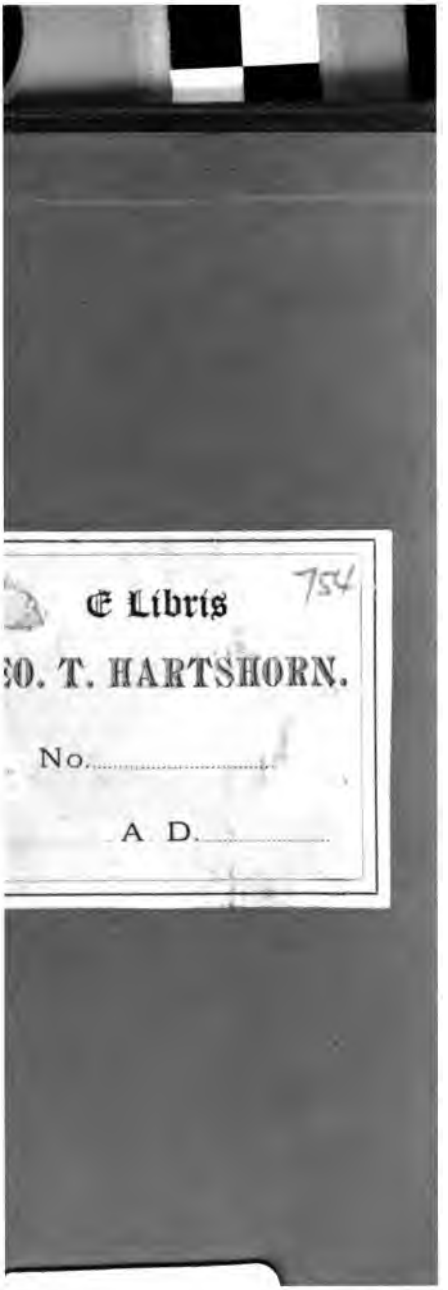
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LOGIC,

OR THE

Right Use of Reason,

IN THE

INQUIRY AFTER TRUTH.

WITH

VARIETY OF RULES TO GUARD AGAINST ERROR IN THE AFFAIRS OF RELIGION AND HUMAN LIFE, AS WELL AS IN THE SCIENCES.

BY ISAAC WATTS, *D. D.*

FOURTH AMERICAN EDITION.

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1809.

TO

JOHN HARTOPP, Baronet.

Sir, IT is fit the public should receive through your hands what was written originally for the assistance of your younger studies, and was then presented to you.

It was by the repeated importunities of our learned friend Mr. *John Eames*, that I was persuaded to revise these *rudiments of logic*, and when I had once suffered myself to begin the work, I was drawn still onward far beyond my first design, even to the neglect, or too long delay of other pressing and important demands that were upon me.

It has been my endeavour to form every part of this treatise both for the instruction of students, to open their way into the sciences, and for the more extensive and general service of mankind, that the *gentleman* and the *Christian* might find their account in the perusal as well as the *scholar*. I have therefore collected and proposed the chief principles and rules of right judgment

in matters of common and sacred importance, and pointed out our most frequent mistakes and [illegible] in the concerns of life and religion, that we might better guard against the springs of error, guilt and sorrow, which surround us in our state of mortality.

You know, Sir, the great design of this noble science is to rescue our reasoning powers from their unhappy slavery and darkness; and thus, with all due submission and deference, it offers an humble assistance to divine revelation. Its chief business is to relieve the natural weaknesses of the mind by some better efforts of nature; it is to diffuse a light over the understanding in our inquiries after truth, and not to furnish the tongue with [illegible]. *True logic* is not that hurtful thing that deals all in dispute and wrangling, to which former ages had debased and confined it; yet its disciples must acknowledge also, that they are taught to vindicate and defend the truth, as well as to search it out. *True logic* doth not require a long detail of hard words to amuse mankind, and to puff up the mind with empty sounds, and a pride of false learning; yet some distinctions and terms of art are necessary to range every idea in its proper class, and to keep our thoughts

n confusion. The world is now grown so wise as to suffer this valuable art to be engrossed by the ools. In so polite and knowing an age, every *man eason* will covet some acquaintance with *logic*, since enders its daily service to *wisdom* and *virtue*, and to affairs of *common life*, as well as to the *sciences*.

I will not presume, Sir, that this little book is im-ved since its first composure in proportion to the provements of your manly age. But when you shall ase to review it in your retired hours, perhaps you y refresh your own memory in some of the early ts of *learning*: And if you find all the additional re-irks and rules made so familiar to you already by ur own observation, that there is nothing new among em, it will be no unpleasing reflection that you have far anticipated the present zeal and labour, of,

SIR,

Your most Faithful, and

Obedient Servant,

I. WATTS.

London, Aug. 24, 1724.

INTRODUCTION,

AND

General Scheme.

LOGIC is *the art of using* REASON* *well i inquiries after truth, and the communication of it to o*

REASON* is the glory of human nature, and one chief eminencies whereby we are raised above our fe creatures, the brutes, in this lower world.

Reason as to the *power* and principles of it, is the mon gift of God to all men; though all are not fav with it by nature in an equal degree: But the *acq improvements* of it, in different men, make a much gr distinction between them than nature had made. I even venture to say, that the *improvement of reason* raised the learned and the prudent, in the Euro world, almost as much above the *Hottentots*, and savages of *Africa*, as those savages are by nature sup to the birds, the beasts, and the fishes.

Now, the *design of logic* is to teach us the right u our *reason*, or *intellectual powers*, and the improvem them in ourselves and others; this is not only neces in order to attain any competent knowledge in the *sci* or the affairs of learning, but to govern both the gr and the meaner *actions of life*. It is the cultivation *reason*, by which we are better enabled to distin *good* from *evil*, as well as *truth* from *falsehood*: both these are matters of the highest importance, w er we regard this life, or the life to come.

The *pursuit* and *acquisition of truth* is of infinite cernment to mankind. Hereby we become acqua

* The word REASON, in this place, is not confined to the faculty of reasoning, or inferring one thing from another, cludes all the intellectual powers of man.

the nature of things, both in heaven and earth, and r various relations to each other. It is by this mean liscover our duty to God and our fellow-creatures : his we arrive at the knowledge of *natural religion*, learn to confirm our faith in *divine revelation*, as as to understand what is revealed. Our wisdom, lence, and piety, our present conduct, and our fu- hope, are all influenced by the use of our *rational ers* in the search after *truth*.

here are several things that make it very necessary our reason should have some assistance in the exer- or *use* of it.

he first is the *depth and difficulty of many truths*, the *weakness of our reason to see far into things at , and penetrate to the bottom of them*. It was a saying ng the ancients, *Veritas in puteo*, "Truth lies in a ;" and, to carry on this metaphor, we may very ly say, that *logic* does, as it were, supply us with s whereby we may go down to reach the water ; or ames the links of a chain, whereby we may draw the er up from the bottom. Thus, by the means of ly reasonings well connected together, philosophers our age have drawn a thousand truths out of the ths of darkness, which our fathers were utterly unac- inted with.

nother thing that makes it necessary for our reason ave some assistance given it, is the *disguise and false urs in which many things appear to us in this present erfect state :* There are a thousand things which are in reality what they appear to be, and that both in *natural* and the *moral* world : So the *sun* appears to lat as a plate of silver, and to be less than twelve ies in diameter : The *moon* appears to be as big as *sun*, and the rainbow appears to be a large substan- arch in the sky ; all which are in reality gross false- ds. So *knavery* puts on the face of *justice*, *hypocrisy superstition* wear the vizard of *piety*, *deceit* and *evil* often clothed in the shapes and appearances of *truth goodness*. Now, logic helps us to strip off the out- d disguise of things, and to behold them, and judge em in their own nature.

here is yet a further proof that our intellectual or ra- al *powers* need some assistance, and that is because

IV. *Disposition* is that operation of the mind, whereby we put the ideas, propositions, and arguments, which we have formed concerning one subject, into such an order as is fittest to gain the clearest knowledge of it, to retain it longest, and to explain it to others in the best manner: Or, in short, it is the ranging of our thoughts in such order as is best for our own and others conception and memory. The effect of this operation is called *method*. This very *description of the four operations of the mind and their effects, in this order*, is an instance or example of method.

Now, as the art of logic assists our conceptions, so it gives us a *large* and *comprehensive* view of the subjects we inquire into, as well as a clear and distinct knowledge of them. As it regulates our *judgment* and our *reasoning*, so it secures us from mistakes, and gives us a *true* and *certain* knowledge of things; and, as it furnishes us with *method*, so it makes our knowledge of things both *easy* and *regular*, and guards our thoughts from confusion.

Logic is divided into four parts, according to these four operations of the mind, which it directs, and therefore we shall treat of it in this order.

THE

First Part of Logic.

OF PERCEPTIONS AND IDEAS.

THE first part of *Logic* contains observations and precepts about the first operation of the mind, *perception* or *conception*: And, since all our knowledge, how wide and large soever it grow, is founded upon our conception and ideas, here we shall consider,

1. The general Nature of them.
2. The Objects of our Conception, or the Archetypes or Patterns of these Ideas.
3. The several Divisions of them.
4. The Words and Terms whereby our Ideas are expressed.
5. General Directions about our Ideas.
6. Special Rules to Direct our Conceptions.

CHAP. I.

OF THE NATURE OF IDEAS.

FIRST, the nature of conception or perception shall just be mentioned,* though this may seem to belong to another science rather than *Logic*.

Perception is that act of the mind, (or, as some philosophers call it,) rather a *passion* or *impression*, whereby the mind becomes conscious of any thing; as, when I feel hunger, thirst, or cold, or heat; when I see a horse, a

* NOTE.—The words CONCEPTION and PERCEPTION are often used promiscuously, as I have done here, because I would not embarrass a learner with too many distinctions; but, if I were to distinguish them, I would say, PERCEPTION is the consciousness of an object when present; CONCEPTION is the forming an idea of the object, whether present or absent.

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Watts

Among substances, some are called *simple*, some ar *compound*, whether the words be taken in a *philosophic* or a *vulgar* sense.

Simple substances, in a *philosophical sense* are either *spir its* which have no manner of composition in them, and i this sense God is called a *simple being*; or they are th first principles of bodies, which are usually called *element* of which all other bodies are compounded: *Elements* ar such substances as cannot be resolved, or reduced int two or more substances of different kinds.

The various sects of philosophers have attributed th honour of this name to various things. The Peripateti or followers of *Aristotle*, made *Fire*, *Air*, *Earth*, and *Wate* to be the four elements of which all earthly things wer compounded; and they supposed the heavens to be a *quin essence*, or *fifth* sort of body, distinct from all these: Bu since experimental philosophy and mathematics have bee

" confused idea of substance (such as it is) is always ready to of " itself. It is a conjunction of ideas co-existing in such a cause " their union, and makes the whole subject subsist by itself, thou " the cause of their union be unknown; and our general idea of s " stance arises from the self-subsistence of this collection of ideas."

Now, if this notion of substance rest here, and be considered me as an unknown cause of the union of properties, it is much mo easy to be admitted; but, if we proceed to suppose a sort of re substantial, distinct being, different from solid quantity or extensi n bodies, and different from a power of thinking in spirits, in m pinion it is the introduction of needless scholastical notion into t real nature of things, and then fancying it to have a real existence.

Mr. Locke, in his Essay of Human Understanding, Book 2. ch 23. §. 2. seems to ridicule this common idea of substance, whi men have generally supposed to be a sort of substratum, distinct fr all properties whatsoever, and to be the support of all properti Yet, in Book 4. chap. 3 §. 6. he seems to suppose there may be s an unknown substratum, which may be capable of receiving the pr erties both of matter and of mind, namely, extension, solidity, a cogitation; for he supposes it possible for God to add cogitation that substance which is corporeal, and thus to cause matter to thi If this be true, then spirits (for ought we know) may be corpo beings, or thinking bodies, which is a doctrine too favourable to mortality of the soul. But I leave these debates to the philosoph of the age, and will not be too positive in my opinion of this abstr subject.

See more of this argument in Philosophical Essays, before ci Essay 2d.

better understood, this doctrine has been abundantly refuted. The *Chemists* make *Spirit*, *Salt*, *Sulphur*, *Water*, and *Earth*, to be their *five* elements, because they can reduce all terrestrial things to these five: This seems to come nearer the truth; though they are not all agreed in this enumeration of elements. In short, our modern philosophers generally suppose *matter* or *body* to be one simple principle, or *solid extension*, which being diversified by its various shapes, quantities, motions, and situations, makes all the varieties that are found in the universe; and therefore they make little use of the word *element*.

Compound substances are made up of two or more *simple* substances: So every thing in this whole material creation, that can be reduced by the art of man into two or more different principles or substances is a *compound body* in the philosophical sense.

But, if we take the words *simple* and *compound* in a vulgar sense, then all those are simple substances which are generally esteemed uniform in their nature. So every herb is called a *simple*, and every metal a *mineral*; though the chemist perhaps may find all his several elements in each of them. So a needle is a *simple* body, being only made of steel; but a sword or a knife is a *compound*, because its haft or handle is made of materials different from the blade. So the *Bark of Peru*, or the *Juice of Sorrel*, is a *simple* medicine: But, when the apothecary's art has mingled several simples together, it becomes a *compound*, as *Diascordium*, or *Mithridate*.

The terms of *pure* and *mixt*, when applied to bodies, are much akin to *simple* and *compound*. So a guinea is *pure* gold, if it has nothing but gold in it, without any alloy of baser metal: But, if any other mineral or metal be mingled with it, it is called a *mixt* substance or body.

Substances are also divided into *animate* and *inanimate*. Animated substances are either *animal* or *vegetable*.*

Some of the *animal substances* have various organical or instrumental parts, fitted for a variety of motions from

* NOTE.—Vegetables, as well as animals, have gotten the name of animated substances, because some of the ancients supposed herbs and plants, beasts and birds, &c. to have a sort of soul, distinct from matter, or body.

place to place, and a spring of life within thems
beasts, birds, fishes, and insects; these are called
Other *animated substances* are called *vegetable*
have within themselves the principles of anothe
life and growth, and of various productions of lea
ers, and fruit, such as we see in plants, herbs, a

And there are other substances, which are ca
imate, because they have no sort of life in them,
stone, air, water, &c.

There is also one sort of substance or being,
compounded of *body* and *mind*, or a rational spirit
an animal; such is mankind. *Angels*, or any
ings of the spiritual and invisible world, who ha
med visible shapes for a season, can hardly be
among this order of compounded beings; beca
drop their bodies, and divest themselves of tho
shapes, when their particular message is perfor
thereby shew that these bodies do not belong to
tures.

SECT. III.

OF MODES, AND THEIR VARIOUS KINDS, AND FIR
SENTIAL AND ACCIDENTAL MODES.

THE next sort of objects which are r
ed in our ideas, are called *modes* or *manners of b*

A *mode* is that which cannot subsist in and of i
is always esteemed as belonging to, and subsisti
help of some *substance*, which for that reason is
subject. A mode must depend on that substanc
very existence and being; and that not as a being
on its *cause*, (for so *substances* themselves depen

* NOTE—The term mode is by some authors applied ch
relations, or relative manners of being. But in logical tre
often used in a larger sense, and extends to all attributes w
and includes the most essential and inward properties, as
ward respects and relations, and reaches to actions themsel
as manners of action.

their Creator;) but the *very being of a mode* depends on some substance for its *subject*, in which it is or to which it belongs; so motion, shape, quantity, weight, are *modes* of the *body*; knowledge, wit, folly, love, doubting, judging, are *modes* of the *mind*; for the one cannot subsist without *body*, and the other cannot subsist without *mind*.

Modes have their several divisions, as well as substances.

I. Modes are either *essential* or *accidental*.

An *essential mode* or *attribute*, is that which belongs to the very nature or essence of the subject wherein it is; and the subject can never have the same nature without it; such is *roundness* in a bowl, *hardness* in a stone, *softness* in water, *vital motion* in an animal, *solidity* in matter, *thinking* in a spirit; for, though that piece of wood which is now a bowl may be made *square*, yet, if *roundness* be taken away, it is no longer a bowl: so that very flesh and bones, which is now an *animal*, may be without *life* or inward motion; but if all motion be entirely gone, it is no longer an animal, but a carcass; so, if a *body* or matter be divested of *solidity*, it is a mere void space, or nothing; and, if *spirit* be entirely without *thinking*, I have no idea of any thing that is left in it; therefore, so far as I am able to judge, *consciousness* must be its essential attribute.* Thus all the perfections of God are called his *attributes*, for he cannot be without them.

An *essential mode* is either *primary* or *secondary*.

A *primary essential mode* is the first or chief thing that constitutes any being in its particular essence or nature, and makes it to be that which it is, and distinguishes it from all other beings: This is called the *difference* in the definition of things; of which hereafter: So *roundness* is the primary essential mode or difference of a bowl; the *meeting* of *two lines* is the primary essential mode, or the difference of an *angle*; the *perpendicularity* of these lines to each other

* NOTE—When I call solid extension an essential mode or attribute of matter, and a power of thinking an essential mode or attribute of a spirit, I do it in compliance with common forms of speech: But perhaps in reality these are very essences or substances themselves, and the most substantial ideas that we can form of body and spirit, and have no need of any (we know not what) substratum, or unintelligible substance, to support them in their existence or being.

is the difference of a *right angle*: *Solid exten* primary attribute or difference of *matter*: *Consci* at least a *power of thinking*, is the difference o attribute of a *spirit*;* and to *fear* and *love* God mary attribute of a *pious man*.

A *secondary essential mode* is any other att thing which is not of primary consideration: T ed a *property*. Sometimes indeed it goes towar up the essence, especially of a *complex being*, s are acquainted with it; sometimes it depends follows from the essence of it; so, *volubility*, or roll, is the property of a bowl, and is deriv *roundness*. *Mobility*, and *figure*, or *shape* are of *matter*; and it is the property of a *pious man neighbour*.

An *accidental mode*, or an *accident*, is such a not *necessary* to the being of a thing, for the s be without it, and yet remain of the same na was before, or it is that mode which may be s abolished from its subject: So, *smoothness* or *blackness* or *whiteness*, *motion* or *rest*, are the a a bowl; for these may be all changed, and y remain a bowl still: *Learning*, *justice*, *folly* *health*, are the accidents of a *man*: *Motion*, *sq* any *particular shape* or *size*, are the accidents of *shape* and *size*, in general, are essential modes body must have some size and shape; nor can out them: So, *hope*, *fear*, *wishing*, *assenting*, a are accidents of the *mind*, though *thinking* in ge to be *essential* to it.

Here observe, that the name of *accident* has times given by the old Peripatetic philos modes, whether essential or accidental; but t confine this word *accident* to the sense in whic scribed it.

Here it should be noted also, that, thoug *property* be limited sometimes, in logical trea *secondary essential mode*, yet it is used in c guage to signify these four sorts of *modes*; of are *essential*, and some *accidental*.

* See preceding Note.

1. Such as belong to *every* subject of that kind, but *not only* to those subjects. So, *yellow colour*, and *ductility*, are properties of gold; they belong to *all* gold, but not *only* to gold; for saffron is also *yellow*, and lead is *ductile*.

2. Such as belong only to *one* kind of subject, but not to *every* subject of that kind. So, *learning*, *reading*, and *writing*, are properties of *human nature*; they belong only to man, but *not* to *all* men.

3. Such as belong to *every* subject of one kind, and *only* to them, but *not always*. So, *speech* or *language* is a property of *man*, for it belongs to *all* men, and to men *only*; but men are *not always* speaking.

4. Such as belong to *every* subject of one kind, and to them *only* and *always*. So, *shape* and *divisibility* are properties of *body*; so *omniscience* and *omnipotence* are properties of *divine Nature*; for in this sense properties and attributes are the same; and, except in logical treatises, there is scarce any distinction made between them. These are called *proprία quartæ modo* in the schools, or *properties of the fourth sort*.

NOTE.—Where there is any one *property* or *essential attribute* so superior to the rest, that it appears plainly that all the rest are derived from it, and such as is sufficient to give a full distinction of that subject from all other subjects, this attribute or property is called the *essential difference*, as is before declared; and we commonly say, the *essence* of the thing consists in it; so the *essence of matter* in general seems to consist in *solidity*, or *solid extension*. But, for the most part, we are so much at a loss in finding out the intimate essence of particular natural bodies, that we are forced to distinguish the *essential difference* of most things by a *combination* of properties. So a *sparrow* is a bird which has such coloured feathers, and such a particular size, shape and motion. So *wormwood* is an herb which has such a leaf of such a colour, and shape, and taste, and such a root and stalk. So beasts and fishes, minerals, metals, and works of art sometimes, as well as of nature, are distinguished by such a *collection of properties*.

SECT. IV.

THE FARTHER DIVISIONS OF MODE.

THE *second* division of Modes is into *absolute and relative.* An *absolute mode* is that which belongs to its subject, without respect to any other beings whatsoever: But a *relative mode* is derived from the regard that one being has to others. So *roundness* and *smoothness* are the *absolute* modes of a bowl; for, if there were nothing else existing in the whole creation, a bowl might be *round* and *smooth:* But *greatness* and *smallness* are relative modes; for the very ideas of them are derived merely from the comparison of one being with others: A bowl of four inches diameter is *very great* compared with one of an inch and a half; but it is *very small* in comparison of another bowl whose diameter is eighteen or twenty inches. *Motion* is the absolute mode of a body, but *swiftness* or *slowness* are relative ideas; for the motion of a bowl on a bowling-green is *swift* when compared with a snail; and it is *slow* when compared with a cannon-bullet.

These *relative modes* are largely treated of by some logical and metaphysical writers, under the name of *relations.* And these relations themselves are farther subdivided into *such as arise from the nature of things*, and *such as arise merely from the operation of our minds*; one sort are called *real relations*, the other *mental*; so the *likeness* of one egg to another is a *real* relation, because it arises from the real nature of things; for, whether there was any man or mind to conceive it or not, one egg would be like another: But, when we consider an egg as a *noun substantive* in grammar, or as signified by the letters *e g g*, these are *mere mental* relations, and derive their very nature from the mind of man. These sort of relations are called by the schools *entia rationis*, or *second notions*, which have no real being, but depend entirely on the operation of the mind.

III. The *third* division of modes shew us they are either *intrinsical*, or *extrinsical. Intrinsical modes* are con-

ceived to be in the subject or substance, as when we say a globe is *round*, or *swift*, *rolling*, or at *rest*: Or when we say a man is *tall*, or *learned*, these are *intrinsic modes*: But, *extrinsic modes* are such as arise from something that is not in the subject or substance itself; but it is a manner of being which some substances attain by reason of something that is external or foreign to the subject; as *this globe lies within two yards of the wall*; or, *this man is beloved*, or *hated*. *Note.* Such sort of modes as this last example are called *external denominations*.

IV. There is a *fourth* division much akin to this, whereby modes are said to be *inherent* or *adherent*, that is, *proper* or *improper*. *Adherent* or *improper modes* arise from the joining of some accidental substance to the chief subject, which yet may be separated from it; so when a *bowl is wet*, or a *boy is clothed*, these are *adherent modes*; for the water and the clothes are distinct substances, which adhere to the *bowl*, or to the *boy*: But, when we say the *bowl is swift* or *round*, when we say the *boy is strong* or *witty*, these are proper or *inherent modes*, for they have a sort of *in-being* in the substance itself, and do not arise from the addition of any other substance to it.

V. *Action* and *passion* are modes or manners which belong to substances, and should not entirely be omitted here. When a *smith* with a *hammer* strikes a piece of *iron*, the *hammer* and the *smith* are both *agents* or subjects of action; the one is the *prime* or *supreme*, the other the *subordinate*: The iron is the *patient*, or the subject of passion, in a philosophical sense, because it receives the operation of the agent; though this sense of the words *passion* and *patient* differs much from the vulgar meaning of them.*

VI. The *sixth* division of modes may be into *physical*, that is, *natural*, *civil*, *moral*, and *supernatural*. So when we consider the apostle *Paul*, who was a little man, a Roman by the privilege of his birth, a man of virtue or honesty, and an inspired apostle: his *low stature* is a *physical* mode,

* NOTE—Agent signifies the doer, patient the sufferer, action is doing, passion is suffering: Agent and action have retained their original philosophical sense, though patient and passion have acquired a very different meaning in common language.

his being a *Roman* is a *civil* privilege, his *honesty* is a *mor al* consideration, and his being *inspired* is *supernatural.*

VII. Modes belong either to *body* or to *spirit*, or t *both*. *Modes of body* belong only to matter or to corpo real beings; and these are *shape*, *size*, *situation* or *place* &c. *Modes of spirit* belong only to minds; such are *knowl edge*, *assent*, *dissent*, *doubting*, *reasoning*, &c. Modes whicl belong to both have been sometimes called *mixed modes* or *human modes*, for these are only found in human nature which is compounded both of body and spirit; such ar *sensation*, *imagination*, *passion*, &c. in all which there is concurrence of the operations both of mind and body, tha is of animal and intellectual nature.

But the *modes of body* may be yet farther distinguished Some of them are *primary modes* or *qualities*, for they be long to bodies considered in themselves, whether ther were any man to take notice of them or not; such ar those before mentioned, namely, *shape*, *size*, *situation*, &c *Secondary qualities*, or *modes*, are such ideas as we ascrib to bodies on account of the various impressions which ar made on the senses of men by them; and these are calle *sensible qualities*, which are very numerous; such are a *colours*, as *red*, *green*, *blue*, &c. such are all *sounds*, s *sharp*, *shrill*, *loud*, *hoarse*; all *tastes*, as *sweet*, *bitter*, *sour* all *smells*, whether *pleasant*, *offensive*, or *indifferent*; an all *tactile qualities*, or such as affect the *touch* or *feelin* namely, *heat*, *cold*, &c. These are properly called *seco dary qualities*; for, though we are ready to conceive the as existing in the very bodies themselves which affect o senses, yet true philosophy has most undeniably prove that all these are really various ideas or perceptions e cited in human nature by the different impressions th bodies make upon our senses by their *primary modes*, th is, by means of the different shape, size, motion, and p sition, of those little invisible parts that compose the Thence it follows that a *secondary quality*, considered in the bodies themselves, is nothing else but a power aptitude to produce such sensations in us: See *Lock Essay on the Uunderstanding*, Book II. Chap. 8.

VIII. I might add, in the last place, that, as *modes* b long to *substances*, so there are some also that are but *mo*

of other modes: For, though they subsist in and by the *substance*, as the original subject of them, yet they are properly and directly attributed to some mode of that substance. *Motion* is the mode of a body; but the *swiftness* or *slowness* of it, or its *direction to the north or south*, are but modes of motion. *Walking* is the mode or manner of a man, or of a beast; but *walking gracefully* implies a manner or mode superadded to that action. All comparative and superlative degrees, of any quality, are the *modes of a mode*, as *swifter* implies a greater *measure of swiftness*.

It would be too tedious here to run through all the *modes*, *accidents*, and *relations*, at large, that belong to various beings, and are copiously treated of in *general*, in the science called *Metaphysics*, or, more properly *Ontology*: They are also treated of, in *particular*, in those sciences which have assumed them severally as their proper subjects.

SECT. V.

OF THE TEN CATEGORIES. OF SUBSTANCE MODIFIED.

WE have thus given an account of the two chief objects of our ideas, namely, *substances* and *modes*, and their various kinds; and in these last sections we have briefly comprised the greatest part of what is necessary in the famous ten ranks of being, called the ten *predicaments* or *categories* of *Aristotle*, on which there are endless volumes of discourses formed by several of his followers. But that the reader may not utterly be ignorant of them, let him know the names are these; *Substance*, *quantity*, *quality*, *relation*, *action*, *passion*, *where*, *when*, *situation*, and *clothing*. It would be mere loss of time to shew how loose, how injudicious, and even ridiculous, this tenfold division of things is: And whatsoever farther relates to them, and which may tend to improve useful knowledge, should be sought in *Ontology*, and in other sciences.

Besides *substance* and *mode*, some of the moderns would have us consider the *substance modified* as a distinct object of our ideas; but I think there is nothing more that need be

said on this subject, than this, namely, There is som difference between a substance, when it is considered *wi all its modes* about it, or clothed in all its manners of exis ence, and when it is distinguished from them, and consi ered naked *without them.*

SECT. VI.

OF NOT-BEING.

AS *being* is divided into *substance* and *mode*, s we may consider *not-being* with regard to both these.

I. *Not-being* is considered as excluding all substance, an then all modes are also necessarily excluded; and th we call *pure nihility*, or *mere nothing*.

This *nothing* is taken either in a *vulgar* or a *philosophi al* sense; so we say, *There is nothing in the cup* in a vu gar sense, when we mean there is no *liquor in it*; but w cannot say, *There is nothing in the cup*, in a strict phil sophical sense, where there is *air* in it, and perhaps a mi lion of *rays of light* are there.

II. *Not-being*, as it has relation to *modes* or manners *being*, may be considered either as a mere *negation*, or a *privation*.

A *negation* is the absence of that which does not natu rally belong to the thing we are speaking of, or which ha no right, obligation, or necessity, to be present with it as, when we say, *a stone is inanimate*, or *blind*, or *deaf* that is, it has no *life*, nor *sight*, nor *hearing*; nor whe we say, a *carpenter*, or a *fisherman* is *unlearned*, these ar mere *negations*.

But a *privation* is the absence of what does naturally be long to the thing we are speaking of, or which ought to b present with it; as when a *man* or a *horse* is *deaf*, or *blind* or *dead*; or if a *physician* or a *divine* be unlearned, thes are called *privations*: So the *sinfulness* of any huma action is said to be a *privation*; for *sin* is that want of con formity to the law of God which ought to be found in eve ry action of man.

NOTE—There are some writers who make all sorts of *relative modes* or *relations*, as well as all external denominations, to be mere creatures of the mind, and *entia rationis*, and then they rank them also under the general head of *not-beings*; but it is my opinion, that whatsoever may be determined concerning mere mental relations and external denominations, which seem to have something less of entity or being in them, yet there are many *real relations*, which ought not to be reduced to so low a class; such are the *situation* of bodies, their mutual *distances*, their particular *proportions* and *measures*, the notions of *fatherhood*, *brotherhood*, *sonship*, &c. all which are relative ideas. The very essence of *virtues* or *holiness* consists in the conformity of our actions to the rule of right reason, or the law of God: The nature and essence of *sincerity*, is the conformity of our words and actions to our thoughts, all which are but mere relations; and I think we must not reduce such positive beings as *piety*, and *virtue*, and *truth*, to the rank of non-entities, which have nothing real in them, though *sin*, (or rather the sinfulness of an action,) may be properly called a not-being; for it is a want of piety and virtue. This is the most usual, and perhaps the justest way of representing these matters.

CHAP. III.

OF THE SEVERAL SORTS OF PERCEPTIONS OR IDEAS.

Ideas may be divided with regard to their *original*, their *nature*, their *objects*, and their *qualities*.

SECT. I.

OF SENSIBLE, SPIRITUAL, AND ABSTRCTED IDEAS.

THERE has been a great controversy about the *origin* of ideas, namely, whether any of our ideas are *innate* or not, that is, born with us and naturally belonging to our minds. Mr. Locke utterly denies it; others as

positively affirm it. Now, though this controversy may be comprised, by allowing that there is a sense wherein our first ideas of some things may be said to be innate, (as I have shewn in some remarks on Mr. Locke's Essay, which have lain long by me,) yet it does not belong to this place and business to have that point debated at large, nor will it hinder our pursuit of the present work to pass over it in silence.

There is sufficient ground to say, that all our ideas with regard to their original, may be divided into three sorts, namely, *sensible*, *spiritual*, and *abstracted* ideas.

I. *Sensible* or *corporeal ideas*, are derived originally from our senses, and from the communication which the soul has with the animal body in this present state; such are the notions we frame of all *colours*, *sounds*, *tastes*, *figures*, or *shapes* and *motions*; for our senses being conversant about particular sensible objects, become the occasions of several distinct perceptions in the mind; and thus we come by the ideas of *yellow*, *white*, *heat*, *cold*, *soft*, *hard*, *bitter*, *sweet*, and all those which we call *sensible* qualities. All the ideas which we have of *body*, and the sensible modes and properties that belong to it, seem to be derived from *sensation*.

And howsoever these may be treasured up in the memory, and by the work of fancy may be increased, diminished, compounded, divided, and diversified, (which we are ready to call *our invention*,) yet they all derive their first nature and being from something that has been let into our minds by one or other of our senses. If I think of a *golden mountain*, or a *sea of liquid fire*, yet the single ideas of *sea*, *fire*, *mountain*, and *gold*, came into my thoughts at first by sensation; the mind has only compounded them.

II. *Spiritual** or *intellectual ideas*, are those which we gain by reflecting on the nature and actions of our own souls, and turning our thoughts within ourselves, and observing what is transacted in our own minds. Such are the ideas we have of *thought*, *assent*, *dissent*, *judging*, *reason*, *knowledge*, *understanding*, *will*, *love*, *fear*, *hope*.

By *sensation* the soul contemplates things (as it were

* Here the word spiritual is used in a mere natural, and not in a religious sense.

out of itself, and gains corporeal representations or sensible ideas: By *reflection*, the soul contemplates itself, and things within itself, and by this mean it gains spiritual ideas, or representations of things intellectual.

Here it may be noted, though the first original of these two sorts of ideas, namely, *sensible* and *spiritual*, may be entirely owing to these two principles, sensation, and reflection, yet the *recollection*, and fresh excitation of them, may be owing to a thousand other occasions and occurrences of life. We could never inform a man who was born blind or deaf what we mean by the words *yellow*, *blue*, *red*, or by the words *loud* or *shrill*, nor convey any just ideas of these things to his mind, by all the powers of language, unless he has experienced those sensations of sound and colour; nor could we ever gain the ideas of *thought*, *judgment*, *reason*, *doubting*, *hoping*, &c. by all the words that man could invent, without turning our thoughts inward upon the actions of our own souls. Yet, when once we have attained these ideas, by sensation and reflection, they may be excited afresh by the use of names, words, signs, or by any thing else that has been connected with them in our thoughts; for, when two or more ideas have been associated together, whether it be by custom, or accident, or design, the one presently brings the other to mind.

III. Besides these two which we have named, there is a *third* sort of ideas, which are commonly called *abstracted ideas*, because, though the original ground or occasion of them may be sensation, or reflection, or both, yet these ideas are framed by another act of the mind, which we usually call *abstraction*. Now, the word abstraction signifies *a withdrawing some part of an idea from other parts of it*, by which means such abstracted ideas are formed, as neither represent any thing corporeal or spiritual, that is, any thing peculiar or proper to mind or body. Now these are of two kinds.

Some of these abstracted ideas are the most *absolute*, general and universal conceptions of things, considered in themselves, without respect to others; such as *entity* or *being*, and *not-being*, *essence*, *existence*, *act*, *power*, *substance*, *mode*, *accident*, &c.

beings, this is called a *compound idea*, whether these u ed ideas be simple or complex. So, a man is compou ed of *body* and *spirit*; so *mithridate* is a *compound medic* because it is made of many different ingredients: Thi have shewn under the doctrine of *substances*. And *mc* also may be compounded. *Harmony* is a compound i made up of *different sounds united*: So, several *differ virtues* must be united to make up the compounded ide character, either of a *hero*, or a *saint*.

But, when many ideas of the *same kind* are joined gether, and united in one name, or under one view, i called a *collective idea*; so, an *army* or a *parliament*, is a lection of men; a *dictionary* or *nomenclatura*, is a collec of words; a *flock* is a collection of sheep; a *forest*, or *gr* a collection of trees; an *heap*, is a collection of sand corn, or dust, &c. a *city*, is a collection of houses; a *n gay*, is a collection of flowers; a *month*, or *year*, is a col tion of days; and a *thousand*, is a collection of units.

The precise difference between a *compound* and *collec idea* is this, that a *compound idea* unites things of a diffe kind, but a *collective idea* things of the same kind: Tho this distinction in some cases is not accurately obser and custom oftentimes uses the word *compound* for *co tive*.

SECT. III.

OF UNIVERSAL AND PARTICULAR IDEAS, REAL AND IM INARY.

IDEAS, according to their *objects*, may firs divided into *particular* or *universal*.

A *particular idea* is that which represents one thing or

Sometimes the one thing is represented in a loose indeterminate manner, as, when we say, *some man*, *man*, *one man*, *another man*; *some horse*, *any horse*; *one c* or *another*; which is called by the schools *individuum gum*.

Sometimes the *particular idea* represents one thing i determinate manner, and then it is called a *singular id* such is *Bucephalus*, or *Alexander's* horse, *Cicero* the ora *Peter* the apostle, the palace of *Versailles*, *this book*,

river, the *New Forest*, or the city of *London*: That idea which represents one particular determinate thing to me, is called a *singular idea*, whether it be simple, or complex, or compound.

The *object* of any particular idea, as well as the *idea* itself, is sometimes called an *individual*: So *Peter* is an individual man, *London* in an individual city. So, *this book*, *one horse*, *another horse*, are all individuals; though the word *individual* is more usually limited to one *singular*, *certain* and *determined* object.

An *universal idea*, is that which represents a common nature agreeing to several particular things; so a *horse*, a *man*, or a *book*, are called *universal ideas*; because they agree to all *horses*, *men*, or *books*.

And I think it not amiss to intimate, in this place, that the *universal ideas* are formed by that act of the mind which is called *abstraction*, that is, a withdrawing some part of an idea from other parts of it: For, when *singular ideas* are first let into the mind, by sensation or reflection, then, in order to make them *universal*, we leave out, or drop all those peculiar and determinate characters, qualities, modes or circumstances, which belong merely to any particular individual being, and by which it differs from other beings; and we only contemplate those properties of it, wherein it agrees with other beings.

Though, it must be confessed, that the name of *abstracted ideas* is sometimes attributed to *universal ideas*, both *sensible* or *spiritual*, yet this abstraction is not so great, as when we drop out of our idea every *sensible* or *spiritual* representation, and retain nothing but the most *general* and *absolute* conceptions of things, or their mere *relations* to one another, without any regard to their particular natures, whether they be *sensible* or *spiritual*. And it is to this kind of conceptions we more properly give the name of *abstracted ideas*, as in the first section of this chapter.

An *universal idea* is either *general* or *spiritual*.

A *general idea* is called by the schools a *genus*; and it is one common nature agreeing to several other common natures. So *animal* is a *genus*; because it agrees to *horse*, *lion*, *whale*, *butterfly*, which are also common ideas; so *fish* is a *genus*; because it agrees to *trout*, *herring*, *crab*, which are common natures also.

A *special idea* is called by the schools a *species* ; it is one common nature that agrees to several singular individuals beings ; so *horse* is a *special idea*, or a *species*, because it agrees to *Bucephalus*, *Trott*, and *Snowball*. *City* is a *special idea*, for it agrees to *London*, *Paris*, *Bristol*.

NOTE 1st.—Some of these *universals* are *genuses*, if compared with less common natures ; and they are *species* if compared with natures more common. So *bird* is a *genus*, if compared with *eagle*, *sparrow*, *raven*, which are also common natures : But it is a *species*, if compared with the more general nature, *animal*. The same may be said of *fish*, *beast*, &c.

This sort of universal ideas, which may either be considered as a *genus*, or a *species*, is called *subaltern* : But the highest *genus*, which is never a *species*, is called the *most general* ; and the lowest *species*, which is never a *genus*, is called the *most special*.

It may be observed here also, that that general nature or property, wherein one thing agrees with most other things, is called its *more remote genus* : So *substance* is the remote genus of *bird*, or *beast*, because it agrees not only to all kinds of animals, but also to things inanimate, as sun, stars, clouds, metals, stones, air, water, &c. But *animal* is the *proximate* or *nearest genus of bird*, because it agrees to fewer other things. Those general natures which stand between the *nearest* and most *remote*, are called *intermediate*.

NOTE 2d.—In universal ideas it is proper to consider their *comprehension* and their *extension*.*

The *comprehension* of an idea regards all the essential modes and properties of it : So *body*, in its *comprehension* takes in *solidity*, *figures*, *quantity*, *mobility*, &c. So a *bowl* in its *comprehension*, includes *roundness*, *volubility*, &c.

The *extension* of an universal idea regards all the particular kinds and single beings that are contained under it So a *body* in its *extension* includes *sun*, *moon*, *star*, *wood*, *iron*, *plant*, *animal*, &c. which are several *species*, or *individuals* under the general name of *body*. So a *bowl*, in its *extension*, includes a *wooden* bowl, a *brass* bowl, a *white* and

* NOTE—The word extension here is taken in a mere logical sense, and not in a physical and mathematical sense.

black bowl, a *heavy* bowl, &c. and all kinds of bowls, together with all the particular individual bowls in the world.

Note. The *comprehension of an idea* is sometimes taken in so large a sense, as not only to include the essential attributes, but all the properties, modes, and relations whatsoever, that belong to any being, as will appear, *Chap.* VI.

This account of *genus* and *species* is part of that famous doctrine of *universals*, which is taught in the schools, with divers other formalities belonging to it; for it is in this place that they introduce *difference*, which is the primary essential mode, and *property*, or the secondary essential mode, and *accident*, or the accidental mode; and these they call the *five predicables*, because every thing that is affirmed concerning any being must be either the *genus*, the *species*, the *difference*, some *property*, some *accident*: But what farther is necessary to be said concerning these things will be mentioned when we treat of *definition*.

Having finished the doctrine of *universal* and *particular ideas*, I should take notice of another division of them, which also hath respect to their *objects*; and that is, they are either *real* or *imaginary*.

Real ideas are such as have a just foundation in nature, and have real objects, or exemplars, which did, or do, or may actually exist, according to the present state and nature of things; such are all our ideas of *long*, *broad*, *swift*, *slow*, *wood*, *iron*, *men*, *horses*, *thoughts*, *spirits*, a cruel *master*, a proud *beggar*, a *man* seven feet high.

Imaginary ideas, which are also called *fantastical*, or *chimerical*, are such as are made by enlarging, diminishing, uniting, dividing real ideas in the mind, in such a manner, as no objects, or exemplars did or ever will exist, according to the present course of nature, though the several parts of these ideas are borrowed from real objects; such are the conceptions we have of a *centaur*, a *satyr*, a *golden mountain*, a *flying horse*, a *dog without a head*, a *bull less than a mouse*, or a *mouse as big as a bull*, and a *man twenty feet high*.

Some of these fantastic ideas are *possible*, that is, they are not utterly inconsistent in the nature of things; and therefore it is within the reach of divine power to make such

objects; such are most of the instances already given: But *impossibles* to carry an utter inconsistence in the ideas which are joined; such are *self-active matter*, and *infinite* or *eternal men*, a *pious man without honesty*, or *heaven without holiness*.

SECT. IV.

THE DIVISION OF IDEAS, WITH REGARD TO THEIR QUALITIES.

IDEAS, with regard to their *qualities*, afford us these several divisions of them. 1. They are either *clear* and *distinct*, or *obscure* and *confused*. 2. They are *vulgar* or *learned*. 3. They are *perfect* or *imperfect*. 4. They are *true* or *false*.

I. Our ideas are either *clear* and *distinct*, or *obscure* and *confused*.

Several writers have distinguished the *clear ideas* from those that are *distinct*; and the *confused ideas* from those that are *obscure*; and it must be acknowledged there may be some difference between them; for it is the *clearness* of ideas for the most part makes them *distinct*; and the *obscurity* of ideas is one thing that will always bring a sort of *confusion* into them. Yet when these writers come to talk largely upon this subject, and to explain and adjust their meaning with great nicety, I have generally found that they did not keep up the distinction they first designed, but they confound the one with the other. I shall therefore treat of *clear* or *distinct ideas*, as one and the same sort, and *obscure* or *confused ideas*, as another.

A *clear* and *distinct idea*, is that which represents the object of the mind with full evidence and strength, and plainly distinguishes it from all other objects whatsoever.

An *obscure* and *confused* idea represents the object either so faintly, so imperfectly, or so mingled with other ideas, that the object of it doth not appear plain to the mind, nor purely in its own nature, nor sufficiently distinguished from other things.

When we see the sea and sky nearer at hand, we have a *clear* and *distinct idea* of each; but, when we look *far* to-

ward the horizon, especially in a misty day, our ideas of both are but *obscure* and *confused*; for we know not which is *sea*, and which is *sky*. So when we look at the *colours of* the rainbow, we have a *clear idea* of the *red*, the *blue*, the *green*, in the *middle* of their several arches, and a *distinct idea* too, while the eye fixes there; but, when we consider the *border* of those colours; they so run into one another, that it renders their ideas *confused* and *obscure*; So the idea which we have of *our brother*, or *our friend*, whom we see daily, is *clear* and *distinct*; but, when the absence of many years has injured the idea, it becomes *obscure* and *confused*.

NOTE here—That some of our ideas may be very *clear* and *distinct* in one respect, and very *obscure* and *confused* in another. So when we speak of a *Chiliagonum*, or a *figure of a thousand angles*, we may have a *clear* and *distinct rational idea* of the number *one thousand angles*; for we can demonstrate various properties concerning it by reason: But the *image*, or *sensible idea*, which we have of the figure, is but *confused* and *obscure*; for we cannot precisely distinguish it by fancy from the image of a *figure that has nine hundred angles*, or *nine hundred and ninety*. So when we speak of the *infinite divisibility of matter*, we always keep in our minds a very clear and distinct idea of *division* and *divisibility*; but, after we have made a little progress in dividing, and come to parts that are far too small for the reach of our senses, then our *ideas* or *sensible images* of these little bodies become *obscure* and *indistinct*, and the idea of *infinite* is very *obscure*, *imperfect*, and *confused*.

§ II. *Ideas* are either *vulgar* or *learned*. A *vulgar idea* represents to us the most obvious and sensible appearances that are contained in the object of them: But a *learned idea* penetrates farther into the nature, properties, reasons, causes, and effects of things. This is best illustrated by some examples.

It is a *vulgar idea* that we have of a *rainbow*, when we conceive a large arch in the clouds, made up of various colours parallel to each other: But it is a *learned idea* which a philosopher has when he considers it as the various reflections and refractions of sun-beams, in drops of falling rain. So it is a *vulgar idea*, which we have of the *colours of solid bodies*, when we perceive them to be, as it

were, a red, or blue, or green tincture of the surfa
those bodies: But it is a *philosophical idea*, when we
sider the *various colours* to be nothing else but diffe
sensations excited in us by the variously refracted
of light, reflected on our eyes in a different manner, acc
ing to the different size, or shape, or situation of the
ticles of which the surfaces of those bodies are compo
It is a *vulgar idea* which we have of a *watch* or *clock*, v
we conceive of it as a pretty instrument, made to she
the hour of the day: But it is a *learned idea* which
watchmaker has of it, who knows all the several par
it, the spring, the balance, the chain, the wheels, t
axles, &c. together with the various connections and
justments of each part, whence the exact and uniform
tion of the index is derived, which points to the mi
or the hour. So, when a common understanding re
Virgil's Æneid, he has but a *vulgar idea* of that poem, ye
mind is naturally entertained with the story, and his
with the verse: But, when a critic, or a man who
skill in poesy, reads it, he has a *learned idea* of its pecu
beauties, he tastes and relishes a superior pleasure,
admires the Roman Poet, and wishes he had known
Christian Theology, which would have furnished
with nobler materials and machines than all the Heat
idols.

It is with a *vulgar idea* that the world beholds the
toons of *Raphael* at Hampton Court, and every one
his share of pleasure and entertainment: But a *pai*
contemplates the wonders of that Italian pencil, and
a thousand beauties in them which the vulgar eye neg
ed: His *learned ideas* give him a transcendant deli
and yet, at the same time, discover the blemishes which
common gazer never observed.

III. *Ideas* are either *perfect* or *imperfect*, which are
erwise called *adequate* or *inadequate*.

Those are *adequate ideas* which perfectly represent t
archetypes or objects. *Inadequate ideas* are but a par
or incomplete representation of those archetypes to wh
they are referred.

All our *simple ideas* are in some sense *adequate* or
fect, because simple ideas, considered merely as our
perceptions, have no parts in them: So we may be sa

have a perfect idea of *white*, *black*, *sweet*, *sour*, *length*, *light*, *motion*, *rest*, &c. We have also a perfect idea of various figures, as a *triangle*, a *square*, a *cylinder*, a *cube*, a *sphere*, which are complex ideas: But, our idea or image of a *figure of a thousand sides*, our idea of the *city of London*, or the *powers of a loadstone*, are very imperfect, as well as our ideas of *infinite length* or *breadth*, *infinite power*, *wisdom*, or *duration*; for the idea of *infinite* is endless and ever growing, and can never be completed.

NOTE 1.—When we have a *perfect* idea of any thing in all its parts, it is called a *complete idea*; when in all its properties, it is called *comprehensive*. But, when we have but an *inadequate* and *imperfect* idea, we are only said to *apprehend* it; therefore we use the term *apprehension* when we speak of our knowledge of God, who can never be *comprehended* by his creatures.

NOTE 2.—Though there are a multitude of ideas which may be called *perfect*, or *adequate*, in a vulgar sense, yet there are scarce any ideas which are *adequate*, *comprehensive*, and *complete*, in a philosophical sense: for there is scarce any thing in the world that we know, as to all the parts and powers and properties of it, in perfection. Even so plain an idea as that of a *triangle*, has, perhaps, infinite properties belonging to it, of which we know but a few. Who can tell what are the shapes and positions of those particles, which cause all the variety of colours that appear on the surface of things? Who knows what are the figures of the little corpuscles that compose and distinguish different bodies? The ideas of *brass*, *iron*, *gold*, *wood*, *stone*, *hyssop*, and *rosemary*, have an infinite variety of hidden mysteries contained in the shape, size, motion, and position of the little particles of which they are composed; and perhaps, also infinite unknown properties and powers, that may be derived from them. And, if we arise to the *animal* world, or the world of *spirits*, our knowledge of them must be amazingly imperfect, when there is not the least *grain of sand*, or *empty space*, but has too many questions and difficulties belonging to it for the wisest philosopher upon earth to answer and resolve.

IV. Our *ideas* are either *true* or *false*; for an idea being the representation of a thing in the mind, it must be either a *true* or a *false representation* of it. If the idea be conformable to the object or archetype of it, it is a true idea;

if not, it is a *false* one. Sometimes our ideas are refer
to things really existing without us, as their archetyp
If I see bodies *in their proper colours*, I have a *true id*
But, when a man under the jaundice sees *all bodies yell*
he has a *false idea* of them. So, if we see the *sun or m*
rising or *setting*, our idea represents them *bigger* th
when they are *on the meridian*: And in this sense it i
false idea, because those heavenly bodies are all day and
night of the same bigness. Or, when I see a *straight st*
appear crooked while it is half under the water, I say t
water gives me a *false* idea of it. Sometimes our ide
refer to the ideas of other men, denoted by such a part
ular word, as their archetypes: So, when I hear a *P*
testant use the words *church* and *sacraments*, if I underst
by these words a *congregation of faithful men, who proj*
Christianity, and the two *ordinances*, baptism, and
Lord's supper, I have a *true* idea of those words in
common sense of Protestants: But, if the man who spe
of them be a *Papist*, he means the *church of Rome and*
seven sacraments, and then I have a *mistaken* idea of th
words, as spoken by him, for he has a different sense a
meaning: And, in general, whensoever I mistake t
sense of any speaker or writer, I may be said to hav
false idea of it.

Some think that *truth* or *falsehood* properly belongs o
to *propositions*, which shall be the subject of discourse
the Second Part of *Logic*; for, if we consider *idea* as m
impressions upon the mind, made by outward objects, th
impressions will ever be conformable to the laws of natu
in such a case: The *water* will make a *stick* appear *cro*
ed, and the *horizontal air* will make the *sun* and *moon*
pear *bigger*. And, generally, where there is *falsehood*
ideas, there seems to be some *secret* or *latent proposit*
whereby we judge falsely of things. This is more ob
ous where we take up the words of a writer or speaker
a mistaken sense, for we join his words to our own ide
which are different from his. But, after all, since id
are pictures of things, it can never be very improper
pronounce them to be *true* or *false*, according to their c
formity or *nonconformity* to their exemplars.

CHAP. IV.

OF WORDS, AND THEIR SEVERAL DIVISIONS, TOGETHER WITH THE ADVANTAGE AND DANGER OF THEM.

SECT. I.

OF WORDS IN GENERAL, AND THEIR USE.

THOUGH our ideas are first acquired by the perception of objects, or by various *sensations* and *reflections*, yet we convey them to each other by the means of certain sounds, or written marks, which we call *words*; and a great part of our knowledge is both obtained and communicated by these means, which are called *speech* or *language*.

But, as we are led into the knowledge of things by *words*, so we are oftentimes led into error or mistake by the use or abuse of *words* also. And, in order to guard against such mistakes, as well as to promote our improvement in knowledge, it is necessary to acquaint ourselves a little with *words* and *terms*. We shall begin with these observations.

Observation 1. Words (whether they are spoken or written) have no natural connection with the ideas they are designed to signify, nor with the things which are represented in those ideas. There is no manner of affinity between the sounds *white* in English, or *blanc* in French, and *that colour* which we call by that name; nor have the letters, of which these words are composed, any natural aptness to signify that colour rather than *red* or *green*. Words and names, therefore, are mere *arbitrary signs*, invented by men to communicate their thoughts or ideas to one another.

Observ. 2. If one simple word were appointed to express one simple idea, and nothing else, as *white*, *black*, *sweet*, *sour*, *sharp*, *bitter*, *extension*, *duration*, there would be scarce any mistake about them.

But alas! it is a common unhappiness in language, that different *simple ideas* are sometimes expressed by the

same word; so the words *sweet* and *sharp* are applied both to the objects of hearing and tasting, as we shall see hereafter; and this, perhaps, may be one cause or foundation of obscurity and error arising from words.

Observ. 3. In communicating our complex ideas to one another, if we could join as many peculiar and appropriated words together in one sound, as we join simple ideas to make one complex one, we should seldom be in danger of mistaking: When I express the taste of an *apple*, which we call the *bitter sweet*, none can mistake what I mean.

Yet this sort of *composition* would make all language a most tedious and unwieldly thing, since most of our ideas are complex and many of them have eight or ten simple ideas in them; so that the remedy would be worse than the disease; for, what is now expressed in one short word, as *month*, or *year*, would require two lines to express it. It is necessary therefore, that *single words* be invented to express *complex ideas*, in order to make language short and useful.

But here is our great infelicity, that when *single words* signify *complex ideas*, one word can never distinctly manifest all the *parts* of a complex idea; and thereby it will often happen, that one man includes *more* or *less* in his idea than another does, while he affixes the *same* word to it. In this case, there will be danger of mistake between them, for they do not mean the *same object*, though they use the *same name*. So, if one person or nation, by the word *year*, mean twelve months of thirty days each, that is, three hundred and sixty days, another intend a *solar year* of three hundred sixty five days, and a third mean a *lunar year*, or twelve *lunar months*, that is, three hundred fifty four days, there will be a great variation and error in their account of things, unless they are well apprised of each other's meaning before hand. This is supposed to be the reason why some ancient histories, and prophecies, and accounts of chronology, are so hard to be adjusted. And this is the true reason of so furious and endless debates on many points of divinity; the words *church*, *worship*, *idolatry*, *repentance*, *faith*, *election*, *merit*, *grace*, and many others, which signify very *complex ideas*, are not applied to include just the same simple ideas, and the same number of them. by the various contending parties; thence arise confusion and *contest*.

Observ. 4. Though a *single name* does not certainly m ifest to us all the *parts* of a *complex idea*, yet it mus acknowledged, that in many of our *complex ideas*, the gle name may point out to us some *chief property* wh belongs to the thing that the word signifies; especi when the word or name is traced up to the original, thro several languages from whence it is borrowed. So a *postle* signifies *one who is sent forth.*

But this tracing of a word to its original, (which is c ed *etymology*) is sometimes a very precarious and un tain thing; and, after all, we have made but little prog towards the attainment of the full meaning of a *comp idea*, by knowing some one chief property of it. We k but a small part of the notion of an *apostle*, by know barely that he is *sent forth.*

Observ. 5. Many (if not most) of our words which applied to *moral* and *intellectual ideas*, when traced u their original in the learned languages, will be foun signify *sensible* and *corporeal* things. Thus, the words *prehension*, *understanding*, *abstraction*, *invention*, *idea*, *in ence*, *prudence*, *religion*, *church*, *adoration*, &c. have a corporeal signification in their original. The name *s* itself signifies *breath* or *air*, in Latin, Greek, and Hebr Such is the poverty of all languages, they are force use these names for *incorporeal* ideas, which thing h tendency to error and confusion.

Observ. 6. The last thing I shall mention, that lead into many a mistake, is, the multitude of objects that name sometimes signifies: There is almost an infi variety of things and ideas, both simple and complex, yond all the words that are invented in any langua thence it becomes almost necessary that one name sh signify several things. Let us but consider the two ours of *yellow* and *blue*; if they are mingled togethe any considerale proportion they make a *green*: Now, t may be infinite differences of the proportions in the n ture of *yellow* and *blue*; and yet we have only these t words, *yellow*, *blue*, and *green*, to signify all *of* them, at l by one single term.

When I use the word *shore*, I may intend thereby a c *of land near the sea*, or a *drain to carry off water*, or a *f*

to support a building; and by the sound of the word *porter*, who can tell whether I mean *a man who bears burdens*, or *a servant, who waits at a nobleman's gate?* The world is fruitful in the invention of *utensils* of life, and new *characters* and *offices* of men, yet *names* entirely new are seldom invented; therefore old names are almost necessarily used to signify new things, which may occasion much confusion and error in the receiving and communicating of knowledge.

Give me leave to propose one single instance, wherein all these notes shall be remarkably exemplified. It is the word *bishop*, which in France is called evêque; upon which I would make these several observations. 1. That there is no natural connection between the sacred office hereby signified, and the letters or sounds which signify this office; for both these words, evêque or *bishop*, signify the same office, though there is not one letter alike in them; nor have the letters which compose the English or the French word any thing sacred belonging to them, more than the letters that compose the words *king* or *soldier*. 2. If the meaning of a word could be learned by its derivation or etymology, yet the original derivation of words is oftentimes very dark and unsearchable; for who would imagine that each of these words are derived from the Latin *episcopus*, or the Greek EPISKOPOS. Yet, in this instance, we happen to know certainly the true derivation; the French being anciently writ *evesque*, is borrowed from the first part of the Latin word; and the old English *biscop* from the middle of it. 3. The original Greek word signifies an *overlooker*, or one who stands higher than his fellows and overlooks them: It is a compound word, that primarily signifies *sensible ideas*, translated to signify or include several *moral* or *intellectual ideas*; therefore all will grant that the nature of the office can never be known by the mere sound or sense of the word *overlooker*. 4. I add farther, the word *bishop* or *episcopus*, even when it is thus translated from a sensible idea, to include several intellectual ideas, may yet equally signify an *overseer* of the poor; an *inspector* of the customs; a *surveyor* of the highways; a *supervisor* of the excise, &c. but by the consent of men, and the language of scripture, it is appropriated to signify a *sacred office in the church*. 5. This very idea and name,

thus translated from things sensible, to signify a spiritual and sacred thing, contains but one property of it, namely, *one that has the oversight or care over others*; but does not tell us whether it includes a *care over one church* or *many*; over the *laity*, or the *clergy*. 6. Thence it follows, that those who, in the complex idea of the word *bishop*, include an oversight over *the clergy*, or over a *whole diocese* of people, a *superiority* to presbyters, a distinct *power* of ordination, &c. must necessarily disagree with those who include in it only the care of a single congregation. Thus according to the various opinions of men, this word signifies a *pope*, a Gallican *bishop*, a Lutheran *superintendant*, an English *prelate*, a *pastor of a single assembly*, or a *presbyter* or *elder*. Thus they quarrel with each other perpetually: and it is well if any of them all have hit precisely the sense of the sacred writers, and included just the same ideas in it, and no others.

I might make all the same remarks on the word *church* or *kirk*, which is derived from KURIOU OIKOS, or *the house of the Lord*, contracted into *Kyrioick*, which some suppose to signify *an assembly of Christians*, some take it for *all the world that professes Christianity*, and some make it to mean only *the clergy*; and on these accounts it has been the occasion of as many and as furious controversies as the word *bishop* which was mentioned before.

SECT. II.

OF NEGATIVE AND POSITIVE TERMS.

FROM these, and other considerations, it will follow, that, if we could avoid error in our pursuit of knowledge, we must take good heed to the use of *words* and *terms*, and be acquainted with the various kinds of them.

1. Terms are either *positive* or *negative*.

Negative terms are such as have a little word or syllable of denying joined to them, according to the various idioms of every language; as *unpleasant*, *imprudent*, *immortal*, *irregular*, *ignorant*, *infinite*, *endless*, *lifeless*, *deathless*,

nonsense, *abyss*, *anonymous*, where the propositions *un*, *i*
in, *non*, *a*, *an*, and the termination *less*, signify a negatio
either in English, Latin, or Greek.

Positive terms are those which have no such negati
appendices belonging to them, as *life*, *death*, *end*, *sense*, *mo*
tal.

But so unhappily are our words and ideas linked t
gether, that we can never know which are *positive idea*
and which are *negative*, by the word that is used to expre
them, and that for these reasons :

1*st*, There are some *positive terms* which are made
signify a *negative idea* ; as *dead* is properly a thing th
is deprived of *life* ; *blind* implies a negation or privatio
of *sight* ; *deaf* a want of *hearing* ; *dumb* a denial
speech.

2*dly*, There are also some *negative terms* which imp
positive ideas, such as *immortal* and *deathless*, which si
nify *ever living*, or a continuance in life : *Insolent*, sig
fies rude and haughty ; *indemnify*, to keep safe ; and
finite, perhaps has a *positive idea* too, for it is an idea e
growing ; and when it is applied to *God*, it signifies
complete perfection.

3*dly*, There are both *positive* and *negative terms*, inve
ed to signify the *same*, instead of *contrary* ideas : as *unh*
py and *miserable*, *sinless* and *holy*, *pure* and *undefiled*, *imp*
and *filthy*, *unkind* and *cruel*, *irreligious* and *prophane*, *un*
giving and *revengeful*, &c. and there is a great dea
beauty and convenience derived to any language from t
variety of expression ; though sometimes it a little
founds our conceptions of *being* and *not-being*, our *positi*
and *negative* ideas.

4*thly*, I may add also, that there are some words wi
are *negative* in their *original* language, but seem *positi*
to an Englishman, because the negation is unknown ;
abyss, a place without a bottom ; *anodyne*, an easing n
icine ; *amnesty*, an unremembrance, or general pard
anarchy, a state without government ; *anonymous*, tha
nameless ; *inept*, that is, not fit ; *iniquity*, that is, unri
eousness ; *infant*, one that cannot speak, namely, a chi
injurious, not doing justice or right.

The way therefore to know whether any idea be *n*
tive or not, is to consider whether it primarily imply

bsence of any positive being, or mode of being; if it doth, hen it is a *negation*, or *negative idea*; otherwise it is a *ositive* one, whether the word that expresses it be positive r negative. Yet, after all, in many cases, this is very ard to determine, as in *amnesty*, *infinite*, *abyss*, which are riginally relative terms, but they signify *pardon*, &c. hich seem to be positive. So *darkness*, *madness*, *clown*, re positive terms, but they imply the want of *light*, the ant of *reason*, and the want of *manners*; and perhaps hese may be ranked among the *negative* ideas.

Here *note*, That in the English tongue *two negative* erms are equal to *one positive*, and signify the same thing, s *not unhappy*, signifies *happy*; *not immortal*, signifies *mortal*; he is, *no imprudent man*, that is he is a *man of prudence*: But the sense and force of the word, in such a negative way of expression, seem to be a little diminished.

SECT. III.

OF SIMPLE AND COMPLEX TERMS.

II. TERMS are divided into *simple* or *complex*. A *simple term* is one word, a *complex term* is when more words are used to signify one thing.

Some terms are *complex in words, but not in sense*; such s the *second Emperor of Rome*; for it excites in our mind nly the idea of one man, namely, *Augustus*.

Some terms are *complex in sense, but not in words*; so when say an *army*, a *forest*, I mean a *multitude of men* or *trees*: nd almost all our *moral ideas*, as well as many of our *natral* ones are expressed in this manner; *Religion*, *piety*, *oyalty*, *knavery*, *theft*, include a variety of ideas in each erm.

There are other terms which are *complex both in words nd sense*; so when I say, a *fierce dog*, or a *pious man*, it xcites an idea, not only of those two creatures, but of heir peculiar characters also.

Among the terms that are *complex in sense, but not in words*, we may reckon those simple terms which contain

a primary and a *secondary* idea in them; as whe
my neighbour speak that which is not true, and
him, *This is not true*, or *this is false*, I only convey
the naked idea of his error; this is the *primary idea*
if I say *it is a lie*, the word *lie* carries also a *secondary*
in it, for it implies both the falsehood of the spee
my reproach and censure of the speaker. On the
hand, if I say *it is a mistake*, this carries also a *seco*
idea with it; for it not only refers to the falsehood
speech, but includes my tenderness and civility to hi
the same time. Another instance may be this; when
the word *incest*, *adultery*, and *murder*, I convey to ano
not only the *primary idea* of those actions, but I incl
also the *secondary idea* of their unlawfulness, and my
horrence of them.

Note 1st.—Hence it comes to pass, that among wo
which signify the same *principal ideas*, some are *clean* a
decent, others *unclean*; some *chaste*, others *obscene*; so
are *kind*, others are *affronting* and *reproachful*, because
the *secondary idea* which custom has affixed to them. A
it is the part of a wise man, when there is a necessity
expressing any *evil actions*, to do it either by a word th
has a secondary idea of *kindness* or *softness*, or a word th
carries with it an idea of *rebuke* and *severity*, according
the case requires: So when there is a necessity of expres
ing things *unclean* or *obscene*, a wise man will do it in t
most decent language, to excite as few uncleanly ideas
possible in the minds of the hearers.

Note 2d.—In length of time, and by the power of cu
om, words sometimes change their *primary ideas*, as sh
declared, and sometimes they have changed their *seco*
ry ideas, though the *primary ideas* may remain:
ords that were once *chaste* by frequent use grow *obsce*
uncleanly; and words that were once *honorable* ma
the next generation, grow *mean* and *contemptible*.
word *dame* originally signified a mistress of a famil
was a *lady*; and it is used still in the *English* law
ify a *lady*, but in common use now a-days it repr
a *farmer's wife, or a mistress of a family of the low*
in the country. So those words of *Rabshakeh*, Is
i. 12, in our translation, *eat their own dung*, &c
doubtless decent and clean language, when o

translators wrote them, above a hundred years ago. The word *eat* has maintained its old secondary idea and inoffensive sense to this day; but the *other word* in that sentence has by custom acquired a more uncleanly idea, and should now rather be changed into a more decent term, and so it should be read in public, unless it should be thought more proper to omit the sentence.*

For this reason it is that the Jewish Rabbins have supplied other chaste words in the margin of the Hebrew Bible, where the words of the text, through time and custom, are degenerated, so as to carry any base and *unclean secondary idea* in them; and they read the word which is in the margin, which they call *keri*, and not that which was written in the text, which they called *chetib*.

SECT. IV.

OF WORDS COMMON AND PROPER.

III. WORDS and *names* are either *common or proper*. *Common names* are such as stand for universal ideas, or a whole rank of beings, whether general or special. These are called *appellatives*; so *fish*, *bird*, *man*, *city*, *river*, are common names; and so are *trout*, *eel*, *lobster*, for they all agree to many *individuals*, and some of them to many *species*; But *Cicero*, *Virgil*, *Bucephalus*, *London*, *Rome*, *Ætna*, the *Thames*, are proper names, for each of them agrees only to one *single* being.

Note here, first, That a *proper* name may become in some sense *common*, when it hath been given to several beings of the same kind; so *Cæsar*, which was the proper name of the first emperor *Julius*, became also a common name to all the following emperors. And *tea*, which was the proper name of one sort of *Indian* leaf, is now-a-days become a common name for many infusions of herbs, or plants, in water; a *sage tea*, *ale hoof tea*, *limon tea*, &c. So

* Note—So in some places of the sacred historians, where it is written, Every one that pisseth against the wall, we should read, every male.

Peter, Thomas, John, William, may be reckoned comm names also, because they are given to many persons, u less they are determined to signify a single person at a particular time or place.

Note in the *second* place, That a *common* name may b come *proper* by custom, or by the time, or place, or perso that use it; as in Great-Britain, when we say *the king,* v mean our present rightful sovereign *King* GEORGE, wh now reigns; when we speak of *the prince,* we intend h royal highness GEORGE *Prince of Wales:* If we mentio the *city,* when we are near *London,* we generally mean th *city of London:* When in a country town we say the *parso* or the *esquire,* all the parish knows who are the single pe sons intended by it; so when we are speaking of the hi tory of the New Testament, and use the words *Peter, Pau John,* we mean those three apostles.

Note in the *third* place, That any *common* name whats ever is made *proper* by terms of particularity added to as the common words *pope, king, horse, garden, book, knif* &c. are designed to signify a singular idea, when we sa the *present pope; the king of Great Britain; the horse th won the last plate at Newmarket; the royal garden at Ke sington; this book, that knife,* &c.

SECT. V.

OF CONCRETE AND ABSTRACT TERMS.

IV. WORDS or *terms* are divided into *abstra* and *concrete.*

Abstract terms signify the mode or quality of a bein without any regard to the subject in which it is; as *whi ness, roundness, length, breadth, wisdom, mortality, li death.*

Concrete terms, while they express the quality, do al either express or imply, or refer to some subject to whi it belongs; as *white, round, long, broad, wise, mortal, l ing, death.* But these are not always noun adjectives i grammatical sense; for a *fool,* a *knave,* a *philosopher,* a many other concretes, are *substantives,* as well as *knave folly,* and *philosophy,* which are the *abstract* terms that l long to them.

SECT. VI.

OF UNIVOCAL AND EQUIVOCAL WORDS.

V. WORDS and *terms* are either *univocal* or *equivocal*. *Univocal* words are such as signify but one idea, or at least but one sort of thing; *equivocal* words are such as signify two or more different ideas, or different sorts of objects. The words *book*, *bible*, *fish*, *house*, *elephant*, may be called *univocal* words; for I know not that they signify any thing else but those ideas to which they are generally affixed; but *head* is an equivocal word, for it signifies the head of a *nail*, or of a *pin*, as well as of an *animal*; *Nail* is an equivocal word, it is used for the *nail of the hand*, or *foot*, and for an *iron nail* to fasten any thing. *Post* is equivocal, it is a *piece of timber*, or *a swift messenger*. A *church* is a *religious assembly*, or the *large fare building* where they meet; and sometimes the same word means a *synod of bishops*, or of *presbyters*, and in some places it is the *pope and a general council*.

Here let it be noted, that when two or more words signify the same thing, as *wave* and *billow*, *mead* and *meadow*, they are usually called *synonymous* words: But it seems very strange, that words, which are directly contrary to each other, should sometimes represent almost the same ideas; yet thus it is in some few instances; a *valuable*, or an *invaluable blessing*; a *shameful*, or a *shameless villian*; a *thick skull*, or a *thin skull'd fellow*, a mere *paper skull*; a man of a *large conscience*, *little conscience*, or *no conscience*; a *famous rascal*, or an *infamous* one. So uncertain a thing is human language, whose foundation and support is custom!

As words signifying the same thing are called *synonymous*, so equivocal words, or those which signify several things, are called *homonymous*, or *ambiguous*; and when persons use such ambiguous words with a design to deceive, it is called *equivocation*.

Our *simple ideas*, and especially the *sensible qualities*, furnish us with a great variety of *equivocal* or *ambiguous words*; for these being the first and most natural ideas we have, we borrow some of their names, to signify many other

ideas, both simple and complex. The word *sweet* expresses the pleasant perceptions of almost every sense; *sugar* is sweet, but it hath not the same sweetness as *music*: Nor hath music the sweetness of a *rose*; and a sweet *prospect* differs from them all: Nor yet have any of these the same sweetness as *discourse*, *council*, or *meditation* hath; yet the royal Psalmist saith of a man, *We took sweet council together*; and of God, *My meditation of him shall be sweet*. *Bitter* is also such an equivocal word; there is bitter *wormwood*, there are bitter *words*, there are bitter *enemies*, and a bitter *cold morning*. So there is a sharpness in *vinegar*, and there is a sharpness in *pain*, in *sorrow*, and in *reproach!* there is a sharp *eye*, a sharp *wit*, and a sharp *sword*: But there is not one of these seven *sharpnesses* the same as another of them; and a sharp *east wind* is different from them all.

These are also *verbs*, or words of action, which are equivocal, as well as *nouns* or *names*. The words to *bear*, to *take*, to *come*, to *get*, are sufficient instances of it; as when we say, to bear *a burden*, to bear *sorrow* or reproach, to bear *a name*, to bear *a grudge*, to bear *fruit*, or bear *children*; the word *bear* is used in very different senses: And so is the word *get*, when we say, to get *money*, to get *in*, to get *off*, to get *ready*, to get a *stomach*, and to get a *cold*, &c.

There is also a great deal of ambiguity in many of the English particles; as *but*, *before*, *beside*, *with*, *without*, *that*, *then*, *there*, *for*, *forth*, *above*, *about*, &c. of which grammars and dictionaries will sufficiently inform us.

SECT. VII.

VARIOUS KINDS OF EQUIVOCAL WORDS.

IT would be endless to run through all the varieties of words and terms which have different senses applied to them; I shall only mention therefore a few of the most remarkable and most useful distinctions among them.

1. The first division of equivocal words lets us know that some are equivocal *only in their sound* or *pronunciation*; others are equivocal *only in writing*; others *both in writing and in sound*.

Words equivocal in *sound only* are such as these; the *rein* of a bridle, which hath the same sound with the *reign* of a king, or a shower of *rain*; but all three have different letters, and distinct spelling. So, *might*, or strength, is equivocal in sound, but differs in writing from *mite*, a little animal, or small piece of money. And the verb *to write* has the same sound with *wright* a workman, *right* or equity, and *rite* or ceremony; but it is spelled very differently in them all.

Words equivocal *in writing only* are such as these. To *tear* to pieces, has the same spelling with a *tear*: To *lead*, or guide, has the same letters as *lead*, the metal; and a *bowl* for recreation, is written the same way as a *bowl* for drinking; but the pronunciation for all these is different.

But those words which are most commonly and justly called *equivocal*, are such as are both written and pronounced the same way, and yet have different senses or ideas belonging to them: such are all the instances which were given in the preceding section.

Among the words which are equivocal in *sound only*, and *not in writing*, there is a large field for persons who delight in jests and puns, in fiddles and quibbles, to sport themselves. This sort of words is also used by wanton persons to convey *lewd ideas*, under the covert of expressions capable of a *chaste* meaning, which are called *double entendres*; or when persons speak *falsehood* with a design to deceive, under the covert of *truth*; though, it must be confessed, that all sorts of equivocal words yield sufficient matter for such purposes.

There are many cases also, wherein an equivocal word is used, for the sake of *decency*, to cover a *foul idea*: For the most chaste and modest, and well bred persons, having sometimes a necessity to speak of the things of nature, convey their ideas in the most inoffensive language by this mean. And indeed, the mere poverty of all languages makes it necessary to use *equivocal words* upon many occasions, as the common writings of men, and even the holy book of God, sufficiently manifest.

2*dly*, Equivocal words are usually distinguished, according to their *original*, into such, whose various senses

arise from *mere chance* or *accident*, and such as are made equivocal by *design*; as the word *bear* signifies a *shaggy beast*, and it signifies also to *bear* or *carry a burden*; this seems to be the mere effect of *chance*: But if I call my dog *bear*, because he is shaggy, or call one of the northern constellations by that name, from a fancied situation of the stars in the shape of that animal, then it is by *design* that the word is made yet further equivocal.

But because I think this common account of the spring or origin of equivocal words is too slight and imperfect, I shall reserve this subject to be treated of by itself, and proceed to the *third division*.

3 *lly*, Ambiguous or *equivocal* words are such as are sometimes taken in a *large and general* sense, and sometimes in a sense *more strict and limited*, and have different ideas affixed to them accordingly. *Religion*, or *virtue*, taken in a large sense, includes both our *duty to God* and our *neighbour*; but in a more strict, limited, and proper sense, *virtue* signifies our *duty towards men*, and *religion* our *duty to God*. *Virtue* may yet be taken in the strictest sense, and then it signifies *power* or *courage*, which is the sense of it in some places of the New Testament. So *grace*, taken in a large sense, means the *favor of God*, and all the spiritual blessings that proceed from it, (which is a frequent sense of it in the bible) but in a limited sense it signifies *the habit of holiness* wrought in us by divine favour, or a *complex idea of the Christian virtues*. It may also be taken in the strictest sense, and thus it signifies any *single Christian virtue*, as in 2 *Cor.* viii. 6, 7, where it is used for *liberality*. So a *city*, in a strict and proper sense, means the *houses enclosed within the walls*; in a large sense it reaches to all the *suburbs*.

This *larger* and *stricter* sense of a word is used in almost all the sciences, as well as in theology, and in common life. The word *geography*, taken in a *strict sense*, signifies the knowledge of the circles of the earthly globe, and the situation of the various parts of the earth; when it is taken in a *little larger sense*, it includes the knowledge of the seas also; and in the *largest sense* of all, it extends to the various customs, habits and governments of nations.—When an astronomer uses the word *star* in its proper and

strict sense, it is applied only to the *fixed stars*, but in a large sense it includes the *planets* also.

This equivocal sense of words belongs also to many proper names: So *Asia*, taken in the largest sense is one quarter of the world; in a more limited sense it signifies *Natolia*, or the *Lesser Asia*; but in the strictest sense it means no more than one little province in *Natolia*, where stood the cities of *Ephesus*, *Smyrna*, *Sardis*, &c. And this is the most frequent sense of the New Testament. *Flanders* and *Holland*, in a strict sense, are but two single provinces among the seventeen, but in a large sense *Holland* includes seven of them, and *Flanders* ten.

There are also some very common and little words in all languages, that are used in a more *extensive*, or more *limited sense*; such as *all*, *every*, *whatsoever*, &c. When the apostle says, *all men have sinned* and *all men must die*, *all* is taken in its most universal and extensive sense, including *all mankind*, Rom. v. 12. When he appoints *prayer to be made for all men*, it appears, by the following verses, that he restrains the word *all* to signify chiefly *all ranks and degrees of men*, 1 Tim. ii. 1. But when St. *Paul* says, *I please all men in all things*, 1 Cor. x. 33, the word *all* is exceedingly limited, for it reaches no farther than that he pleased *all* those men *whom he conversed with* in *all* things that were *lawful*.

4thly, Equivocal words are, in the fourth place, distinguished by their *literal* or *figurative* sense. Words are used in a *proper* or *literal* sense when they are designed to signify those ideas for which they were originally made, or to which they are primarily and generally annexed; but they are used in a *figurative* or *tropical* sense when they are made to signify some things, which only bear either a *reference* or a *resemblance* to the primary ideas of them.—So when two princes contend by their armies, we say they are at *war* in a proper sense; but when we say there is a *war* betwixt the winds and the waves in a storm, this is called *figurative*, and the peculiar figure is a *metaphor*. So when the scripture says, *Riches make themselves wings*, and *fly away as an eagle towards heaven*, *the wings*, and the *flight* of the eagle are *proper* expressions; but when *flight* and *wings* are applied to *riches*, it is only by way of *figure* and

metaphor. So when a man is said to *repent*, or *laugh*, or *grieve*, it is literally taken; but when God is said to *be grieved*, to *repent*, or *laugh*, &c. these are all figurative expressions borrowed from a resemblance to mankind.—And when the words *Job* or *Esther* are used to signify those very persons, it is the *literal* sense of them; but when they signify those two books of scripture, this is a *figurative* sense. The names of *Horace*, *Juvenal*, and *Milton*, are used, in the same manner, either for *books* or *men*.

When a word, which originally signifies any particular idea or object, is attributed to several other objects, not so much by way of *resemblance*, but rather on the account of some evident *reference* or *relation* to the original idea, this is sometimes peculiarly called an *analogical* word; so a *sound* or *healthy pulse*, a *sound digestion*, *sound sleep*, are all so called with *reference* to a *sound* and *healthy* constitution; but if you speak of *sound doctrine*, or *sound speech*, this is by way of *resemblance* to health; and the words are *metaphorical*: Yet many times *analogy* and *metaphor* are used promiscuously in the same sense, and not distinguished.

Here *note*, That the design of *metaphorical language*, and *figures of speech*, is not merely to represent our *ideas*, but to represent them with vivacity, spirit, affection and power; and though they often make a deeper impression on the mind of the hearer, yet they do as often lead him into a mistake, if they are used at improper times and places. Therefore, where the design of the speaker or writer is merely to *explain*, *instruct*, and to lead into the knowledge of naked truth, he ought for the most part to use *plain* and *proper* words if the language affords them, and not to deal much in *figurative* speech. But this sort of terms is used very profitably by *poets* and *orators*, whose business is to move and persuade, and work on the passions, as well as on the understanding. Figures are also happily employed in proverbial *moral sayings*, by the *wisest* and the *best* of men, to impress them deeper on the memory by *sensible images*; and they are often used for other valuable purposes in the *sacred writings*.

5thly, I might adjoin another *sort of equivocal words*; as there are some which have a different meaning in *common language* from what they have in the *sciences*; the word *flat*,

sion signifies the *receiving any action* in a large philosophical sense; in a more limited philosophical sense, it signifies *any of the affections of human nature, as love, fear, joy, sorrow*, &c. But the common people confine it only to *anger:* So the word *simple* philosophically signifies *single*, but vulgarly it is used for *foolish*.

6*thly*, Other equivocal words are used sometimes in an *absolute* sense, as when God is called *perfect;* which allows of no defect; and sometimes in a *comparative* sense, as good men are oftentimes called *perfect* in scripture, in comparison of those who are much inferior to them in knowledge or holiness: But I have dwelt rather too long upon this subject already, therefore I add no more.

SECT. VIII.

THE ORIGIN OR CAUSES OF EQUIVOCAL WORDS.

NOW, that we may become more skilful in guarding ourselves and others against the danger of mistakes which may arise from *equivocal* words, it may not be amiss to conclude this chapter with a short account of the various ways or means whereby a word changes its signification, or acquires any new sense, and thus becomes *equivocal*, especially if it keeps its old sense also.

1. *Mere chance* sometimes gives the same word different senses; as the word *light* signifies a *body that is not heavy;* and it also signfies the *effect of sun beams*, or the *medium whereby we see objects:* This is merly accidental, for there seems to be no connection between these two senses, nor any reason for them.

2. *Error* and *mistake* is another occasion of giving various senses to the same words; as when different persons read the names of *priest*, *bishop*, *church*, *Easter*, &c. in the New Testament, they affix different ideas to them, for want of acquaintance with the true meaning of the sacred writer; though it must be confessed, these various senses, which might arise at first from honest mistake, may be culpably supported and propagated by interest, ambition, prejudice, and a party-spirit on any side.

3. *Time* and *custom* alters the meaning of words. *Knave* heretofore signified a *diligent servant (Gnavus)* and a *villain* was an *under tenant to the lord of the manour (villicus)* but now both these words carry an idea of wickedness and reproach with them. A *ballad* once signified a solemn and sacred song, as well as one that is trivial, when *Solomon's Song* was called the *ballad of ballads;* but now it is applied to nothing but trifling verse, or comical subjects.

4. Words change their senses by *figures* and *metaphors*, which are derived from some *real analogy* or *resemblance* between several things; as when *wings* and *flight* are applied to *riches*, it signifies only, that the owner may as easily lose them as he would lose a bird who flew away with wings.

And I think, under this head, we may rank those words which signify different ideas, by a sort of an unaccountable far-fecht *analogy*, or distant *resemblance*, that fancy has introduced between one thing and another; as when we say, the *meat* is *green*, when it is *half-roasted*: We speak of *airing linen by the fire*, when we mean *drying* or *warming* it: We call for *round coals* for the chimney, when we mean *large square ones:* And we talk of the *wing of a rabbit*, when we mean the *fore-leg:* The true reason of these appellations we leave to the critics.

5. Words also change their sense by the *special occasion* of using them, *the peculiar manner of pronunciation*, the *sound of the voice*, the *motion of the face*, or *gestures of the body;* so when an angry master says to his servant, *it is bravely done!* or *you are a fine gentleman!* he means just the contrary; namely, *it is very ill done; you are a sorry fellow*: It is one way of giving a severe reproach, for the words are spoken by way of *sarcasm*, or *irony*.

6. Words are applied to various senses, by *new ideas* appearing or arising faster than *new words* are framed. So when *gunpowder* was found out, the word *powder* which before signified only *dust*, was made then to signify that *mixture* or *composition of nitre, charcoal*, &c. And the name *cannon*, which before signified a *law* or a *rule*, is now also given to a *great* gun, which gives laws to nations. So footboys, who had frequently the common name of *Jack* given them, were kept to turn the spit, or to pull off their master's boots; but when instruments were invented

for both those services, they were both called *jacks*, though one was of iron, the other of wood, and very different in their form.

7. Words alter their significations according to the *ideas of the various persons, sects*, or *parties*, who use them, as we have hinted before; so when a *Papist* uses the word *heretics*, he generally means the *Protestants*; when a *Protestant* uses the word, he means *any persons who were wilfully* (and perhaps contentiously) *obstinate in fundamental errors*. When a Jew speaks of the *true religion*, he means the *institution of Moses*; when a *Turk* mentions it, he intends the *doctrine of Mahomet*; but when a *Christian* makes use of it, he designs to signify *Christianity*, or the *truths and the precepts of the gospel*.

8. Words have different significations according to the *book, writing*, or *discourse* in which they stand. So in a treatise of *anatomy*, a *foot* signifies that *member in the body of a man*. But in a book of *geometry* or *mensuration*, it signifies *twelve inches*.

If I had room to exemplify most of these particulars in one single word, I know not where to choose a fitter than the word *sound*, which it seems as it were by *chance* to signify three distinct ideas, namely, *healthy*, (from *sanus*) as a sound *body*; *noise*, (from *sonus*) as a *shrill* sound; and to *sound* the sea (perhaps from the French *sonde*, a probe, or an instrument to find the depth of water.) From these three, which I may call *original senses*, various *derivative senses* arise; as sound *sleep*, sound *lungs*, sound *wind* and *limb*, a sound *heart*, a sound *mind*, sound *doctrine*, a sound *divine*, sound *reason*, a sound *cask*, sound *timber*, a sound *reproof*, to beat *one* soundly, to sound one's *meaning* or *inclination*, and a sound or narrow *sea*; turn these all into Latin, and the variety will appear plain.

I confess some few of these which I have mentioned, as the different springs of *equivocal* words, may be reduced in some cases to the same original: But it must also be granted, that there may be other ways besides these whereby a word comes to extend is signification, to include various ideas, and become *equivocal*. And though it is the business of a grammarian to pursue these remarks with more variety and particularity, yet it is also the work of a *logi-*

And more especially let those ideas be laid up and preserved with the greatest care, which are most directly suited, either to your *eternal welfare* as a *Christian*, or to your particular *station* and *profession* in this life; for though the former rule recommends an universal acquaintance with things, yet it is but a more general and superficial knowledge that is required or expected of any man, in things which are utterly foreign to his own business. But it is necessary you should have a more particular and accurate acquaintance with those things that refer to your peculiar province and duty in this life, or your happiness in another.

There are some persons who never arrive at any deep, solid, or valuable knowledge in any science, or any business of life, because they are perpetually fluttering over the surface of things in a curious and wandering search of infinite variety; ever hearing, reading, or asking after something new, but impatient of any labour to lay up and preserve the ideas they have gained: Their souls may be compared to a looking-glass, that wheresoever you turn it it receives the images of all objects, but retains none.

In order to preserve your treasure of ideas, and the knowledge you have gained, pursue the following advices especially in your younger years.

1. *Recollect every day the things you have seen, or heard, or read,* which may have made an addition to your understanding: Read the writings of God and men with diligence and perpetual reviews: Be not fond of hastening to a new book, or a new chapter, till you have well fixed and established in your minds what was useful in the last: make use of your memory in this manner, and you will sensibly experience a gradual improvement of it while you take care not to load it to excess.

2. *Talk over the things which you have seen, heard, or learnt with some proper acquaintance:* This will make a fresh impression on your memory; and if you have no fellow-student at hand, none of equal rank with yourselves, tell it over to any of your acquaintance, where you can do it with propriety and decency; and whether they learn any *thing* by it or not, your own repetition of it will be an improvement to yourself: And this practice also will furnish

you with a *variety of words*, and copious language, to express your thoughts upon all occasions.

3. Commit to writing some of the most considerable improvements which you daily make, at least such hints as may recal them again to your mind, when perhaps they are vanished and lost. And here I think Mr. *Locke's* method of *adversaria*, or *common places*, which he describes in the end of the first volume of his *posthumous works* is the best; using no learned method at all, setting down things as they occur, leaving a distinct page for each subject, and making an index to the pages.

At the end of every week, or month, or year, you may review your remarks, for these reasons; *First, to judge of your own improvement;* when you shall find that many of your younger collections are either weak and trifling; or if they are just and proper, yet they are grown now so familiar to you, that you will thereby see your own advancement in knowledge. And, in the next place, what remarks you find there worthy of your riper observation, you may *note them with a marginal star*, instesd of transcribing them, as being worthy of your second year's review, when others are neglected.

To shorten something of this labour, if the books which you read are your own, mark with a pen, or pencil, the most considerable things in them which you desire to remember. Thus you may read that book the second time over with half the trouble, by your eye running over the paragraphs which your pencil has noted. It is but a very weak objection against this practice to say, *I shall spoil my book;* for I persuade myself, that you did not buy it as a *bookseller*, to sell it again for gain, but as a *scholar*, to improve your mind by it; and if the mind be improved, your advantage is abundant, though your book yields less money to your executors.*

* Note—This advice of writing, marking, and reviewing your marks, refers chiefly to those occasional notions you meet with either in reading or in conversation: But when you are directly and professedly pursuing any subject of knowledge in a good system in your younger years, the system itself is your common-place-book, and must be entirely reviewed. The same may be said concerning any treatise which closely, succinctly, and accurately handles any particular theme.

Direct. III. *As you proceed both in learning an make a wise observation what are the ideas, what courses and the parts of knowledge that have been less useful to yourself or others.* In our younge while we are furnishing our minds with a treasure our experience is but small, and our jndgment we therefore impossible at that age to determine ari cerning the real *advantage* and *usefulness* of man we learn. But, when age and experience have your judgment, then you will gradually drop t *useless part* of your younger *furniture*, and be mo tous to retain that which is most necessary for y fare in this life, or a better. Hereby you will make the same complaint that almost every lear has done after long experience in study and in th of human life and religion: *Alas! how many ho days, and months, have I lost in pursuing some learning, and in reading some authors, which hav to no other account, but to inform me that they were n my labour and pursuit!* Happy the man who ha tutor to conduct him through all the sciences in years of his study; and who has a prudent frien at hand to point out to him, from experience, ho of every science is worth his pursuit! And ha student that is so wise as to follow such advice!

Direct. IV. *Learn to acquire a government o ideas and your thoughts, that they may come when called, and depart when they are bidden.* There a thoughts that arise and intrude upon us while them; there are others that fly from us, when w hold and fix them.

If the *ideas* which you would willingly make t ter of your present meditation *are ready to fly from* must be obstinate in the pursuit of them by an fixed meditation; you must keep your soul to t when it is ready to start aside every moment, un will abandon yourself to be a slave to every wil nation. It is a common, but it is an unhapp shameful thing, that every trifle that comes ac senses or fancy should divert us, that a buzzing fl teaze our spirits, and scatter our best ideas: But

learn to be deaf to, and regardless of other things, besides that which we make the present subject of our meditation: And in order to help a wandering and fickle humour, it is proper to have a book or paper in our hands, which has some proper hints of the subject we design to pursue. We must be resolute and laborious, and sometimes conflict with ourselves, if we would be wise and learned.

Yet I would not be too severe in this *rule*: It must be confessed there are *seasons* when the mind, or rather the brain, is *over tired* or *jaded* with study and thinking; or upon some other accounts, animal nature may be *languid* or *cloudy*, and unfit to assist the spirit in meditation; at such seasons (provided that they return not too often) it is better sometimes to yield to the present indisposition; for if nature entirely resist, nothing can be done to the purpose, at least in that subject or science. Then you may think it proper to give yourself up to some hours of *leisure* and *recreation*, or *useful idleness*; or if not, then turn your thoughts to some *other alluring subject*, and pore no longer upon the *first*, till some brighter or more favorable moments arise. A student shall do more in one hour, when all things concur to invite him to any special study, than in four hours, at a dull and improper season.

I would also give the same advice, if some *vain*, or *worthless*, or *foolish idea*, will croud itself into your thoughts; and if you find that all your labor and wrestling cannot defend yourself from it, then divert the importunity of that which offends you, by turning your thoughts to some entertaining subject, that may amuse you a little, and draw you off from the troublesome and imposing guest; and many a time also, in such a case, when the impertinent and intruding ideas would divert from present duty, *devotion* and *prayer* have been very successful to overcome such obstinate troublers of the peace and profit of the soul.

If the natural genius and temper be too *volatile*, [redacted]*wandering*, such persons ought in a more special manner to apply themselves to *mathematical learning*, and to begin their studies with *arithmetic* and *geometry*; wherein new truths continually arising to the mind, out of the

present state. It is therefore of great service to the improvement of the mind to distinguish well bet *knowables* and *unknowables*.

As far as things are *knowable* by us, it is of exc use to accustom ourselves *to clear and distinct* Now, among other occasions of the darkness and mis of our minds, there are these two things which mo markably bring *confusion* into our *ideas*.

1. That from our infancy we have had the id things so far connected with the *ideas of words*, that w ten mistake words for things, we mingle and con one with the other.

2. From our youngest years we have been ever to consider things not so much in their own natures, their *various respects* to ourselves, and chiefly to our *s* and we have also joined and mingled the ideas of things, with many *other ideas*, to which they were no in their own natures.

In order therefore to a *clear* and *distinct* knowled things, we must unclothe them of all these *relation mixtures*, that we may contemplate them naked, *their own natures*, and distinguish the subject that we in view from all other subjects whatsoever: Now, t form this well, we must here consider the *definit words, and the definition of things*.

SECT. II.

OF THE DEFINITION OF WORDS OR NAMES.

IF we could conceive of things as angels an bodied spirits do, without involving them in those c which words and language throw upon them, we s seldom be in danger of such mistakes, as are perpe committed by us in the present state; and indeed it be of unknown advantage to us to accustom ourse *form ideas of things without words*, that we might them in their *own proper natures*. But, since we use *words* both to learn and communicate most of ou

tions we should do it with just rules of caution. I have already declared in part, how often and by what means our words become the occasion of errors in our conceptions of things. To remedy such inconveniences, we must get an exact *definition of the words* we make use of, that is, we must determine precisely the sense of our words, which is called the *definition of the name.*

Now a *definition of the name* being only a declaration in what sense the word is used, or what idea or object we mean by it, this may be expressed by any one or more of the properties, effects, or circumstances of that object which do sufficiently distinguish it from other objects: As, if I were to tell what I mean by the word *air*, I may say, it is *that thin matter which we breathe in and breathe out continually*; or it is *that fluid body in which the birds fly a little above the earth*; or it is *that invisible matter which fills all places near the earth, or which immediately encompasses the globe of earth and water.* So if I would tell what I mean by *light*, I would say it is *that medium whereby we see the colours and shapes of things*; or it is *that which distinguishes the day from the night.* If I were asked what I mean by *religion*, I would answer, it is a *collection of all our duties to God*, if taken in a strict and limited sense; but if taken in a large sense, it is a *collection of all our duties both to God and man.* These are called the *definitions of the name.*

Note—In defining the name there is no necessity that we should be acquainted with the intimate essence or nature of the things; for any manner of *description* that will but sufficiently acquaint another person what we mean by such a word, is a sufficient *definition for the name.* And on this account a *synonymous* word, or a mere *negation of the contrary*, a *translation of the word* into another tongue, or a *grammatical explication* of it, is sometimes sufficient for this purpose; as if one would know what I mean by a *sphere*, I tell him it is a *globe*; if he ask what is a *triangle*, it is that *which has three angles*; or an *oval* is that which has the *shape of an egg. Dark* is that which has *no light*; *asthma* is a *difficulty of breathing*; a *diaphoretic* medicine, or a *sudorific*, is something that will *provoke sweating*; and an *insolvent*, is a man that *cannot pay his debts.*

Since it is the design of *Logic*, not only to assist us in *learning* but in *teaching* also, it is necessary that we should be furnished with some particular directions relating to the *definition of names*, both in *teaching* and *learning*.

SECT. III.

DIRECTIONS CONCERNING THE DEFINITION OF NAMES.

DIREC. I. HAVE *a care of making use of mere words, instead of ideas*, that is, such words as have no meaning, no definition belonging to them: *Do not always imagine that there are ideas wheresoever there are names*: For, though mankind hath so many millions of ideas more than they have names, yet so foolish and lavish are we, that too often we use some words in mere waste, and have *no ideas* for them; or, at least, our ideas are so exceedingly shattered and confused, broken and blended, various and unsettled, that they can signify nothing toward the improvement of the understanding. You will find a great deal of reason for this remark, if you read the *sophish schoolmen*, or the *mystic divines*.

Never rest satisfied therefore with *words which have no ideas belonging to them*, or at least *no settled and determined ideas*. Deal not in such empty ware, whether you are a learner or a teacher; for hereby some persons have made themselves rich in words and learned in their own esteem; whereas, in reality, their understandings have been poor, and they knew nothing.

Let me give, for instance, some of those writers or talkers who deal much in the words *nature*, *fate*, *luck*, *chance*, *perfection*, *power*, *life*, *fortune*, *instinct*, &c. and that even in the most calm and instructive parts of their discourse; though neither they themselves nor their hearers have any settled meaning under those words; and thus they build up their reasonings, and infer what they please, with an ambition of the name of learning, or of sublime elevations in religion; whereas in truth, they do but amuse themselves and their admirers with *swelling words of vanity*,

understanding neither what they say, nor whereof they affirm. But this sort of talk was reproved of old by the two chief apostles, St. *Peter* and St. *Paul*, 1 Tim. i. 7. and 2 Pet. ii. 18.

When pretenders to philosophy or good sense grow fond of this sort of learning, they dazzle and confound their weaker hearers, but fall under the neglect of the wise. The *Epicureans* are guilty of this fault when they ascribe the formation of the world to *chance:* The *Aristotelians*, when they say, *Nature abhors a vacuum:* The *Stoicks*, when they talk of *fate*, which is superior to the gods: And the *gamesters*, when they curse their *ill-luck*, or hope for the favours of *fortune*. Whereas if they would tell us, that, by the word *nature* they mean *the properties of any being*, or *the order of things established at the creation;* that by the word *fate* intend the *decrees of God*, or the *necessary connection and influence of second causes and effects;* if by the word *luck* or *chance* they signify the *absolute negation of any determinate cause*, or only *their ignorance of any such cause*, we should know how to converse with them, and to assent to, or dissent from, their opinions. But, while they flutter in the dark, and make a noise with words which have no fixed ideas, they talk to the wind, and never can profit.

I would make this matter a little plainer still by instances borrowed from the *Peripatetick* philosophy, which was once taught in all the schools. The professor fancies he has assigned the true reason why all *heavy bodies tend downward*, why *amber will draw feathers or straws*, and the *loadstone draw iron* when he tells you that this is done by certain *gravitating* and *attractive qualities*, which proceed from the *substantial forms* of those various bodies. He imagines that he has explained why the *loadstone's north-pole* shall repel the north end of a magnetic needle, and attract the south*, when he affirms, that this is done by its *sympathy* with one end of it, and its *antipathy* against the other end. Whereas in truth, all these names of *sympathy, antipathy, substantial forms*, and *qualities*, when they are put for the causes

* Note—Some writers call that the south pole of a loadstone which attracts the south end of the needle; but I choose to follow those who call it the north pole.

of these effects in bodies, are but hard words, which only express a learned and pompous ignorance of the true cause of natural appearances; and in this sense they are *mere words without ideas.*

This will evidently appear, if one ask me, *Why a concave mirror or convex glass will burn wood* in the sun beams, *or why a wedge will cleave it?* And I should tell him, it is by an *ustorious quality* in the mirror or glass, and by a *cleaving power* in the wedge, arising from a certain unknown *substantial form* in them, whence they derive these *qualities*; or if he should ask me, Why a *clock strikes, and points to the hour?* and I should say, it is by an *indicative form* and *sonorific quality*; whereas I ought to tell him how the sun beams are collected and united by a *burning-glass*; whence the mechanical force of a *wedge* is derived; and what are the *wheels* and *springs*, the *pointer*, and *hammer*, and *bell*, whereby a *clock* gives notice of the time, both to the eye and the ear. But these *ustorious* and *cleaving powers, sonorious and indicative forms and qualities*, do either teach the enquirer nothing at all but what he knew before, or they are *mere words without ideas.**

And there is many a man in the vulgar and in the learned world, who imagines himself deeply skilled in the *controversies of divinity*, whereas he has only furnished himself with a parcel of *scholastic* or *mystic* words, under some of which the authors themselves had no just ideas; and the learner, when he hears, or pronounces them, hath

* It may be objected here, "And what does the modern philosopher, with all his detail of mathematical numbers, and diagrams, do more than this towards the solution of these difficulties? Does he not describe gravity by a certain unknown force, whereby bodies tend downward to the centre? Hath he found the certain and mechanical reasons of attraction, magnetism, &c, ?" I answer, that the moderns have found a thousand things by applying mathematics to natural philosophy, which the ancients were ignorant of; and, when they use any names of this kind, viz gravitation, attraction, &c. they use them only to signify, that there are such effects and such causes, with a frequent confession of their ignorance of the true springs of them: They do not pretend to make these words stand for the real causes of things as though they thereby assigned the true philosophical solution of these difficulties; for in this sense they will still be words without ideas, whether in the mouth of an old philosopher or a new one.

scarce any ideas at all. Such sort of words sometimes have become matters of immortal contention, as though the gospel could not stand without them; and yet the zealot perhaps knows little more of them than he does of *Shibboleth*, or *Higgaion*, *Selah*. Judges xii. 6. Psal. ix. 16.

Yet here I would lay down this *caution*, that there are several objects of which we have not a clear and distinct idea, much less an adequate or comprehensive one, and yet we cannot call the names of these things *words without ideas*; such are the *infinity* and *eternity* of God himself, the *union of our own soul and body*, the *union of the divine and human natures in Jesus Christ*, the *operation of the Holy Spirit on the mind of man*, &c. These ought not to be called *words without ideas*, for there is sufficient evidence for the reality and certainty of the existence of there objects; though there is some confusion in our clearest conceptions of them; and our ideas of them, though imperfect, are yet sufficient to converse about them, so far as we have need, and to determine so much as is necessary for our own faith and practice.

Direct. II. *Do not suppose that the natures or essences of things always differ from one another as much as their names do.* There are various purposes in human life, for which we put very different names on the same thing, or on things whose natures are near akin; and thereby oftentimes, by making a new *nominal species*, we are ready to deceive ourselves with the idea of another *real species of things*: And those, whose understandings are led away by the mere sound of words, fancy the *nature* of those *things* to be very different whose names are so, and judge of them accordingly.

I may borrow a remarkable instance for my purpose almost out of every garden which contains a variety of plants in it. Most or all plants agree in this, that they have a *root*, *a stalk*, *leaves*, *buds*, *blossoms*, and *seeds*: But the gardener ranges them under very different names, as though they were really different kinds of beings, merely because of the different use and service to which they are applied by men: As, for instance, those plants whose roots are eaten, shall appropriate the names of *roots* to themselves; such are *carrots*, *turnips*, *radishes*, &c. If the *leaves*

are of chief use to us, then we call them *herbs*; as *sa mint, thyme*. If the *leaves* are eaten raw, they are term *sallad*; as *lettuce, purcelain*. If boiled, they become *herbs*; as *spinnage, colworts*; and some of those same pla which are *potherbs*, in one family, are sallad in another the buds are made our food, they are called *heads* or *to* so *cabbage* heads, heads of *asparagus* and *artichoaks*. If blossom be of most importance, we call it a *flower*; s are *daisies, tulips*, and *carnations*, which are the mere b soms of those plants. If the *husk* or *seeds* are eaten, t are called the *fruits of the ground*, as *peas, beans, straw ries*, &c. If any part of the plant be of known and comm use to us in *medicine*, we call it a *physical herb*, as *cardu scurvy-grass*; but if we count no part useful, we call *weed*, and throw it out of the garden; and yet perh our next neighbour knows some valuable property use of it; he plants it in his garden, and gives it the t of an *herb*, or a *flower*. You see here how small is real distinction of these several *plants*, considered in th general nature as the *lesser vegetables*: Yet what very ferent ideas we vulgarly form concerning them, and m different *species* of them, chiefly because of the differ names given them.

Now, when things are set in this clear light, it appe how ridiculous it would be for two persons to conte whether *dandelion* be an *herb* or a *weed*; whether it t *potherb* or *sallad*; when, by the custom or fancy of dif ent families, this one plant obtains all these names cording to the several uses of it, and the value that is upon it.

Note here—That I find no manner of fault with the riety of names which are given to several plants, acc ing to the various use we make of them. But I wo not have our judgments imposed upon hereby, to th that these mere *nominal* species, namely, *herbs, sallad, weeds*, become three *really* different species of beings, this account, that they have different names and uses. I proceed to other instances.

It has been the custom of mankind, when they h been angry with any thing, to add a *new ill name* t that they may convey thereby a hateful idea of it, tho

the nature of the thing still abides the same. So the Papists call the Protestants *Heretics*; a profane person calls a man of piety a *Precisian*; and in the times of the civil war, in the last century, the Royalists called the Parliamentarians *Fanatic*, *Roundheads* and *Sectaries*. And they in requital called the Royalists *Malignants*: But the partizans on each side were really neither better nor worse for these names.

It has also been a frequent practice, on the other hand, to put *new favorable names* upon *ill ideas*, on purpose to take off the odium of them. But, notwithstanding all these flattering names and titles, a man of profuse generosity is but a *spendthrift*; a natural son is a *bastard* still; a gallant is an *adulterer*; and a lady of pleasure is a *whore*.

Direct. III. *Take heed of believing the nature and essence of two or more things to be certainly the same, because they may have the same name given them.* This has been an unhappy and fatal occasion of a thousand mistakes in the natural, in the civil, and religious affairs of life, both amongst the vulgar and the learned. I shall give two or three instances, chiefly in the matters of *natural philosophy*, having hinted several dangers of this kind relating to *theology* in the foregoing discourse concerning *equivocal words*.

Our elder philosophers have generally made use of the word SOUL to signify that principle whereby a plant grows, and they call it the *vegetative soul*: The principle of the animal motion of a brute has been likewise called a *soul*, and we have been taught to name it the *sensitive soul*; they have also given the name *soul* to that superior principle in man, whereby he thinks, judges, reasons, &c. and though they distinguished this by the honorable title of the *rational soul*, yet in common discourse and writing, we leave out the words *vegetation*, *sensitive* and *rational*, and make the word *soul* serve for all these principles: Thence we are led into this imagination, that *there is a sort of spiritual being in plants and in brutes, like that in men.* Whereas, if we did but abstract and separate these things from words, and compare the cause of *growth* in a *plant*, with the cause of *reasoning* in *man*, (without the word *soul*) we should never think that these two principles were at all like one another; nor should we perhaps so easily and per-

emptorily conclude that *brutes* need an intelligent mind to perform their animal actions.

Another instance may be the word LIFE, which being attributed to *plants*, to *brutes*, and to *men*, and in each of them ascribed to the *soul*, has very easily betrayed us from our infancy into this mistake, *that the spirit or mind, or thinking principle in man is the spring of vegetative and animal life in his body*: Whereas it is evident, that if the spirit or thinking principle of man gave *life* to his animal nature, the way to save men from dying would not be to use medicines, but to persuade the spirit to abide in the body.

I might derive a third instance from the word HEAT, which is used to signify the *sensation we have* when we are near the fire, as well as the *cause of that sensation*, which is in the fire itself; and thence we conclude from our infancy, that *there is a sort of heat in the fire resembling our sensation, or the heat which we feel*: Whereas, in the fire, there is nothing but little particles of matter, of such particular shapes, sizes, situations and motions, as are fitted to impress such motion on our flesh or nerves as excite the sense of *heat*. Now if this cause of our sensation in the *fire* had been always called by a distinct name, perhaps we had not been so rooted in this mistake, that *the fire is hot with the same sort of heat that we feel*. This will appear with more evidence when we consider, that we are secure from the same mistake where there have been two different names allotted to our *sensation*, and to the *cause of it*; as, we do not say, *pain is in the fire* that burns us, or *in the knife* that cuts and wounds us; for we call it *burning in the fire*, *cutting in the knife*, and *pain* only when it is in *ourselves*.

Numerous instances of this kind might be derived from the words *sweet*, *sour*, *loud*, *shrill*, and almost all the *sensible qualities*, whose real natures we mistake from our very infancy, and we are ready to suppose them to be the same in us, and in the bodies that cause them; partly, because the words which signify our own sensations are applied also to signify those unknown shapes and motions of the *little corpuscles* which excite and cause those sensations.

Direct. IV. In conversation or reading, be diligent to find *out the true sense, or distinct idea*, which the speaker or wri-

ter affixes to his words, and especially to those words which are the chief subject of his discourse. As far as possible take heed lest you put more or fewer ideas into one word than the person did when he wrote or spoke; and endeavour that your ideas of every word may be the same as his were: Then you will judge better of what he speaks or writes.

It is for want of this that men quarrel in the dark; and that there are so many contentions in the several sciences, and especially in *divinity*. Multitudes of them arise from a mistake of the true sense or complete meaning in which words are used by the writer or speaker; and hereby sometimes *they seem to agree when they really differ* in their sentiments; and sometimes *they seem to differ when they really agree*. Let me give an instance of both.

When one man by the word *church* shall understand *all that believe in Christ;* and another by the word *church* means only the *church of Rome;* they may both assent to this proposition, *There is no salvation out of the church*, and yet their inward sentiments may be widely different.

Again, if one writer shall affirm that *virtue added to faith is sufficient to make a Christian*, and another shall as zealously deny this proposition, they seem to differ widely in words, and yet perhaps they may both really agree in sentiment; if, by the word *virtue*, the affirmer intends our *whole duty to God and man;* and the denier by the word *virtue* means only courage, or at most our *duty towards our neighbour*, without including in the idea of it the *duty which we owe to God.*

Many such sort of contentions, as these are, traced to their original, will be found to be mere *logomachies*, or strifes and quarrels about *names* and *words*, and *vain janglings*, as the apostle calls them in his first letter of advice to *Timothy.*

In order therefore to attain *clear and distinct ideas* of what we read and hear, we must search the *sense of words;* we must consider what is their original and derivation in our own or foreign languages; what is their common sense among mankind, or in other authors, especially such as wrote in the same country, in the same age, about the same time, and upon the same subjects: We must con-

sider in what sense the same author uses any partic
word or *phrase*, and that when he is discoursing or
same matter, and especially about the same parts or
graphs of his writing: We must consider whethe
word be used in a strict or limited, or in a large and
eral sense; whether in a literal, in a figurative, or
prophetic sense; whether it has any secondary idea an
ed to it, besides the primary or chief sense. We mus
quire farther, what is the scope and design of the wri
and what is the connection of that sentence with those
go before it, and those which follow it. By these and
methods we are to search out the *definition of names*,
is the true sense and meaning in which any auth
speaker uses any word, which may be the chief subje
discourse, or may carry any considerable importance

Direct. V. *When we communicate our notions to ot
merely with a design to inform and improve their knowl
let us in the beginning of our discourse take care to adju
definition of names wheresoever there is need of it;* th
to determine plainly what we mean by the chief w
which are the subject of our discourse; and be sur
ways to keep the same ideas, whensoever we use the
words, unless we give due notice of the change. This
have a very large and happy influence, in securing no
ly others but ourselves too from confusion and mist
for even writers and speakers themselves, for want o
watchfulness, are ready to affix *different ideas to their
words*, in different parts of their discourses, and he
bring perplexity into their own reasonings, and conf
their hearers.

It is by an observation of this rule that *mathemati*
have so happily secured themselves, and the *sciences* w
they have professed, from wrangling and controve
because whensoever, in the progress of their treatises,
have occasion to use a new and unknown word, the
ways *define* it, and tell in what sense they shall tak
and in many of their writings you find a heap of *defini*
at the very beginning. Now, if the writers of *natura
losophy* and *morality* had used the same accuracy and
they had effectually secluded a multitude of noisy
fruitless debates out of their own several provinces:
had that sacred theme of *divinity* been perplexed wi

many intricate disputes, nor the church of *Christ* been torn to pieces by so many sects and factions, if the words *grace*, *faith*, *righteousness*, *repentance*, *justification*, *worship*, *church*, *bishop*, *presbyter*, &c. had been well defined, and their significations adjusted, as near as possible, by the use of those words in the New Testament; or at least, if every writer had told us at first in what sense he would use those words.

Direct. VI. *In your own studies, as well as in the communication of your thoughts to others merely for their information, avoid ambiguous and equivocal terms as much as possible.* Do not use such words as have two or three *definitions of the name* belonging to them, that is, such words as have two or three senses, where there is any danger of mistake. Where your chief business is to inform the judgment, and to explain a matter rather than to persuade or affect, be not fond of expressing yourselves in *figurative* language, when there are any proper words that signify the same idea in the *literal* sense. It is the ambiguity *of names*, as we have often said, that brings almost infinite confusion into our *conceptions of things*.

But where there is necessity of using an ambiguous word, there let double care be used in defining that word, and declaring in what sense you take it. And be sure to suffer no ambiguous word ever to come into your definitions.

Direct. VII. *In communicating your notions, use every word as near as possible in the same sense in which mankind commonly use it, or which writers that have gone before you have usually affixed to it, upon condition that it is free from ambiguity.* Though names are in their original merely arbitrary, yet we should always keep to the established meaning of them, unless great necessity requires the alteration; for, when any word has been used to signify an idea, that old idea will recur in the mind when the word is heard or read, rather than any new idea which we may fasten to it. And this is one reason why the *received definition of names* should be changed as little as possible.

But I add further, that, though a word entirely new introduced into a language may be affixed to what idea you please, yet an old word ought never to be fixed to an unaccustomed idea, without just and evident necessity, or

without present or previous notice, lest we introduce thereby a licence for all manner of pernicious *equivocations* and *falsehoods*; as for instance, when an idle boy, who has not seen his book all the morning, shall tell his master that *he has learned his lesson*, he can never excuse himself by saying, that by the word *lesson* he meant his *breakfast*, and by the word *learnt* he meant *eating*; surely this would be construed a downright lie, and his fancied wit would hardly procure him a pardon.

In using an ambiguous word, which has been used in different senses, we may choose what we think the most proper sense, as I have done, *p.* 72, in naming the *poles of the loadstone*, north *or* south.

And, when a word has been used in two or three senses, and has made a great inroad for error upon that account, it is of good service to drop one or two of those senses, and leave it only one remaining, and affix the other senses or ideas to other words. So the modern philosophers, when they treat of the *human soul*, they call it the *mind*, or *mens humana*, and leave the word *anima*, or *soul*, to signify the *principle of life and motion in mere animal beings*.

The poet *Juvenal* has long ago given us a hint of this accuracy and distinction, when he says of *brutes* and *men*,

Indulsit mundi communis conditor illis
Tantam animas; *nobis* animum *quoque*.
Sat. ix. v. 134.

Exception. There is one case, wherein some of these last rules concerning *the definition of words* may be in some measure dispensed with; and that is, when strong and rooted prejudice hath established some favourite word or phrase, and long used it to express some mistaken notion, or to unite some inconsistent ideas; for then it is sometimes much easier to lead the world into truth, by indulging their fondness for a phrase, and by assigning and applying new ideas and notions to their favorite word; and this is much safer also than to awaken all their passions by rejecting both their old words, and phrases, and notions, and introducing all new at once: Therefore we continue to say, *there is heat in the fire, there is coldness in ice, rather* than invent new words to express the powers

which are in *fire* or *ice*, to excite the sensations of *heat* or *cold* in us. For the same reason, some words, and phrases, which are less proper, may be continued in *theology*, while people are led into clearer ideas with much more ease and success, than if an attempt was made to change all their beloved forms of speech.

In other cases, these *logical directions* should generally be observed, and different names affixed to different ideas.

Here I cannot but take occasion to remark, that it is a considerable advantage to any language to have a *variety of new words* introduced into it, that when, in course of time, *new objects* and *new ideas* arise, there may be *new words* and names assigned to them: And also, where one single name has sustained two or three ideas in time past, these new words may remove the ambiguity by being affixed to some of those ideas. This practice would, by degrees, take away part of the uncertainty of language. And for this reason I cannot but congratulate our English tongue, that it has been abundantly enriched with the translation of words from all our neighbour nations, as well as from ancient languages, and these words have been as it were infranchised amongst us; for French, Latin, Greek, and German names, will signify English ideas, as well as words that are anciently and entirely English.

It may not be amiss to mention in this place, that, as the determination of the particular sense in which any word is used is called the *definition of the name*, so the enumeration of the various senses of an equivocal word is sometimes called the *division* or *distinction* of the name; and for this purpose good doctrines are of excellent use.

This *distinction* of the *name* or *word* is greatly necessary in argumentation or dispute; when a fallacious argument is used, he that answers it distinguishes the several senses of some word or phrase in it, and shews in what sense it is *true*, and in what sense it is evidently *false*.

SECT. IV.

OF THE DEFINITION OF THINGS.

AS there is much confusion introduced into ideas, by the means of those *words* to which they are al ed, so the *mingling our ideas* with each other without c tion, is a farther occasion whereby they become confu A *court lady*, born and bred up amongst *pomp* and *equip* and the vain notions of *birth* and *quality*, constantly j and mixes all these with the idea of herself, and she i gines these to be *essential to her nature*, and as it were, *cessary to her being*; thence she is tempted to look u *menial servants*, and the lowest rank of mankind, *as ano species of beings* quite distinct from herself. A *plow* that has never travelled beyond his own village, and seen nothing but *thatched houses* and his *parish church* naturally led to imagine that *thatch* belongs to the nature of a *house*, and that that must be a *church* whic built of *stone*, and especially if it has a *spire* upon it. *child* whose *uncle* has been excessive fond, and his *sch master* very severe, easily believes that *fondness* always longs to *uncles*, and that severity is essential to *master instructors*. He has seen also *soldiers* with *red coats ministers* with *long black gowns*, and therefore he persu himself that these garbs are essential to those charact and that he is not a *minister* who has not *a long black g* nor can he be a *soldier* who is not dressed in *red*. It w be well if all such mistakes ended with childhood.

It might be also subjoined, that our complex ideas come confused, not only by *uniting* or *blending toge more simple or single ideas* than really belong to them, the instances just mentioned; but obscurity and confu sometimes come upon our ideas also, *for want of uniti sufficient number of single ideas* to make the complex c So if I conceive of a *leopard* only as a *spotted beast*, this not distinguish it from a *tyger* or a *lynx*, nor from n *dogs* or *horses*, which are spotted too; and therefo

ord must have some more ideas added to complete and nguish it.

grant that it is a large and free acquaintance with the d, a watchful observation and diligent search into the ire of things, that must fully correct this kind of errors: The *rules of logic* are not sufficient to do it: But yet the *rules of logic* may instruct us by what means to distinguish one thing from another, and how to search and mark out, as far as may be, the contents and limits of the nature of distinct beings, and thus may give us great assistance towards the remedy of these mistakes.

As the *definition of names* free us from that confusion which *words* introduce, so the *definition of things* will in some measure guard us against that confusion which *mingled ideas* have introduced: For, as a *definition of the name* explains what any word means, so a *definition of the thing* explains what is the nature of that thing.

In order to form a *definition* of any thing, we must put forth these three acts of the mind.

First, compare the thing to be defined with other things that are most like to itself, and see wherein its essence or nature agrees with them; and this is called the *general nature* or *genus* in a definition: So if you would define what *wine* is, first compare it with other things like itself, as *cider*, *perry*, &c. and you will find it agrees essentially with them in this, that it is a *sort of juice*.

Secondly, Consider the most remarkable and primary attribute, property, or idea wherein this thing differs from those other things that are most like it; and that is, its *essential* or *specific difference*: So *wine* differs from *cider* and *perry*, and all other *juices*, in that it is *pressed from a grape*. This may be called its *special nature*, which distinguishes it from other *juices*.

Thirdly, Join the general and special nature together, or (which is all one) the *genus* and the *difference*, and these make up a *definition*. So the *juice of a grape*, or *juice pressed from grapes*, is the *definition of wine*.

So, if I would define what *winter* is, I consider first wherein it agrees with other things which are most like it, namely, *summer*, *spring*, *autumn*, and I find they are all *seasons of the year*; therefore a season of the year is the gen-

us. Then I observe wherein it differs from the that is in the *shortness of the days;* for it is this does primarily distinguish it from other *seasons;* fore this may be called its *special nature* or its *dif* Then, by joining these together, I make a *definition ter is that season of the year wherein the days are* I confess indeed this is but a ruder definition of it, define it as an accurate astronomer, I must limit th hours, and minutes.

After the same manner, if we would explain or what the *picture of man is*, we consider first the *g general nature* of it, which is a *representation;* and it agrees with many other things, as a *statue*, a *sh print*, a *verbal description* of a man, *&c.* Then sider wherein it differs from these, and we find it from a verbal description, in that it is a represent the eye and not to the ear: It differs from a *statue*, it is a representation upon a flat surface, and not in figure: It differs from a *shadow*, in that it is an representation, and not a fleeting one: It differs *print* or *draught*, because it represents the colours b as well as the shape of the object by delineation. so many, or rather so few of these ideas put toge are just sufficient to distinguish *a picture* from a representations, make up its essential difference, *special nature;* and all these are included in its *bein ed on a plain surface.* Then join this to the *genus*, is a *representation;* and thus you have the complete *tion* of a *man*, namely, it is *the representation of a paint upon a surface (or a plane.)*

Here it must be observed, that when we speak *genus* and *difference* as composing a *definition*, it n ways be understood that the *nearest genus*, and the *difference*, are required.

The next *general nature*, or the *nearest genus*, n used in a definition, because it includes all the rest of its complex idea; as if I would define *wine*, I m *wine is a juice*, which is the nearest genus; and *wine is a liquid*, which is a remote general natur *wine is a substance*, which is yet more remote; fo includes both *substance* and *liquid.* Besides, ne

these two remote general natures would make any distinction between *wine*, and a thousand other *substances*, or other *liquids*, a *remote genus* leaves the thing too much undistinguished.

The *specific difference* is that primary attribute which distinguishes each species from one another, while they stand ranked under the same general nature or genus. Tho' *wine* differs from other liquids in that it is the *juice of a certain fruit*, yet this is but a *general* or *generic difference*, for it does not distinguish *wine* from *cider* or *perry*; the *specific difference of wine* therefore is its *pressure from the grape*; as *cider* is pressed from *apples*, and *perry* from *pears*.

In definitions also, we must use the *primary attribute* that distinguishes the *species* or special nature, and not attempt to define *wine* by its peculiar tastes, or effects, or other properties, which are but *secondary* or *consequential*, when its *pressure from the grape* is the most obvious and primary distinction of it from all other juices. I confess in some cases it is not so easily known which is the primary idea that distinguishes one thing from another; and therefore some would as soon define *winter* by the *coldness of the season*, as by the *shortness of the days*; though the *shortness of the days* is doubtless the most just, primary and philosophical difference betwixt that and the other seasons of the year, since winter days are always *shortest*, but not always the *coldest*; I add also, that the *shortness of the days* is one cause of the *coldness*, but the *cold* no cause of their *shortness*.

SECT. V.

RULES OF THE DEFINITION OF THE THING.

THE *special rules of a good definition* are the following:

Rule I.....*A definition must be universal*, or, as *some* call it, *adequate*; that is, it must agree to all the particular species or individuals that are included under the same idea; so the *juice of a grape* agrees to all proper wines, whether *red, white, French, Spanish*, Florence, &c.

Rule II....*It must be proper and peculiar to the thing defined, and agree to that alone;* for it is the very design of definition effectually to distinguish one thing from all others: So the *juice of a grape* agrees to no other substance to no other liquid, to no other being but *wine*.

These two *rules* being observed, will always render definition *reciprocal with the things defined;* which is scholastic way of speaking, to signify that the definitio may be used in any sentence in the place of the thing defined, or they may be mutually confirmed concerning eac other, or substituted in the room of each other. *The juic of the grape is wine*, or *wine is the juice of the grape*. An wheresoever the word *wine* is used, you may put *the juic of the grape* instead of it, except when you consider *win* rather as a *word* than a thing, or when it is mentioned i such *logical rules*.

Rule III.....*A definition ought to be clear and plain;* fo the design of it is to lead us into the knowledge of the thin defined.

Hence it will follow, that the words used in a definitio ought not to be *doubtful*, or *equivocal* and *obscure*, but a plain and easy as the language will afford: And indeed i is a general rule concerning the definition both of *name* and *things*, that no word should be used in either of them which has any darkness or difficulty in it, unless it ha been before explained or defined.

Hence it will follow also, that there are many thing which cannot well be defined, either as to the *name* or th *thing*, unless it be by synonymous words, or by a negatio of the contrary idea, *&c.* for learned men know not ho to make them more evident, or more intelligible, than th ideas which every man has gained by the vulgar method of teaching. Such are the ideas of *extension*, *duratio consciousness*, and most of our simple ideas, and particu larly *sensible* qualities, as *white*, *blue*, *red*, *cold*, *heat*, *shri bitter*, *sour*, &c.

We can say of *duration*, that it is a *continuance in bein* or a *not ceasing to be;* we can say of *consciousness*, that is as it were *a feeling within ourselves;* we may say, *he* is that which is *not cold;* or *sour* is that which is like *vinega* or we may point to the clear sky, and say, that is *bl*

These are vulgar methods of teaching the *definitions of names*, or meaning of words. But there are some philosophers, whose attempts to define these thing learnedly have wrapt up their ideas in greater darkness, and exposed themselves to ridicule and contempt; as when they define *heat*, they say, it is *Qualitas congregans homogenea, and segregans heterogenea*; that is, a quality gathering together things of the same kind, and separating things of a different kind. So they define *white, a colour arising from the prevalence of brightness*: But every child knows *hot* and *white* better without these definitions.

There are many other definitions given by the Peripatetick philosophers, which are very faulty, by reason of their *obscurity*; as *motion* is defined by them *the act of a being in power, so far forth as it is in power. Time is the measure or number of motion according to past, present, and future.* The *soul* is the *act of an organical natural body, having life in power*; and several others of the same stamp.

Rule IV.—It is also commonly prescribed amongst the rules of definition, *that it should be short*, so that it *must have no tautology in it, nor any words superfluous.* I confess definitions ought to be expressed in as few words as is consistent with a clear and just explication of the nature of the thing defined, and a distinction of it from all other things besides: But it is of much more importance, and far better, that a definition should explain *clearly* the subject we treat of, though the words be *many*, than to leave obscurities in the sentence by confining it within too narrow limits. So in the definition which we have given of *logic*, that is the *art of using reason well in the search after truth, and the communication of it to others*, it has indeed many words in it, but it could not be well shorter. *Art* is the *genus* wherein it agrees with *rhetoric, poesy, arithmetic, wrestling, sailing, building*, &c. for all these are *arts* also: But the difference or special nature of it is drawn from its object, *reason*; from the act *using it well*, and from its two great ends or designs, namely, the *search after truth*, and the *communication of it*; nor can it be justly described and explained in fewer ideas.

V....If we add a *fifth rule*, it must be, that *neither the thing defined, nor a mere synonymous name, should make a part of*

the definition, for this would be no explication of *the nature of the thing*; and a synonymous word at best could only be a *definition of the name*.

SECT. VI.

OBSERVATIONS CONCERNING THE DEFINITION OF THINGS.

BEFORE I part with this subject, I must propose several *observations* which relate to the definition of things.

1*st Observ.* There is no need that, in *definitions*, we should be confined to *one single attribute or property*, in order to express the difference of the thing defined, for sometimes the *essential* difference consists in *two* or *three* ideas or attributes. So a *grocer* is a man *who buys and sells sugar, and plumbs and spices for gain.* A *clock* is an *engine with weights and wheels, that shows the hour of the day both by pointing and striking:* And if I were to define a *repeating clock*, I must add another property, namely, that it also *repeats the hour.* So that the true and primary essential difference of some complex ideas consisting in several distinct properties, cannot be well expressed without conjunctive particles of speech.

2*d. Observ.* There is no need that *definitions* should always be *positive*, for some things differ from others merely by a defect of what others have; as, if a *chair* be defined *a seat for a single person with a back belonging to it*, then a *stool* is a *seat for a single person without a back*; and a *form* is a *seat for several persons without a back:* These are *negative* differences. So *sin is want of conformity to the law of God*; *blindness is a want of sight*; a *vagabond* is a *person without a home.* Some ideas are *negative*, and their definition ought to be so too.

3*d Observ.* Some things may have two or more *definitions*, and each of them equally just and good; as a *mile* is the *length of eight furlongs*, or it is the *third part of a league. Eternal* is *that which ever was, and ever shall be*; or it is *that which had no beginning and shall have no end.*

*Man** is usually defined a *rational animal:* But it may be much better to define him a *spirit united to an animal of such a shape*, or *an animal of such a peculiar shape united to a spirit*, or a *being composed of such an animal and a mind.*

4th Observ. Where the *essences* of things are evident, and clearly distinct from each other, there we may be more accurate and exact in the *definitions* of them: But, where their *essences* approach near to each other, the *definition* is more difficult. A *bird* may be defined a *feathered animal with wings*, a *ship* may be defined a *large hollow building made to pass over the water with sails:* But if you ask me to define a *bat*, which is between a *bird* and a *beast*, or to define a *barge* and *hoy*, which are between a *boat* and a *ship*, it is much harder to define them, or to adjust the bounds of their essence. This is very evident in all *monstrous births*, and *irregular productions of nature*, as well as in many *works of art*, which partake so much of *one species*, and so much of *another*, that we cannot tell under which *species* to rank them, or how to determine their *specific difference.*

The several *species* of beings are seldom precisely limited in the nature of things by an uncertain and unalterable bounds: The essences of many things do not consist *in indivisibili*, or in one evident indivisible point, as some have imagined; but by various degrees they approach nearer to, or differ more from, others that are of a kindred nature. So (as I have hinted before) in the very middle of each of the arches of a rainbow, the colours of *green*, *yellow* and *red*, are sufficiently distinguished; but near the borders of the several arches they run into one another, so that you hardly know how to limit the colours, nor whether to call it *red* or *yellow*, *green* or *blue.*

5th Observ. As the *highest* or chief *genuses*, namely,

* The common definition of man namely, a rational animal, is very faulty. 1. Because the animal is not rational; the rationality of man arises from the mind to which the animal is united. 2. Because if a spirit should be united to a horse, and make it a rational being, surely this would not be a man: It is evident therefore that the peculiar shape must enter into the definition of a man to render it just and perfect; and for want of a full description thereof, all our definitions are defective.

being and *not-being*, can never be defined, because there is no *genus* superior to them: so neither can *singular ideas* or *individuals* be well defined, because either they have no *essential differences* from other individuals, or their differences are not known; and therefore *individuals* are only to be described by their particular circumstances: So King *George* is distinguished from all other men and other kings, by describing him as *the first king of Great Britain of the house of Brunswick*; and *Westminster Hall* is described by its situation and its use, &c.

That individual bodies can hardly have any essential difference, at least within the reach of our knowledge, may be made thus to appear: *Methuselah*, when he was nine hundred and sixty years *old*, and perhaps worn out with age and weakness, was the same person as when he was in his full vigour of *manhood*, or when he was an *infant*, newly born; but how far was his body the same? Who can tell whether there was any fibre of his flesh or his bones that continued the same throughout his whole life? Or who can determine which are those fibres? The *ship* in which Sir *Francis Drake* sailed round the world might be new built, and refitted so often, that few of the same timbers remained; and who can say whether it must be called the same ship or not? And what is its essential difference? How shall we define Sir *Francis Drake's* ship, or make a definition for *Methuselah?*

To this head belongs that most difficult question, *What is the principle of individuation?* Or what is it that makes any one thing *the same* as it was some time before? This is too large and laborious an inquiry to dwell upon in this place: Yet I cannot forbear to mention this hint, namely, Since our own bodies must rise at the last day for us to receive rewards or punishments in them, there may be perhaps some *original fibres* of each human body, some *stamina vitæ*, or primeval *seed of life*, which may remain unchanged through all the stages of life, death, and the grave; these may become the springs and principles of a resurrection, and sufficient to denominate it that *same body* But, if there be any such constant and vital atoms which distinguish every human body, they are known to God only

6th Observ. Where we cannot find out the *essence* or *essential difference* of any *species* or *kind* of beings that we would define, we must content ourselves with a collection of such *chief parts* or *properties* of it as may best explain it, so far as it is known, and best distinguish it from other things: So a *marigold* is a *flower which hath many long and yellow leaves, round a little knot of seeds in the midst, with such a peculiar stalk*, &c. So if we would define *silver*, we say it is a *white and hard metal, next in weight to gold*: If we would define an *elder tree*, we might say it is *one among the lesser trees, whose younger branches are soft and full of pith, whose leaves are jagged or indented, and of such a particular shape, and it bears large clusters of small black berries*: So we must define *earth*, *stone*, a *lion* an *eagle*, a *serpent*, and the greatest part of *natural* beings, by a collection of those properties, which according to our observation distinguish them from all other things. This is what Mr. *Locke* calls *nominal essence*, and *nominal definitions*. And indeed, since the *essential differences* of the various natural beings or bodies round about us arise from a peculiar shape, size, motion, and situation of the small particles of which they are composed, and since we have no sufficient method to inform us what these are, we must be contented with such a *sort of* definition of the bodies they compose.

Here *note*, That this sort of definition, which is made up of a mere collection of the most remarkable parts or properties, is called an *imperfect definition*, or a *description*; whereas the *definition* is called *perfect* when it is composed of the essential *difference*, added to the general nature or *genus*.

7th Observ. The *perfect definition of any being* always includes the *definition of the name* whereby it is called, for it informs us of the sense or meaning of that word, and shews us what idea that word is affixed to: But the *definition of the name* does by no means include a *perfect definition of the thing*; for, as we have said before, a mere synonymous word, a negation of the contrary, or the mention of any one or two distinguishing properties of the thing, may be a sufficient *definition of the name*. Yet in those cases where the essential differences or essence of a

thing is unknown, there a *definition of the name*, by the chief properties, and a *description of the thing*, are much the same.

And here I think it necessary to take notice of one general sentiment, that seems to run through that excellent performance, Mr. *Locke's Essay on human understanding*, and that is, That the *essence of things* are utterly unknown to us, and therefore all our pretences to distinguish the essences of things can reach no farther than *mere nominal essences*; or a collection of such properties as we know; to some of which we affix particular names, and others we bundle up, several together, under one name: And that all our attempts to rank beings into different kinds of species can reach no farther than to make *mere nominal species*; and therefore our definitions of things are but *mere nominal descriptions* or definitions of the name."

Now, that we may do justice to that great author, we ought to consider that he confines this sort of discourse only to the *essence of simple ideas*, and to the *essence of substances*, as appears evident in the fourth and sixth chapters of his third book; for he allows the *names of mixed modes always to signify the real essences of their species*, Chap. V. and he acknowledges *artificial things to have real distinct species*; and that, in the distinction of their essences, *there is generally less confusion and uncertainty than in natural*, Chap. VI. sect. 40, 41. though it must be confessed that he scarcely makes any distinction between the *definition of the name* and the *definition of the thing*, Chap. IV. and sometimes the current of his discourse decries the *knowledge of essences* in such general terms as may justly give occasion to mistake.

It must be granted, that the *essence* of most of our *simple ideas*, and the greatest part of particular *natural substances* are much unknown to us; and therefore the essential difference of different qualities, and of the various kinds of bodies, (as I have said before) lie beyond the reach of our understandings: We know not what makes the primary real inward distinctions between *red*, *green*, *sweet*, *sour*, &c. between *wood*, *iron*, *oil*, *stone*, *fire*, *water*, *flesh*, *clay*, in their general natures; nor do we know what are the inward and prime distinctions between all the particular kinds or species in the *vegetable*, *animal*, *mineral*, *metallic*, or *liquid*

world of things. See *Philosophical Essays*, Essay xi. sec. 1. But still there is a very large field for the knowledge of the *essences* of things, and for the use of *perfect definitions* amongst our *complex ideas*, the *modal appearances and changes of nature*, the *works of art*, the *matters of science*, and all the affairs of the *civil* the *moral*, and the *religious life*: And indeed it is of much more importance to all mankind, to have a better acquaintance with the *works of art* for their own livelihood and daily use, with the *affairs of* morality for their behavior in this world, and with the *matters of religion*, that they may be prepared for the world to come, than to be able to give a perfect definition of the works of nature.

If the particular essences of natural bodies are unknown to us, we may be yet good philosophers, good artists, good neighbors, good subjects, and good Christians, without that knowledge; and we have just reason to be content.

Now that the essences of some of the *modal appearances* and *changes in nature*, as well as *things of art*, *science*, and *morality*, are sufficiently known to us to make *perfect definitions* of them, will appear by the specimen of a few definitions of these things.

Motion is a change of a place. *Swiftness* is the passing over a long space in a short time. A *natural day* is the time of one alternate revolution of light and darkness, or it is the circulation of twenty-four hours. An *eclipse of the sun* is a defect in the sun's transmission of light to us by the moon interposing. **Snow* is congealed vapour. **Hail* is congealed rain. An **island* is a piece of land rising above the surrounding water. An **hill* is an elevated part of the earth, and a **grove* is a piece of ground thick set with trees. An *house* is a building made to dwell in. A *cottage* is a mean house in the country. A *supper* is that meal which we make in the evening. A *triangle* is a figure composed of three sides. A *gallon* is a measure con-

*Note—Island, hill, grove, are not defined here in their more remote and substantial natures, (if I may so express it) or as the matter of them is earth: for in this sense we know not their essence, but only as considered in their modal appearances whereby one part of earth is distinguished from another. The same may be said of snow, hail, &c.

taining eight pints. A *Porter* is a man who carries burdens for hire. A *king* is the chief ruler in a kingdom. *Veracity* is the conformity of our words to our thoughts. *Covetousness* is an excessive love of money, or other possessions. *Killing* is the taking away the life of an animal. *Murder* is the unlawful killing of a man. *Rhetoric* is the art of speaking in a manner fit to persuade. *Natural philosophy* is the knowledge of the properties of bodies, and the various effects of them, or it is the knowledge of the various appearance in nature, and their causes; and *Logic* is the art of using our reason well, &c.

Thus you see the essential difference of various beings may be known, and are borrowed from their *qualities* and *properties*, their *causes*, *effects*, *objects*, *adjunct ends*, &c. and indeed, as infinitely various as the *essences* of things are, their *definitions* must needs have various forms.

After all it must be confessed, that many logicians and philosophers in the former ages have made too great a bustle about the exactness of their definitions of things, and entered into long fruitless controversies, and very ridiculous debates in the several sciences, about adjusting the *logical formalities* of every definition; whereas that sort of wrangling is now grown very justly contemptible, since it is agreed that true learning and the knowledge of things depend much more upon a large acquaintance with their various properties, causes, effects, suject, object, ends and designs, than it does upon the formal and scholastic nicenties of *genus* and *difference*.

SECT. VII.

OF A COMPLETE CONCEPTION OF THINGS.

HAVING dwelt so long upon the first *rule* to direct our conceptions, and given an account of the *definition* both of *names* and *things*, in order to gain *clear* and *distinct ideas*, we make haste now to the *second rule*, to guide our conceptions, and that is, *Conceive of things completely in all their parts.*

All *parts* have a reference to some *whole:* Now there is an old distinction which logical writers make of a *whole* and its *parts* into four several kinds, and it may be proper just to mention them here.

1. There is a *metaphysical whole*, when the essence of a thing is said to consist of two *parts*, the *genus* and the *difference*, that is, the general and the special nature, which being joined together make up a *definition*. This has been the subject of the foregoing sections.

2. There is a *mathematical whole*, which is better called *integral*, when the several parts which go to make up the whole are really distinct from one another, and each of them may subsist apart. So the *head*, the *limbs*, and the *trunk*, are the integral parts of any large *number;* so these discourses which I have written concerning *perception*, *judgment*, *reasoning*, and *disposition*, are the four integral parts of *logic*. This sort of parts goes to make up the *completeness* of any subject; and this is the chief and most direct matter of our discourse in this section.

3. There is a *physical or essential whole*, which is usually made to signify and include only the two *essential parts* of man, *body* and *soul:* But I think the sense of it may better be altered, or at least enlarged, and so include all the essential modes, attributes, or properties, which are contained in the *comprehension* of any idea. This shall be the subject of discourse under the *third rule to direct our conceptions*.

4. There is a *logical whole*, which is also called an *universal;* and the *parts* of it are all the *particular ideas* to which this universal nature extends. So a *genus is a whole* in respect to several *species* which are its parts. So the species is a *whole*, and all the *individuals* are the *parts* of it. This shall be treated of, in the *fourth rule to guide our conceptions*.

At present we consider an idea as an *integral whole*, and our *second rule* directs us to contemplate it *in all its parts:* But this can only refer to complex ideas, for simple ideas have no parts.

SECT. VIII.

OF DIVISION AND THE RULES OF IT.

SINCE our minds are narrow in their capacity, and cannot survey the several parts of any complex being, with one single view, as God sees all things at once; therefore we must, as it were, take it to pieces, and consider of the parts separately, that we may have a more complete conception of the whole. So that, if I would learn the nature of a *watch*, the workman takes it to pieces and shews me the *spring*, the *wheels*, the *axles*, the *pinions*, the *balance*, the *dial-plate*, the *pointer*, the *case*, &c. and describes each of these things to me apart, together with their figures and their uses. If I would know what an *animal* is, the anatomist considers the *head* the *trunk*, the *limbs*, the *bowels*, apart from each other, and gives me distinct lectures upon each of them, So a *kingdom* is divided into its several *provinces*; a *book* into its several *chapters*; and any *science* is divided according to the several *subjects* of which it treats.

This is what we properly call the *division* of an *idea*, which is an *explication of the whole by its several parts*, or an *enumeration of the several parts* that go to compose any *whole idea*, and to render it complete. And I think when man is divided into *body* and *soul*, it properly comes under this part of the doctrine of integral *division*, as well as when the mere *body* is divided into *head*, *trunk*, and *limbs*: This division is sometimes called *partition*.

When any of the *parts* of any *idea* are yet farther divided, in order to a clear explication of the *whole*, this is called a *subdivision*; as when a *year* is divided into *months*, each month into *days*, and each day into *hours*, which may also be farther subdivided into *minutes* and *seconds*.

It is necessary, in order to a full explication of any being, to consider *each part*, and the *properties of it*, distinct *by itself*, as well as *in its relation* to the whole: For there are many properties that belong to the several parts of a *being which* cannot properly be ascribed to the whole,

though these properties may fit each part for its proper station, and as it stands in that relation to the whole complex being: As in a *house*, the *doors* are moveable, the *rooms* square, the *ceilings* white, the *windows* transparent, yet the *house* is neither moveable, nor square, nor white, nor transparent.

The special Rules of a good Division are these.

I Rule.....*Each part singly taken must contain less than the whole, but all the parts taken collectively, (or together,) must contain neither more nor less than the whole.* Therefore, if in discoursing of a *tree* you divide it into the *trunk* and *leaves*, it is an imperfect division, because the *root* and the *branches* are needful to make up the whole. So *logic* would be ill divided into *apprehension*, *judgment* and *reasoning*; for *method* is a considerable part of the art which teaches us to use our reason right, and should by no means be omitted.

Upon this account, in every division wherein we design a perfect exactness, it is necessary to examine the whole idea with diligence, lest we omit any parts of it through want of care; though in some cases it is not possible, and in others it is not necessary, that we should dscend to the minutest parts.

II Rule..... *In all divisions we should first consider the larger and more immediate parts of the subject, and not divide it at once into the more minute and remote parts.* It would by no means be proper to divide a *kingdom* first into *streets*, and *lanes*, and *fields*; but it must be first divided into *provinces* or *counties*, then those *counties* may be divided into *towns*, *villages*, *fields*, &c. and *towns* into *streets* and *lanes*.

III Rule.....*The several parts of a division ought to be opposite, that is, one part ought not to contain another.* It would be a rediculous division of an *animal* into *head*, *limb*, *body*, and *brain*, for the *brains* are contained in the head.

Yet here it must be noted, that sometimes the subjects of any treatise, or the objects of any particular science, may be properly and necessarily so divided, that the second may include the first, and the third may include the first and second, without offending against this rule, be-

cause in the second or following parts of the science or discourse these objects are not considered in the same manner as in the first; as for instance, *geometry* divides its objects into *lines*, *surfaces*, and *solids*: Now, though a *line* be contained in a *surface* or a *solid*, yet it is not considered in a *surface*, separate and alone, or as a *mere line*, as it is in the first part of *geometry*, which treats of *lines*. So *logic* is rightly divided into *conception*, *judgment*, *reasoning*, and *method*. For, though *ideas* or *conceptions* are contained in the following parts of *logic*, yet they are not there treated of as *separate ideas*, which are the **proper subject** of the first part.

IV Rule.....*Let not subdivisions be too numerous without necessity*: For it is better many times to distinguish more parts at once, if the subject will bear it, than to mince the discourse by excessive dividing and subdividing. It is preferable therefore, in a treatise of *geography*, to say, that in a *city* we will consider its *walls*, its *gates*, its *buildings*, its *streets*, and *lanes*, than to divide it formerly first into the *encompassing* and the *encompassed* parts; the encompassing parts are the *walls* and *gates*, the encompassed parts include the *ways* and *buildings*; the ways are the *streets* and the *lanes*; buildings consist of the *foundations* and the *superstructure*, &c.

Too great a number of subdivisions has been affected by some persons in sermons, treatises, instructions, &c. under pretence of great accuracy: But this sort of subtilities hath often caused great confusion to the understanding, and sometimes more difficulty to the memory. In these cases it is only a good judgment can determine what *subdivisions* are useful.

V Rule.....*Divide every subject according to the special design you have in view*. One and the same idea or subject may be divided in very different manners, according to the different purposes we have in discoursing of it. So if a *printer* were to consider the several parts of a *book*, he must divide it into *sheets*, the *sheets* into *pages*, the *pages* into *lines*, and the *lines* into *letters*. But a *grammarian* divides a *book* into *periods*, *sentences*, and *words*, or parts of *speech*, as *noun*, *pronoun*, *verb*, &c. A logician considers a *book* as divided into *chapters*, sections, arguments, propositions, *ideas*; and, with the help of ontology, he divi-

the *propositions* into *subject*, *object*, *property*, *relation*, *action*, *passion*, *cause*, *effect*, &c. But it would be very ridiculous for a *logician* to divide a *book* into *sheets*, *pages* and *lines*; or for a *printer* to divide it into *nouns* and *pronouns*, or into *propositions*, *ideas*, *properties*, or *causes*.

VI Rule.....*In all your divisions observe with the greatest exactness the nature of things* And here I am constrained to make a subdivision of this rule into two very necessary particulars.

(1.) *Let the parts of your divisions be such as are properly distinguished in nature.* Do not divide asunder those parts of the idea which are intimately united in nature, nor unite those things into one part which nature has evidently disjoined: Thus it would be very improper, in treating of an *animal body*, to divide it into the *superior* and *inferior halves*; for it would be hard to say how much belongs by nature to the *inferior half*, and how much to the *superior*. Much more improper would it be still to divide the *animal* into the *right hand parts* and *left hand parts*, which would bring greater confusion. This would be as unnatural as if a man should cleave a *hasel nut* in halves through the *husk*, the *shell*, and the *kernel*, at once, and say, a *nut is divided into these two parts*; whereas nature leads plainly to the threefold distinction of *husk*, *shell*, and *kernel*.

(2.) *Do not affect duplicates, nor triplicates, nor any certain number of parts in your division of things*; for we know of no such certain number of parts which God the Creator has observed in forming all the varieties of his creatures; nor is there any uniform determined number of parts in the various subjects of human art or science; yet some persons have disturbed the order of nature, and abused their readers, by an affectation of *dichotomies*, *trichotomies*, *sevens*, *twelves*, &c. Let the nature of the subject, considered together with the *design* which you have in view, always determine the *number* of parts into which you divide it.

After all, it must be confessed, that an intimate knowledge of things, and a judicious observation, will assist in the business of *division*, as well as of *definition*, better than too nice and curious an attention to the mere formalities of logical writers, without a real acquaintance with things.

SECT. IX.

OF A COMPREHENSIVE CONCEPTION OF THINGS, AND OF ABSTRACTION.

THE *third rule* to direct our conceptions requires us to *conceive of things comprehensively.* As we must survey an object in all its *parts* to obtain a *complete* idea of it, so we must consider it in all its *modes*, *attributes*, *properties* and *relations*, in order to obtain a *comprehensive* conception of it.

The *comprehension* of an idea, as it was explained under the doctrine of universals, includes only the *essential modes* or *attributes* of that *idea*; but in this place the word is taken in a larger sense, and implies also the various *occasional properties*, *accidental modes*, and *relations*.

The necessity of this rule is founded upon the same reason as the former, namely, That our minds are narrow and scanty in their capacities, and as they are not able to consider all the *parts* of a complex idea *at once*, so neither can they *at once* contemplate all the different *attributes* and *circumstances* of it: We must therefore consider things *successively* and *gradually* in their various appearances and circumstances: As our natural eye cannot at once behold the *six sides of a die or cube*, nor take cognizance of all the *points* that are marked on them, and therefore we turn up the sides successively, and thus survey and number the points that are marked on *each side*, that we may know the whole.

In order to a *comprehensive* view of any idea, we must first consider, whether the object of it has an *existence* as well as *essence*; whether it be a *simple* or *complex idea*; whether it be a *substance* or a *mode*. If it be a *substance*, then we must inquire what are the *essential modes* of it which are necessary to its nature, and what are those *properties* or *accidents* of it which belong to it occasionally or as it is placed in some particular circumstances: We must view it in its *internal* and *absolute* modes, and observe it in those various *external relations* in which it stands to

other beings: We must consider it in its *powers* and *capacities* either to *do* or *suffer*: We must trace it up to its various *causes*, whether supreme or subordinate. We must descend to the variety of its *effects*, and take notice of the several *ends* and *designs* which are to be attained by it. We must conceive of it as it is either an *object or a subject*, what are the things that are *akin* to it, and what are the *opposites* or *contraries* of it; for many things are to be known both by their *contrary* and *kindred* ideas.

If the thing we discourse of be a mere *mode*, we must inquire whether it belongs to *spirits* or *bodies*; whether it be a *physical* or *moral* mode; If *moral*, then we must consider its relation to *God*, to our *selves*, to our *neighbor*; its reference to *this life*, or the *life to come*. If it be a *virtue*, we must seek what are the *principles* of it, what are the *rules* of it, what are the *tendencies* of it, and what are the *false virtues* that counterfeit it, and what are the *real vices* that oppose it, what are the *evils* which attend the *neglect* of it, and what are the *rewards* of the *practice* of it, both *here* and *hereafter*.

If the subject be *historical*, or a *matter of fact*, we may then inquire whether the action was *done at all*; whether it was done *in such a manner*, or by *such persons* as is reported; at *what time* it was done; in *what place*; by *what motive*, and for *what design*; what is the *evidence of the fact*; *who are the witnesses*; what is their *character* and *credibility*; what *signs* there are of such a fact; what *concurrent circumstances* which may either support the truth of it, or render it doubtful.

In order to make due inquiries into all these, and many other particulars which go towards the *complete* and *comprehensive* idea of any being, the science of *ontology* is exceeding necessary. This is what was wont to be called the *first of metaphysics* in the *Peripatetick* schools. It treats of *being in its most general nature, and of all its affections* and *relations*. I confess the old Popish schoolmen have mingled a number of useless subtilities with this science; they have exhausted their own spirits, and the spirits of their readers, in many laborious and intricate trifles; and some of their writings have been fruitful of *names without ideas*, which have done much injury to the sacred study of

divinity. Upon this account many of the moderns have most unjustly abandoned the whole science at once, and throw abundance of contempt and raillery upon the very name of *metaphysics*; but this contempt and censure is very unreasonable; for this science, separated from some Aristotelian fooleries, and scholastic subtilities, is so necessary to a distinct conception, solid judgment, and just reasoning on many subjects, that sometimes it is introduced as a *part of logic*, and not without reason. And those who utterly despise and ridicule it, either betray their own ignorance, or will be supposed to make their wit and banter a refuge and excuse for their own laziness. Yet this much I would add, that the later writers of *ontology* are generally the best on this account, because they have left out much of the ancient jargon. See the *Brief Scheme of Ontology* in the *Philosophical Essays*, by *I. Watts*.

Here let it be noted, that it is neither useful, necessary, or possible, to run through *all the modes, circumstances* and *relations* of every subject we take in hand; but in *ontology* we enumerate a great variety of them, that so a judicious mind may chosse what are those *circumstances*, *relations*, and *properties* of any subject, which are most necessary to the present design of him that speaks or writes, either to explain, to illustrate, or to prove the point.

As we arrive at the *complete* knowledge of an idea in all its *parts*, by that act of the mind which is called *division*, so we come to a *comprehensive* conception of a thing in its several *properties* and *relations*, by that act of the mind which is called *abstraction*; that is, we consider each single relation or property of the subject alone; and thus we do as it were withdraw and separate it in our minds, both from the subject itself, as well as from other properties and relations, in order to make a fuller observation of it.

This act of *abstraction* is said to be twofold, either *precisive* or *negative*.

Precisive abstraction is when we consider those things apart which cannot really exist apart; as when we consider a *mode* without considering its *substance* and *subject*, or one *essential mode* without *another*. *Negative abstraction* is, when we consider one thing separate from another,

which may also exist without it; as when we conceive of a *subject* without conceiving of its *accidental modes* or *relations*; or when we conceive of *one accident* without thinking of *another*. If I think of *reading* or *writing* without the express idea of some *man*, this is *precisive abstraction*; or if I think of the *attraction of iron*, without the express idea of some particular magnetic body. But, when I think of a *needle* without an idea of its *sharpness*, this is *negative abstraction*; and it is the same when I think of its *sharpness* without considering its *length*.

SECT. X.

OF THE EXTENSIVE CONCEPTION OF THINGS, AND OF DISTRIBUTION.

AS the *completeness* of an idea refers to the several *parts* that compose it, and the *comprehension* of an idea includes its various *properties*; so the *extension* of an idea denotes the various *sorts* or *kinds* of *beings* to which the same idea belongs: And if we would be fully acquainted with a subject, we must observe

This *fourth rule* to direct our conceptions, namely, *Conceive of things in all their extension*; that is, we must search out the various *species* or *special natures* which are contained under it, as a *genus* or *general nature*. If we would know the nature of an *animal* perfectly, we must take cognizance of *beast*, *birds*, *fishes*, and *insects*, as well as *men*, all which are contained under the general nature and name of *animal*.

As an *integral whole* is distinguished into its several parts by *division*; so the word *distribution* is most properly used when we distinguish an *universal whole* into its several kinds or species: And perhaps it had been better, if this word had been always confined to its signification, though it must be confessed that we frequently speak of the *division* of an idea into its several kinds, as well as into its several parts.

The rules of a good *distribution* are much the same with those which we have before applied to *division*, which

must be just repeated again in the briefest manner, in order to give examples of them.

Rule I.....Each part *singly* taken must contain less than the whole, but all the parts taken *collectively*, or *together*, must contain neither more nor less than the whole; or, as *logicians* sometimes express it, the *parts of the division ought to exhaust the whole thing which is divided.* So *medicine* is justly distributed into *prophylactic*, or the art of preserving health; and *therapeutic*, or the art of restoring health; for there is no other sort of medicine besides these two. But *men* are not well distributed into *tall* or *short*, for there are some of a *middle stature.*

Rule II..... In all *distributions* we should first consider the larger and more immediate kinds of species, or ranks of being, and not divide a thing at once into the more minute and remote. A *genus* should not at once be divided into *individuals*, or even into the *lowest species*, if there be a *species superior.* Thus it would be very improper to divide *animal* into *trout*, *lobster*, *eel*, *dog*, *bear*, *eagle*, *dove*, *worm*, *and butterfly*, for there are inferior kinds; whereas *animal* ought first to be distributed into *man*, *beast*, *bird*, *fish*, *insect*; and then *beast* should be distributed into *dog*, *bear*, &c. *Bird* into *eagle*, *dove*, &c. *Fish* into *trout*, *eel*, *lobster*, &c.

It is irregular also to join any species in the same rank or order with the superior; as, if we should distinguish *animals* into *birds*, *bears*, and *oysters*, &c. it would be a ridiculous distribution.

Rule III.....The several parts of a distribution ought to be opposite; that is, one species or class of beings in the same rank of division, ought not to contain or include another; so *men* ought not to be divided into the *rich*, the *poor*, the *learned*, and the *tall*; for *poor men* may be both *learned* and *tall*, and so may the *rich.*

But it will be objected, Are not *animated bodies* rightly distributed into *vegetative* and *animal*, or (as they are usually called) *sensitive?* Now the *sensitive* contains the *vegetative* nature in it, for *animals* grow as well as plants. I answer, that in this, and in all such distributions, the word *vegetative* signifies *merely vegetation*; and in this sense *vegetative will* be sufficiently opposite to *animal*; for it

cannot be said of an *animal* that it contains *mere vegetation* in the idea of it.

Rule IV.....Let not subdivisions be too numerous without necessity; therefore I think *quantity* is better distinguished at once into a *line*, *surface*, and a *solid*; than to say, as *Ramus* does, that *quantity is either a line or a thing lined*; and a *thing lined is either a line or a solid.*

Rule V.....Distribute every subject according to the special design you have in view, so far as is necessary or useful to your present inquiry. Thus a *politician* distributes mankind according to their civil characters into the *rulers* and the *ruled*; and a *physician* divides them into the *sick* or the *healthy*; but a *divine* distributes them into *Turks*, *Heathens*, *Jews*, or *Christians*.

Here *note*, That it is a very useless thing to distribute any idea into such kinds or members as have no different properties to be spoken of; as it is mere trifling to divide *right angles* into such *whose legs are equal and whose legs are unequal*, for as to the mere right angles they have no different properties.

Rule VI.....In all your distributions observe the nature of things with great exactness, and do not affect any particular form of distribution, as some persons have done, by dividing *every genus* into *two species*, or into *three species*; whereas nature is infinitely various, and human affairs and human sciences have as great a variety; nor is there any one form of distribution that will exactly suit with all subjects.

Note.....It is to this doctrine of *distribution of genus into its several species* we must also refer the distribution of a *cause* according to its several *effects*, as some *medicines are heating*, *some are cooling*; or an *effect*, when it is distinguished by its causes, as *faith is either built upon divine testimony* or *human*. It is to this head we refer particular *artificial bodies*, when they are distinguished according to the *matter* they are made of, as a *statue is either of brass*, *of marble*, *or of wood*, &c. and any other *beings*, when they are distinguished according to their *end* and *design*, as the *furniture* of *body* or *mind is either for ornament or use*. To this head also we refer *subjects* when they are divided according to their *modes* or *accidents*; *as men are either merry*, *or grave*, *or sad*; and *modes*, when they are divided by

their *subjects*, as *distempers belong to the fluids, solid parts of the animal.*

It is also to this place we reduce the *processes o faulty under its various cases*, whether it be in spe or practice: As, to shew the reason of *sun-beam wood, whether it be done by a convex glass or a co* or to shew the *construction and mensuration of tri* whether you have two angles and a side given, or tw and an angle, or only three sides. Here it is necess distribute or *divide a difficulty in all its cases*, in or gain a perfect knowledge of the subject you contem

It might be observed here, that *logicians* have somet given a *mark* or *sign* to distinguish when it is an *int whole* that is divided into its *parts* or *members*, or wh is a *genus*, *an universal whole*, that is distributed inte *species* and *individuals*. The rule they give is this: Wh soever the whole idea can be directly and properly affi ed of each part, as, a *bird is an animal*, a *fish is an anim Bucephalus is a horse*, *Peter is a man*, then it is a distri tion of a *genus* into its *species*, or a *species* into its *indiv uals*: But when the whole cannot be thus directly affirm concerning every part, then it is a division of an *integ* into its several *parts* or *members*; as we cannot say t *head*, the *breast*, the *hand*, or the *foot is an animal*, but say, *the head is a part of the animal*, and the *foot* is ano er *part*.

This rule may hold true generally in corporeal bein or perhaps in all substances: But, when we say *the f of God is wisdom*, *and so is human civility*; *criticism is t learning*, *and so is philosophy*: *To execute a murderer justice*, *and to save and defend the innocent is justice* In these cases it is not so easily determined, whether intergral whole be divided into its parts, or an univer into its species: For the *fear of God* may be called eit one *part*, or one *kind* of *wisdom*: *Criticism* is one *part*, one *kind* of *learning*: And the *execution of a murde* may be called a *species of justice*, as well as a *part* of Nor indeed is it a matter of great importance to determ this controversy.

SECT. XI.

OF AN ORDERLY CONCEPTION OF THINGS.

THE *last rule* to direct our conceptions is, that *ould rank and place them in proper method and just or-*

This is of necessary use to prevent confusion; for, *rader* who never places his goods in his shop or ware- in a regular order, nor keeps his accounts of his buy- nd selling, paying and receiving, in a just method, is utmost danger of plunging all his affairs into con- and ruin; so a *student* who is in the search of truth, *author* or *teacher* who communi- cates knowledge to s, will very much obstruct his design, and confound wn mind or the minds of his hearers, unless he range eas in just order.

we would therefore become successful learners or ers we must not conceive of things in a *confused heap*, ispose our ideas in some *certain method*, which may be easy and useful both for the understanding and mem- and be sure, as much as may be, *to follow the nature ngs*, for which many rules might be given; namely, Conceive as much as you can of the *essentials* of any ct, before you consider its *accidentals*.

Survey first the general *parts* and *properties* of any ct, before you extend your thoughts to discourse of articular *kinds* or *species* of it.

Contemplate things first in their own *simple natures*, fterwards view them in *composition* with other things; s it be your present purpose to take a *compound being* ces, in order to find out, or to shew the nature of it, arching and discovering of what *simples* it is com- d.

Consider the *absolute modes* or affections of any being is in itself, before you proceed to consider it *relatively*; survey the various *relations* in which it stands to beings, &c.

te—These rules chiefly belong to the method of in- tion which the learned call *synthetic*.

But in the regulation of our ideas, there is seldom an absolute necessity that we should place them in this or the other particular method: It is possible in some cases that many methods may be equally good, that is, may equally assist the understanding and the memory: To frame a method exquisitely accurate, according to the strict nature of things, and to maintain this accuracy from the beginning to the end of a treatise, is a most rare and difficult thing, if not impossible. But a larger account of *method* would be very improper in this place, lest we anticipate what belongs to the *fourth part of logic*.

SECT. XII.

THESE FIVE RULES OF CONCEPTION EXEMPLIFIED.

IT may be useful here to give a specimen of the *five special rules to direct our conceptions*, which have been the chief subject of this long chapter, and represent them practically in one view.

Suppose the theme of our discourse was the *passions of the mind*.

1*st*, To gain a *clear* and *distinct* idea of *passion*, we must *define* both the *name* and the *thing*.

To begin with the *difinition of the name*. We are not here to understand the word *passion* in its vulgar and most limited sense, as it signifies merely *anger* or *fury*; nor do we take it in its most extensive philosophical sense, for the *sustaining the action* of an *agent*; but in the more limited philosophical sense, *passions* signify the *various affections of the mind*, such as *admiration*, *love*, or *hatred*; this is the definition of the name.

We proceed to the *definition of the thing*. *Passion* is defined *a sensation of some special commotion in animal nature, occasioned by the mind's perception* of some object suited to

excite that commotion. Here* the *genus*, or general nature of *passion*, is a *sensation of some special commotion in animal nature;* and herein it agrees with hunger, thirst, pain, &c. The *essential difference* of it is, that this *commotion arises from a thought or perception of the mind*, and hereby it is distinguished from hunger, thirst, or pain.

2*dly*, We must conceive of it *completely*, or survey the several parts that compose it. These are, (1.) *The mind's perception of some object.* (2.) *The consequent ruffle, or special commotion of the nerves, and blood, and animal spirits.* And, (3.) *The sensation of this inward commotion.*

3*dly*, We must consider it *comprehensively*, in its various *properties.* The most essential attributes that make up its nature have been already mentioned under the foregoing heads. Some of the most considerable properties that remain are these, namely, That *passion belongs to all mankind* in greater or lesser degrees: *It is not constantly present with us, but upon some certain occasions:* It is *appointed by our Creator for various useful ends and purposes*, namely, to give us vigour in the pursuit of what is good and agreeable to us, or in the avoidance of what is hurtful: *It is very proper for our state of trial in this world: It is not utterly to be rooted out of our nature, but to be moderated and governed according to the rules of virtue and religion*, &c.

4*thly*. We must take cognizance of the various *kinds* of it, which is called an *extensive conception* of it. If the object which the mind perceives be very *uncommon*, it excites the passion of *admiration:* If the object appears *agreeable*, it raises *love:* If the agreeable object be *absent* and *attainable*, it causes *desire:* If likely to be *obtained*, it excites *hope:* If

* Since this was written, I have published a short treatise of the passions, wherein I have so far varied from this definition, as to call them sensible commotions of our whole nature, both soul and body, occasioned by the mind's perceptions of some object, &c. I made this alteration in the description of the passions in that book chiefly to include in a more explicit manner, the passions of desire and aversion, which are acts of volition rather than sensations. Yet since some commotions of animal nature attend all the passions, and since there is always a sensation of these commotions I shall not change the definition I have written here; for this will agree to all the passions whether they include any act of volition or not; nor indeed is the matter of any great importance. Nov. 17, 1728.

But in the regulation of our ideas, there is seldom absolute necessity that we should place them in this or other particular method : It is possible in some cases many methods may be equally good, that is, may equally assist the understanding and the memory : To frame methods exquisitely accurate, according to the strictest rules of things, and to maintain this accuracy from the beginning to the end of a treatise, is a most rare and difficult, if not impossible. But a larger account of *method* would be very improper in this place, lest we anticipate what belongs to the *fourth part of logic*.

SECT. XII.

THE FIVE RULES OF CONCEPTION EXEMPLIFIED.

It may be useful here to give a specimen of the *rules to direct our conceptions*, which have been the chief subject of this long chapter, and represent them briefly in one view.

Suppose the theme of our discourse was the *passions of men*.

1. To gain a clear and *distinct* idea of *passion*, we must first fix the *name* and the *thing*.

2. We begin with the *definition of the name*. We are here to understand the word *passion* in its vulgar and popular sense, as it signifies merely *anger* or *fury* ; not as we use it in its most extensive philosophical sense, for any sudden action of an *agent* ; but in the more limited philosophical sense, *passions* signify the *various affections of the mind*, such as *admiration*, *love*, or *hatred* ; this is the definition of the name.

3. We proceed to the *definition of the thing*. *Passion* is defined to be *some special commotion in animal nature, arising from the mind's perception of some object suited*

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unattainable, *despair*. If it be *present* and *possessed*, it is the passion of *joy*: If *lost*, it excites *sorrow*: If the object be *disagreeable*, it causes, in general, *hatred* or *aversion*: If it be *absent*, and yet we are in *danger* of it, it raises our *fear*: If it be *present*, it is *sorrow*, and *sadness*, &c.

5thly, All these things and many more, which go to compose a treatise on this subject, must be placed in their *proper order*: A slight specimen of which is exhibited in this short account of *passion*, and which that admirable author *Descartes* has treated of at large; though for want of sufficient experiments and observations in natural philosophy, there are some few mistakes in his account of animal nature.

SECT. XIII.

AN ILLUSTRATION OF THESE FIVE RULES BY SIMILITUDES.

THUS we have brought the first part of *logic* to a conclusion: And it may not be improper here to represent its excellencies (so far as we have gone) by general hints of its *chief design* and *use*, as well as by a various *comparison* of it to those instruments which mankind have invented for their several conveniences and improvements.

The *design of logic* is not to furnish us with the perceiving faculty, but only *direct* and *assist* us in the use of it: It doth not give us the objects of our ideas, but only *casts such a light* on those objects which nature furnishes us with, that they may be the more clearly and distinctly known: It doth not add new parts or properties to things, but it *discovers* the various parts, properties, relations, and dependencies of one thing upon another, and by *ranking all things* under *general* and *special heads*, it renders the nature, or any of the properties, powers, and uses of a thing, more easy to be found out, when we seek in what rank of beings it lies, and wherein it agrees with, and wherein it differs from others.

If any comparisons would illustrate this, it may be thus represented.

I. When logic assists us to attain a *clear* and *distinct*

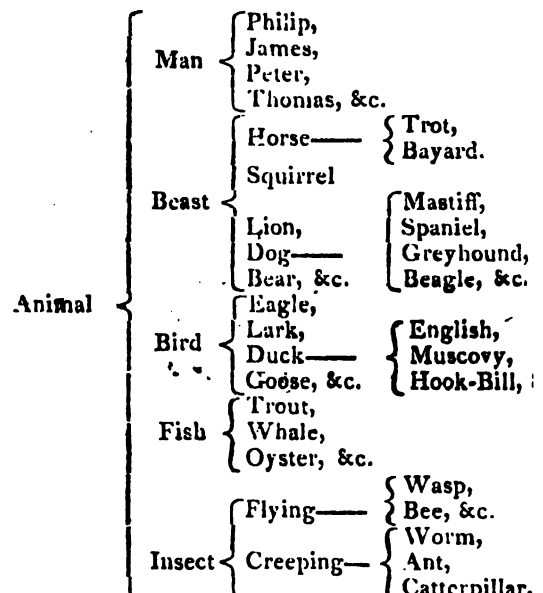
conception of the nature of things by *definition*, it is like those *glasses* whereby we behold such objects *distinctly*, as, by reason of their smallness, or their great distance, appear in *confusion* to the naked eye: So the telescope discovers to us distant wonders in the heavens, and shews the *milky way*, and the *bright cloudy spots* in a very dark sky, to be a collection of little stars, which the eye unassisted beholds in a mingled confusion. So when bodies are too *small* for our sight to survey them distinctly, then the *microscope* is at hand for our assistance, to shew us all the *limbs* and *features* of the most *minute animals*, with great clearness and distinction.

II. When we are taught by logic to view a thing *completely* in all its *parts*, by the help of *division*, it has the use of an *anatomical knife*, which dissects an animal body, and separates the *veins*, *arteries*, *nerves*, *muscles*, *membranes*, &c. and shews us the several parts which go to the composition of a complete animal.

III. When logic instructs us to survey an object *comprehensively* in all the *modes*, *properties*, *relations*, *faces*, and *appearances* of it, it is of the same use as a terrestrial globe, which turning round on its axis represents to us all the variety of *lands* and *seas*, *kingdoms* and *nations*, on the surface of the earth, in a very short succession of time shews the situations and various relations of them to each other, and gives a comprehensive view of them in miniature.

IV. When this art teaches us to *distribute* any *extensive* idea into its different *kinds* or *species*, it may be compared to the *prismatic glass*, that receives the sun-beams or *rays of light*, which seem to be uniform when falling upon it, but it separates and distributes them into their different *kinds* and *colours*, and ranks them in their proper succession.

Or, if we descend to *subdivisions* and subordinate ranks of being, then *distribution* may also be said to form the resemblance of a *natural tree*, wherein the *genus* or general idea stands for the *root* or *stock*, and the several *kinds* or *species*, and *individuals*, are distributed abroad, and represented in their dependence and connection, like the several *boughs*, *branches*, and *lesser shoots*. For instance let *animal* be the *root* of a logical tree, the resemblance is seen by mere inspection, though the root be not placed at the bottom of the page.



The same similitude will serve also to illustr*division* and *subdivision* of an *integral whole* into its parts.

When logic directs us to place all our ideas in a *method*, most convenient both for instruction and m it doth the same service as the *cases of well contrived in a large library*, wherein *folios*, *quartos*, *octavos*, an *volumes*, are disposed in such exact order, under t ticular heads of *divinity*, *history*, *mathematics*, *ancie miscellaneous* learning, *&c.* that the student knows to find every book, and has them all as it were witl command at once, because of the exact order where are placed.

The man who has such assistance as these at ha order to manage his *conceptions*, and regulate his *id* well prepared to improve his knowledge, and to *joi ideas together* in a regular manner by *judgment*, w the second operation of the mind, and will be the s of the second part of logic.

THE

Second Part of Logic.

OF JUDGMENT AND PROPOSITION.

WHEN the mind has got acquaintance with things by framing *ideas* of them, it proceeds to the next operation, and that is, to compare these ideas together, and to join them by *affirmation*, or disjoin them by *negation*, according as we find them to agree or disagree. This act of the mind is called *judgment*; as when we have by perception obtained the ideas of *Plato* a *philosopher*, *man innocent*, we form these judgments; *Plato was a philosopher: No man is innocent.*

Some writers have asserted, that *judgment* consists in a *mere perception of the agreement or disagreement of ideas*. But I rather think there is an act of the will (at least in most cases) necessary to form a *judgment*; for, though we do perceive, or think we perceive, ideas to *agree* or *disagree*, yet we may sometimes *refrain from judging* or assenting to the perception, for fear lest the perception should not be sufficiently clear, and we should be mistaken: And I am well assured at other times, that there are multitudes of *judgments formed*, and a firm assent given to ideas *joined* or *disjoined*, before there is any clear perception whether they agree or disagree; and this is the reason of so many *false judgments* or mistakes among men. Both these practices are a proof that *judgment* has something of the *will* in it, and does not merely consist in *perception*; since we sometimes judge (though unhappily) without perceiving, and sometimes we perceive without immediate judging.

As an *idea* is the result of our *conception* or *apprehension*, so a *proposition* is the effect of *judgment*. The foregoing sentences, which are examples of the act of judgment, are properly called *propositions*. *Plato is a philosopher*, &c.

Here let us consider,

1. The general nature of a proposition, and the parts of which it is composed.
2. The various divisions or kinds of propositions.
3. The springs of false judgment, or the doctrine of prejudices.
4. General directions to assist us in judging right.
5. Special rules to direct us in judging particular objects.

CHAP. I.

OF THE NATURE OF A PROPOSITION, AND ITS SEVERAL PARTS.

A PROPOSITION is a sentence wherein two or more *ideas* or *terms* are joined or disjoined by one affirmation or negation, as *Plato was a philosopher*: *Every angle is formed by two lines meeting*: *No man living on earth can be completely happy*. When there are ever so many ideas or terms in the sentence, yet if they are joined or disjoined merely by one single affirmation or negation, they are properly called but *one proposition*, though they may be resolved into several propositions which are implied therein, as will hereafter appear.

In describing a proposition, I use the words *terms* as well as *ideas*, because, when mere ideas are joined in the mind without words, it is rather called a *judgment*; but when clothed with words it is called a *proposition*, even though it be in the mind only, as well as when it is expressed by speaking or writing.

There are *three* things which go to the nature and constitution of a proposition, namely, the *subject*, the *predicate*, and the *copula*.

subject of a proposition is that concerning which
ng is affirmed or denied : So *Plato, ang[illegible]man liv-*
arth, are the subjects of the foregoing propositions.
predicate is that which is affirmed or denied of the
; so *philosopher* is the predicate of the first propo-
formed by two lines meeting, is the predicate of the
; *capable of being completely happy*, the proper pre-
of the third.
subject and *predicate* of a *proposition* taken togeth-
called the *matter* of it ; for these are the materials
h it is made.
copula is the *form* of a proposition ; it represents
of the mind affirming or denying, and it is ex-
by the words, *am, art, is, are*, &c. or *am not, art not,*
re not, &c.
not a thing of importance enough to create dispute,
r the word *no, none, not, never*, &c. which disjoin
a or terms in a negative proposition, shall be cal-
art of the subject of the *copula*, or of the *predicate*.
mes perhaps they may seem most naturally to be
d in one, and sometimes in the other of these.
a proposition is usually denominated *affirmative* or
e from its *copula*, as hereafter.

1.....Where each of these parts of a proposition is
ressed distinctly in so many words, yet they are all
ood, and implicitly contained therein ; as *Socrates*
d, is a complete proposition, for it signifies *Socrates*
huting. So *I die*, signifies *I am dying*. *I can write.*
I am able to write. In Latin and Greek one single
many times a complete composition.

2 ....These words, *am, art, is*, &c. when they are
one without any other predicate, signify both the
he mind judging, which includes the *copula*, and sig-
o *actual* existence, which is the *predicate* of that
tion. So *Rome is*, signifies *Rome is existent :*
re some strange monsters : that is, *Some strange*
s are existent : Carthage is no more, that is, *Car-*
ge is no being.

3....The subject and predicate of a proposition are
ays to be known and distinguished by the placing
words in the sentence, but by reflecting duly on the

sense of the words, and on the mind and design of the speaker or writer: As if I say, *In Africa there are many lions*, I mean *many lions are existent in Africa: Many lions* is the subject, and *existent in Africa* is the predicate. *It is proper for a philosopher to understand geometry*; here the word *proper* is the predicate, and all the rest is the subject, except *Is* the copula.

Note 4...The subject and predicate of a proposition ought always to be two different *ideas*, or two different *terms*; for, where both the *terms* and *ideas* are the same, it is called an *identical proposition*, which is mere trifling, and cannot tend to promote knowledge; such as, *A rule is a rule* or *A good man is a good man*. But there are some propositions, wherein the *terms* of the subject and predicate seem to be the same; yet the *ideas* are not the same, nor can these be called *purely identical* or trifling propositions; such as *Home is home*; that is, *Home is a convenient* or *delightful place*; *Socrates is Socrates still*; that is, *The man Socrates is still a philosopher*: *The hero was not a hero*, that is, *The hero did not shew his courage*; *What I have written, I have written*; that is, *What I wrote I still approve, and will not alter it*: *What is done is done*; that is, *it cannot be undone*. It may be easily observed in these propositions the term is *equivocal*, for in the *predicate* it has a different idea from what it has in the *subject*.

There are also some propositions wherein the *terms* of the subject and predicate differ, but the *ideas* are the same; and these are not *merely identical* or trifling propositions; as *impudent* is *shameless*; a *billow* is a *wave*; or *fluctus* (in Latin) is a *wave*; a *globe* is a *round body*. In these propositions either the words are explained by a definition of the name, or the ideas by a definition of the thing, and therefore they are by no means useless when formed for this purpose.

CHAP. II.

OF THE VARIOUS KINDS OF PROPOSITIONS.

PROPOSITIONS may be distributed into various kinds, according to their *subject*, their *copula*, their *predicate*, their *nature* or *composition*, their *sense*, and their *evidence*, which distributions will be explained in the following sections.

SECT. I.

OF UNIVERSAL, PARTICULAR, INDEFINITE, AND SINGULAR PROPOSITIONS.

PROPOSITIONS may be divided, according to their *subject*, into *universal* and *particular*; this is usually called a division arising from the *quantity*.

An *universal proposition* is when the subject is taken according to the whole of its extension; so, if the subject be a *genus*, or a general nature, it includes all its *species* or *kinds*: If the subject be a *species*, it includes all individuals. This universality is usually signified by these words, *all*, *every*, *no*, *none*, or the like; as, *All men must die*: *No man is almighty*: *Every creature had a beginning*.

A *particular proposition*, is when the subject is not taken according to its whole extension; that is, when the term is limited and restrained to some one or more of those *species* or *individuals* whose general nature it expresses, but reaches not to all; and this is usually denoted by the words, *some*, *many*, *few*, *there*, *are*, *which*, &c. as *Some birds can sing well*; *Few men are truly wise*: *There are parrots which will talk an hundred things*.

A *singular proposition* is when the subject is a singular or individual term or idea: as, *Descartes was an ingenious philosopher*: *Sir Isaac Newton has far exceeded all his predecessors*: *The palace at Hampton* Court is a pleasant *dwelling*: *This day is very cold*. The subject here must be

Note 4...The *universality* of a subject is often restrained by a part of the predicate; as when we say, All men learn wisdom by experience: the universal subject, *all men*, is limited to signify only *all those men who learn wisdom*. The scripture also uses this sort of language, when it speaks of 'all men being justified by the righteousness of one,' Ro. v. 10. that is, all men who are justified obtain it in this way.

Observe here, That not only a metaphysical or natural, but a *moral* universality also is oftentimes to be restrained by a part of the predicate; as when we say, All the Dutch are good seamen: All the Italians are subtil politicians; that is, those among the Dutch that are seamen are good seamen; and those among the Italians who are politicians are subtil politicians, that is, they are generally so.

Note 5....The universality of a term is many times restrained by the particluar time, place, circumstance, &c. or the design of the speaker; as, if we were in the city of London, and say, All the weavers went to present their petition; we mean only, All the weavers who dwelt in the city. So when it is said in the gospel, All men did marvel, Mark v. 20. it reaches only to All those men who heard of the miracles of our Saviour.

Here also it should be observed, that a *moral universality* is restrained by *time*, *place*, and other circumstances, as well as a *natural*; so that by these means the word *all* sometimes does not extend to a tenth part of those who at first might seem to be included in that word.

One occasion of these difficulties and ambiguities, that belong to *universal propositions*, is the common humor and temper of mankind, who generally have an inclination to magnify their ideas, and to talk roundly and *universally* concerning any thing they speak of; which has introduced universal terms of speech into custom and habit, in all nations and all languages, more than nature or reason would dictate; yet, when this custom is introduced, it is not at all improper to use this sort of language in solemn and sacred writings, as well as in familiar discourse.

II. Remarks concerning *indefinite propositions*.

Note 1....Propositions carrying in them universal forms of expression may sometimes drop the *note of universality and become indefinite*, and yet retain the same universal

sense, whether *metaphysical*, *natural*, or *moral*, whether *collective* or *distributive*.

We may give instances of each of these.

Metaphysical; as, *A circle has a centre and circumference.* Natural; as, *Beasts have four feet.* Moral; as, *Negroes are stupid creatures.* Collective; as, *The apples will fill a bushel.* Distributive; as, *Men are mortal.*

Note 2.... There are many cases wherein a *collective idea* is expressed in a proposition by an *indefinite term*, and that where it describes the *nature* or *quality* of the subject, as well as when it declares some *past matters of fact*; as, *Fir trees set in good order will give a charming prospect*; this must signify a *collection*, for one makes no prospect. In matters of fact this is more evident and frequent; as, *The Romans overcame the Gauls: The robbers surrounded the coach: The wild geese flew over the Thames in the form of a wedge.* All these are collective subjects.

Note 3....In *indefinite propositions* the subject is often restrained by the predicate, or by the special time, place, or circumstances, as well as in propositions which are expressly universal; as, *The Chinese are ingenious silk weavers*; that is, those Chinese which are *silk-weavers* are *ingenious* at their work. *The stars appear to us when the twilight is gone*; this can signify no more than the *stars* which are above our horizon.

Note 4....All these restrictions tend to reduce some *indefinite* propositions almost into *particular*, as will appear under the next remarks.

III. Remarks concerning *particular propositions.*

Note 1.....As *particular* proposition may sometimes be expressed *indefinitely*, without any note of particularity prefixed to the subject; as, *In times of confusion laws are not executed: Men of virtue are disgraced, and murderers escape*; that is, *some laws, some men of virtue, some murderers:* Unless we should call this language a *moral universality*, though I think it can hardly extend so far.

Note 2.....The words *some, a few*, &c. though they generally denote a proper *particularity*, yet sometimes they express a *collective idea*; as, *Some of the enemies beset the general around: A few Greeks would beat a thousand Indians.*

I conclude this section with a few *general remarks* on this subject, namely,

Gen. Rem. I. Since *Universal, indefinite* and *particular* terms, in the plural number, may either be taken in a *collective* or *distributive* sense, there is one short and easy way to find when they are *collective*, and when *distributive*; namely, If the plural number may be changed into the singular, that is, if the predicate will agree to one single subject, it is a *distributive* idea; if not, it is *collective*.

Gen. Rem. II. *Universal* and *particular* terms, in the plural number; such as, *all, some, few, many*, &c. when they are taken in their *distributive* sense, represent *several single ideas*; and when they are thus affixed to the subject of a proposition, render that proposition *universal* or *particular*, according to the universality or particularity of the terms affixed.

Gen. Rem. III. *Universal* and *particular* terms, in the plural number, taken in their *collective* sense, represent generally one *collective idea*.

If this one *collective idea* be thus represented, (whether by universal or particular terms) as the subject of a proposition, which *describes the nature of a thing*, it properly makes either a *singular* or an *indefinite proposition*; for the words *all, some, a few*, &c. do not then denote the *quantity* of the proposition, but are esteemed merely as terms which connect the individuals together, in order to compose *one collective idea*. Observe these instances; *All the sycamores in the garden would make a large grove*; that is, this one collection of sycamore, which is a *singular idea*. *Some of the sycamores in the garden would make a fine grove*: *sycamores would make a noble grove*: In these last the subject is rather *indefinite* than *singular*. But it is very evident, that in each of these propositions the predicate can only belong to a *collective idea*, and therefore the subject must be esteemed a *collective*.

If this *collective idea* (whether represented by universal or particular terms) be used in *describing past matters of fact*, then it is generally to be esteemed a *singular* idea, and renders the proposition *singular*; as, *All the soldiers of Alexander made but a little army*: *A few Macedonians vanquished the large army of Darius*: *Some grenadiers in the camp plundered* all the neighboring towns.

Now we have shewn before, that if a proposition describing the *nature of things* has an *indefinite* subject, it is generally to be esteemed *universal* in its propositional sense; And, if it has a *singular subject*, in its propositional sense it is always ranked with *universals*.

After all, we must be forced to confess, that the language of mankind, and the idioms of speech, are so exceeding various, that it is hard to reduce them to a few rules; and, if we would gain a just and precise idea of every *universal particular* and *indefinite* expression, we must not only consider the peculiar idioms of the language, but the time, the place, the occasion, the circumstances of the matter spoken of, and thus penetrate, as far as possible, into the design of the speaker or writer.

SECT. II.

OF AFFIRMATIVE AND NEGATIVE POPOSITIONS.

WHEN a proposition is considered with regard to its *copula*, it may be divided into *affirmative* and *negative*; for it is the *copula* joins or disjoins the *two ideas*. Others call this a division of propositions according to their quality.

An *affirmative proposition* is when the idea of the predicate is supposed to agree to the idea of the subject, and is joined to it by the word *is*, or *are*, which is the *copula*; as, *All men are sinners*. But, when the predicate is not supposed to agree with the subject, and is disjoined from it by the particles, *is not*, *are not*, &c. the proposition is *negative*; as, *Man is not innocent*; or, *No man is innocent*. In an affirmative proposition, we assert one thing to belong to another, and, as it were, unite them in thought and word: In negative propositions, we separate one thing from another, and deny their agreement.

It may seem something odd, that two ideas or terms are said to be *disjoined* by a copula: But, if we can but suppose the negative particles do really belong to the copula of negative propositions, it takes away the harshness of the expression; and, to make it yet softer, we may consider that the predicate and subject may be properly said to be joined *in a form of words as a proposition*, by connective particles in grammar or logic, though they are disjoined in their sense and signification. Every youth who has learned his grammar, knows there are such words as *disjunctive propositions*.

Several things are worthy our notice on this subject.

Note 1st....As there are some *terms*, or *words*, and *ideas*, (as I have shewn before) concerning which it is hard to determine whether they are *negative* or *positive*, so there are some *propositions* concerning which it may be difficult to say whether they *affirm* or *deny*: As, when we say, *Plato was no fool: Cicero was no unskilful orator: Cæsar made no expedition to Muscovy: An oyster has no part like an eel: It is not necessary for a physician to speak French*; and *for a physician to speak French is needless*.

The *sense* of these propositions is very plain and easy, though logicians might squabble perhaps a whole day, whether they should rank them under the names of *negative* or *affirmative*.

Note 2d....In Latin and English, two negatives joined in one sentence make an affirmative; as when we declare, *No man is not mortal*; it is the same as though we said, *Man is mortal*. But, in Greek, and oftentimes in French, two negatives make but a stronger denial.

Note 3d....If the mere negative term *not* be added to the copula of an *universal affirmative proposition*, it reduces it to a *particular negative*; as, *All men are not wise*, signifies the same as, *Some men are not wise*.

Note 4th..... In all *affirmative* propositions, the predicate is taken in its whole comprehension; that is, every essential part and attribute of it is affirmed concerning the subject; as when I say, *A true christian is an honest man*, every thing that belongs to *honesty* is affirmed concerning a *true christian*.

Note 5th.....In all negative propositions the predicate is taken in its whole extension; that is, every species and

individual that is contained in the general idea of the predicate, is utterly denied concerning the subject: So in this proposition, *A spirit is not an animal*, we exclude all sorts and kinds and particular animals whatsoever from the idea of a *spirit*.

From these two last remarks we may derive this inference, that we ought to attend to the *entire comprehension* of our ideas, and to the *universal extension* of them, as far as we have proper capacity for it, before we grow too confident of our affirming or denying any thing which may have the least darkness, doubt or difficulty attending it: It is the want of this attention that betrays us into many mistakes.

SECT. III.

OF THE OPPOSITION AND CONVERSION OF PROPOSITIONS.

ANY two ideas being joined or disjoined in various forms, will afford us several propositions. All these may be distinguished according to their *quantity* and their *quality** into four, which are marked or denoted by the letters, A, E, I, O, thus:

A	denotes a	Universal affirmative.
E		Universal negative.
I		Particular affirmative.
O		Particular negative.

according to the old Latin rhymes—

Asserit A, *negat* E, *verum generaliter ambæ*,
Asserit I, *negat* O, *sed particulariter ambo*.

This may be exemplified by these two ideas, a *vine* and a *tree*.

A *Every vine is a tree*,
E *No vine is a tree*.
I *Some vine is a tree*.
O *Some vine is not a tree*.

* The reader should remember here, that a proposition according to its quantity is called universal or particular; and according to its quality, it is either affirmative or negative.

The logicians of the schools have written many trifles concerning the *opposition* and *conversions* of *tions*. It will be sufficient here to give a few brie of these things, that the learner may not be utterly ig of them.

Propositions which are made of the same subj predicate, are said to be *opposite*, when that which i ed in one is affirmed in the other, either in whol part, without any consideration whether the propo be true or not.

If they differ both in quantity and quality, th called *contradictory*; as,

A *Every vine is a tree.*
O *Some vine is not a tree.*
} These can never be both true false at the same time.

If two universals differ in quality, they are *contrari*

A *Every vine is a tree.*
E *No vine is a tree.*
} These can never be both true er, but they may be both fals

If two *particular* propositions differ in quality, th *subcontraries*; as,

I *Some vine is a tree.*
O *Some vine is not a tree.*
} These may be both true togeth they can never be both false.

Both *particular* and *universal* propositions, whic in quality, but not in quantity, are called *subaltern*, these are not properly *opposite*; as,

A *Every vine is a tree.*
I *Some vine is a tree.*

Or thus:...E *No vine is a tree.*
O *Some vine is not a tree.*

The canons of *subaltern propositions* are usually r ed these three; namely, (1.) If an *universal* prop be true, the particular will be true also, but not

ary. And, (2.) If a *particular* proposition be false, *universal* must be false too, but not on the contrary. *Subaltern propositions*, whether universal or particular, sometimes be both true, and sometimes both false.

ıe *conversion of propositions*, is when the subject and cate change their places with preservation of the truth. may be done with constant certainty in all *universal ives* and *particular affirmatives*; as, *No spirit is an ani-* nay be converted. *No animal is a spirit*: and, *Some a vine*, may be converted, *Some vine is a tree.* But is more of formal trifling in this sort of discourse there is of solid improvement, because this sort of *rsion* arises merely from the *form of words*, as connect- a proposition, rather than from the *matter*.

t it may be useful to observe, that there are some ositions, which, by reason of the *ideas* or *matter* of ı they are composed, may be converted with con- truth: Such are those propositions whose predicate *ominal* or *real* definition of the subject, or the differ- of it, or a property of the fourth kind, or a superla- legree of any property or quality whatsoever; or, in wheresoever the predicate and the subject have ex- the same extension, or the same comprehnsion; as, *y vine is a tree bearing grapes*; and, *Every tree bear- rapes is a vine*: *Religion is the truest wisdom*; and, *truest wisdom is religion*: *Julius Cæsar was the first ror of Rome*; and, *The first emperor of Rome was Julius* r. These are the propositions which are properly con- ble, and they are called *reciprocal propositions*.

SECT. IV.

OF PURE AND MODAL PROPOSITIONS.

ANOTHER division of propositions among cholastic writers is into *pure* and *modal*. This may lled (for distinction sake) a division *according* to the icate.

When a proposition merely expresses that the predicate is connected with the subject, it is called a *pure proposition*; as, *Every true Christian is an honest man.* But, when it also includes the *way* and *manner* wherein the predicate is connected with the subject, it is called a *modal proposition*; as when I say, *It is necessary that a true Christain should be an honest man.*

Logical writers generally make the *modality* of this proposition to belong to the *copula*, because it shews the *manner* of the connection between the subject and predicate. But, if the *form* of the sentence as a *logical* proposition be duly considered, the *mode* itself is the very predicate of the proposition, and it must run thus; *That a true Christain should be an honest man is a necessary thing*, and then the whole primary proposition is included in the subject of the *modal* proposition.

There are *four modes* of connecting the predicate with the subject, which are usually reckoned upon this occasion, namely, *necessity* aud *contingency*, which are two opposites; *possibility* and *impossibility*, which are also opposites; as, *It is necessary that a globe should be round: That a globe be made of wood or glass, is a necessary or contingent thing: It is impossible that a globe should be square: It is possible that a globe may be made of water.*

With regard to the *modal propositions* which the schools have introduced, I would make these two remarks.

Remark 1. These propositions in English are formed by the resolution of the words, *must be, might not be, can be,* and *cannot be*, into those more explicate forms of a logical copula and predicate, *is necessary, is contingent, is possible, is impossible:* For *it is necessary that a globe should be round*, signifies no more than that *a globe must be round.*

Remark 2. Let it be noted, that this quadruple *modality* is only an enumeration of the *natural modes* or manners wherein the predicate is connected with the subject: We might also describe several *moral* and *civil modes* of connecting two ideas together, namely, *lawfulness* and *unlawfulness, conveniency* and *inconveniency*, &c. whence we may form such *modal propositions* as these; *It is unlawful for any person to kill an innocent man. It is unlawful for Christian*

to eat flesh in Lent: To tell all that we think is inexpedient: for a man to be affable to his neighbour is very convenient, &c.

There are several other *modes* of speaking whereby a predicate is connected with a subject: Such as, *it is certain, it is doubtful, it is probable, it is improbable, it is agreed, it is granted, it is said by the ancients, it is written*, &c. all which will form other kinds of *modal propositions*.

But, whether the *modality* be *natural, moral*, &c. yet in all these propositions it is the *mode* is the *proper predicate*, and all the rest of the propositions, except the *copula*, (or word *is*,) belongs to the *subject*; and thus they become *pure propositions* of a *complex* nature, of which we shall treat in the next section; so that there is no great need of making *modals* of a distinct sort.

There are many little subtilities which the schools acquaint us with concerning the *conversion* and *opposition* and *equipollence* of these modal propositions, suited to the Latin or Greek tongues, rather than the English, and fit to pass away the idle time of a student, rather than to enrich his understanding.

SECT. V.

OF SINGLE PROPOSITIONS, WHETHER SIMPLE OR COMPLEX.

WHEN we consider the *nature of propositions*, together with the *formation* of them, and divide the *materials* whereof they are made, we divide them into *single* and *compound*.

A *single proposition*, is that which has but one subject and one predicate; but if it has more subjects or more predicates, it is called a *compound proposition*, and indeed it contains two or more propositions in it.

A *single* proposition (which is also called *categorical*) may be divided again into *simple* and *complex*.*

* As simple ideas are opposed to complex, and single ideas to compound, so propositions are distinguished in the same manner: The English tongue, in this respect, having some advantage above the learned languages, which have no usual word to distinguish single from simple.

A *purely simple proposition* is that whose subject and predicate are made up of single terms; as *Virtue is desirable: Every penitent is pardoned: No man is innocent.*

When the subject or predicate, or both, are made up of complex terms, it is called a *complex proposition*; as, *Every sincere penitent is pardoned: Virtue is disirable for its own sake: No man alive is perfectly innocent.*

If the term which is added to the subject of a complex proposition be either essential or any way necessary to it, then it is called *explicative*, for it only explains the subject: as, *Every mortal man is a son of Adam.* But, if the term added to make up the complex subject does not necessarily or constantly belong to it, then it is *determinative*, and limits the subject to a particular part of its extension; as, *Every pious man shall be happy.* In the first proposition the word *mortal* is merely explicative: In the second proposition the word *pious* is determinative.

Here note, that whatsoever may be affirmed or denied concerning any subject, with an explicative addition, may be also affirmed or denied of that subject without it; as we may boldly say, Every man is a son of Adam, as well as every mortal man: But it is not so, where the addition is determinative, for we cannot say, Every man shall be happy, though every pious man shall be so.

In a complex proposition, the predicate or subject is sometimes made complex by the pronouns who, which, whose, to whom, &c. which make another proposition; as Every man who is pious shall be saved: Julius, whose sir name was Cæsar, overcame Pompey: Bodies, which are transparent, have many pores. Here the whole proposition is called the primary or chief, and the additional proposition is called an incident proposition. But it is still to be esteemed in this case merely as a part of the complex term; and the truth or falsehood of the whole complex proposition is not to be judged by the truth or falsehood of the incident proposition, but by the connection of the whole subject with the predicate. For the incident proposition may be false, and absurd, or impossible, and yet the whole complex proposition may be true; as, A horse *which* has wings might fly over the Thames.

Beside this complexion which belongs to the subject or predicate, logical writers use to say, there is a complexion which may fall upon the copula also: But this I have accounted for in the section concerning modal propositions; and indeed it is not of much importance whether it were placed there or here.

SECT. VI.

OF COMPOUND PROPOSITIONS.

A COMPOUND proposition is made up of two or more subjects or predicates, or both; and it contains in it two or more propositions, which are either plainly expressed, or concealed and implied.

The first sort of compound propositions are those wherein the composition is expressed and evident, and they are distinguished into these six kinds, namely, copulative, disjunctive, conditional, causal, relative and discretive.

I. Copulative propositions, are those which have more subjects or predicates connected by affirmative or negative conjunctions; as, *Riches and honor are temptations to pride: Cæsar conquered the Gauls and Britons: Neither gold or jewels will purchase immortality.* These propositions are evidently compounded, for each of them may be resolved into two propositions, namely, *Riches are temptations to pride;* and *Honor is a temptation to pride;* and so the rest.

The truth of copulative propositions depends upon the truth of all the parts of them; for, if Cæsar had conquered the Gauls, and not the Britons, or the Britons, and not the Gauls, the second copulative proposition had not been true.

Here note, Those propositions, which cannot be resolved into two or more simple propositions, are not properly copulative, though two or more ideas be connected and coupled by such conjunctions, either in the subject or predicate; as *Two and three make five: Majesty and meekness do not often meet: The sun, moon, and stars, are not all to be seen at once.* Such propositions are to be esteemed merely complex, because the predicate cannot be affirmed of each single subject, but only of all of them together as a collective subject.

II. *Disjunctive propositions*, are when the parts are disjoined or opposed to one another by disjunctive particles; as, *It is either day or night: The weather is* either *shining* or *rainy: Quantity is* either *length, breadth* or *depth.*

The truth of *disjunctives* depends on the necessary and immediate oppositions of the parts; therefore only the last of these examples is true; but the two first are not strictly true, because *twilight* is a medium between *day* and *night;* and *dry cloudy weather* is a medium between *shining* and *raining.*

III. *Conditional* or *hypothetical propositions*, are those whose parts are united by the conditional particle *if;* as, If *the sun be fixed the earth must move:* If *there be no fire, there will be no smoke.*

Note....The first part of these propositions, or that wherein the conditional is contained, is called the *antecedent*, the other is called the *consequent.*

The truth of these propositions depends not at all on the truth or falsehood of their two parts, but on the truth of the *connection* of them; for each part of them may be false, and yet the whole proposition true; as, *If there be no providence, there will be no future punishment.*

IV. *Causal propositions*, are where two propositions are joined by causal particles; as, *Houses were not built that they might be destroyed: Rehoboam was unhappy* because *he followed evil counsel.*

The truth of a *causal proposition* arises not from the truth of the parts, but from the *causal influence* that the one part has upon the other; for both parts may be true, yet the proposition false, if one part be not the cause of the other.

Some logicians refer *reduplicate propositions* to this place, as *Men, considered as men, are rational creatures*, that is, because *they are men.*

V. *Relative propositions* have their parts joined by such particles as express a relation or comparison of one thing to another; as, *When you are silent I will speak: As much as you are worth so much shall you be esteemed: As is the father, so is the son: Where there is no tale-bearer, contention will cease.*

These are very much akin to *conditional* propositions, and the truth of them depends upon the justness of their *connection.*

VI. *Discretive propositions* are such wherein various and seemingly opposite judgments are made, whose variety or distinction is noted by the particles, *but, though, yet, &c.* as *Travellers may change their climate but not their temper ; Job was patient, though his grief was great.*

The truth and goodness of a *discretive proposition* depends on the truth of both parts, and their contradistinction to one another ; for, though both parts should be true, yet if there be no seeming opposition between them, it is an useless assertion, though we cannot call it a false one ; as, *Descartes was a philosopher, yet he was a Frenchman : The Romans were valiant, but they spoke Latin ;* both which propositions are ridiculous, for want of a seeming opposition between the parts.

Since we have declared wherein the *truth* and *falsehood* of these *compound propositions* consist, it is proper also to give some intimations how any of these propositions, when they are false, may be *opposed* or *contradicted.*

All compound propositions, except *copulatives* and *discretives*, are properly denied or contradicted when the negation affects their conjunctive particles ; as, if the disjunctive proposition asserts, *It is either day or night ;* the opponent says, *It is not either day or night ;* or, *It is not necessary that it should be either day or night :* so the *hypothetical* proposition is denied, by saying, *It does not follow that the earth must move if the sun be fixt.*

A *disjunctive proposition*, may be contradicted also by denying all the parts ; as, *It is neither day nor night.*

And a *causal proposition* may be denied or opposed *indirectly* and *improperly*, when either part of the proposition is denied ; and it must be false if either part be false : But the design of the proposition being to shew the *causal connection* of the two parts, each part is supposed to be true, and it is not properly contradicted as a *causal proposition*, unless one part of it be denied to be the cause of the other.

As for *copulatives* and *discretives*, because their truth depends more on the truth of their parts, therefore these may be opposed or denied, as many ways as the parts of

which they are composed may be denied; so this copulative proposition, *Riches and honor are temptations to pride* may be denied by saying, *Riches are not temptations, though honor may be:* or, *Honor is not a temptation, though riches may be;* or, *Neither riches nor honor are temptation* &c.

So this *discretive* proposition, *Job was patient, though his grief was great,* is denied by saying, *Job was not patient though his grief was great:* or, *Job was patient, but his grief was not great:* or *Job was not patient, nor was his grief great.*

We proceed now to the *second sort of compound* propositions, namely, such *whose composition is not expressed but latent or concealed;* yet a small attention will find two propositions included in them. Such are these that follow.

1. Exclusives; as, *The pious man alone is happy. It is only Sir Isaac Newton could find out true philosophy.*

2. Exceptives; as, *None of the ancients but Plato well defended the soul's immortality. The Protestants worship none but God.*

3. Comparatives; as, *Pain is the greatest affliction. No Turk was fiercer than the Spaniards at Mexico.*

Here *note,* That the *comparative* degree does not always imply the *positive;* as, if I say, *A fool is better than a knave,* this does not affirm that *folly is good,* but that it is *less evil* than knavery.

4. *Inceptives* and *desitives,* which relate to the beginning or ending of any thing; as, *The Latin tongue is not yet forgotten. No man before Orpheus wrote Greek verse. Peter Czar of Muscovy began to civilize his nation.*

To these may be added *continuatives;* as, *Rome remains to this day,* which includes at least two propositions, namely, *Rome was,* and *Rome is.*

Here let other authors spend time and pains in giving the precise definitions in all these sorts of propositions which may be as well understood by their names and examples: Here let them tell what their truth depends upon, and how they are to be opposed or contradicted; but a moderate share of common sense, with a review of what is said on the former *compounds,* will suffice for all the purposes, without the formality of rules.

SECT. VII.

OF TRUE AND FALSE PROPOSITIONS.

PROPOSITIONS are next to be considered according to their *sense* or *signification*, and thus they are distributed into *true* and *false*. A *true proposition* represents things as they are in themselves; but, if things are represented otherwise than they are in themselves, the proposition is *false*.

Or we may describe them more particularly thus: a *true proposition* joins those ideas and terms together whose objects are joined and agree; or it disjoins those ideas and terms whose objects disagree, or are disjoined; as, *Every bird has wings: A Brute is not immortal.*

A *false proposition* joins those ideas or terms whose objects disagree, or it disjoins those whose objects agree; as, *Birds have no wings: Brutes are immortal.*

Note.....It is impossible that the same proposition should be both true and false at the same time, in the same sense, and in the same respect; because a proposition is but the representation of the agreement or disagreement of things: Now *it is impossible that the same thing should be and not be*, or, *that the same thing should agree, and not agree, at the same time, and in the same respect.* This is a first principle of human knowledge.

Yet some propositions may seem to contradict one another, though they may be both true, but in different senses, or respects, or times; as, *Man was immortal in paradise*, and *Man was mortal in paradise.* But these two propositions must be referred to different times: as, Man *before his fall* was immortal, but *at the fall* he became mortal. So we may say now, *Man is mortal*, or *man is immortal*, if we take these propositions in different respects: as, *Man is* an immortal creature *as to his soul*, but mortal *as to his body.* A great variety of difficulties and seeming contradictions, both in Holy Scripture, and other writings, may be solved and explained in this manner.

The most important question on this subject is th
What is the criterion or distinguishing mark of truth? H
shall we know when a proposition is really true or fals
There are so many disguises of truth in the world, so n
ny false appearances of truth, that some sects have
clared there is no possibility of distinguishing *truth* fr
falsehood; and therefore they have abandoned all pret
ces to knowledge, and maintain strenuously that *nothi
is to be known.*

The first men of this humour make themselves fame
in Greece by the name of *sceptics*, that is, *seekers*. Th
were also called *academics*, borrowing their name fr
academia, their school or place of study. They taug
that *all things are uncertain*, though they allowed th
some are more probable than others. After these are
the sects of *Pyrrhonics* so named from *Pyrrho* their m
ter, who would not allow one proposition to be more pr
able than another; but professed that *all things were equ
ly uncertain.* Now all these men (as an ingenious auth
expresses it) were rather to be called a sect of *liars* th
philosophers, and that censure is just for two reason
(1.) Because they determined concerning every propo
tion that *it was uncertain*, and believed that as a certa
truth, while they professed *there was nothing certain*, a
that nothing could be determined concerning truth
falsehood; and thus their very doctrine gave itself the l
(2.) Because they judged and acted as other men did
the common affairs of life; they would neither run in
fire nor water, though they professed ignorance and u
certainty, whether the one would burn, or the oth
drown them.

There have been some in all ages who have too mu
affected this humour, who dispute against every thi
under pretence that *truth has no certain mark to dist
guish it.* Let us therefore inquire *what is the general
terion of truth?* And, in order to this, it is proper to c
sider what is the reason why we assent to those propo
tions which contain the most certain and indubita
truths, such as these. *The whole is greater than a par
Two and three make five.*

The only reason why we believe these propositions
be true, is because the ideas of the subjects and predica

appear with so much clearness and strength of evidence to agree to each other, that the mind cannot help discerning the agreement, and cannot doubt of the truth of them, it is constrained to judge them true. So, when we compare the ideas of a *circle* and a *triangle*, or the ideas of an *oyster* and *butterfly*, we see such an evident disagreement between them, that we are sure that a *butterfly is not an oyster*, nor is a *triangle a circle*. There is nothing but the evidence of the agreement or disagreement between two ideas that makes us affirm or deny the one or the other.

Now it will follow from hence, that a *clear and distinct perception or full evidence of the agreement and disagreement of our ideas to one another, or to things*, is a certain criterion of truth: For, since our minds are of such a make, that where the evidence is exceeding plain and strong, we cannot withhold our assent; we should then be necessarily exposed to believe falsehood, if complete evidence should be found in any propositions that are not true. But surely the God of perfect wisdom, truth and goodness, would never oblige his creatures to be thus deceived; and therefore he would never have constituted us of such a frame as would render it naturally impossible to guard against error.

Another consequence is naturally derived from the former, and that is, that the only reason why we fall into mistake, is because we are impatient to form a judgment of things before we have a clear and evident perception of their agreement or disagreement; and, if we will make haste to judge while our ideas are obscure and confused, or before we see whether they agree or disagree, we shall plunge ourselves into perpetual errors. See more on this subject in an *Essay on the Freedom of will in God and Man*, published in 1732, section 1. page 13.

Note.—What is here asserted concerning the necessity of clear and distinct ideas, refers chiefly to propositions which we form *ourselves* by our own powers: As for propositions which we derive from the testimony of others, they will be accounted for in Chap. IV.

SECT. VIII.

OF CERTAIN AND DUBIOUS PROPOSITIONS OF K AND OPINION,

SINCE we have found that evidence i criterion, and the sure mark of truth, this leads to consider propositions according to their evid here we must take notice both of the different evidence, and the different kinds of it.

Propositions, according to their different deg idence are distinguished into certain and dubiou

Where the evidence of the agreement or dis of the ideas is so strong and plain, that we ca nor delay our assent, the proposition is called c *Every circle hath a centre; The world did not* c An assent to such propositions is honoured wit of *knowledge.*

But when there is any obscurity upon the or disagreement of the ideas, so that the min clearly perceive it, and is not compelled to as sent, then the proposition, in a proper and pl sense, is called doubtful or *uncertain;* as, *The inhabited; The souls of brutes are mere matter; will not stand a thousand years longer; Dido bui Carthage,* &c. Such *uncertain* propositions *opinions.*

When we consider ourselves as philosophers *ers after truth,* it would be well if we always s full judgment or determination about any

* It may be objected, that this certainty and uncertain in the mind, the division belongs to propositions rather, the degrees of our assent, than the degrees of evidence. be well answered, that the evidence here intended is th pears so to the mind, and not the mere evidence in things. Besides (as we shall shew immediately,) the de ought to be exactly proportionable to the degree of ev therefore the difference is not great, whether propositi certain or uncertain, according to the measure of ev assent.

made farther inquiries, where this plain and *perfect evidence* is wanting: but we are so prone of ourselves to judge without full evidence, and in some cases the necessity of action in the affairs of life constrains us to judge and determine upon a tolerable *degree* of evidence, that we vulgarly call those propositions *certain*, where we have but very little room or reason to doubt of them, though the evidence be not complete and resistless.

Certainty, according to the schools is distinguished into *objective* and *subjective*. *Objective certainty*, is when the proposition is certainly true in itself; and *subjective*, when we are certain of the truth of it. The one is in *things*, the other is in our *minds*.

But let it be observed here, that every proposition in itself is certainly true or certainly false. For, though doubtfulness or uncertainty seems to be a medium between certain truth and certain falsehood in our minds, yet there is no such medium in things themselves, no, not even in future events: For now at this time it is certain in itself, that midsummer-day seven years hence will be serene, or it is certain it *will be cloudy*, tho' we are uncertain and utterly ignorant what sort of day it will be: This certainty of distant futurities is known to God only.

Uncertain or dubious propositions, that is, opinions, are distinguished into probable, or improbable.

When the evidence of any proposition is greater than the evidence of the contrary, then it is a probable opinion: Where the evidence and arguments are stronger on the contrary side, we call it improbable. But, while the arguments on either side seem to be equally strong, and the evidence for, and against any proposition appears equal to the mind, then in common language we call it a doubtful matter. We also call it a dubious or doubtful proposition, when there are no arguments on either side, as Next Christmas-day will be a very sharp frost. And in general, all those propositions are doubtful, wherein we can perceive no sufficient marks or evidences of truth or falsehood. In such a case, the mind which is searching for truth ought to remain in a state of doubt or suspense, until superior evidence on one side or the other incline the balance of the judgment, and determine the probability or certainty to the one side.

A great many propositions which we generally believe or misbelieve in human affairs, or in the sciences, have very various degrees of evidence, which yet arise not to complete *certainty*, either of truth or falsehood. Thus it comes to pass that there are such various and almost infinite degrees of probability and improbability. To a weak probability we should give a weak assent; and a stronger assent is due where the evidence is greater, and the matter more probable. If we proportion our assent in all things to the degrees of evidence, we do the utmost that human nature is capable of, in a rational way to secure itself from error.

SECT. IX.

OF SENSE, CONSCIOUSNESS, INTELLIGENCE, REASON, FAITH, AND INSPIRATION.

AFTER we have considered the *evidence* of propositions in the various degrees of it, we come to survey the several kinds of evidence, or the different ways whereby truth is let into the mind, and which produce accordingly several kinds of knowledge. We shall distribute them into these six; namely, Sense, Consciousness, Intelligence, Reason, Faith, and Inspiration; and then distinguish the propositions, which are derived from them.

I. The evidence of sense is, when we frame a proposition according to the dictates of any of our senses; so we judge that grass is green; that a trumpet gives a pleasant sound; that fire burns wood; water is soft, and iron is hard; for we have seen, heard or felt all these. It is upon this evidence of sense, that we know and believe the daily occurrences in human life; and almost all the histories of mankind, that are written by eye or ear witnesses, are built upon this principle.

Under the evidence of sense we do not only include that knowledge which is derived to us by our outward senses of hearing, seeing, feeling, tasting, and smelling;

that also which is derived from the inward sensations
l appetites of hunger, thirst, ease, pleasure, pain, weari-
s, rest, &c. And all those things which belong to the
y ; as *Hunger is a painful appetite ; Light is pleasant ;*
t is sweet to the weary limbs.

Propositions which are built on this evidence, may be
ned sensible propositions, or the dictates of sense.

II. as we learn what belongs to the body by the evidence
ense, so we learn what belongs to the soul by an inward
sciousness, which may be called a sort of internal
ling, or spiritual sensation of what passes in the mind ;
I think before I speak ; I desire large knowledge ; I
pect my own practice ; I studied hard to-day ; My con-
ence bears witness of my sincerity ; My soul hates vain
ughts ; Fear is an easy passion ; Long meditation on
: thing is tiresome.

Thus it appears that we obtain the knowledge of a
ltitude of propositions, as well as of single ideas, by
se two principles which Mr. Locke calls sensation and
lection : One of them is a sort of consciousness of what
ects the body, and the other is a consciousness of what
ses in the mind.

Propositions which are built on this internal concious-
s, have yet no particular or distinguishing name assign-
to them.

III. Intelligence relate chiefly to those abstracted pro-
sitions which carry their own evidence with them, and
mit no doubt about them. Our perception of this self-
idence in any proposition is called intelligence. It is
r knowledge of those first principles of truth which are,
it were, wrought into the very nature and make of
r minds : They are so evident in themselves to every
n who attends to them, that they need no proof. It
the prerogative and peculiar excellence of those propo-
ions that they can scarce either be proved, or denied :
hey cannot easily be proved, because there is nothing
pposed to be more clear or certain, from which an argu-
ent may be drawn to prove them. They cannot well
denied, because their own evidence is so bright and con-
ncing, that as soon as the terms are understood the mind
cessarily assents ; such are these, Whatsoever acteth hath

... Nothing has no properties; A part is less than ... Nothing can be the cause of itself.

... propositions are called axioms, or maxims, or first ... are the very foundations of all improvement ... reasonings, and on that account these have ... ultimate propositions, or truths born ...

... that a great part of the knowledge of angels ... soul in the separate state is obtained ... namely, by such an immediate view of things ... which is called intuition.

... is the next sort of evidence, and that is ... inferred or drawn from others by natural ... arguments; as, if there be much ... I infer it proceeds from the moon ... the earth.* If I see a cottage in ... some man has been there and built ... the heavens and earth, this gives ... that there is a God who made them. ... believe upon this kind of evi- ... truths; and the ... is properly called science. ... science is usually ap- ... regular and methodical observa- ... learned men have formed ... deriving one truth ... arguments. If this knowledge ... only called an art. And ... between an art and ... refers chiefly to practice, the ... Natural philosophy, or physics, and ... logic and rhetoric are called arts; ... both art and science: for they ... and much of practice in them

* ... was written, we have had so many ap- ... instances of the influence only to

sequent prophecies or miracles, or some public appearances more than human.

The propositions which are attained by this sort of evidence are called inspired truths. This is divine revelation at first hand, and the dictates of God in an immediate manner, of which theological writers discourse at large: But since it belongs only to a few favourites of heaven to be inspired, and not the bulk of mankind, it is not necessary to speak more of it in a treatise of logic, which is designed for the general improvement of human reason.

The various kinds of evidence upon which we believe any proposition, afford us these three remarks:

REMARK I. The same proposition may be known to us by the different kinds of evidence: That the whole is bigger than a part, is known by our senses, and it is known by the self-evidence of the thing to our mind. That God created the heavens and the earth is known to us by reason, and is known also by divine testimony or faith.

REMARK II. Among these various kinds of evidence some are generally stronger than others in their own nature, and give a better ground for certainty. Inward consciousness and intelligence, as well as divine faith and inspiration, usually carry much more force with them than sense or human faith, which are often fallible; though there are instances wherein human faith, sense and reasoning lay a foundation also for complete assurance, and leave no room for doubt.

Reason in its own nature would always lead us into the truth in matters within its compass, if it were used aright, or it would require us to suspend our judgment where there is a want of evidence. But it is our sloth, precipitancy, sense, passsion, and many other things, that lead our reason astray in this degenerate and imperfect state: Hence it comes to pass that we are guilty of so many errors in reasoning, especially about divine things, because our reason either is busy to inquire, and resolved to determine about matters that are above our present reach; or because we mingle many prejudices and secret influences of sense, fancy, passion, inclination, &c. with our exercises of reason, and judge and determine according to their irregular instances.

Divine faith would never admit of any controversies doubtings, if we were but assured that God had spok and that we rightly understood his meaning.

REMARK III. The greatest evidence and certainty any proposition does not depend on the variety of ways or kinds of evidence whereby it is known, but ratl upon the strength and degree of evidence, and the cle ness of that light in or by which it appears to the mi For a proposition that is known only one way may much more certain, and have stronger evidence, tl another that is supposed to be known many ways. The fore these propositions, Nothing has no properties; I thing can make itself; which are known only by inte gence, are much surer than this proposition, The rainb has real and inherent colours in it; or than this, The rolls round the earth; though we seem to know b these last by our senses, and by the common testimony our neighbors. So any proposition that is clearly evid to our own *consciousness* or *divine faith*, is much more c tain to us than a thousand others that have only the e dence of feeble and obscure sensations of mere probal reasonings and doubtful arguments, or the *witness* of f lible *men*, or even though all these should join togeth

CHAP. III.

THE SPRINGS OF FALSE JUDGMENT, OR THE DO TRINE OF PREJUDICES.

INTRODUCTION.

IN the end of the foregoing chapter, we h surveyed the several sorts of evidence on which we bu our assent to propositions. These are indeed the gene grounds upon which we form our judgment concern things. What remains in this SECOND PART OF LO is to point out the several springs and causes of our m takes in judging, and to lay down some rules by wh we should conduct ourselves in passing a judgment up every thing that is proposed to us.

confess many things which will be mentioned in these wing chapters might be as well referred to the THIRD T OF LOGIC, where we shall treat of Reasoning and ment; for most of our false judgments seem to include ret bad reasoning in them; and while we shew the gs of error, and the rules of true judgment, we do at same time discover which arguments are fallacious, h reasonings are weak, and which are just and strong. since this is usually called a judging ill, or judging , I think we may without any impropriety treat of it ; and this will lay a sure foundation for all sorts of cination and argument.

ash judgments are called prejudices, and so are the gs of them. This word in common life signifies an pinion which we have conceived of some other person, me injury done to him. But when we use the word atters of science, it signifies a judgment that is form- oncerning any person or thing before sufficient exam- on; and generally we suppose it to mean a false judg- t or mistake: At least, it is an opinion taken up with- solid reason for it, or an assent given to a proposition re we have a just evidence of the truth of it, though thing itself may happen to be true.

ometimes these rash judgments are called prepossess- s; whereby is meant, that some particular opinion has essed the mind, and engaged the assent, without suffi- t search or evidence of the truth of it.

here is a vast variety of these prejudices and prepos- ions which attend mankind in every age and condition fe; they lay the foundations of many an error, and y an unhappy practice, both in the affairs of religion, in other civil concernments; as well as in matters of ning. It is necessary for a man who pursues truth to uire into these springs of error, that as far as possible may rid himself of old prejudices, and watch hourly inst new ones.

he number of them is so great, and they are so inter- en with each other, as well as with the powers of hu- n nature, that it is sometimes hard to distinguish them rt; yet for method's sake we shall reduce them to these r general heads, namely, prejudices arising from

things, or from words, from ourselves, or from other persons; and, after the description of each prejudice, we shall propose one or more ways of curing it.

SECT. I.

PREJUDICES ARISING FROM THINGS.

THE first sort of prejudices are those which arise from the things themselves about which we judge. But here let it be observed, that there is nothing in the nature of things that will necessarily lead us into error, if we do but use our reason aright, and withhold our judgment till there appears sufficient evidence of truth. But since we are so unhappily prone to take advantage of every doubtful appearance and circumstance of things to form a wrong judgment, and plunge ourselves into mistake, therefore it is proper to consider what there is in the things themselves that may occasion our errors.

I. The obscurity of some truths, and the difficulty of searching them out, is one occasion of rash and mistaken judgment.

Some truths are difficult because they lie remote from the first principles of knowledge, and want a long chain of argument to come at them: Such are many of the deep things of algebra and geometry, and some of the theorems and problems of most parts of the mathematics. Many things also in natural philosophy are dark and intricate upon this account, because we cannot come at any certain knowledge of them without the labour of many and difficult, as well as chargeable experiments.

There are other truths which have great darkness upon them, because we have no proper means or mediums to come at the knowledge of them. Though in our age we have found out many of the deep things of nature, by the assistance of glasses and other instruments; yet we are not hitherto arrived at any sufficient methods to discover the figures of those little particles of matter which distinguish the several sapours, odours, and colours of bodies; nor t

find what sort of atoms compose liquids or solids, and distinguish wood, minerals, metals, glass, stone, &c. There is a darkness also lies upon the actions of the intellectual or angelical world; their manners of subsistence and agency, the power of spirits to move bodies, and the union of our souls with this animal body of ours, are much unknown to us on this account.

Now in many of these cases, a great part of mankind is not content to be entirely ignorant; but they rather choose to form rash and hasty judgments, to guess at things without just evidence, to believe something concerning them before they can know them; and thereby fall into error.

This sort of prejudice, as well as most others, is cured by patience and diligence in inquiry and reasoning, and a suspension of judgment, till we have attained some proper mediums of knowledge, and till we see sufficient evidence of the truth.

II. The appearance of things in a disguise is another spring of prejudice, or rash judgment. The outside of things, which first strikes us, is oftentimes different from their inward nature; and we are tempted to judge suddenly according to outward appearances. If a picture is daubed with many bright and glaring colours, the vulgar eye admires it is an excellent piece; whereas the same person judges very contemptuously of some admirable design, sketched out only with a black pencil on a coarse paper, though by the hand of a Raphael. So the scholar spies the name of a new book in a public news-paper; he is charmed with the title, he purchases, he reads with huge expectations, and finds it is all trash and impertinence: This is a prejudice derived from the appearance; we are too ready to judge that volume valuable which had so good a frontispiece. The large heap of encomiums and swelling words of assurance, that are bestowed on quack medicines in public advertisements, tempts many a reader to judge them infallible, and to use the pills or the plaister, with vast hope and frequent disappointment.

We are tempted to form our judgment of persons as well as things by these outward appearances. Where there is wealth, equipage, and splendor, we are ready to

call that man happy; but we see not the vexing disquietudes of his soul: and when we spy a person in ragged garments, we form a despicable opinion of him too suddenly; we can hardly think him either happy or wise, our judgment is so strangely biassed by outward and sensible things. It was through the power of this prejudice, that the Jews rejected our blessed Saviour; they could not suffer themselves to believe that the man who appeared as the son of a carpenter was also the son of God. And because St. Paul was of little stature, a mean presence, and his voice contemptible, some of the Corinthians were tempted to doubt whether he was inspired or not.

This prejudice is cured by a long acquaintance with the world, and a just observation that things are sometimes better and sometimes worse than they appear to be. We ought therefore to restrain our excessive forwardness to form our opinion of persons or things before we have opportunity to search into them more perfectly. Remember that a grey beard does not make a philosopher; all is not gold that glistens; and a rough diamond may be worth an immense sum.

III. A mixture of different qualities in the same things is another temptation to judge amiss. We are ready to be carried away by that quality which striks the first or the strongest impressions upon us, and we judge of the whole object according to that quality, regardless of all the rest; or sometimes we colour over all the other qualities with that one tincture, whether it be bad or good.

When we have just reason to admire a man for his virtues, we are sometimes inclined not only to neglect his weaknesses, but even to put a good colour upon them, and to think them amiable. When we read a book that has many excellent truths in it, and divine sentiments, we are tempted to approve not only that whole book, but even all the writings of that author. When a poet, an orator, or a painter, has performed admirably in several illustrious pieces, we sometimes also admire his very errors, we mistake his blunders for beauties, and are so ignorantly fond as to copy after them.

It is this prejudice that has rendered so many great scholars perfectly bigots, and inclined them to defend Homer or Horace, Livy or Cicero, in their mistakes, and vin

licate all the follies of their favorite author. It is that tempts some great writers to support the sayings of almost all the ancient fathers of the church, and admire them even in their very reveries.

On the other hand, if an author has professed heretical sentiments in religion, we throw our scorn upon every thing he writes, we despise even his critical or mathematical learning, and will hardly allow him common sense. If a poem has some blemishes in it, there is a set of false critics who decry it universally, and will allow no beauties there.

This sort of prejudice is relieved by learning to distinguish things well, and not to judge in the lump. There is scarce any thing in the world of nature or art, in the world of morality or religion, that is perfectly uniform. There is a mixture of wisdom and folly, vice and virtue, good and evil, both in men and things. We should remember that some persons have great wit and little judgment; others are judicious, but not witty. Some are good humoured without compliment; others have all the formalities of complaisance, but no good humour. We ought to know that one man may be vicious and learned, while another has virtue without learning. That many a man thinks admirably well, who has a poor utterance; while others have a charming manner of speech, but their thoughts are trifling and impertinent. Some are good neighbours, and courteous, and charitable towards men, who have no piety towards God; others are truly religious, but of morose natural tempers. Some excellent sayings are found in very silly books, and some silly thoughts appear in books of value. We should neither praise nor dispraise by wholesale, but separate the good from the evil, and judge of them apart: The accuracy of a good judgment consists much in making such distinctions.

Yet let it be noted too, that in common discourse we usually denominate persons and things according to the major part of their character. He is to be called a wise man who has but few follies: He is a good philosopher who knows much of nature, and for the most part reasons well in matters of human science; and that book should be esteemed well written, which has more of good sense in it than it has of impertinence.

IV. Though a thing be uniform in its own nature, yet the different lights in which it may be placed, and the different views in which it appears to us, will be ready to excite in us mistaken judgments concerning it. Let an erect cone be placed on a horizontal plane, at a great distance from the eye, and it appears a plain triangle, but we shall judge that very cone to be nothing but a flat circle if its base be obverted towards us. Set a common round plate a little obliquely before our eyes afar off, and we shall think it an oval figure: But if the very edge of it be turned towards us, we shall take it for a straight line. So when we view the several folds of a changeable silk, we pronounce this part red, and that yellow, because of its different position to the light, though the silk laid smooth in one light appears all of one colour.

When we survey the miseries of mankind, and think of the sorrows of millions, both on earth and in hell, the divine government has a terrible aspect, and we may be tempted to think hardly even of God himself: But if we view the profusion of his bounty and grace among his creatures on earth, or the happy spirits in heaven, we shall have so exalted an idea of his goodness as to forget his vengeance. Some men dwell entirely upon the promises of his gospel, and think him all mercy: Others, under a melancholy frame, dwell upon his terrors and his threatenings, and are overwhelmed with the thoughts of his severity and vengeance, as though there were no mercy in him.

The true method of delivering ourselves from this prejudice, is to view a thing on all sides, to compare all the various appearances of the same thing with one another and let each of them have its full weight in the balance of our judgment, before we fully determine our opinion. It was by this mean that the modern astronomers came to find out that the planet Saturn hath a flat broad circle round its globe, which is called its ring, by observing the different appearances as a narrow or a broader oval, or, as it sometimes seems to be a straight line, in the different parts of its twenty-nine years revolution through the ecliptic. And if we take the same just and religious survey of the great and blessed God in all the discoveries of his

vengeance and his mercy, we shall at last conclude him to be both just and good.

V. The casual association of many of our ideas becomes the spring of another prejudice or rash judgment, to which we are sometimes exposed. If in our younger years we have taken medicines that have been nauseous, when any medicine whatsoever is afterward proposed to us under sickness, we immediately judge it nauseous: Our fancy has so closely joined these ideas together, that we know not how to separate them: Then the stomach feels the disgust, and perhaps refuses the only drug that can preserve life. So a child who has been let blood joins the ideas of pain and the surgeon together, and he hates the sight of the surgeon because he thinks of his pain: Or if he has drank a bitter portion, he conceives a bitter idea of the cup which held it, and will drink nothing out of that cup.

It is for the same reason that the bulk of the common people are so superstitiously fond of the psalms translated by Hopkins and Sternhold, and think them sacred and divine, because they have been now for more than an hundred years bound up in the same covers with our bibles.

The best relief against this prejudice of association is to consider, whether there be any natural and necessary connection between these ideas, which fancy, custom, or chance, hath thus joined together; and if nature has not joined them, let our judgment correct the folly of our imagination, and separate these ideas again.

SECT. II.

PREJUDICES ARISING FROM WORDS.

OUR ideas and words are so linked together, that while we judge of things according to words, we are led into several mistakes. These may be distributed under two general heads, namely, such as arise from single words or phrases, or such as arise from words joined in speech, and composing a discourse.

I. The most eminent and remarkable errors first kind are these three. (1) When our words significant, and have no ideas; as when the myst vines talk of the prayer of silence, the supernatu passive night of the soul, the vicinity of powers, t pension of all thoughts: Or (2) When our wo law, equivocal, and signify two or more ideas; as th law, light, flesh, spirit, righteousness, and many othe in scripture: Or (3) When two or three words are mous, and signify one idea, as regeneration and n ation in the New Testament; both which mear change of the heart from sin to holiness; or, as th tor of Cologn and the Bishop of Cologn are two the same man.

These kinds of phrases are the occasion of vario takes; but none so unhappy as those in theolog words without ideas, as well as synonymous and ec words, have been used and abused by the humou sions, interests, or by the real ignorance and weal men, to beget terrible contests among Christians.

But to relieve us under all those dangers, and to these sort of prejudices which arise from single v phrases, I must remit the reader to Part I. ch where I have treated about words, and to those di which I have given concerning the definition of Part I. chap. VI. sect. 3.

II. There is another sort of false judgments, or r which we are exposed to by words; and that is wl are joined in speech, and compose a discourse; a we are in danger two ways.

The one is, when a man writes good sense, or much to the purpose, but he has not a happy ar ging manner of expression. Perhaps he uses co vulgar words, or old, obsolete, and unfashionable la or terms, and phrases that are foreign, latinized, scl very uncommon, and hard to be understood: An still worse, if his sentences are long and intricate sound of them harsh and grating to the ear. All t deed are defects in stile, and lead some nice thinking hearers or readers into an ill opinio

h a person speaks or writes. Many an excellent
e of our forefathers has had abundance of con-
ast upon it by our modern pretenders to sense, for
:heir distingishing between the language and the

e other hand, when a man of eloquence speaks or
pon any subject, we are too ready to run into his
nts, being sweetly and insensibly drawn by the
ıess of his harangue, and the pathetic power of
uage. Rhetoric will vanish every error, so that
ıppear in the dress of truth, and put such orna-
pon vice, as to make it look like virtue : It is an
ondrous and extensive influence ; it often conceals,
ı or overwhelms the truth, and places sometimes
falsehood in a more alluring light. The decency of
he music of the voice, the harmony of the periods,
ty of the stile, and all the engaging airs of the
have often charmed the hearers into error, and
ed them to approve whatsoever is proposed in so
le a manner. A large assembly stands exposed
:o the power of these prejudices, and imbibes them
Cicero and Demosthenes made the Romans and
ɛnians believe almost whatsoever they pleased.
ɔest defence against both these dangers, is to learn
(as much as possible) of separating our thoughts
s from words and phrases, to judge of the things
own natures, and in their natural or just relation to
her, abstracted from the use of language, and to
ı a steady and obstinate resolution, to hearken to
but truth, in whatsoever stile or dress it appears.
we shall hear a sermon of pious and just senti-
'ith esteem and reverence, though the preacher
an unpolished stile, and many defects in the man-
is delivery. Then we shall neglect and disregard
lattering insinuations, whereby the orator would
ay for his own sentiments to take possession of our
he has not solid and instructive sense equal to his
e. Oratory is a happy talent, when it is rightly
:d, to excite the passions to the practice of virtue
y : but, to speak properly, this art has nothing to
ɛ search after truth.

SECT. III.

PREJUDICES ARISING FROM OURSELVES.

NEITHER *words* nor *things* would so often lead us astray from truth, if we had not within ourselves such springs of error as these that follow.

I. Many errors are derived from our weakness of reason, and incapacity to judge of things in our infant state. These are called the *prejudices of infancy*. We frame early mistakes about the common objects which surround us, and the common affairs of life: We fancy the nurse is our best friend, because children receive from their nurses their food and other conveniences of life. We judge that books are very unpleasant things, because perhaps we have been driven to them by the scourge. We judge also that the sky touches the distant hills, because we cannot inform ourselves better in childhood. We believe the stars are not risen till the sun is set, because we never see them by day But some of these errors may seem to be derived from the next spring.

The way to cure the prejudices of infancy, is to distinguish, as far as we can, which are those opinions which we framed in perfect childhood; to remember that at that time our reason was incapable of forming a right judgment, and to bring these propositions again to be examined at the bar of mature reason.

II. Our senses gives us many a false information of things, and tempt us to judge amiss. This is called *prejudice of sense*: as, when we suppose the sun and moon to be flat bodies, and to be but a few inches broad, because they appear so to the eye. Sense inclines us to judge that air has no weight, because we do not feel it press heavy upon us; and we judge also by our senses that cold and heat, sweet and sour, red and blue, &c. are such real properties in the objects themselves, and exactly like those sensations which they excite in us.

Note.—Those mistakes of this sort, which all mankind *drop and lose* in their advancing age, are called mere *prejudices of* infancy; but those which abide with the

vulgar part of the world, and generally with all men, till learning and philosophy cure them, more properly attain the name of *prejudices of sense*.

These prejudices are to be removed several ways. (1.) By the assistance of one sense we cure the mistake of another: as, when a stick thrust into the water seems crooked, we are prevented from judging it to be really so in itself; for, when we take it out of the water, both our sight and feeling agree and determine it to be straight. (2.) The exercise of our reason, and an application to mathematical and philosophical studies, cures many other *prejudices of sense*, both with relation to the heavenly and earthly bodies. (3.) We should remember that our senses have often deceived us in various instances; that they give but a confused and imperfect representation of things in many cases; that they often represent falsely those very objects to which they seem to be suited, such as the *shape*, *motion*, *size*, and *situation* of gross bodies, if they are but placed at a distance from us; and as for the minute particles of which bodies are composed, our senses cannot distinguish them. (4.) We should remember also, that one prime and original design of our senses, is to inform us what various relations the bodies that are round about us bear to our own animal body, and to give us notice what is pleasant and useful and what is painful or injurious to us; but they are not sufficient of themselves to lead us into a philosophical acquaintance with the inward nature of things. It must be confessed, it is by the assistance of the *eye* and the *ear* especially (which are called the *senses of discipline*) that our minds are furnished with various parts of knowledge, by reading, hearing, and observing things divine and human; yet reason ought always to accompany the exercise of our senses, whenever we would form a just judgment of things proposed to our inquiry.

Here it is proper to observe also, that as the weakness of reason in our infancy, and the dictates of our senses, sometimes in advancing years, lead the wiser part of mankind astray from truth; so the meaner parts of our species, persons whose genius is very low, whose judgment is always weak, who are ever indulging the dictates of sense and humour, are but children of a large size, they stand ex-

posed to everlasting mistakes in life, and live and die midst of prejudices.

III. Imagination is another fruitful spring of false ments. Our imagination is nothing else but the appearances of our sensible ideas in the brain, wh soul frequently works in uniting, disjoining, multi magnifying, diminishing, and altering the several colours, sounds, motions, words and things, that hav communicated to us by the outward organs of sen is no wonder therefore if fancy leads us into man takes, for it is but sense at second hand. Wha strongly impressed upon the imagination, some believe to be true. Some will choose a particular n in a lottery, or lay a large wager on a single char dye, and doubt not of success, because their fancy powerful an impression, as assures them it will b perous. A thousand pretended prophecies and i tions, and all the freaks of enthusiasm have been from this spring. Dreams are nothing else but ceptions of fancy; A delirium is but a short wild the imagination; and a settled irregularity of fa distraction and madness.

One way to gain a victory over this unruly facul set a watch upon it perpetually, and to bridle it i extravagancies; never to believe any thing me cause fancy dictates it, any more than I would b midnight-dream, nor to trust fancy any farther th attended with severe reason. It is a very useful tertaining power of human nature, in matters of i tion, persuasion, oratory, poetry, wit, conversati but in the calm inquiry after truth, and the final ju of things, fancy should retire and stand aside, unle called in to explain and illustrate a difficult point militude.

Another method of deliverance from these pre of fancy, is to compare the *ideas* that arise in our nations with the real nature of things, as often as occasion to judge concerning them; and let calm date reason govern and determine our opinions, fancy should shew never so great a reluctance. F the inferior faculty, and it ought to obey.

IV. The various passions or affections of the mind, are numerous and endless springs of prejudice. They disguise every object they converse with, and put their own colours upon it, and thus lead the judgment astray from truth. It is love that makes the mother think her own child the fairest, and will sometimes persuade us that a blemish is a beauty. Hope and desire make an hour of delay seem as long as two or three hours: Hope inclines us to think there is nothing too difficult to be attempted: Despair tells us that a brave attempt is mere rashness, and that every difficulty is insurmountable. Fear makes us imagine that a bush shaken with the wind has some savage beast in it, and multiplies the dangers that attend our path: But still there is a more unhappy effect of fear, when it keeps millions of souls in slavery to the errors of established religion: What could persuade the wise men and philosophers of a popish country to believe the gross absurdities of the Romish church, but the fear of torture, or death, the galley, or the inquisition? Sorrow and melancholy tempt us to think our circumstances much more dismal than they are, that we may have some excuse for mourning: And envy represents the condition of our neighbor better than it is, that there might be some pretence for her own vexation and uneasiness. Anger, wrath, and revenge, and all those hateful passions, excite in us far worse ideas of men than they deserve, and persuade us to believe all that is ill of them. A detail of the evil influence of the affections of the mind upon our own judgment would make a large volume.

The cure of these prejudices is attained by a constant jealousy of ourselves, and watchfulness over our passions, that they may never interpose when we are called to pass a judgment of any thing; And when our affections are warmly engaged, let us abstain from judging. It would be also of great use to us to form our deliberate judgments of persons and things in the calmest and serenest hours of life, when the passions of nature are all silent, and the mind enjoys its most perfect composure: and these judgments so formed should be treasured up in the mind, that we might have recourse to them in hours of need.

See many sentiments and directions relating to this subject, in my Doctrine of the Passions, a new edition enlarged.

V. The fondness we have for *self*, and the relation which other persons and things have to ourselves, furnish us with another long list of prejudices. This indeed might be reduced to the passion of self-love; but it is so copious an head that I choose to name it a distinct spring of false judgments. We are generally ready to fancy every thing of our own has something peculiarly valuable in it, when indeed there is no other reason, but because it is our own. Were we born among the gardens of Italy, the rocks of Switzerland, or the ice and snows of Russia and Sweden, still we would imagine peculiar excellencies in our native land. We conceive a good idea of the town and village where we first breathed, and think the better of a man for being born near us. We entertain the best opinion of the persons of our own party, and easily believe evil reports of persons of a different sect or faction. Our own sect, our kindred, our houses, and our very names, seem to have something good and desirable in them. We are ready to mingle all these with ourselves, and cannot bear to have others think meanly of them.

So good an opinion have we of our sentiments and practices, that it is very difficult to believe what a reprover says of our conduct; and we are as ready to assent to all the language of flattery. We set up our own opinions in religion and philosophy as the tests of orthodoxy and truth; and we are prone to judge every practice of other men either a duty or a crime, which we think would be a crime or a duty in us, though their circumstances are vastly different from our own. This humour prevails sometimes to such a degree, that we would make our own taste and inclination the standard by which to judge of every dish of meat that is set upon the table, every book in a library, every employment, study, and business of life, as well as every recreation.

It is from this evil principle, of setting up self for a model of what other men ought to be, that the anti-christian spirit of imposition and persecution had its original: *Though there* is no more reason for it than there was for *the practice* of that tyrant, who having a bed fit for h

own size, was reported to stretch men of low stature upon the rack, till they were drawn out of the length of his bed; and some add also, that he cut off the legs of any whom he found too long for it.

It is also from a principle near akin to this, that we pervert and strain the writings of many venerable authors, and especially the sacred books of scripture, to make them speak our own sense. Through the influence which our own schemes or hypotheses have upon the mind, we sometimes become so sharp-sighted as to find these schemes in those places of scripture where the holy writers never thought of them, nor the holy spirit intended them. At other times this prejudice brings such a dimness upon the sight, that we cannot read any thing that opposes our own scheme, though it be written as with sun-beams, and in the plainest language; and perhaps we are in danger in such a case of winking a little against the light.

We ought to bring our minds free, unbiassed, and teachable, to learn our religion from the word of God; but we have generally formed all the lesser as well as the greater points of our religion before-hand, and then we read the prophets and apostles only to pervert them to confirm our own opinions. Were it not for this influence of *self*, and a bigotry to our own tenets, we could hardly imagine that so many strange, absurd, inconsistent, wicked, mischievous, and bloody principles, should pretend to support and defend themselves by the gospel of Christ.

Every learned critic has his own hypothesis; and if the common text be not favourable to his opinion, a various lection shall be made authentic. The text must be supposed to be defective or redundant; and the sense of it shall be literal or metaphorical, according as it best supports his own scheme. Whole chapters or books shall be added or left out of the sacred canon, or be turned into parables by this influence. Luther knew not well how to reconcile the epistle of St. James to the doctrine of justification by faith alone, and so he could not allow it to be divine. The Papists bring all the apocrypha into their bible, and stamp divinity upon it; for they can fancy purgatory is there, and they find prayers for the dead. But they leave out the second commandment, because it for-

bids the worship of images. Others suppose the Mosaic history of the creation, and the fall of man, to be oriental ornaments, or a mere allegory, because the literal sense of those three chapters of Genesis do not agree with their theories. Even an honest plain-hearted and unlearned Christian is ready to find something in every chapter of the bible to countenance his own private sentiments; but he loves those chapters best which speak his own opinion plainest: This is a prejudice that sticks very close to our natures; the scholar is infested with it daily, and the mechanic is not free.

Self has yet a farther and more pernicious influence upon our understandings, and is an unhappy guide in the search after truth. When our own inclination, or our ease, and honor, or our profit, tempt us to the practice of any thing of suspected lawfulness, how do we strain our thoughts to find arguments for it and persuade ourselves it is lawful? We colour over iniquity and sinful compliance with the names of virtue and innocence, or at least of constraint and necessity. All the different and opposite sentiments and practices of mankind are too much influenced by this mean bribery, and give too just occasion for satyrical writers to say, that self interest governs all mankind.

When the judge had awarded due damages to a person into whose field a neighbor's oxen had broke, it is reported that he reversed his own sentence, when he heard that the oxen which had done this mischief were his own. Whether this be a history or a parable, it is still a just representation of the wretched influence of *self* to corrupt the judgment.

One way to amend this prejudice, is to thrust *self* so far out of the question, that it may have no manner of influence whensoever we are called to judge and consider the naked nature, truth, and justice of things. In matters of equity between man and man, our Saviour has taught us an effectual means of guarding against this prejudice, and that is, to put my neighbor in the place of myself, and myself in the place of my neighbour, rather than be bribed by this corrupt principle of self-love to do injury to

our neighbours. Thence arises that golden rule of dealing with others as we would have others deal with us.

In the judgment of truth and falsehood, right and wrong, good and evil, we ought to consider that every man has a SELF as well as we; and that the tastes, passions, inclinations, and interests of different men are very different, and often contrary, and that they dictate contrary things: Unless therefore all manner of different and contrary propositions can be true at once, *self* can never be a just test or standard of truth and falsehood, good and evil.

VI. Tempers, humours, and peculiar turns of the mind, whether they be natural or acquired, have a great influence upon our judgment, and become the occasion of many mistakes. Let us survey a few of them.

(1) Some persons are of an easy and credulous temper, while others are perpetually discovering a spirit of contradiction.

The credulous man is ready to receive every thing for truth that has but a shadow of evidence; every new book that he reads, and every ingenious man with whom he converses, has power enough to draw him into the sentiments of the speaker or writer. He has so much complaisance in him, or weakness of soul, that he is ready to resign his own opinion to the first objection which he hears, and to receive any sentiments of another that are asserted with a positive air and much assurance. Thus he is under a kind of necessity, through the indulgence of this credulous humour, either to be often changing his opinions, or to believe inconsistencies.

The man of contradiction is of a contrary humour, for he stands ready to oppose every thing that is said: He gives but a slight attention to the reasons of other men, from an inward and scornful presumption that they have no strength in them. When he reads or hears a discourse different from his own sentiments, he does not give himself leave to consider whether that discourse may be true; but employs all his powers immediately to confute it. Your great disputers, and your men of controversy, are in continual danger of this sort of prejudice; they contend often for victory, and will maintain whatsoever they have asserted, while truth is lost in the noise and tumult of re-

ciprocal contradictions; and it frequently happens that a debate about opinions is turned into a mutual reproach of persons.

The prejudice of credulity may in some measure be cured, by learning to set a high value on truth, and by taking more pains to attain it; remembering that truth oftentimes lies dark and deep, nad requires us to dig for it as hid treasure; and that falsehood often puts on a fair disguise, and therefore we should not yield up our judgment to every plausible appearance. It is no part of civility or good breeding to part with truth, but to maintain it with decency and candour.

A spirit of contradiction is so pedantic and hateful, that a man should take much pains with himself to watch against every instance of it: He should learn so much good humour, at least, as never to oppose any thing without just and solid reason for it: He should abate some degrees of pride and moroseness, which are never-failing ingredients in this sort of temper, and should seek after so much honesty and conscience as never to contend for conquest or triumph; but to review his own reasons, and to read the arguments of his opponents (if possible) with an equal indifferency, and be glad to spy truth, and to submit to it, though it appear on the opposite side.

(2.) There is another pair of prejudices, derived from two tempers of mind, near akin to those I have just now mentioned; and these are the dogmatical and the sceptical humour, that is, always positive, or always doubting.

By what means soever the dogmatist came by his opinions, whether by his senses or by his fancy, his education or his own reading, yet he believed them all with the same assurances that he does a mathematical truth; he has scarce any mere probabilities that belong to him; every thing with him is certain and infallible; every punctilio in religion is an article of his faith; and he answers all manner of objections by a sovereign contempt.

Persons of this temper are seldom to be convinced of any mistake: A full assurance of their own notions makes all the difficulties on their own side vanish so entirely, that they think every point of their belief is written as with sunbeams, and wonder any one should find a difficulty in it.

are amazed that learned men should make a contro-
of what is to them so perspicuous and indubitable.
west rank of people, both in learned and in vulgar
very subject to this obstinacy.

pticism is a contrary prejudice. The dogmatist is
every thing, and the sceptic believes nothing. Per-
ne has found himself often mistaken in matters of
he thought himself well assured in his younger days,
erefore he is afraid to give his assent to any thing
He sees so much shew of reason for every opinion,
many objections also arising against every doctrine,
: is ready to throw off the belief of every thing : He
ices at once the pursuit of truth, and contents him-
say, There is nothing certain. It is well, if through
luence of such a temper he does not cast away his
n as well as his philosophy, and abandon himself to
ne course of life, regardless of hell or heaven.

n these prejudices last mentioned, though they are
osite to each other, yet they arise from the same
, and that is, impatience of study, and want of dili-
ttention in the search of truth. The dogmatist is
e to believe something ; he cannot keep himself long
n in suspence, till some bright and convincing evi-
appear on one side, but throws himself casually into
ntiments of one party or another, and then he will
o argument to the contrary. The sceptic will not
ains to search things to the bottom, but when he sees
ties on both sides, resolves to believe neither of

Humility of soul, patience in study, diligence in
y, with an honest zeal for truth, would go a great
wards the cure of both these follies.

Another sort of temper that is very injurious to a
udgment of things, is an inconstant, fickle, change-
pirit, and a very uneven temper of mind. When
ersons are in one humour, they pass a judgment of
agreeable to it ; when their humour changes, they
: their first judgment, and embrace a new opinion.
have no steadiness of soul ; they want firmness of
sufficient to establish themselves in any truth, and
ady to change it for the next alluring falsehood that
eable to their change of humour. This fickleness

is sometimes so mingled with their very constitution b ture, or by distemper of body, that a cloudy day i lowering sky shall strongly incline them to form an ion both of themselves and of persons and things r about them, quite different from what they believe the sun shines, and the heavens are serene.

This sort of people ought to judge of things and pe in their most sedate, peaceful, and composed hours o and reserve these judgments for their conduct at mor happy seasons.

(4.) Some persons have a violent and turgid m both of talking and thinking; whatsoever they judge is always with a tincture of this vanity. They are al in extremes, and pronounce concerning every thing i superlative. If they think a man to be learned, *he chief scholar of the age;* If another has low parts, *he greatest blockhead in nature:* If they approve any bo divine subjects, *it is the best book in the world next bible:* If they speak of a storm of rain or hail, *it is th terrible storm that fell since the creation:* And a winter day the *coldest that ever was known.*

But the men of this swelling language ought to re ber, that nature has ten thousand moderate things and does not always deal in extremes as they do.

(5.) I think it may be called another sort of prej derived from humour, when some men believe a do merely because it is ancient, and has been long beli others are so fond of novelty, that nothing prevails their assent so much as new thoughts and new mo Again, there are some who set a high esteem upon thing that is foreign and far fetched; therefore Chin tures are admired, how awkward soever: Others things the more for being of our own native growt vention or manufacture, and these as much despise fo things.

Some men of letters and theology will not believe position even concerning a sublime subject, till every mysterious, deep, and difficult, is cut off from it, th the scripture asserts it never so plainly; others are s of a mystery and things incomprehensible, that they scarce believe the doctrine of the Trinity, if it could l

plained; they incline to that foolish rant of one of the ancients, *Credo quia impossibile est;* I believe it because it is impossible.

To cure these mistakes, remember that neither antique nor novel, foreign nor native, mysterious nor plain, are certain characters either of truth or of falsehood.

I might mention various other *humours of men* that excite in them various prejudices, and leads them into rash and mistaken judgments; but these are sufficient for a specimen.

VII. There are several other weaknesses which belong to human nature, whereby we are led into mistakes, and indeed are rendered almost incapable of passing a solid judgment in matters of great depth and difficulty. Some have a native obscurity of perception, (or shall I call it a want of natural sagacity?) whereby they are hindered from attaining clear and distinct ideas. Their thoughts always seem to have something confused and cloudy in them, and therefore they judge in the dark. Some have a defect of memory, and then they are not capable of comparing their present ideas with a great variety of others, in order to secure themselves from inconsistency in judgment. Others may have a memory large enough, yet they are subject to the same errors, from a narrowness of soul, and such a fixation and confinement of thought to a few objects, that they scarce ever take a survey of things wide enough to judge wisely and well, and to secure themselves from all inconsistencies.

Though these are *natural defects* and *weaknesses*, yet they may in some measures be relieved by labour, diligence, and a due attention to proper rules.

But among all the causes of false judgment which are within ourselves, I ought by no means to leave out that universal and original spring of error, of which we are informed by the word of God; and that is, the sin and defection of our first parents; whereby all our best natural powers, both of mind and body, are impaired and rendered very much inferior to what they were in a state of innocence. Our understanding is darkened, our memory contracted, our corrupt humours and passions are grown *predominant*, our reason enfeebled, and various

disorders attend our constitution and animal nature, whereby the mind is strangely imposed upon in its judgment of things. Nor is there any perfect relief to be expected on earth. There is no hope of ever recovering from these maladies, but by a sincere return to God in the ways of his own appointment, whereby we shall be kept safe from all dangerous and pernicious errors in the matters of religion; and though imperfections and mistakes will hang about us in the present life as the effects of our original apostacy from God, yet we hope for a full deliverance from them when we arrive at heaven.

SECT. IV.

PREJUDICES ARISING FROM OTHER PERSONS.

WERE it not for the springs of prejudice that are lurking in ourselves, we should not be subjected to so many mistakes from the influence of others: But, since our nature is so susceptive of errors on all sides, it is fit we should have hints and notices given us, how far other persons may have power over us, and become the causes of all our false judgments. This might also be cast into one heap, for they are all near akin, and mingle with each other; but for distinction sake let them be called the prejudices of education, of custom, of authority, and such as arise from the manner of proposal.

I. Those with whom our education is intrusted may lay the first foundation of many mistakes in our younger years. How many fooleries and errors are inlisted into us by our nurses, our fellow-children; by servants or unskilled teachers; which are not only maintained through the following parts of life, but sometimes have a very unhappy influence upon us! We are taught that there are bugbears and goblins in the dark; our young minds are crouded with the terrible ideas of ghosts appearing upon every occasion, or with the pleasanter tales of fairies dancing at midnight. We learn to prophecy betimes, to foretel futurities by good or evil omens, and to presage ap-

proaching death in a family by ravens and little worms, which we therefore call a death watch. We are taught to know beforehand, for a twelvemonth together, which days of the week will be fair or foul, which will be lucky or unlucky; nor is there any thing so silly, but may be imposed upon our understandings in that early part of life; and these ridiculous stories abide with us too long, and too far influence the weaker part of mankind.

We choose our particular set and party in the civil, the religious, and the learned life, by the influence of education. In the colleges of learning, some are for the nominals, and some for the realists, in the science of metaphysics, because their tutors were devoted to these parties. The old philosophy and the new have gained thousands of partisans the same way: And every religion has its infant votaries, who are born, live and die in the same faith, without examination of any article. The Turks are taught early to believe in Mahomet; the Jews in Moses; the heathens worship a multitude of gods, under the force of their education. And it would be well if there were not millions of Christians, who have little more to say for their religion, than that they were born and bred up in it. The greatest part of the Christian world can hardly give any reason why they believe the Bible to be the word of God, but because they have always believed it, and they were taught so from their infancy. As Jews and Turks, and American Heathens, believe the most monstrous and incredible stories, because they have been trained up amongst them, as articles of faith; so the Papists believe their transubstantiation, and make no difficulty of assenting to impossibilities, since it is the current doctrine of their catechisms. By the same means, the several sects and parties in Christianity believe all the strained interpretations of scripture by which they have been taught to support their own tenets: They find nothing difficult in all the absurd glosses and far-fetched senses, that are sometimes put upon the words of the sacred writers, because their ears have been always accustomed to these glosses; and therefore they sit so smooth and easy upon their understandings, that they know not how to admit the most natural and easy interpretation in opposition to them.

In the same manner, we are nursed up in many silly and gross mistakes about domestic affairs, as well as in matters of political concernment. It is upon the same ground that children are trained up to be Whigs and Tories betimes; and every one learns the distinguishing terms of his own party, as the Papists learn to say their prayers in Latin, without any meaning, reason, or devotion.

This sort of prejudice must be cured by calling all the principles of our young years to the bar of more mature reason, that we may judge of the things of nature and political affairs by juster rules of philosophy and observation: And even the matters of religion must be first enquired into by reason and conscience, and when these have led us to believe scripture to be the word of God, then that becomes our sovereign guide, and reason and conscience must submit to receive its dictates.

II. The next prejudice which I shall mention, is that which arises from the custom or fashion of those amongst whom we live. Suppose we have freed ourselves from the younger prejudices of our education, yet we are in danger of having our mind turned aside from truth by the influence of general custom.

Our opinion of meats and drinks, of garments and forms of salutation, are influenced much more by custom, than by the eye, the ear, or the taste. Custom prevails even over sense itself, and therefore no wonder it it prevail over reason too. What is it but *custom* that renders many of the maxims of food and sauces elegant in Britain, which would be awkward and nauseous to the inhabitants of China, and indeed were nauseous to us when we first tasted them? What but custom could make those salutations polite in Muscovy, which are ridiculous in France or England? We call ourselves indeed the politer nations, but it is we who judge thus of ourselves; and that fancied politeness is oftentimes more owing to custom than reason. Why are the forms of our present garments counted beautiful, and those fashions of our ancestors the matter of scoff and contempt, which in their day were all decent and genteel? It is custom that forms our opinion of dress, and reconciles by degrees to those habits which at first seemed very odd and monstrous. It must be grant-

ed, there are some garments and habits which have a natural congruity, or incongruity, modesty, or immodesty, decency or indecency, gaudery or gravity; though for the most part there is but little of reason in these affairs: But what little there is of reason or natural decency, custom triumphs over all. It is almost impossible to persuade a gay lady that any thing can be decent which is out of the fashion; And it were well if fashion stretched its powers no farther than the business of drapery and the fair sex.

The methods of our education are governed by custom. It is custom, and not reason, that sends every boy to learn the Roman poets, and begin a little acquaintance with Greek, before he is bound an apprentice to a soapboiler or leather seller. It is custom alone that teaches us Latin by the rules of a Latin grammar; a tedious and absurd method! And what is it but custom that has for past centuries confined the brightest geniuses, even of the highest rank in the female world, to the business of the needle only, and secluded them most unmercifully from the pleasure of knowledge, and the divine improvement of reason? But we begin to break all these chains, and reason begins to dictate the education of youth. May the growing age be learned and wise!

It is by the prejudice arising from our own customs, that we judge of all other civil and religious forms and practices. The rites and ceremonies of war and peace in other nations, the forms of weddings and funerals, the several ranks of magistracy, the trades and employments of both sexes, the public and the domestic affairs of life, and almost every thing of foreign customs is judged irregular. It is all imagined to be unreasonable or unnatural, by those who have no other rule to judge of nature, and reason, but the customs of their own country, or the little town where they dwell. Custom is called a second nature, but we often mistake it for nature itself.

Besides all this, there is a fashion in opinions, there is a fashion in writing and printing, in style and language. In our day it is the vogue of the nation that parliaments may settle the succession of the crown, and that a people can make a *king*; *in* the last age this was a doctrine akin

to treason. Citations from the Latin poets were an embellishment of style in the last century, and whole pages in that day were covered with them; it is forbidden by custom, and exposed by the name of pedantry; whereas in truth both these are extremes. Sometimes our printed books shall abound in capitals, and sometimes reject them all. Now we deal much in essays, and most unreasonably despise systematic learning, whereas our fathers had a just value for regularity and systems; then folios and quartos were the fashionable sizes, as volumes in octavo are now. We are ever ready to run into extremes, and yet custom still persuades us that reason and nature are on our side.

This business of the fashion has a most powerful influence on our judgments; for it employs those two strong engines of fear and shame to operate upon our understandings with unhappy success. We are ashamed to believe or profess an unfashionable opinion in philosophy; and a cowardly soul dares not so much as indulge a thought contrary to the established or fashionable faith, nor act in opposition to custom, though it be according to the dictates of reason.

I confess there is a respect due to mankind, which should incline even the wisest of men to follow the innocent customs of their country in the outward practices of civil life, and in some measure to submit to fashion in all indifferent affairs, where reason and scripture make no remonstrances against it. But the judgments of the mind ought to be for ever free, and not biassed by the customs and fashions of any age or nation whatsoever.

To deliver our understandings from this danger and slavery, we should consider three things.

1. That the greatest part of the civil customs of any particular nation or age spring from humour rather than reason. Sometimes the humour of the prince prevails, and sometimes the humour of the people. It is either the great or the many who dictate the fashion, and these have not always the highest reason on their side.

2. Consider also, that the customs of the same nations in different ages, the customs of different nations in the same age, and the customs of different towns and villages

in the same nation, are very various and contrary to each other. The fashionable learning, language, sentiments, and rules of politeness, differ greatly in different countries and ages of mankind ; but truth and reason are of a more uniform and steady nature, and do not change with the fashion. Upon this account, to cure the prepossessions which arise from custom, it is of excellent use to travel and see the customs of various countries, and to read the travels of other men, and the history of past ages, that every thing may not seem strange and uncouth which is not practised within the limits of our parish, or in the narrow space of our own life-time.

3. Consider yet again, how often we ourselves have changed our opinions concerning the decency, propriety, or congruity of several modes or practices in the world, especially if we have lived to the age of thirty or forty. Custom or fashion, even in all its changes, has been ready to have some degree of ascendency over our understandings, and what at one time seemed decent, appears obsolete and disagreeable afterward, when the fashion changes. Let us learn therefore to abstract as much as possible from custom and fashion, when we would pass a judgment concerning the real value & intrinsic nature of things.

III. The authority of men is the spring of another rank of prejudices.

Among these, the authority of our forefathers and ancient authors is most remarkable. We pay deference to the opinion of others merely because they lived a thousand years before us ; and even the trifles and impertinencies that have a mark of antiquity upon them are reverenced for this reason, because they came from the ancients.

It is granted that the ancients had many wise and great men among them, and some of their writings, which time hath delivered down to us, are truly valuable : But those writers lived rather in the infant state of the world ; and the philosophers, as well as the polite authors of our age, are properly the elders who have seen the mistakes of the younger ages of mankind, and corrected them by observation and experience.

Some borrow all their religion from the fathers of the Christian church, or from their synods or councils ; but

he that will read Monsieur Daille on the use of the fathers, will find many reasons why they are by no means fit to dictate our faith, since we have the gospel of Christ, and the writings of the apostles and prophets in our hands.

Some persons believe every thing that their kindred, their parents, and their tutors believe. The veneration and the love which they have for their ancestors incline them to swallow down all their opinions at once, without examining what truth or falsehood there is in them. Men make up their principles by inheritance, and defend them as they would their estates, because they are born heirs to them. I freely grant, that parents are appointed by God and nature to teach us all the sentiments and practice of our younger years; and happy are those whose parents lead them into the paths of wisdom and truth! I grant farther, that when persons come to years of discretion, and judge for themselves, they ought to examine the opinions of their parents with the greatest modesty, and with an humble deference to their superior character; they ought in matters perfectly dubious to give the preference to their parents advice, and always to pay them the first respect, nor ever depart from their opinions and practice, till reason and conscience make it necessary. But, after all, it is possible that parents may be mistaken, and therefore reason and scripture ought to be our final rules of determination in matters that relate to this world and that which is to come.

Sometimes a favorite author, or a writer of great name, drags a thousand followers after him into his own mistakes, merely by the authority of his name and character. The sentiments of Aristotle were imbibed and maintained by all the schools in Europe for several centuries; and a citation from his writings was thought a sufficient proof of any proposition. The great Descartes had also too many implicit believers in the last age, though he himself, in his philosophy, disclaims all such influence over the minds of his readers. Calvin and Luther, in the days of reformation from Popery, were learned and pious men and there have been a succession of their disciples even to this day, who pay too much reverence to the *words of their* masters. There are others who re-

nounce their authority, but give themselves up in too servile a manner to the opinion and authority of other masters, and follow as bad or worse guides in religion.

If only learned, and wise, and good men had influence on the sentiments of others, it would be at least a more excusable sort of prejudice, and there would be some colour of shadow and reason for it: But that riches, honours, and outward splendor, should set up persons for dictators to all the rest of mankind; this is a most shameful invasion of the right of our understanding on the one hand, and as shameful a slavery of the soul on the other. The poor man, or the labourer, too often believes such a principle in politics, or in morality, and judges concerning the rights of the king and the people just as his wealthy neighbour does. Half the parish follows the opinion of the esquire; and the tenants of a manor fall into the sentiments of their lord, especially if he lives among them. How unreasonable, and yet how common is this!

As for the principles of religion, we freqently find how they are taken up and forsaken, changed and resumed by the influence of princes. In all nations, the priests have much power also in dictating the religion of the people, but the princes dictate to them: And, where there is a great pomp and grandeur attending the priesthood in any religion whatsoever, with so much the more reverenc and stronger faith do the people believe whatever they teach them: Yet it is too evident, that riches and dominions, and high titles, in church or state, have no manner of pretence to truth and certainty, wisdom and goodness, above the rest of mortals, because the superiorities in this world are not always conferred according to merit.

I confess, where a man of wisdom and years, of observation and experience, gives us his opinion and advice in matters of the civil or the moral life; reason tells us we should pay a great attention to him, and it is probable he may be in the right. Where a man of long exercise in piety speaks of practical religion, there is due deference to be paid to his sentiments: And the same we may say conterning an ingenious man, long versed in any art or science, he may justly expect due regard when he speaks of

his own affairs and proper business. But, in other things, each of these many be ignorant enough, notwithstanding all their piety and years, and particular skill: Nor even in their own proper province are they to be believed in every thing, without reserve and without examination.

To free ourselves from these prejudices, it is sufficient to remember, that there is no rank or character among mankind, which has any such pretence to sway the judgments of other men by their authority: For there have been persons of the same rank and character who have maintained different and contrary sentiments; but all these can never be true, and therefore the mere name or reputation that any of them possess is not a sufficient evidence of truth.

Shall we believe the ancients in philosophy? But some of the ancients were Stoics, some Peripatetics, some Platonics, and some Epicureans, some Cynics, and some Sceptics. Shall we judge of matters of the Christian faith by the fathers, or primitive writers for three or four hundred years after Christ? But they often contradicted one another, and themselves too; and, what is worse, they sometimes contradicted the scripture itself. Now, among all these different and contrary sentiments in philosophy and religion, which of the ancients must we believe, for we cannot believe them all?

Again, To believe in all things as our predecessors did, is the ready way to keep mankind in an everlasting state of infancy, and to lay an eternal bar against all the improvements of our reason and our happiness. Had the present age of philosophers, satisfied themselves with the substantial forms and occult qualities of Aristotle, with the solid spheres, eccentrics, and epicycles of Ptolemy, and the ancient astronomers; then the great Lord Bacon, Copernicus, and Descartes, with the greater Sir Isaac Newton, Mr. Locke, and Mr. Boyle, had risen in our world in vain. We must have blundered on still, in successive generations among absurdities and thick darkness, and a hundred useful inventions for the happiness of human life had never been known.

Thus it is in the matters of philosophy and science. But, you will say, shall not our own ancestors determine

our judgment in matters of civil or religious concernment? If they must, then the child of a Heathen must believe that Heathenism is truth; the son of a Papast must assent to all the absurdities of Popery; the posterity of the Jews and Socinians must forever be Socinians and Jews; and a man whose father was of Republican principles, must make a succession of Republicans in his family to the end of the world. If we ought always to believe whatsoever our parents, our priests or our princes believe, the inhabitants of China ought to worship their own idols, and the savages of Africa ought to believe all the nonsense, and practise the idolatry of their Negro fathers and kings. The British nation, when it was Heathen, could never have become Christian; and, when it was a slave to Rome, it could never have been reformed.

Besides, let us consider, that the great God, our common Maker, has never given one man's understanding a legal and rightful sovereignty to determine truths for others, at least after they are past the state of childhood or minority. No single person, how learned and wise, and great soever, or whatsoever natural, or civil, or ecclesiastical relations he may have to us, can claim this dominion over our faith. St. Paul the apostle, in his private capacity, would not do it; nor hath an inspired man any such authority, until he makes divine commission appear. Our Saviour himself tells the Jews, that if he had not done such monstrous works among them, they had not sinned in disbelieving his doctrines, and refusing him for the Messiah. No bishop or presbyter, nor synod or council, no church or assembly of men, since the days of inspiration, hath power derived to them from God to make creeds or articles of faith for us, and impose them upon our understandings. We must all act according to the best of our light, and the judgment of our own consciences, using the best advantages which providence hath given us, with an honest and impartial diligence to inquire and search out the truth; For every one of us must give an account of himself to God. To believe as the church, or the court believes, is but a sorry and a dangerous faith: This principle would make more Heathens than Christians, and more Papists than Protestants; and perhaps lead more

souls to hell than to heaven; for our Saviour himse hath plainly told us, that if the blind will be led by th blind, they must both fall into the ditch.

Though there be so much danger of error arising fro the three prejudices last mentioned, yet, before I dismi this head, I think it proper to take notice, that, as educ tion, custom, and authority, are no sure evidences of trut so neither are they certain marks of falsehood: for re son and scripture may join to dictate the same thing which our parents, our nurses, our tutors, our friends, a our country believe and profess. If there appears som times in our age a pride and petulancy in youth, zealo to cast off the sentiments of their fathers, and teachers, purpose to shew that they carry none of the prejudices education and authority about them; they indulge all ma ner of licentious opinions and practices, from a vain pr tence of asserting their liberty. But alas! This is b changing one prejudice for another; and sometimes happens by this means, that they make a sacrifice both truth and virtue to the vile prejudices of their pride a sensuality.

IV. There is another tribe of prejudices which a near akin to those of authority, and that is, when we r ceive a doctrine because of the manner in which it is pr posed to us by others. I have already mentioned the po erful influence that oratory and fine words have to insin ate a false opinion; and sometimes truth is refused, a suffers contempt in the lips of a wise man, for want of t charms of language: But there are several other ma ners of proposal, whereby mistaken sentiments are powe fully conveyed into the mind.

Some persons are easily persuaded to believe wh another dictates with a positive air, and a great degree assurance: They feel the overbearing force of a con dent dictator, especially if he be of a superior rank character to themselves.

Some are quickly convinced of the truth of any do trine, when he that proposes it puts on all the airs of piet and makes solemn appeals to heaven, and protest tions of the truth of it: The pious mind of a weak

Christian is ready to receive any thing that is pronounced with such an awful solemnity.

It is a prejudice near akin to this, when an humble soul is frightened into any particular sentiments of religion, because a man of great name or character pronounces heresy upon the contrary sentiments, casts the disbeliever out of the church, and forbids him the gates of heaven.

Others are allured into particular opinions by gentler practices on the understanding: Not only the soft tempers of mankind, but even hardy and rugged souls, are sometimes led captives to error by the soft air of address, and the sweet and engaging methods of persuasion and kindness.

I grant, where natural or revealed religion plainly dictate to us the infinite and everlasting importance of any sacred doctrine, it cannot be improper to use any of these methods, to persuade men to receive and obey the truth, after we have given sufficient reason and argument to convince their understandings. Yet all these methods, considered in themselves, have been often used to convey falsehood into the soul as well as truth; and if we build our faith merely upon these foundations, without regard to the evidence of truth, and the strength of argument, our belief is but the effect of prejudice: For neither the positive, the awful or solemn, the terrible or the gentle methods of address carry any certain evidence with them that truth lies on that side.

There is another manner of proposing our own opinion, or rather opposing the opinions of others, which demands a mention here, and that is when persons make a jest serve instead of an argument; when they refute what they call error, by a turn of wit, and answer every objection against their own sentiments by casting a sneer upon the objector. These scoffers practise with success upon weak and cowardly spirits: Such as have not been well established in religion or morality, have been laughed out of the best principles by a confident buffoon: they have yielded up their own opinions to a witty banterer, and sold their faith and religion for a jest.

There is no way to cure these evils in such a degenerate world as we live in, but by learning to distinguish well be-

tween the substance of any doctrine, and the manner address, either in proposing, attacking, or defending i and then by setting a just and severe guard of reason a conscience over all the exercises of our judgment, reso ing to yield to nothing but the convincing evidence of tru religiously obeying the light of reason, in matters of pu reason, and the dictates of revelation in things that rel to our faith.

Thus we have taken a brief survey of some of the in nite varieties of prejudice that attend mankind on eve side of the present state, and the dangers of error, or rash judgment, we are perpetually exposed to in this lif This chapter shall conclude with one remark, and o piece of advice.

The remark is this, The same opinion, whether fal or true, may be dictated by many prejudices at the sam time; for, as I hinted before, prejudice may happen dictate truth sometimes as well as error. But, when tw or more prejudices oppose one another, as it often ha pens, the stronger prevails and gains the assent: Yet h seldom does reason interpose with sufficient power to g the ascendant of them all, as it ought to do!

The advice follows, namely, Since we find such a swar of prejudices attending us both within and without; sin we feel the weakness of our reason, the frailty of our n tures, and our insufficiency to guard ourselves from err upon this account, it is not at all unbecoming the chara ter of a logician or a philosopher, together with the advi already given, to direct every person in his search aft truth to make his daily addresses to heaven, and implo the God of truth to lead him into all truth, and to ask wi dom of him who giveth liberally to them that ask it, an upbraideth us not with our follies.

Such a devout practice will be an excellent preparati for the best improvement of all the directions and rul proposed in the two following chapters.

CHAP. IV.

GENERAL DIRECTIONS TO ASSIST US IN JUDGING ARIGHT.

THE chief design of the art of logic is to assist us in forming a true judgment of things; a few proper observations for this end have been dropt occasionally in some of the foregoing chapters: Yet it is necessary to mention them again in this place, that we may have a more complete and simultaneous view of the general directions, which are necessary in order to judge aright. A multitude of advices may be framed for this purpose; the chief of them may, for order sake, be reduced to the following heads.

Direction I. "When we consider ourselves as philosophers, or searchers after truth, we should examine all our old opinions afresh, and inquire what was the ground of them, and whether our assent was built on just evidence; and then we should cast off all those judgments which were formed heretofore without due examination." A man in pursuit of knowledge should throw off all those prejudices which he had imbibed in times past, and guard against all the springs of error mentioned in the preceding chapter, with the utmost watchfulness, for time to come.

Observe here, That this rule of casting away all our former prejudicate opinions and sentiments is not proposed to any of us to be practised at once, considered as men of business or religion, as friends or neighbors, as fathers or sons, as magistrates, subjects, or christians; but merely as philosophers and searchers after truth: And though it may be well presumed that many of our judgments, both true and false, together with the practices built thereon in the natural, the civil, and the religious life, were formed without sufficient evidence; yet an universal rejection of all these might destroy at once our present sense and practice of duty with regard to God, ourselves, and our fellow creatures. Mankind would be hereby thrown into such a

state of doubting and indifference, that it would be too lo
ere they recovered any principles of virtue or religion
a train of reasonings.

Besides, the common affairs of human life often deme
a much speedier determination, and we must many tim
act upon present probabilities: The bulk of mankind ha
not time and leisure, and advantage sufficient to begin
their knowledge anew, and to build up every single op
ion and practice afresh, upon the justest grounds of e
dence.

Yet let it be observed also, that so far as any person
capable of forming and correcting his notions, and
rules of conduct in the natural, civil, and religious l
by the strict rules of logic; and so far as he hath ti
and capacity to review his old opinions, to re-examine
those which are any ways doubtful, and to determine
thing without just evidence, he is likely to become
much the wiser and the happier man: and, if divine gr
assist him, so much the better Christian. And thou
this cannot be done all at once, yet it may be done by p
dent steps and degrees, till our whole set of opinions a
principles be in time corrected and reformed, or at le
established upon juster foundations.

Direction II. "Endeavour that all your ideas of th
objects, concerning which you pass any judgment,
clear and distinct, complete, comprehensive, extensi
and orderly, as far as you have occasion to judge conce
ing them." This is the substance of the last chapter
the first part of logic. The rules which direct our c
ceptions must be reviewed, if we would form our ju
ments aright. But if we will make haste to judge at
adventures, while our ideas are dark and confused, and
ry imperfect, we shall be in danger of running into ma
mistakes. This is like a person who would pretend
give the sum total of a large account in arithmetic, wi
out surveying all the particulars; or as a painter, w
professes to draw a fair and distinct landscape in the t
light, when he can hardly distinguish a house from a t

Observe here, That this direction does not require
to gain clear, distinct, complete ideas of things in all t
parts, powers, and qualities, in an absolute sense; for

belongs to God alone, and is impossible for us to attain: But it is expressed in a relative or limited sense; that is, our ideas should be clear, distinct, and comprehensive, &c. at least so far as we have occasion at that time to judge concerning them. We may form many true and certain judgments concerning God, angels, men, heaven, hell, &c. by those partial and very imperfect conceptions of them to which we have attained, if we judge no farther concerning them than our conceptions reach.

We may have a clear and distinct idea of the existence of many things in nature, and affirm that they do exist, though our ideas of their intimate essences and causes, their relations and manners of action, are very confused and obscure. We may judge well concerning several properties of any being, though other properties are unknown; for perhaps we know not all the properties of any being whatsoever.

Sometimes we have clear ideas of the absolute properties of an object; and we may judge of them with certainty, while the relative properties are very obscure and unknown to us. So we may have a clear and just idea of the area of a parallelogram, without knowing what relation it bears to the area of a triangle, or a polygon: I may know the length of the diameter of a circle, without knowing what proportion it has to the circumference.

There are other things, whose external relative properties, with respect to each other, or whose relation to us we know better than their own inward and absolute properties, or their essential distinguishing attributes. We perceive clearly, that fire will warm or burn us, and will evaporate water; and that water will allay our thirst, or quench the fire, though we know not the inward distinguishing particles, or prime essential properties of fire or water. We may know the King, and Lord Chancellor, and affirm many things of them in their legal characters, though we can have but a confused idea of their persons or natural features, if we have never seen their faces. So the scripture has revealed God himself to us, as our Creator, Preserver, Redeemer, and Sanctifier, and as the object of our worship, in clearer ideas than it has revealed many *other abstruse* questions which may be raised

about his divine essence or substance, his immensity or omnipresence.

This therefore is the general observation in order to guide our judgments, "That we should not allow ourselves to form a judgment concerning things farther than our clear and distinct ideas reach, and then we are not in danger of error."

But there is one considerable objection against this rule, and which is necessary to be answered; and there is one just and reasonable exception, which is as needful to be mentioned.

The objection is this: May we not judge safely concerning some total or complete ideas, when we have a clear perception only of some parts or properties of them? May we not affirm, that all that is in God is eternal, or that all his unknown attributes are infinite, though we have so very imperfect an idea of God, eternity, and infinity? Again, May we not safely judge of particular objects, whose idea is obscure, by a clear idea of the general? May I not affirm, That every unknown species of animals has inward springs of motion, because I have a clear idea that these inward springs belong to an animal in general?

Answer. All those supposed unknown parts, properties, or species, are clearly and distinctly perceived to be connected with, or contained in the known parts, properties, or general ideas, which we suppose to be clear and distinct, as far as we judge of them: And as we have no particular idea of those unknown divine attributes, or unknown species of animals; so there is nothing particular affirmed concerning them beyond what belongs to the general idea of divine attributes, or animals, with which I clearly and distinctly perceive them to be connected.

It may be illustrated in this manner. Suppose a long chain lies before me, whose nearest links I see are iron rings, and I see them fastened to a post near me, but the most distant links lie beyond the reach of my sight, so that I know not whether they are oval or round, brass or iron: Now I may boldly affirm, the whole length of this chain is fastened to the post, for I have a clear idea that *the nearest* links are thus fastened, and a clear idea that *the distinct* links are connected with the nearest, if I can *draw the* whole chain by one link.

Or thus: If two known ideas, A and B are evidently joined, or agree, and if C unknown be included in A, and also D unknown be included in B, then I may affirm that C and D are joined and agree: For I have a clear perception of the union of the two known ideas A and B; and also a clear perception of the connection of the unknown ideas with the known. So that clear and distinct ideas must still abide as a general necessary qualification, in order to form a right judgment: And indeed it is upon this foot that all ratiocination is built, and the conclusions are thus formed, which reduce things unknown from things known.

Yet it seems to me, that there is one just limitation or exception to this general rule of judgment, as built on clear and distinct ideas, and it is this.

Exception. In matter of mere testimony, whether human or divine, there is not always a necessity of clear and distinct ideas of the things which are believed. Though the evidence of propositions, which are entirely formed by ourselves, depends on the clearness and distinctness of those ideas of which they are composed, and on our own clear perception of their agreement or disagreement, yet we may justly assent to propositions formed by others, when we have neither a very clear conception in ourselves of the true ideas contained in the words, nor how they agree or disagree; provided always, that we have a clear and sufficient evidence of the credibility of the persons who inform us.

Thus when we read in scripture the great doctrines of the deity of Christ, of the union of the divine and human natures in him, of the divine agency of the blessed Spirit, that the Son is the brightness of the Father's glory, that all things were created by him and for him, that the Son shall give up the kingdom to the Father, and that God shall be all in all; we may safely believe them: For, though the ideas of these subjects themselves are not sufficiently clear, distinct, and perfect, for our own minds to form these judgments or propositions concerning them, yet we have a clear and distinct perception of God's revealing them, or that they are contained in scripture; and this is *sufficient evidence* to determine our assent.

The same thing holds true in some measure, where credible human testimony assures us of some propositions, while we have no sufficient ideas of the subject and predicate of them to determine our assent. So when an honest and learned mathematician assures a ploughman that the three angles of a triangle are equal to two right angles, or that the square of the hypothenuse of a right-angled triangle is equal to the sum of the squares of the two sides; the ploughman, who has but confused ideas of these things, may firmly and easily believe these propositions, upon the same ground because he has evidence of the skill and faithfulness of his informer.*

* Perhaps some may object against this representation of things, and say, that "We cannot properly be said to believe a proposition any further than we ourselves have ideas under the terms: Therefore, if we have no ideas under the terms, we believe nothing but the connection of words or sounds; and, if we have but obscure and inadequate ideas under the terms, then we partly believe a connection of things, and partly a connection of sounds. But that we cannot properly be said to believe the proposition, for our faith can never go beyond our ideas."

Now, to set this matter in a clear light, I suppose that every proposition which is proposed to my assent, is a sentence made up of terms which have some ideas under them known or unknown to me. I confess, if I believe there are no ideas at all under the terms, and there is nothing meant by them, then indeed, with regard to me, it is the mere joining of sounds: But if, for instance, a ploughman has credible information from an honest and skilful mathematician, that an elipsis is made by the section of a cone, he believes the proposition, or he believes the sentence is true, as it is made up of terms which his informant understands, though the ideas be unknown to him; that is, he believes there are some ideas which his informant has under these words which are really connected. And, I think, this may be called believing the proposition, for it is a belief of something more than the mere joining of sounds; it is a belief of the real connection of some unknown ideas belonging to those sounds; and in this sense a man may be said to believe the truth of a proposition, which he doth not understand at all.

With more reason still may we be said to believe a proposition upon credible testimony, if we have some sort of ideas under the terms, though they are but partial or inadequate and obscure; such as Divine answers were given by Urim and Thummim: For, since it is purely upon testimony we believe the known parts of the ideas *signified* by those words to be connected, upon the same testimony *we may also* believe all the unknown parts of the ideas signified by

Direction III. "When you have obtained as clear and comprehensive ideas as needful, both of the subject and predicate of a proposition, then compare those ideas of the subject and predicate together with the utmost attention, and observe how far they agree, and wherein they differ." Whether the proposition may be affirmed absolutely or relatively, whether in whole or in part, whether universally or particularly, and then under what particular limitations. Turn these ideas about in your mind, and take a view of them on all sides, just as a mason would do to see whether two hewn stones exactly suit each

those words to be connected, namely, because our informant is knowing and faithful. And in this sense we may justly be said to believe a proposition of scripture entirely, which we understand but very imperfectly, because God who reveals it is knowing and faithful in perfection.

And indeed, unless this representation of the matter be allowed, there are but very few propositions in the world, even in human things, to which we can give an entire assent, or which we may be said either to know, or believe, because there is scarce any thing on earth of which we have an adequate, and most perfect idea. And it is evident, that in divine things there is scarce any thing which we could either know or believe, without this allowance: For, though reason and revelation join to inform me, that God is holy, how exceeding inadequate are my ideas of God, and of his holiness? Yet I may boldly and entirely assent to this whole proposition, since I am sure that every known and unknown idea signified by the term God is connected with the ideas of the term holiness, because reason partly informs me, but especially because the divine testimony which has connected them is certainly credible.

I might argue from this head perhaps more forcibly from the doctrine of God's incomprehensibleness. If we could believe nothing but what we have ideas of, it would be impossible for us to believe that God is incomprehensible: For this implies in it a belief that there are some unknown ideas belonging to the nature of God. Therefore we both believe and profess that something concerning unknown ideas, when we believe and profess that God is incomprehensible.

I persuade myself that most of those very persons who object against my representation of things, will yet readily confess, they believe all the propositions in scripture, rather than to declare they do not believe several of them; though they must acknowledge that several of them are far above their understanding, or that they have scarce any ideas of the true sense of them. And therefore, where propositions derived from credible testimony are made up of dark or unde-

other in every part, and are fit to be joined in erecting a carved or fluted pillar.

Compare the whole subject with the whole predicate in their several parts: Take heed in this matter that you neither add to, nor diminish the ideas contained in the subject or in the predicate; for such an inadvertence or mistake will expose you to great error in judgment.

Direction IV. "Search for evidence of truth with diligence and honesty, and be heartily ready to receive evidence, whether for the agreement or disagreement of ideas."

Search with diligence; spare no labour in searching for the truth, in due proportion to the importance of the proposition. Read the best authors who have writ on that subject; consult your wise and learned friends in conversation; and be not unwilling to borrow hints toward

equate ideas, I think it is much more proper to say we believe them, than that we do not believe them, lest we cut off a multitude of the propositions of the bible from our assent of faith.

Yet let it be observed here, that when we believe a proposition on mere testimony, of which we have no ideas at all, we can only be said to give a general implicit assent to the truth of that proposition, without any particular knowledge of, or explicit assent to the special truth contained in that proposition; And thus our implicit assent is of very little use, unless it be to testify our belief of the knowledge and veracity of him that informs us.

As our ideas of a proposition are more or less clear and adequate, as well as just and proper, so we do explicitly assent more or less to the particular truth contained in that proposition. And our assent hereby becomes more or less useful for the increase of our knowledge, or the direction of our practice.

When divine testimony plainly proposes to our faith such a proposition whereof we have but obscure, doubtful, and inadequate ideas, we are bound implicitly to believe the truth of it, as expressed in those terms, in order to shew our submission to God who revealed it, as a God of perfect knowledge and veracity: But it is our duty to use all proper methods to obtain a farther and explicit knowledge of the particular truth contained in the proposition, if we would improve by it either in knowledge or virtue. All necessary rules of grammar and criticism should be employed to find out the very ideas that belong to those words, and which were designed by the divine speaker or writer. Though we may believe the truth of a proposition which we do not understand, yet we should endeavour to understand every proposition *which we believe* to be true.

your improvement from the meanest person, nor to receive any glimpse of light from the most unlearned. Diligence and humility is the way to thrive in the riches of the understanding, as well as in gold or silver. Search carefully for the evidence of truth, and dig for wisdom as for hid treasure.

Search with a steady honesty of soul, and a sincere impartiality, to find the truth. Watch against every temptation that might bribe your judgment, or warp it aside from truth. Do not indulge yourself to wish any unexamined proposition were true or false. A wish often perverts the judgment, and tempts the mind strangely to believe upon slight evidence whatsoever we wish to be true or false.

Direction V. "Since the evidence of the agreement or disagreement of two ideas is the ground of our assent to any proposition, or the great criterion of truth; therefore we should suspend our judgment, and neither affirm or deny till this evidence appear."

This direction is different from the second; for, though the evidence of the agreement or disagreement of two ideas most times depends on the clearness and distinctness of the ideas themselves, yet it does not always arise hence. Testimony may be sufficient evidence of the agreement or disagreement of two obscure ideas, as we have seen just before in the exception under the second direction. Therefore, though we are not universally and in all cases bound to suspend our judgment till our ideas of the objects themselves are clear and distinct, yet we must always suspend our judgment, and withhold our assent to, or denial of any proposition, till some just evidence appear of its truth or falsehood. It is an impatience of doubt and suspence, a rashness and precipitance of judgment, and hastiness to believe something on one side or the other, that plunges us into many errors.

This direction to delay and to suspend our assent is more particularly necessary to be observed, when such propositions offer themselves to us as are supported by education, authority, custom, inclination, interest, or other powerful prejudices: for our judgment is led away insensibly *to believe* all that they dictate; and, where pre-

judices and dangers of error are multiplied, we should set the strictest guard upon our assent.

Yet remember the caution or limitation here which I gave under the first objection, namely, that this is not to be too strictly applied to, in matters of daily practice, either in human life or religion; but, when we consider ourselves as philosophers, or searchers after truth, we should always withhold our assent where there is not just evidence: And, as far and as fast as we can, in a due consistence with our daily necessary duties, we should also reform and adjust all our principles and practices, both in religion and the civil life, by these rules.

Direction VI. "We must judge of every proposition by those proper and peculiar mediums or means, whereby the evidence of it is to be obtained, whether it be sense, consciousness, intelligence, reason or testimony. All our faculties and powers are to be employed in judging of their proper objects."

If we judge of sounds, colours, odours, sapors, the smoothness, roughness, softness, or hardness of bodies, it must be done by the use of our senses: But then we must take heed that our senses are well disposed, as shall be shewn afterward.

And since our senses in their various exercises are in some cases liable to be deceived, and more especially when by our eyes or our ears we judge of the figure, quantity, distance, and position of objects that are afar off, we ought to call our reason in to the assistance of our senses, and correct the errors of one sense by the help of another.

It is by the powers of sense and reason joined together, that we must judge philosophically of the inward nature, the secret properties and powers, the causes and effects, the relations and proportions, of a thousand corporeal objects which surround us on earth, or are placed at a distance in the heavens. If a man, on the one hand, confines himself only to sensible experiments, and does not exercise reason upon them, he may surprise himself and others with strange appearances, and learn to entertain the world with sights and shews, but never become a philosopher: And, on the other hand, if a man imprisoned

scure idea, for we know not what was the peculiar agen- himself in his closet, and employ the most exquisite pow- ers of reason to find out the nature of things in the copo- real world, without the use of his senses, and the prac- tice of experiments, he will frame to himself a scheme of chimeras, instead of true philosophy. Hence came the invention of substantial forms and qualities, of *materia prima* and *privation*, with all the insignificant names used by the Peripatetic writers; and it was for want of more ex- periments that the great Descartes failed in several parts of his philosophical writings.

In the abstracted and speculative parts of the mathe- matics, which treat of quantity and number, the faculty of reason must be chiefly employed to perceive the relation of various quantities, and draw certain and useful conclu- sions; but it wants the assistance of sense also to be ac- quainted with lines, angles, and figures. And in practi- cal mathematics our senses have still greater employment.

If we would judge of the pure properties and actions of the mind, of the nature of spirits, their various percep- tions and powers, we must not inquire of our eyes and our ears, nor the images or shapes laid up in the brain, but we must have recourse to our own consciousness of what passes within our own mind.

If we are to pass a judgment upon any thing that re- lates to spirits in a state of union with animal nature, and the mixt properties of sensation, fancy, appetite, passion, pleasure and pain, which arise thence, we must consult our own sensations, and the other powers which we find in ourselves considered as men or creatures made up of a mind and an animal, and by just reasonings deduce proper consequences, and improve our knowledge in these sub- jects.

If we have occasion to judge concerning matters done in past ages, or in distant countries, and where we our- selves cannot be present, the powers of sense and reason, for the most part, are not sufficient to inform us, and we must therefore have recourse to the testimony of oth- ers: And this is either divine or human.

In matters of mere human prudence, we greatest advantage by making wise observa

own conduct, and the conduct of others, and a survey of the events attending such conduct. Experience in this case is equal to a natural sagacity, or rather superior. A treasure of observations and experiences, collected by wise men, is of admirable service here. And perhaps there is nothing in the world of this kind equal to the sacred book of Proverbs, even if we look on it as a mere human writing.

In questions of natural religion, we must exercise the faculty of reason which God hath given us; and, since he has been pleased to afford us his word, we should confirm and improve, or correct our reasonings on this subject by the divine assistance of the Bible.

In matters of revealed religion, that is, Christianity, Judaism, &c. which we could never have known by the light of nature, the word of God is our only foundation and chief light; though here our reason must be used both to find out the true meaning of God in his word, and to derive just inferences from what God has written, as well to judge of the credentials whereby divine testimony is distinguished from mere human testimony or from imposture.

As divine revelation can never contradict right reason, for they are two great lights given us by our Creator for our conduct, so reason ought by no means to assume to itself a power to contradict divine revelation.

Though revelation be not contrary to reason, yet there are four classes wherein matters of revelation may be said to rise above, or go beyond our reason.

1. When revelation asserts two things of which we have clear ideas, to be joined, whose connection or agreement is not discoverable by reason; as when scripture informs us, that *The dead shall rise*, that *The earth shall be burnt up*, and the *Man Christ Jesus shall return from heaven*; none of these things could ever be found out or proved by reason.

2. When revelation affirms any proposition, while reason has no clear and distinct ideas of the subject or of the predicate; as, *God created all things by Jesus Christ: By the* Urim *and* Thummim *God gave forth divine oracles.* The predicate of each of these propositions is to us an ob-

cy of Jesus Christ when God the Father created the world by him; nor have we any clear and certain conception what the Urim and Thummim were, nor how God gave answers to his people by them.

3. When revelation, in plain and express language, declares some doctrine which our reason at present knows with evidence and certainty, how or in what sense to reconcile to some of its own principles; as, that the child Jesus is the mighty God, Isa. ix. 6, which proposition carries a seeming opposition to the unity and spirituality of the Godhead, which are principles of reason.

4. When two propositions or doctrines are plainly asserted by divine revelation, which our reason at present knows not how or in what sense, with evidence and certainty, to reconcile with one another; as, *The Father is the only true God*, John xvii. 3. and yet Christ is over all, God blessed for ever, Rom. ix. 5.

Now divine revelation having declared all these propositions, reason is bound to receive them, because it cannot prove them to be utterly inconsistent or impossible, though the ideas of them may be obscure, though we ourselves see not the rational connection of them, and though we know not certainly how to reconcile them. In these cases, reason must submit to faith; that is, we are bound to believe what God asserts, and wait till he shall clear up that which seems dark and difficult, and till the mysteries of faith shall be farther explained to us either in this world or in the world to come,* and reason itself dictates this submission.

Direction VII. It is very useful to have some general principles of truth settled in the mind, whose evidence is great and obvious, that they may be always at hand to assist us in judging of the great variety of things which occur. These may be called first notions, or fundamental principles; for, though many of them are deduced from each other, yet most or all of them may be called principles when compared with a thousand other judgments which we form under the regulation and influence of these primary propositions."

*See something more on this subject, Direction II. preceding, and chap. v. sec. 6.

The same thing holds true in some measure, where credible human testimony assures us of some propositions while we have no sufficient ideas of the subject and predicate of them to determine our assent. So when an honest and learned mathematician assures a ploughman that the three angles of a triangle are equal to two right angles, or that the square of the hypothenuse of a right-angled triangle is equal to the sum of the squares of the two sides, the ploughman, who has but confused ideas of these things, may firmly and easily believe these propositions upon the same ground because he has evidence of the skill and faithfulness of his informer.*

* Perhaps some may object against this representation of things, and say, that "We cannot properly be said to believe a proposition any further than we ourselves have ideas under the terms: Therefore if we have no ideas under the terms, we believe nothing but the connection of words or sounds; and, if we have but obscure and inadequate ideas under the terms, then we partly believe a connection of things, and partly a connection of sounds. But that we cannot properly be said to believe the proposition, for our faith can never go beyond our ideas."

Now, to set this matter in a clear light, I suppose that every proposition which is proposed to my assent, is a sentence made up of terms which have some ideas under them known or unknown to me. I confess, if I believe there are no ideas at all under the terms, and there is nothing meant by them, then indeed, with regard to me, it is the mere joining of sounds: But if, for instance, a ploughman has credible information from an honest and skilful mathematician, that an elipsis is made by the section of a cone, he believes the proposition, or he believes the sentence is true, as it is made up of terms which his informant understands, though the ideas be unknown to him; that is, he believes there are some ideas which his informant has under these words which are really connected. And, I think, this may be called believing the proposition, for it is a belief of something more than the mere joining of sounds; it is a belief of the real connection of some unknown ideas belonging to those sounds; and in this sense a man may be said to believe the truth of a proposition which he doth not understand at all.

With more reason still may we be said to believe a proposition upon credible testimony, if we have some sort of ideas under the terms, though they are but partial or inadequate and obscure; such as Divine answers were given by Urim and Thummim: For, since it is purely upon testimony we believe the known parts of the ideas signified by those words to be connected, upon the same testimony we may also believe all the unknown parts of the ideas signified by

these old or beloved sentiments; do not wink your eyes fast against the light, but part with any thing for the sake of truth: Remember when you overcome an error you gain truth, the victory is on your side, and the advantage is all your own."

I confess those grand principles or belief and practice which universally influence our conduct, both with regard to this life and the life to come, should be supposed to be well settled in the first years of our studies; such as, the existence and providence of God, the truth of Christianity, the authority of scripture, the great rules of morality, &c. We should avoid a light fluttering genius, ever ready to change our foundations, and to be carried about with every wind of doctrine. To guard against which inconvenience, we should labour with earnest diligence and fervent prayer, that our most fundamental and important points of belief and practice may be established upon just grounds of reason and scripture, when we come to years of discretion, and fit to judge for ourselves in such important points. Yet, since it is possible that the folly or prejudices of younger years may have established persons in some mistaken sentiments, even in very important matters, we should always hold ourselves ready to receive any new advantage toward the correction or improvement even of our established principles, as well as opinions of lesser moment.

CHAP. V.

SPECIAL RULES TO DIRECT US IN JUDGING OF PARTICULAR OBJECTS.

IT would be endless to run through all those particular objects concerning which we have occasion to pass a judgment at one time or another. Things of the most frequent occurrence, of the widest extent, and of the greatest importance, are the objects and exercises of sense, of reason, and speculation; the matters of morality, reli-

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And indeed, unless this representation of the matter be allowed, there are but very few propositions in the world, even in human things, to which we can give an entire assent, or which we may be said either to know, or believe, because there is scarce any thing on earth of which we have an adequate, and most perfect idea. And it is evident, that in divine things there is scarce any thing which we could either know or believe, without this allowance: For, though reason and revelation join to inform me, that God is holy, how exceeding inadequate are my ideas of God, and of his holiness? Yet I may boldly and entirely assent to this whole proposition, since I am sure that every known and unknown idea signified by the term God is connected with the ideas of the term holiness, because reason partly informs me, but especially because the divine testimony which has connected them is certainly credible.

I might argue from this head perhaps more forcibly from the doctrine of God's incomprehensibleness. If we could believe nothing but what we have ideas of, it would be impossible for us to believe that God is incomprehensible: For this implies in it a belief that there are some unknown ideas belonging to the nature of God. Therefore we both believe and profess that something concerning unknown ideas, when we believe and profess that God is incomprehensible.

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6. Yet, after our utmost inquiries, we can never be assured by reason, that we know all the powers and properties of any finite being.

7. If finite beings are not adequately known by us, much less the things infinite: For it is of the nature of a finite mind not to be able to comprehend what is infinite.

8. We may judge and argue very justly and certainly concerning infinities, in some parts of them, or so far as our ideas reach, though the infinity of them hath something incomprehensible in it. And this is built on the general rule following, namely,

9. Whatsoever is sufficiently clear and evident, ought not to be denied, though there are other things belonging to the same subject which cannot be comprehended. I may affirm many things with certainty concerning human souls, their union with bodies, concerning the divisibility of matter, and the attributes of God, though many other things relating to them are all darkness to us.

10. If any opinion proposed has either no arguments, or equal arguments for and against it, we must remain in perfect suspence about it, till convincing evidence appear on one side.

11. Where present necessity of action does not constrain us to determine, we should not immediately yield up our assent to mere probable arguments, without due reserve, if we have any reasonable hope of obtaining greater light and evidence on one side or the other: for, when the balance of the judgment once resigns its equilibrium or neutrality to a mere probable argument, it is too ready to settle itself on that side, so that the mind will not easily change that judgment, though bright and strong evidence appear afterwards on the other side.

12. Of two opinions, if one has unanswerable difficulties attending it, we must not reject it immediately, till we examine whether the the contrary opinion has not difficulties as unanswerable.

13. If each opinion has objections against it, which we cannot answer, or reconcile, we should rather embrace that which has the least difficulties in it, and which has the best arguments to support it: And let our assent bear proportion to the superior evidence.

14. If any doctrine hath very strong and sufficient light and evidence to command our assent, we ought to reject it because there is an objection or two against it which we are not able to answer: for then a man of a common Christian would be baffled out of every article of his faith, and must renounce even the testimony of his reason and his senses; and the most learned man in the world would hold but very few of them fast. For some objections which attend the sacred doctrine of the eternity and the omnipresence of God, and the plain common doctrines of light, atoms, space, motion, &c. are such as have been urged in this day.

15. Where two extremes are proposed either in matters of speculation or practice, and neither of them has certain and convincing evidence, it is generally safest to take the middle way. Moderation is more likely to come near the truth than doubtful extremes. This is an excellent rule to judge of the characters and value of the greatest part of persons and things, for wise persons deals in superlatives. It is a good rule also to direct us to form our judgment in many speculative controversies, and a reconciling medium in such cases does often secure both truth as well as peace.

16. When two different propositions have each of them very strong and cogent evidence, and yet are not plainly inconsistent, we may believe both of them, though we may not at present see the way to reconcile them. Thus we find as well as our own consciousness, scripture tells us that man is free and that multitudes of human actions are in that respect contingent; and yet reason and scripture assure us, that God foreknows them all; and that with a certain fatality. Now, though learned men have not to this day hit on any so clear and happy method as to be able to reconcile these propositions, yet since we can discover no a plain inconsistency in them, we justly believe them both, because their evidence is great.

17. Let us not therefore too suddenly conclude in difficult matters, that two things are utterly inconsistent. For there are many propositions which may appear inconsistent at first, and yet afterwards we find their consistency, and the way of reconciling them may be made plain and easy; As also, there are other propositions

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we find their inconsistency.

18. For the same reason, we should not call
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able which we are not presently able to answer :
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19. In short, if we will secure ourselves fr
we should not be too frequent or hasty in ass
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possibility of agreement, and calls every thing
his opinion absurdity and nonsense. A true p
will affirm or deny with much caution and mode
he has thoroughly examined and found the evid
ery part of his assertion exceeding plain.

20. Let us have a care of building our a
any important point of doctrine upon one single
if there are more to be obtained. We should
and reject all other arguments which support
doctrine, lest if our favorite argument should
and fail us, we should be tempted to abandon t
tant principle of truth. I think this was a ver
practice in Descartes, and some of his follov
when he had found out the argument for the
God, derived from the idea of a most perfect a
istent being, he seemed to despise and abandc
arguments against Atheism.

21. If we happen to have our chief argume
opinion refuted, we should not immediately
opinion itself; for perhaps it may be a truth st
may find it to be justly supported by other
which we might once think weaker, or perha
arguments which we knew not before.

22. We ought to esteem that to be sufficie

of a proposition, where both the kind and the force of the arguments or proofs are as great as the nature of the thing admits, and as the necessity or exigence of the case requires. So, if we have a credible and certain testimony that Christ rose from the dead, it is enough; we are not to expect mathematical or ocular demonstration for it; at least in our day.

23. Though we should seek what proofs may be attained of any proposition, and we should receive any number of arguments which are just and evident for the confirmation of the same truth, yet we must not judge of the truth of any proposition by the number of arguments which are brought to support it, but by the strength and weight of them: A building will stand firmer and longer on four large pillars of marble, than on ten of sand, or earth or timber.

24. Yet where certain evidence is not to be found or expected, a considerable number of probable arguments carry great weight with them even in matters of speculation. That is a probable hypothesis in philosophy or in theology, which goes farthest toward the solution of many difficult questions arising on any subject.

SECT. III.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF MORALITY AND RELIGION.

HERE it may be proper, in the first place, to mention a few definitions of words or terms.

By matters of morality and religion, I mean those things which relate to our duty to God, ourselves, or our fellow creatures.

Moral good, or virtue, or holiness, is an action or temper conformable to the rule of our duty. Moral evil, or vice, or sin, is an action or temper unconformable to the rule of our duty, or a neglect to fulfil it.

Note.....The words vice or virtue, chiefly imply the relation of our actions to men and this world. Sin and ho-

liness, rather imply their relation to God and the other world.

Natural good is that which gives us pleasure or satisfaction. Natural evil is that which gives us pain or grief.

Happiness consists in the attainment of the highest and most lasting natural good. Misery consists in suffering the highest and most lasting natural evil; that is in short, heaven or hell.

Though this be a just account of perfect happiness and perfect misery, yet wheresoever pain overbalances pleasure, there is a degree of misery; and wheresoever pleasure overbalances pain, there is a degree of happiness.

I proceed now to lay down some principles and rules of judgment in matters of morality and religion.

1. The will of our Maker, whether discovered by reason or revelation, carries the highest authority with it, and is therefore the highest rule of duty to intelligent creatures; a conformity or nonconformity to it determines their actions to be morally good or evil.

2. Whatsoever is really an immediate duty toward ourselves, or toward our fellow-creatures, is more remotely a duty to God; and therefore in the practice of it we should have an eye to the will of God as our rule, and to his glory as our end.

3. Our wise and gracious Creator has closely united our duty and our happiness together; and has connected sin, or vice, and punishment; that is, he has ordained that the highest natural good and evil, should have a close connection with moral good and evil, and that both in the nature of things, and by his own positive appointment.

4. Conscience should seek all due information, in order to determine what is duty, and what is sin, because happiness and misery depend upon it.

5. On this account our inclination to present temporal good, and our aversion to present temporal evil, must be wisely overbalanced by the consideration of future and eternal good or evil, that is, happiness or misery. And for this reason we should not omit a duty, or commit a sin, to gain any temporal good, or to avoid any temporal evil.

6. Though our natural reason in a state of innocence

might be sufficient to find out those duties which were necessary for an innocent creature, in order to abide in the favour of his maker, yet in a fallen state, our natural reason is by no means sufficient to find out all that is necessary to restore a sinful creature to the divine favour.

7. Therefore God hath condescended in various ages of mankind, to reveal to sinful men what he requires of them in order to their restoration, and has appointed in his word some peculiar matters of faith and practice, in order to their salvation. This is called revealed religion, as the things knowable concerning God and our duty by the light of nature are called natural religion.

8. There are also many parts of morality and natural religion, or many natural duties relating to God, to ourselves, and to our neighbours, which would be exceeding difficult and tedious for the bulk of mankind to find out and determine by natural reason; therefore it has pleased God, in his sacred book of divine revelation, to express the most necessary duties of this kind in a very plain and easy manner, and make them intelligible to souls of the lowest capacity; or they may be very easily derived thence by the use of reason.

9. As there are some duties much more necessary, and more important than others are, so every duty requires our application to understand and practice it in proportion to its necessity and importance.

10. Where two duties seem to stand in opposition to each other, and we cannot practice both, the less must give way to the greater, and the omission of the less is not sinful. So ceremonial laws give way to moral: God will have mercy and not sacrifice.

11. In duties of natural religion, we may judge of the different degrees of their necessity and importance by reason, according to their greater or more apparent tendency to the honor of God, and the good of men: But in matters of revealed religion, it is only divine revelation can certainly inform us what is most necessary and most important; yet we may be assisted also in that search by the exercises of reason.

12. In actions wherein there may be some scruple about the duty or lawfulness of them, we should choose

always the safest side, and abstain as far as we can from the practice of things whose lawfulness we suspect.

13. Points of the greatest importance in human life or in religion, are generally the most evident, both in the nature of things, and in the word of God; and, when points of faith or practice are exceeding difficult to find out, they cannot be exceeding important. This proposition may be proved by the goodness and faithfulness of God, as well as by experience and observation.

14. In some of the outward practices and forms of religion, as well as human affairs, there is frequently a present necessity of speedy action one way or another: In such a case, having surveyed arguments on both sides, as far as our time and circumstances admit, we must guide our practice by those reasons which appear most probable, and seem at that time to overbalance the rest; yet always reserving room to admit farther light and evidence, when such occurrences return again. It is a preponderation of circumstantial argument that must determine our actions in a thousand occurrences.

15. We may also determine upon probable arguments where the matter is of small consequence, and would not answer the trouble of seeking after certainty. Life and time are more precious than to have a large share of them laid out in scrupulous inquiries, whether smoaking tobacco, or wearing a periwig be lawful or not.

16. In affairs of greater importance, and which may have a long, lasting, and extensive influence on our future conduct or happiness, we should not take up with probabilities, if certainty may be attained. Where there is any doubt on the mind in such cases, we should call in the assistance of all manner of circumstances, reasons, motives consequences on all sides: We must wait longer, and with earnest request seek human and divine advice before we fully determine our judgment and our practice according to the old Roman sentence, *Quod statuendum est semel, deliberandum est diu;* "We should be long in considering what we must determine once for all."

SECT. IV.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF HUMAN PRUDENCE.

THE great design of prudence, as distinct from morality and religion, is to determine and manage every affair with decency, and to the best advantage.

That is decent which is agreeable to our state, condition, or circumstances, whether it be in behaviour, discourse, or action.

That is advantageous which attains the most and best purposes, and avoids the most and greatest inconveniencies.

As there is infinite variety in the circumstances of persons, things, actions, times and places, so we must be furnished with such general rules as are accommodable to all this variety by a wise judgment and discretion: For what is an act of consummate prudence in some times, places, and circumstances, would be consummate folly in others. Now these rules may be ranged in the following manner.

1. Our regard to persons or things should be governed by the degrees of concernment we have with them, the relation we have to them, or the expectation we have from them. These should be the measures by which we should proportion our diligence and application in any thing that relates to them.

2. We should always consider whether the thing we pursue be attainable; whether it be worthy our pursuit; whether it be worthy of the degree of pursuit; whether it be worthy of the means used in order to attain it. This rule is necessary both in matters of knowledge, and matters of practice.

3. When the advantages and disadvantages, conveniencies and inconveniencies of any action are balanced together, we must finally determine on that side which has the superior weight; and the sooner in things which are necessarily and speedily to be done or determined.

4. If advantages and disadvantages in their own nature are equal, then those which are most certain or likely as to the event should turn the scale of our judgment and determine our practice.

5. Where the improbabilities of success or advantage are greater than the probabilities, it is not prudent to act or venture, if the action may be attended with danger or loss equal to the proposed gain. It is proper to inquire whether this be not the case in almost all lotteries; for they that hold stakes will certainly secure part to themselves; and only the remainder being divided into prizes must render the improbability of gain to each adventurer greater than the probability.

6. We should not despise nor neglect any real advantage, and abandon the pursuit of it, though we cannot attain all the advantages that we desire. This would be to act like children, who are fond of something which strikes their fancy most, and sullen and regardless of every thing else, if they are not humoured in that fancy.

7. Though a general knowledge of things be useful in science and human life, yet we should content ourselves with a more superficial knowledge of those things which have the least relation to our chief end and design.

8. This rule holds good also in matters of business and practice, as well as in matters of knowledge; and therefore we should not grasp at every thing, lest in the end we attain nothing. Persons that either by an inconstancy of temper, or by a vain ambition, will pursue every sort of art and science, study and business, seldom grow excellent in any one of them: And projectors who form twenty schemes seldom use sufficient application to finish one of them, or make it turn to good account.

9. Take heed of delaying and trifling amongst the means instead of reaching at the end. Take heed of wasting a life in mere speculative studies, which is called to action and employment: Dwell not too long in philosophical, mathematical, or grammatical parts of learning, when your chief design is law, physic, or divinity. Do not spend the day in gathering flowers by the way-side, lest night come upon you before you arrive at your journey's end, and then you will not reach it.

10. Where the case and circumstances of wise and good men resemble our own case and circumstances, we *may* borrow a great deal of instruction toward our prudent *conduct* from their example; as well as in all cases we *may learn* much from their conversation and advice.

11. After all other rules remember this, that mere speculation in matters of human prudence can never be a perfect director, without experience and observation. We may be content therefore in our younger years to commit some unavoidable mistakes in point of prudence, and we shall see mistakes enough in the conduct of others, both which ought to be treasured up amongst our useful observations, in order to teach us better judgment in time to come. Sometimes the mistakes, imprudencies, and follies, which ourselves or others have been guilty of, give us brighter and more effectual lessons of prudence, than the wisest counsels and the fairest examples could ever have done.

SECT. V.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF HUMAN TESTIMONY.

THE evidence of human testimony is not so proper to lead us into the knowledge of the essence and inward nature of things, as to acquaint us with the existence of things, and to inform us of matters of fact both past and present. And though there be a great deal of fallibility in the testimony of men, yet there are some things we may be almost as certain of as that the sun shines, or that five twenties make an hundred. Who is there at London that knows any thing of the world, but believes there is such a city as Paris in France; that the Pope dwells at Rome; that Julius Cæsar was an emperor, or that Luther had a great hand in the reformation?

If we observe the following rules, we may arrive at such a certainty in many things of human testimony, as that it is morally impossible we should be deceived, that is, we may obtain a moral certainty.

1. Let us consider whether the thing reported be in itself possible; if not, it can never be credible, whosoever relates it.

2. Consider farther whether it be probable, whether there are any concurring circumstances to prove it, beside

the mere testimony of the person that relates it. I confess, if these last conditions are wanting, the thing may be true, but then it ought to have the stronger testimony to support it.

3. Consider whether the person that relates it be capable of knowing the truth: Whether he be a skilful judge in such matters, if it be a business of art, or a nice appearance in nature, or some curious experiment in philosophy. But if it be a mere occurrence in life, a plain, sensible matter of fact, it is enough to enquire whether he who relates it were an eye or ear-witness, or whether he himself had it only by hearsay, or can trace it up to the original.

4. Consider whether the narrator be honest and faithful, as well as skilful: Whether he has no bias upon his mind, no peculiar gain or profit by believing or reporting it, no interest or principle which might warp his own belief aside from truth; or which might tempt him to prevaricate, to speak falsely, or to give a representation a little different from the naked truth of things. In short, whether there be no occasion of suspicion concerning his report.

5. Consider whether several persons agree together in the report of this matter; and if so, then whether those persons who joined together in their testimony might not be supposed to combine together in a falsehood. Whether they are persons of sufficient skill, probity and credit. It might be also inquired, whether they are of different nations, sects, parties, opinions, or interests. For the more divided they are in all these, the more likely is their report to be true, if they agree together in their account of the same thing; and especially if they persist in it without wavering.

6. Consider farther, whether the report were capable of being easily refuted at first if it had not been true; if so, this confirms the testimony.

7. Inquire yet again, whether there has been a constant, uniform tradition and belief of this matter, from the very first age or time when the thing was transacted, without any reasonable doubts or contradictions. Or,

8. If any part of it hath been doubted by any considerable persons, whether it has been searched out and afterwards confirmed, by having all the scruples and doubts removed. In either of these cases the testimony becomes more firm and credible.

9. Inquire on the other hand, whether there are any considerable objections remaining against the belief of that proposition so attested. Whether there be any thing very improbable in the thing itself. Whether any concurrent circumstances seem to oppose it. Whether any person or persons give a positive and plain testimony against it. Whether they are equally skilful and equally faithful as those who assert it. Whether there be as many or more in number, and whether they might have any secret bias or influence on them to contradict it.

10. Sometimes the entire silence of a thing may have something of weight toward the decision of a doubtful point of history, or a matter of human faith, namely, where the fact is pretended to be public, if the persons who were silent about it were skilful to observe, and could not but know such an occurrence; if they were engaged by principles or by interest to have declared it: And these things may tend to make a matter suspicious, if it be not very well attested by positive proof.

11. Remember that in some reports there are more marks of falsehood than of truth, and in others there are more marks of truth than of falsehood. By a comparison of all these things together, and putting every argument on one side and the other into the balance, we must form as good a judgment as we can which side preponderates; and give a strong or feeble assent or dissent, or withhold our judgment entirely, according to greater or lesser evidence, according to more plain or dubious marks of truth or falsehood.

12. Observe that in matters of human testimony there is oftentimes a great mixture of truth and falsehood in the report itself: Some parts of the story may be perfectly true, and some utterly false; and some may have such a blended confusion of circumstances which are a little warpt aside from the truth, and misrepresented, that there is need of good skill and accuracy to form a judgment

concerning them, and determine which part is true, and which is false. The whole report is not to be believed, because some parts are indubitably true, nor is the whole to be rejected, because some parts are as evident falsehoods.

We may draw two remarkable observations from this section.

Observ. I. How certain is the truth of the christian religion, and particularly of the resurrection of Christ, which is a matter of fact on which Christianity is built! We have almost all the concurrent evidences that can be derived from human testimony joining to confirm this glorious truth. The fact is not impossible; concurrent circumstances cast a favorable aspect on it; it was foretold by one who wrought miracles, and therefore not unlikely, nor unexpected: The apostles and first disciples were eye and ear-witnesses, for they conversed with their risen Lord; they were the most plain, honest men in themselves; the temptations of worldly interest did rather discourage their belief and report of it: They all agree in this matter, though they were men of different characters: *Pharisees* and *fishermen*, and *publicans*, men of *Judea* and *Galilee*, and perhaps some *heathens*, who were early converted: The thing might easily have been disproved if it were false; it hath been conveyed by constant tradition and *writing* down to our times; those who at first doubted, were afterwards convinced by certain proofs; nor have any pretended to give any proof of the contrary, but merely denied the fact with impudence, in opposition to all these evidences.

Observ. II. How weak is the faith which is due to a multitude of things in ancient human history! For, tho' many of these *criteria*, or marks of credibility, are found plainly in the more *general and public facts*, yet as to a multitude of *particular facts and circumstances*, how deficient are they in such evidence as should demand our assent! Perhaps there is nothing that ever was done in all past ages, and which was not a public fact, so well attested as *the resurrection of Christ*.

SECT. VI.

PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF DIVINE TESTIMONY.

AS human testimony acquaints us with matters of fact, both past and present, which lie beyond the reach of our personal notice; so divine testimony is suited to inform us both of the nature of things, as well as matters of fact, and of things future, as well as present or past.

Whatsoever is dictated to us by God himself, or by men who are divinely inspired, must be believed with full assurance. Reason demands us to believe whatsoever divine revelation dictates: For God is perfectly wise, and cannot be deceived; he is faithful and good, and will not deceive his creatures: And when reason has found out the certain marks or credentials of divine testimony to belong to any proposition, there remains then no farther inquiry to be made, but only to find out the true sense and meaning of that which God has revealed, for reason itself demands the belief of it.

Now divine testimony or revelation requires these following credentials.

1. That the propositions or doctrines reavealed be not inconsistent with reason; for intelligent creatures can never be bound to believe real inconsistencies. Therefore we are sure the popish doctrine of transubstantiation is not a matter of divine revelation, because it is contrary to all our senses and our reason, even in their proper exercises.

God can dictate nothing but what is worthy of himself, and agreeable to his own nature and divine perfections. Now many of these perfections are discoverable by the light of reason, and whatsoever is inconsistent with these perfections cannot be a divine revelation.

But let it be noted, that in matters of practice towards our fellow-creatures, God may command us to act in a manner contrary to what reason would direct antecedent to that command. So Abraham was commanded to offer up his son a sacrifice: The Israelites were ordered to borrow of the Egyptians without paying them, and to plunder and slay the inhabitants of Canaan: Because God

has a sovereign right to all things, and can with equit dispossess his creatures of life, and every thing which h has given them, and especially such sinful creatures mankind; and he can appoint whom he pleases to be th instruments of this just dispossessiion or deprivation. S that these divine commands are not really inconsiste with right reason; for whatsoever is so cannot be b lieved, where that inconsistency appears.

2. Upon the same account, the whole doctrine of re elation must be consistent with itself; every part of must be consistent with each other: And though in poin of practice latter revelation may repeal or cancel form laws, yet in matters of belief no latter revelation can be i consistent with what has been heretofore revealed.

3. Divine revelation must be confirmed by some d vine and supernatural appearances, some extraordina signs or tokens, visions, voices, or miracles wrought, prophecies fulfilled. There must be some demonstr tions of the presence and power of God, superior to all t powers of nature, or the settled connections which God Creator has established among his creatures in this vi ble world.

4. If there are any such extraordinary and wonderf appearances and operations brought to contest with, or oppose divine revelation, there must and always will such a superiority on the side of that revelation which truly divine, as to manifest that God is there. This w the case when the Egyptian sorcerer contended with M ses. But the wonders which Moses wrought did so transcend the powers of the magicians, as made them co fess it was the finger of God.

5. These divine appearances or attestations to revel tion must be either known to ourselves, by our own pe sonal observation of them, or they must be sufficiently tested by others, according to the principles and rules which matters of human faith are to be judged in t foregoing section.

Some of those, who lived in the nations and ages whe miracles were wrought, were eye and ear witnesses the truth and divinity of the revelation; but we who li in these distant ages, must have them derived down to

st and incontestible history and tradition. We also, in these times, may see the accomplishment of some nt predictions, and thereby obtain that advantage to the confirmation of our faith in divine revelation, be what those persons enjoyed who lived when the pre ns were pronounced.

There is another very considerable confirmation of testimony; and that is when the doctrines them , either on the publication or the belief of them, pro supernatural effects. Such were the miraculous 's which were communicated to believers in the first of Christianity, the conversion of the Jews or Gen the amazing success of the gospel of Christ, without n aid, and in opposition to a thousand impediments; wer in changing the hearts and lives of ignorant and s heathens, and wicked and profane creatures in all s, and filling them with a spirit of virtue, piety and ess. Wheresoever persons have found this effect in own hearts, wrought by a belief of the gospel of t, they have a witness in themselves of the truth of it, undant reason to believe it divine.

the difference between reason and revelation, and at sense the latter is superior, see more in Chap. II. . and Chap. IV. direct. 6.

SECT. VII.

IPLES AND RULES OF JUDGING CONCERNING THINGS T, PRESENT, AND TO COME, BY THE MERE USE OF ASON.

THOUGH we attain the greatest assurance of past and future by divine faith, and learn many mat fact, both past and present by human faith, yet rea so may in a good degree assist us to judge of fact both past, present, and to come, by the follo inciples.

There is a system of beings round about we ourselves are apart, which we call th this world there is a course of nature, or

order of causes, effects, antecedents, concomitants, consequences, &c. fromwhich the author of nature doth not vary but upon very important occasions.

2. Where antecedents, concomitants, and consequents, causes and effects, signs and things signified, subjects and adjuncts, are necessarily connected with each other, we may infer the causes from the effects, and effects from causes, the antecedents from the consequents, as well as consequents from antecedents, &c. and thereby be pretty certain of many things both past, present and to come. It is by this principle that astronomers can tell what day and hour the sun and moon were eclipsed five hundred years ago, and predict all future eclipses as long as the world shall stand. They can tell precisely at what minute the sun rises or sets at Pekin in China, or what altitude the dog-star had at midnight or mid-noon in Rome on the day when Julius Cæsar was slain. Gardeners upon the same principle can foretell the months when every plant will be in bloom, and the ploughman knows the weeks of harvest: We are sure, if there be a chicken, there was an egg: If there be a rainbow, we are certain it rains not far off: If we behold a tree growing on the earth, we know it has naturally a root under ground.

3. Where there is a necessary connection between causes and effects, antecedents and consequents, signs and things signified, we know also that like causes will have like effects, and proportionable causes will have proportionable effects, contrary causes will have contrary effects; and observing men may form many judgments by the rules of similitude and proportion, where the causes, effects, &c. are not entirely the same.

4. Where there is but a probable and uncertain connection between antecedents, concomitants and consequents, we can give but a conjecture, or a probable determination. If the clouds gather, or the weather glass sinks we suppose it will be rain. If a man spit blood frequently with coughing, we suppose his lungs are hurt: If very dangerous symptoms appear, we expect his death.

5. Where causes operate freely, with a liberty of indifference to this or the contrary, there we cannot certainly know what the effects will be: For it seems to be con

tingent, and the certain knowledge of it belongs only to God. This is the case in the greatest part of human actions.

6. Yet wise men by a just observation of human nature, will give very probable conjectures in this matter, also concerning things past, or things future, because human nature in all ages and nations has such a conformity to itself. By a knowledge of the tempers of men, and their present circumstances, we may be able to give a happy guess what their conduct will be, and what will be the event, by an observation of the like cases in former times. This made the Emperor Marcus Antonius to say, "By looking back into history, and considering the fate and revolutions of governments, you will be able to form a guess and almost prophecy upon the future. For things past, present, and to come, are strangely uniform, and of a colour; and are commonly cast in the same mould. So that upon the matter, forty years of human life may serve for a sample of ten thousands." Collier's Antonius, Book VII. sec. 50.

7. There are also some other principles of judging concerning the past actions of men in former ages, besides books, histories and traditions, which are the mediums of conveying human testimony; as we may infer the skill and magnificence of the ancients by some fragments of their statues, and ruins of their buildings. We know what Roman legions came into Great Britain by numbers of bricks dug out of the earth in some parts of the island, with the marks of some particular legion upon them, which must have been employed there in brick-making. We rectify some mistakes in history by statues, coins, old altars, utensils of war, &c. We confirm and disprove some pretended traditions and historical writings, by medals, images, pictures, urns, &c.

Thus I have gone through all those particular objects of our judgment which I first proposed, and have laid down principles and rules by which we may safely conduct ourselves therein. There is a variety of other objects, concerning which we are occasionally called to pass a judgment, namely, the characters of persons, the value and worth of things, the sense and meaning of particular writers, matters of wit, oratory, poesy, matters of equity in

judicial courts, matters of traffic and commerce betwee
man and man which would be endless to enumerate.
But if the general and special rules of judgment whic
have been mentioned in these two last chapters are treas
ured up in the mind, and wrought into the very temper o
our souls in our younger years, they will lay a foundatio
for just and regular judgment concerning a thousand spe
cial occurrences in the religious, civil and learned life.

THE

Third Part of Logic.

OF REASONING AND SYLLOGISM.

AS the first work of the mind is perception, whereby our ideas are formed, and the second is judgment, which joins or disjoins our ideas and forms a proposition, so the third operation of the mind is reasoning, which joins several propositions together, and makes a syllogism, that is, *an argument whereby we are wont to infer something that is less known, from truths which are more evident.*

In treating of this subject, let us consider more particularly,

1. The nature of a syllogism, and the parts of which it is composed.
2. The several kinds of syllogisms, with particular rules relating to them
3. The doctrine of sophisms, or false reasoning, together with the means of avoiding them, and the manner of solving or answering them.
4. Some general rules to direct our reasoning.

CHAP. I.

OF THE NATURE OF A SYLLOGISM, AND THE PARTS OF WHICH IT IS COMPOSED.

IF the mere perception and comparison of two ideas would always shew us whether they agree or disagree; then all rational propositions would be matters of intelligence, or first principles, and there would be no use of

reasoning, or drawing any consequences. It is the w
rowness of the human mind which introduces the necessi
of reasoning.* When we are unable to judge of the tru
or falsehood of a proposition in an immediate manner, b
the mere contemplation of its subject and predicate, w
are then constrained to use a medium, and to compa
each of them with some third idea, that by seeing how t
they agree or disagree with it, we may be able to jud
how far they agree or disagree among themselves: As,
there are two lines, A and B, and I know not wheth
they are equal or not, I take a third line C, or an inch, a
apply it to each of them; If it agree with them both, th
I infer that A and B are equal: but if it agree with on
and not with the other, then I conclude A and B are u
equal: If it agree with neither of them, there can be n
comparison.

So if the question be *whether God must be worshipped*, w
seek a third idea, suppose the idea of a Creator, and say,

Our Creator must be worshipped;

God is our Creator;

Therefore *God must be worshipped.*

The comparison of this third idea with the two distin
parts of the question, usually requires two propositions
which are called the premises: The third propositio
which is drawn from them is the conclusion, wherein th
question itself is answered, and the subject and predica
joined either in the negative or the affirmative.

The foundation of all affirmative conclusions is laid i
this general truth, that as far as two proposed ideas agre
to any third idea, they agree also among themselves. Th
character of Creator agrees to God, and worship agrees t
a Creator, therefore worship agrees to God.

The foundation of all negative conclusions is this, th
where one of the two proposed ideas agrees with the thi
idea, and the other disagrees with it, they must needs di
agree so far also with one another; as, if *no sinners are ha*
py, and if *angels are happy*, then *angels are not sinners.*

Thus it appears what is the strict and just notion of
syllogism: It is a sentence or argument made up of thr
propositions so disposed, as that the last is necessarily i
ferred from those which go before, as in the instance
which have been just mentioned.†

In the constitution of a syllogism two things may be considered, viz. the matter and form of it.

The matter of which a syllogism is made up, is three propositions; and these three propositions are made up of three ideas or terms variously joined.

The three terms are called the remote matter of a syllogism; and the three propositions the proxime or immediate matter of it.

The three terms are named the major, the minor, and the middle.

The predicate of the conclusion is called the *major term*, because it is generally of a larger extension than the minor term, or the subject. The major and minor terms are called the extremes.

The middle term is the *third* idea invented, and disposed in two propositions, in such a manner as to shew the connection between the major and minor term in the conclusion; for which reason the middle term itself is sometimes called the argument.

That proposition which contains the predicate of the conclusion connected with the middle term, is usually called the *major proposition*, whereas the *minor proposition* connects the middle term with the subject of the conclusion, and is sometimes called the *assumption*.

Note....This exact distinction of the several parts of a syllogism, and of the major and minor terms connected with the middle term in the major and minor propositions, does chiefly belong to simple or categorical syllogisms, of which we shall speak in the next chapter, though all syllogisms whatever have something analogical to it.

Note farther, That the major proposition is generally placed first, and the minor second, and the conclusion in the last place, where the syllogism is regularly composed and represented.

The form of a syllogism is the framing and disposing of the premises according to art or just principles of reasoning, and the regular inference of the conclusion from them.

The act of reasoning, or inferring one thing from another, is generally expressed and known by the particle *therefore*, when the argument is formed according to the rules

of art; though, in common discourse or writing, *causal* particles as *for*, *because*, manifest the act of re ing as well as the illative particles *then* and *there* And wheresoever any of these words are used, ther perfect syllogism expressed or implied, though pe the three propositions do not appear, or are not plac regular form.

CHAP. II.

OF THE VARIOUS KINDS OF SYLLOGISMS, W PARTICULAR RULES RELATING TO THEM

SYLLOGISMS are divided into various k either according to the question which is proved by t according to the nature and composition of them, o cording to the middle term, which is used to prove question.

SECT. I.

OF UNIVERSAL AND PARTICULAR SYLLOGISMS, I NEGATIVE AND AFFIRMATIVE.

ACCORDING to the question which is proved, so syllogisms are divided into universal affi tive, universal negative, particular affirmative, and p ular negative. This is often called a division of syllog drawn from the conclusion; for so many sorts of co sions there may be, which are marked with the let A, E, I, O.

In an universal affirmative syllogism, one idea is pr universally to agree with another, and may be univer affirmed of it, as, *Every sin deserves death, every unla wish is sin*; therefore *every unlawful wish deserves d*

In an universal negative syllogism, one idea is pr to disagree with another idea universally, and may

thus denied of it: as, *No injustice can be pleasing to God; all persecution for the sake of conscience is injustice;* therefore, *no persecution for conscience sake can be pleasing to God.*

Particular affirmative, and particular negative syllogisms, may be easily understood by what is said of universals, and there will be sufficient examples given of all these in the next section.

The general principle upon which these universal and particular syllogisms are founded, is this, Whatsoever is affirmed or denied universally of any idea, may be affirmed or denied of all the particular kinds of beings which are contained in the extension of that universal idea. So the desert of death is affirmed universally of sin, and an unlawful wish is one particular kind of sin, therefore the desert of death may be affirmed concerning an unlawful wish. And so of the rest.

Note....In the doctrine of syllogisms, a singular and an indefinite proposition are ranked among universals, as was before observed in the doctrine of propositions.

SECT. II.

OF PLAIN, SIMPLE SYLLOGISMS, AND THEIR RULES.

THE next division of syllogisms is into single and compound. This is drawn from the nature and composition of them.

Single syllogisms are made up of three propositions: Compound syllogisms contain more than three propositions, and may be formed into two or more syllogisms.

Single syllogisms, for distinction's sake, may be divided into simple,* complex, and conjunctive.

Those are properly called simple or categorical syllogisms, which are made up of three plain, single, or categorical propositions, wherein the middle term is evidently

*As ideas and propositions are divided into single and compound, and single are subdivided into simple and complex; so there are the same divisions and subdivisions applied to syllogisms.

and regularly joined with one part of the question in the major proposition, and with the other in the minor; whence there follows a plain single conclusion; as, *Every human virtue is to be sought with diligence; prudence is a human virtue;* therefore *prudence is to be sought diligently.*

Note....Though the terms of propositions may be complex; yet where the composition of the whole argument is thus plain, simple, and regular, it is properly called a simple syllogism, since the complexion does not belong to the syllogistic form of it.

Simple syllogisms have several rules belonging to them, which being observed, will generally secure us from false inferences. But these rules being founded on four general axioms, it is necessary to mention these *axioms* beforehand, for the use of those who will enter into the speculative reason of all these rules.

Axiom 1. Particular propositions are contained in universals, and may be inferred from them; but universals are not contained in particulars, nor can be inferred from them.

Axiom 2. In all universal propositions, the subject is particular.

Axiom 3. In all affirmative propositions, the predicate has no greater extension than the subject; for its extension is restrained by the subject, and therefore it is always to be esteemed as a particular idea. It is by mere accident, if it ever be taken universally, and cannot happen but in such universal or singular propositions as are reciprocal.

Axiom 4. The predicate of a negative proposition is always taken universally, for in its whole extension it is denied of the subject; If we say, No stone is vegetable we deny all sorts of vegetation concerning stones.

The rules of simple, regular Syllogisms are these.

Rule I. *The middle term must not be taken twice particularly, but once at least universally.* For if the middle term be taken for two different parts or kinds of the same universal idea, then the subject of the conclusion is compared

h one of these parts, and the predicate with another part, this will never shew whether that subject and predi- agree or disagree: There will then be four distinct ns in the syllogism, and the two parts of the question not be compared with the same third idea; as if I , Some men are pious, and some men are robbers, I never infer that some robbers are pious, for the middle n men being taken twice particularly, it is not the ie men who are spoken of in the major and minor propions.

Rule II. *The term in the conclusion must never be taken e universally than they are in the premises.* The rea- is derived from the first axiom, that generals can nevie inferred from particulars.

Rule III. *A negative conclusion cannot be proved by affirmative premises.* For, when two terms of the consion are united or agree to the middle term, it does not ow by no means that they disagree with one another.

Rule IV. *If one of the premises be negative, the conion must be negative.* For, if the middle term be deniof either part of the conclusion, it may shew that the ms of the conclusion disagree, but it can never shew t they agree.

Rule V. *If either of the premises be negative, the conion must be particular.* This may be proved for the st part from the first axiom.

These two last *rules* are sometimes united in this single tence, *The conclusion always follows the weaker part of premises.* Now negatives and particulars are counted erior to affirmative and universals.

Rule VI. *From two negative premises nothing can be cluded.* For they separate the middle term both from subject and predicate of the conclusion; and when two as disagree to a third, we cannot infer that they either ee or disagree with each other.

Yet where the negation is a part of the middle term, the premises may look like negatives according to the rds, but one of them is *affirmative* in sense: as, *What no thought cannot reason;* but *a worm has no thought;* refore *a worm cannot reason.* The minor proposition s really affirm the middle term concerning the subject.

namely, *a worm has no thought*, and thus it is prope this syllogism an affirmative proposition.

Rule VII. *From two particular premises, nothi be concluded.* This rule depends chiefly on the first

A more laborious and accurate proof of these rul the derivation of every part of them in all possible from the foregoing axioms, require so much time, a of so little importance to assist the right use of r that it is needless to insist longer upon them here all this done ingeniously in the Logic called the *Thinking*, Part III. Chap. III. *&c.*

SECT. III.

OF THE MODES AND FIGURES OF SIMPLE SYLLOG

SIMPLE syllogisms are adorned and sur ed in the common books of logic with a variety of tions about moods and figures, wherein, by the a contexture of the letters A, E, I, and O, men have e ored to transform logic, or the art of reasoning, into of mechanism, and to teach boys to syllogise, or fra guments and refute them, without any real inward edge of the question. This is almost in the same n as school-boys have been taught perhaps in their years to compose Latin verses, that is, by certain and squares, with a variety of letters in them, whe counting every sixth, seventh, or eighth letter, Latin words should be framed in the form of hexa or pentameters; and this may be done by thos know nothing of Latin or of verses.

I confess some of these logical subtilties have more use than those versifying tables, and there is ingenuity discovered in determining the precise n of syllogisms that may be formed in every figure, a ing the reasons of them; yet the light of nature, judgment, and due consideration of things, tend n true reasoning, than all the trappings of moods and f

But lest this book be charged with too great defects and perfections, it may be proper to give short hints of that ich some *logicians* have spent so much time and paper on.

All the possible compositions of three of the letters, A, I, O, to make three propositions, amount to sixty-four; fifty-four of them are excluded from forming true syllisms by the seven rules in the foregoing section: The naining *ten* are variously diversified by figures and ods into fourteen syllogisms.

The figure of a syllogism is the proper disposition of middle term with the parts of the question.

A mood is the regular determination of propositions acding to their quantity and quality, that is, their univeror particular affirmation or negation; which are siged by certain artificial words wherein the consonants neglected, and these four vowels, A, E, I, O, are only arded.

There are generally counted three figures.

In the first of them the middle term is the subject of major proposition, and the predicate of the minor. is contains four moods, called *Barbara*, *Celarent*, *Darii*, *rio*. And it is the excellency of this figure, that all ts of questions or conclusions may be proved by it, ether A, E, I, or O, that is, universal or particular, rmative or negative; as,

Bar- Every wicked man is truly miserable:
ba- All tyrants are wicked men;
ra. Therefore all tyrants are truly miserable.
Ce- He that is always in fear is not happy;
la- Covetous men are always in fear;
ent. Therefore covetous men are not happy.
Da- Whatsoever furthers our salvation is good for us:
ri- Some afflictions further our salvation;
i. Therefore some afflictions are good for us.
Fe- Nothing that must be repented of is truly desirable;
ri- Some pleasures must be repented of;
o. Therefore there are some pleasures which are not truly desirable.

In the second figure the middle term is the predicate of *both* the premises; this contains four moods, namely, *Cesare*, *Camestres*, *Festino*, *Baroco*, and it admits only of negative conclusions; as,

Ce- No liar is fit to be believed;
sa- Every good christian is fit to be believed;
re- Therefore no good Christian is a liar.

The reader may easily form examples of the rest.

The 3d figure requires that the middle term be the subject of both the premises. It has six moods, namely, Darapti, Felapton, Disamis, Datisi, Bocardo, Ferison: And it admits only of particular conclusions; as,

Da- Whosoever loves God shall be saved;
rap- All the lovers of God have their imperfections:
ti. Therefore some who have imperfections shall be saved.

I leave the reader to form examples of the rest.

The moods of these three figures are comprised in four Latin verses.

Barbara, *Celarent*, *Darii*, *Ferio*, quoque primæ.
Cesare, *Camestres*, *Festino*, *Baroco*, secundæ.
Tertia *Darapti* sibi vindicat, atque *Felapton*.
Adjungens *Disamis*, *Datisi*, *Bocardo*, *Ferison*.

The special rules of the three figures are these.

In the first figure the major proposition must always be universal and the minor affirmative.

In the second figure also the major must be universal; and one of the premises, together with the conclusion, must be negative.

In the third figure the minor must be affirmative, and the conclusion always particular.

There is also a fourth figure, wherein the middle term is predicated in the major proposition, and subjected in the minor: But this is a very indirect and oblique manner of concluding, and is never used in the sciences, nor in human life, and therefore I call it useless.—Some logicians will allow it to be nothing else but a mere inversion of the first figure; the moods of it, namely *Baralipton*, or *Barbari*, *Calentes*, *Dibatis*, *Fespamo*, *Fresison*, are not worthy to be explained by one example.

SECT. IV.

OF COMPLEX SYLLOGISMS.

IT is not the mere use of complex terms in a syllogism that gives it this name, though one of the terms is usually complex; but those are properly called *complex syllogisms*, in which the middle term is not connected with the whole subject, or the whole predicate in two distinct propositions, but is intermingled and compared with them by parts, or in a more confused manner, in different forms of speech; as,

The sun is a senseless being;
The Persians worshipped the sun;
Therefore *the Persians worshipped a senseless being.*

Here the predicate of the conclusion is *worshipped a senseless being*, part of which is joined with the middle term *sun* in the major proposition, and the other part in the minor.

Though this sort of argument is confessed to be entangled or confused, and irregular, if examined by the rules of simple syllogisms; yet there are a great variety of arguments used in books of learning, and in common *life*, whose consequence is strong and evident, and which must be ranked under this head; as,

I. Exclusive propositions will form a complex argument; as, *Pious men are the only favorites of heaven; True Christians are favorites of heaven;* Therefore *true Christians are pious men.* Or thus, *Hypocrites are not pious men;* Therefore *hypocrites are not favorites of heaven.*

II. Exceptive propositions will make such complex syllogisms; as, *None but physicians came to the consultation; The nurse is no physician;* Therefore *the nurse came not to the consultation.*

III. Or, comparative propositions; as, *Knowledge is better than riches; virtue is better than knowledge;* therefore *virtue is better than riches.* Or thus, *A dove will fly a mile in a minute; A swallow flies swifter than a dove:* Therefore *a swallow will fly more than a mile in a minute.*

IV. Or inceptive and desitive propositions; as, *The*

conclusion with one of the premises is expressed while the other is supposed and reserved in the mind: Thus, *There is no true religion without good morals*; therefore *a knave cannot be truly religious*: Or thus, *it is our duty to love our neighbor as ourselves*; therefore *there are but few who perform their duty*.

Note....This is the most common sort of argument amongst mankind both in writing and in speaking; for it would take up too much time, and too much retard the discourse to draw out all our arguments in mood and figure. Besides, mankind love to have so much compliment paid to their understandings, as to suppose that they know the major or minor, which is suppressed and implied, when you pronounce the other premise and the conclusion.

If there be any debate about this argument, the syllogism must be completed, in order to try its force and goodness, by adding the absent propositions.

SECT. VII.

OF THE MIDDLE TERMS, OF COMMON PLACES OR TOPICS, AND INVENTION OF ARGUMENTS.

THE next division of syllogisms is according to the middle term, which is made use of in the proof of the proposition. Now the middle term (as we have hinted before) is often called argument, because the force of the syllogism depends upon it. We must make a little delay here to treat briefly of the doctrine of topics, or places whence middle terms or arguments are drawn.

All arts and sciences have some general subjects which belong to them, which are called topics, or common-places; because middle terms are borrowed, and arguments derived from them for the proof of the various propositions which we have occasion to discourse of. The topics of grammar are etymology, noun, verb, construction, signification, &c. The topics of logic are genus, species, difference, property, definition, division, &c. The

The truth of most of these complex syllogisms may also be made to appear, if needful, by reducing them either to regular, simple syllogisms, or to some of the conjunctive syllogisms which are described in the next section. I will give an instance only in the first, and leave the rest to exercise the ingenuity of the reader.

The first argument may be reduced to a syllogism in Barbara, thus:

The sun is a senseless being;
What the Persians worshipped is the sun;
Therefore *what the Persians worshipped is a senseless being.*

Though the conclusive force of this argument is evidently without this reduction.

SECT. V.

OF CONJUNCTIVE SYLLOGISMS.

THOSE are called *conjunctive syllogisms* wherein one of the premises, namely, the major, has distinct parts, which are joined by a conjunction, or some such particle of speech. Most times the major or minor, or both, are explicitly compound propositions; and generally the major proposition is made up of two distinct parts or propositions, in such a manner as that, by the assertion of one in the minor, the other is either asserted or denied in the conclusion: Or, by the denial of one in the minor, the other is either asserted or denied in the conclusion. It is hardly possible indeed to fit any short definition to include all the kinds of them; but the chief amongst them are the conditional syllogism, the disjunctive, the relative, and the connective.

I. The conditional, or hypothetical syllogism, is that whose major or minor, or both, are conditional propositions; as, *If there be a God, the world is governed by providence;* but *there is a God;* therefore *the world is governed by providence.*

These syllogisms admit two sorts of true argumentation, where the major is conditional.

1. When the antecedent is asserted in the the consequent may be asserted in the conclu is the preceding example. This is called *argu position of the antecedent to the position of the co*

2. When the consequent is contradicted in proposition, that the antecedent may be con the conclusion; as, *If Atheists are in the rig world exists without a cause:* but *the world dc without a cause;* therefore *Atheists are not* This is called arguing *from the removing of th to the removing of the antecedent.*

To remove the antecedent or consequent he merely signify the denial of it, but the contrad for the mere denial of it by a contrary proposit make a true syllogism, as appears thus: *If ev be reasonable, every brute is reasonable;* but *no sonable;* therefore *no creature is reasonable.* you say in the minor, but *every brute is not reas* it would follow truly in the conclusion, ther *creature is not reasonable.*

When the antecedent or consequent are ne positions, they are removed by an affirmative; *be no God, then the world does not discover creati* but *the world does discover creating wisdom;* the *is a God.* In this instance the consequent is contradicted in the minor, that the antecedent i tradicted in the conclusion. So in this argu Paul, 1 Cor. xv. *If the dead rise not, Christ di* but *Christ did not die in vain;* therefore *the dea*

There are also two sorts of false arguing, n *From the removing of the antecedent to the remo consequent;* (2.) or, *From the position of the con the position of the antecedent.* Examples of thes framed; as,

(1.) *If a minister were a prince he must be hon a minister is not a prince;* therefore *he must not b*

(2.) *If a minister were a prince he must be hon a minister must be honoured;* therefore *he is a p*

Who sees not the ridiculous falsehood of botl logisms?

Obser. 7. If the subject of the antecedent a

sequent be the same, then the hypothetical syllogism may be turned into a categorical one; as, *If Cæsar be a king he must be honoured;* But *Cæsar is a king:* therefore &c. This may be changed thus, *Every king must be honored;* but *Cæsar is a king;* therefore, &c.

Observ. II. If the major proposition only be conditional, the conclusion is categorical; But if the minor or both be conditional, the conclusion is also conditional; as, *The worshippers of images are idolaters; If the Papists worship a crucifix they are worshippers of an image;* therefore, *If the Papists worship a crucifix they are idolaters.* But this sort of syllogisms should be avoided as much as possible in disputation, because they greatly embarrass a cause: The syllogisms, whose major only is hypothetical, are very frequent, and used with great advantage.

II. A disjunctive syllogism, is when the major proposition is disjunctive; as, *The earth moves in a circle or an ellipsis;* but *it does not move in a circle;* therefore *it moves in an ellipsis.*

A *disjunctive syllogism* may have many members or parts; thus, *It is either spring, summer, autumn, or winter;* but *it is not spring, autumn or winter;* therefore *it is summer.*

The true method of arguing here, is *from the assertion of one to the denial of the rest,* or *from the denial of one or more to the assertion of what remains;* but the major should be so framed, that the several parts of it cannot be true together, though one of them is evidently true.

III. A *relative syllogism* requires the major proposition to be relative; as, *Where Christ is, there shall his servants be;* but *Christ is in heaven;* therefore *his servants shall be there also.* Or, *As is the captain so are his soldiers;* but *the captain is a coward;* therefore *his soldiers are so too.*

Arguments that relate to the doctrine of proportion must be referred to this head; as, *As two are to four so are three to six;* but *two make the half of four;* therefore *three make the half of six.*

Besides these, there is another sort of syllogism which is very natural and common, and yet authors take very

little notice of it, call it by an improper name, and describe it very defectively; and that is,

IV. A connective syllogism. This some have called copulative; but it does by no means require the major to be a copulative nor a compound proposition (according to the definition given of it, Part II. chap. II. sec. 6.) but it requires that two or more ideas be so connected either in the complex subject or predicate of the major, that if one of them be affirmed or denied in the minor, common sense will naturally shew us what will be the consequence. It would be very tedious and useless to frame particular rules about them, as will appear by the following examples, which are very various, and yet may be further multiplied.

(1.) *Meekness and humility always go together; Moses was a man of meekness;* therefore *Moses was also humble.* Or we may form this minor, *Pharaoh was no humble man;* therefore *he was not meek.*

(2.) *No man can serve God and mammon; the covetous man serves mammon;* therefore *he cannot serve God.* Or, the minor may run thus, *The true Christian serves God;* therefore *he does not serve mammon.*

(3.) *Genius must join with study to make a great man; Florino has genius* but *he cannot study;* therefore *Florino will never be a great man.* Or thus, *Quintus studies hard,* but *has no genius;* therefore *Quintus will never be a great man.*

(4.) *Gulo cannot make a dinner without flesh and fish; there was no fish to be gotten to-day;* therefore *Gulo this day cannot make a dinner.*

(5.) *London and Paris are in different latitudes; the latitude of London is 51½ degrees;* therefore *this cannot be the latitude of Paris.*

(6.) *The father and the son are of equal stature; the father is six feet high;* therefore *the son is six feet high also.*

(7.) *Joseph and Benjamin had one mother; Rachel was the mother of Joseph;* therefore *she was Benjamin's mother too.*

(8.) *Pride is inconsistent with innocence; Angels have innocence;* therefore *they have no pride.* Or thus, *Devils have pride;* therefore *they have not innocence.*

I might multiply other instances of these connective syllogisms, by bringing in all sorts of exceptive, exclusive

comparative, and modal propositions, into the composition of them; for all these may be wrought into conjunctive, as well as into simple syllogisms, and thereby we may render them complex. But it would waste time and paper without equal profit.

Concerning these various kinds of conjunctive syllogisms, take these two observations.

Observ. I. Most of them may be transformed into categorical syllogisms by those who have a mind to prove the truth of them that way; or they may be easily converted into each other by changing the forms of speech.

Observ. II. These conjunctive syllogisms are seldom deficient or faulty in the form of them; for such a deficience would be discovered at first glance generally by common reason, without any artificial rules of logic: The chief care therefore is to see that the major proposition be true, upon which the whole force of the argument usually depends.

SECT. VI.

OF COMPOUND SYLLOGISMS.

WE properly call those compound syllogisms, which are made of two or more simple syllogisms, and may be resolved into them. The chief kinds are these; Epichirema, Dilemma, Prosyllogismus, and Sorites.

I. Epichirema is a syllogism which contains the proof of the major or minor, or both, before it draws the conclusion. This is often used in writing, in public speeches, and in common conversation; that so each part of the discourse may be confirmed and put out of doubt, as it moves on toward the conclusion which was chiefly designed. Take this instance.

Sickness may be good for us, for it weans us from the pleasures of life, and makes us think of dying;

But *we are uneasy under sickness, which appears by our impatience, complaints, groanings,* &c.

Therefore *we are uneasy sometimes under that which is good for us.*

Another instance you may see in Cicero's oration in defence of Milo, who had slain Clodius. His major proposition is, *that it is lawful for one man* to kill another who lies

ment or matter of speaking: And indeed it is or of sense and judgment that can use common pla pics well; for amongst this variety he only knov fit to be left out, as well as what is fit to be spoke

By some logical writers this business of topic vention is treated of in such a manner, with matl figures and diagrams, filled with the barbarous words, Napcas, Nipcis, Ropcros, Nosrop, &c. a an ignorant lad were to be led mechanically in c tificial harnesses and trammels to find out argu prove or refute any proposition whatsoever wit rational knowledge of the ideas. Now there is n throw words of contempt on such a practice; the scription of it carries reproof and ridicule in abun

SECT. VIII.

OF SEVERAL KINDS OF ARGUMENTS AND DEMONST

WE proceed now to the division of s according to the middle term; and in this part of tise the syllogisms themselves are properly cal ments, and are thus distributed.

I. Arguments are called grammatical, meta physical, moral, mechanical, theological, &c. a to the art, science, or subject, whence the middl topic is borrowed. Thus, if we prove that no m steal from his neighbour, because the scripture this is a theological argument: If we prove it laws of the land, it is political; but if we prov the principles of reason and equity, the argument

II. Arguments are either certain and evident, ful and merely probable.

Probable arguments, are those whose conclu proved by some probable mediums; as, *This hill a church-yard, or a field of battle*, because *there are man bones found here*. This is not a certain argu

an bones might have been conveyed there some othe

vident and certain arguments are called demonstra
s; for they prove their conclusions by clear medium
undoubted principles; and they are generally divided
these two sorts.

. Demonstrations *a priori*, which prove the effect by
necessary cause; as I prove *the scripture is infallibly*
, because it is *the word of God who cannot lie.*

. Demonstations *a posteriori*, which infer the cause
n its necessary effect; as, *I infer there hath been the*
l of some artificer here, because *I find a curious engine,*
I infer there is a God, from the works of his wisdom in
visible world.

he last of these is called *demonstratio tou oti*, because
oves only the existence of a thing; the first is named
onstatio tou dioti, because it shews also the cause of
tence.

ut *note*, That though these two sorts of arguments are
peculiarly called *demonstrations*, yet generally any
g and convincing argument obtains that name; and it
custom of mathematicians to call their arguments
strations, from what medium soever they derive

Arguments are divided into artificial and inarti-

rtificial argument is taken from the nature and
stances of the things; and if the argument be
it produces a natural certainty; as, *The world was*
ated by God, because *nothing can create itself.*
rtificial argument, is the testimony of another, and
lled original, when our information proceeds im-
y from the persons concerned, or from eye or ear
s of a fact: It is called tradition when it is deliv-
he report of others.
ve taken notice before, that testimony is either
human. If the human testimony be strong, it
moral certainty; but divine testimony produ-
ernatural certainty, which is far superior.
Arguments taken from human testimony, as
m laws and rules of equity, are called moral;

sides in every member, which is but the same thing i
other words. Or, if a Papist should pretend to prove tha
his religion is the only catholic religion; and *is derived fro*
Christ and his apostles, because it agrees with the doctrine
all the fathers of the church, all the holy martyrs, and all t
Christian world throughout all ages: Whereas this is th
great point in contest, whether their religion does agre
with that of all the ancient and the primitive Christians
or not.

III. That sort of fallacy which is called a circle, is very near akin to the *petitio principii;* as when one of the premises in a syllogism is questioned and opposed, and we intend to prove it by the conclusion: Or, when in a train of syllogisms we prove the last by recurring to what was the conclusion of the first: The Papists are famous at this sort of fallacy, when they prove the scriptures to be the word of God by the authority or infallible testimony of their church; and when they are called to shew the infallible authority of their church, they pretend to prove it by the scriptures.

IV. The next kind of sophism is called *non causa pro causa*, or the *assignation of a false cause*. This the Peripatetic philosophers were guilty of continually; when they told us that certain beings, which they called *substantial forms*, were the springs of colour, motion, vegetation, and the various operations of natural beings in the animate and inanimate world; when they informed us that Nature was terribly afraid of a vacuum, and that this was the cause why the water would not fall out of a long tube if it was turned upside down: The moderns as well as the ancients fall often into this fallacy, when they positively assign the reasons of natural appearances, without sufficient experiments to prove them.

Astrologers are overrun with this sort of fallacies, and they cheat the people grossly, by pretending to tell fortunes, and to deduce the cause of the various occurrences in the lives of men from the various positions of the stars and planets, which they call aspects.

When comets and eclipses of the sun and moon are construed to signify the fate of princes, the revolution of

states, famine, wars and calamities of all kinds, it is a fallacy that belongs to this rank of sophims.

There is scarce any thing more common in human life than this sort of human argument. If any two accidental events happen to concur, one is perfectly made the cause of the other. If Titius wronged his neighbour of a guinea, and in six months after he fell down and broke his leg, weak men will impute it to divine vengeance on Titius for his former injustice. This sophism was found also in the early days of the world: For, when holy Job was surrounded with uncommon miseries, his own friends inferred, that he was a most heinous criminal, and charged him with aggravated guilt as the cause of his calamities; though God himself by a voice from heaven solved this uncharitable sophism, and cleared his servant Job of that charge.

How frequent is it among men to impute crimes to wrong persons? We too often charge that upon the wicked contrivance and premeditated malice of a neighbour, which arose merely from ignorance, or from unguarded temper. And, on the other hand, when we have a mind to excuse ourselves, we practise the same sophism, and charge that upon our inadvertence or our ignorance, which perhaps was designed wickedness. What is really done by a necessity of circumstances, we sometimes, impute to choice. And again, we charge that upon necessity which was really desired and chosen.

Sometimes a person acts out of judgment, in opposition to his inclination; another person perhaps acts the same thing out of inclination, and against his judgment. It is hard for us to determine with assurance, what are the inward springs and secret causes of every man's conduct; and therefore we should be cautious and slow in passing a judgment where the case is not exceeding evident; and if we should mistake, let it rather be on the charitable, than on the censorious side.

It is the same sophism that charges mathematical learning with leading the minds of men to scepticism and infidelity, and as unjustly accuses the new philosophy of paving the way to heresy and schism. Thus the reformation from Popery has been charged with the murder and

blood of millions, which in truth is to be imputed to the tyranny of the princes and the priests, who would not suffer the people to reform their sentiments and their practices according to the word of God. Thus Christianity in the primitive ages was charged by the Heathens with all the calamities which befel the Roman empire, because the Christians renounced the heathen gods and idols.

The way to relieve ourselves from those sophisms, and to secure ourselves from the danger of falling into them, is an honest and diligent inquiry into the real nature and causes of things, with a constant watchfulness against all those prejudices that might warp the judgment aside from truth in that inquiry.

V. The next is called *fallacia accidentis*, or a sophism wherein we pronounce concerning the nature and essential properties of any subject according to something which is merely accidental to it. This is akin to the former, and is also very frequent in human life. So if opium or the Peruvian bark has been used imprudently or unsuccessfully, whereby the patient has received injury, some weaker people absolutely pronounce against the use of the bark or opium upon all occasions whatsoever, and are ready to call them poison. So wine has been the accidental occasion of drunkenness and quarrels; learning and printing may have been the accidental cause of sedition in a state; the reading of the bible, by accident has been used to promote heresies or destructive errors; and for these reasons they have been all pronounced *evil things*. Mahomet forbade his followers the use of wine; the Turks discourage learning in their dominions; and the Papists forbid the scriptures to be read by the laity. But how very unreasonable are these inferences, and these prohibitions which are built upon them.

VI. The next sophism borders upon the former; and that is, when we argue from that which is true in particular circumstances, to prove the same thing true absolutely, simply and abstracted from all circumstances; this is called in the schools *a sophism a dicto secundum quid ad dictum simpliciter*; as, *That which is bought in the shambles is eaten for dinner; Raw meat is bought in the shambles*; therefore *raw meat is eaten for dinner*. Or thus, *Livy writes fables and*

improbabilities when he describes prodigies and omens; therefore *Livy's Roman history is never to be believed in any thing.* Or thus, *There may be some mistakes of transcribers in some part of the scriptures;* therefore *scripture alone is not a safe guide for our faith.*

This sort of sophism has its reverse also; as when we argue from that which is true simply and absolutely, to prove the same thing true in all particular circumstances whatsoever;* as if a *traitor* should argue from the sixth commandment, *Thou shalt not kill a man,* to prove that *he himself ought not to be hanged*: Or if a *madman* should tell me, *I ought not to withhold his sword from him, because no man ought to withhold the property of another.*

These two last species of sophisms are easily solved, by shewing the difference betwixt things in their absolute nature, and the same things surrounded with peculiar circumstances, and considered in regard to special times, places, persons and occasions; or by shewing the difference between a moral and a metaphysical universality, and that the proposition will hold good in one case, but not in the other.

VII. The sophisms of composition and division come next to be mentioned.

The sophism of composition, is when we infer any thing concerning ideas in a compound sense, which is only true in a divided sense. And when it is said in the gospel that Christ made the blind to see, and the deaf to hear, and the lame to walk, we ought not to infer hence that Christ performed contradictions; but those who were blind before, were made to see, and those who were deaf before, were made to hear, &c. So when the scripture assures us, The worst of sinners may be saved; it signifies only, that they who have been the worst of sinners may repent and be saved, not that they shall be saved in their sins. Or if any one should argue thus, *Two and three are even and odd; Five are two and three;* therefore *five are even and*

* This is arguing from a moral universality, which admits of some exceptions, in the same manner as may be argued from metaphysical or a natural universality, which admits of no exception.

odd. Here that is very falsely inferred concerning *two and three in union*, which is only true of them divided.

The *sophism* of *division*, is when we infer the same thing concerning ideas in a divided sense, which is only true in a compound sense; as, if we should pretend to prove that every soldier in the Grecian army put an hundred thousand Persians to flight, because the Grecian soldiers did so. Or if a man should argue thus, *Five is one number*; *Two and three are five*; therefore *two and three are one number.*

This sort of sophism is committed when the word *All* is taken in a collective and a distributive sense, without a due distinction; as, if any one should reason thus; *All the musical instruments of the Jewish temple made a noble concert*; *The harp was a musical instrument of the Jewish temple*; therefore *the harp made a noble concert.* Here the word *All* in the major is collective, whereas such a conclusion requires that the word *All* should be distributive.

It is the same fallacy when the universal word *All* or *No* refers to species in one proposition, and to individuals in another; as, *All animals were in Noahs Ark*; therefore *No animals perished in the flood:* Whereas in the premise *all animals* signifies *every kind of animal*, which does not exclude or deny the drowning of a thousand individuals.

VIII. The last sort of sophism arises from our abuse of the ambiguity of words, which is the largest and most extensive kind of fallacy; and indeed several of the former fallacies might be reduced to this head.

When the words or phrases are plainly equivocal, they are called *sophisms* of *equivocation*; as, if we should argue thus: *He that sends forth a book into the light, desires it to be read*; *He that throws a book into the fire, sends it into the light*; therefore *He that throws a book into the fire desires it to be read.*

This sophism, as well as the foregoing, and all of the like nature, are solved by shewing the different senses of the words, terms or phrases. Here *light* in the major proposition signifies the *public view of the world*; in the minor it signifies the *brightness of flame and fire*; and therefore the syllogism has four terms, or rather, it has no middle term, and proves nothing.

But where such gross equivocations and ambiguities appear in [illegible], there is little danger of imposing up

on ourselves or others. The greatest danger, and which we are perpetually exposed to in reasoning, is, where the two senses or significations of one term as near akin, and not plainly distinguished, and yet they are really sufficiently different in their sense, to lead us into great mistakes, if we are not watchful. And indeed the greatest part of controversies in the sacred or civil life arise from the different senses that are put upon words, and the different ideas which are included in them ; as have been shewn at large in the FIRST PART OF LOGIC, Chap. IV. which treats of words and terms.

There is, after all these, another sort of sophisms, which is wont to be called on *imperfect enumeration*, or a *false induction*, when from a few experiments or observations men infer general theorems and universal propositions. But this is sufficiently noticed in the foregoing chapter, where we treated of that sort of syllogism which is called *induction*.

SECT. II.

TWO GENERAL TESTS OF TRUE SYLLOGISMS, AND METHODS OF SOLVING ALL SOPHISMS.

BESIDES the special description of true syllogisms and sophisms already given, and the rules by which the one are framed, and the other refuted, there are these two general methods of reducing all syllogisms whatsoever to a test of their truth or falsehood.

I. The first is, that the premises must, at least implicitly, contain the conclusion ; or thus, *One of the premises must contain the conclusion, and the other must shew that the conclusion is contained in it.* The reason of this rule is this ; when any proposition is offered to be proved it is necessary to find another proposition which confirms it, which may be called the containing proposition ; but because the second must not contain the first in an express

manner, and in the same words,* therefore it is necessary that a third or ostensive proposition be found out, to shew that the second proposition contains the first, which was to be proved. Let us make an experiment of this syllogism: *Whosoever is a slave to his natural inclination is miserable; The wicked man is a slave to his natural inclination;* therefore *The wicked man is miserable.* Here it is evident that the major proposition contains the conclusion; for, under the general character of a slave to natural inclinations, a wicked man is contained or included; and the minor proposition declares it; whence the conclusion is evidently deduced, *that the wicked man is miserable.*

In many affirmative syllogisms we may suppose either the major or the minor to contain the conclusion, and the other to shew it; for there is no great difference. But in negative syllogisms it is the negative proposition that contains the conclusion, and the affirmative proposition shews it; as *Every wise man masters his passions; No angry man masters his passions;* therefore *No angry man is wise.* Here it is more natural to suppose the minor to be the contained proposition; it is the minor implicitly denies wisdom concerning an angry man, because mastering the passions is included in wisdom, and the major shews it.

Note....This rule may be applied to complex and conjunctive, as well as simple syllogisms, and is adapted to shew the truth or falsehood of any of them.

II. The second is this; *As the terms in every syllogism are usually repeated twice, so they must be taken precisely in the same sense in both places:* For the greatest part of mistakes that arise in forming syllogisms, is derived from some little difference in the sense of one of the terms in the two parts of the syllogism wherein it is used. Let us consider the following sophisms.

1. *It is a sin to kill a man; A murderer is a man;* therefore *It is a sin to kill a murderer.* Here the word

* It is confessed that conditional and disjunctive major propositions do expressly contain all that is in the conclusion; but then it is *not in* a certain and conclusive manner, but only in a dubious form of *speech*, and mingled with other terms; and therefore it is not the *same* express proposition.

kill in the first proposition signifies to kill unjustly, or without law; in the conclusion it is taken absolutely for putting a man to death in general, and therefore the inference is not good.

2. *What I am, you are not*; but *I am a man*; therefore *You are not a man.* This is a relative syllogism: But if it be reduced to a regular categorical form, it will appear there is ambiguity in the terms, thus; *What I am, is a man; You are not what I am*; therefore *you are not a man.* Here *what I am* in the major proposition is taken *specially* for *my nature*; but in the minor proposition the same words are taken *individually* for *my person*; therefore the *inference* must be false, for the syllogism does not take the term *what I am* both times in the same sense.

3. *He that says you are an animal, says true*; but *He that says you are a goose says you are an animal*; therefore *He that says you are a goose, says true.* In the major proposition the word *animal* is the predicate of an accidental proposition; which accidental proposition being affirmative, renders the predicate of it particular, according to chap. II. sec. 2. axiom 3. and consequently the word *animal* there signifies only *human animality.* In the minor proposition the word *animal*, for the same reason, signifies the *animality of a goose*; whereby it becomes an *ambiguous* term, and unfit to build the conclusion upon. Or if you say, the word *animal* in the minor is taken for *human animality*, then the minor is evidently *false.*

It is from this last general test of syllogisms that we derive the custom of the respondent in answering the arguments of the opponent, which is to distinguish upon the major or minor proposition, and declare which term is used in two senses, and in what sense the proposition may be true, and in what sense it is false.

CHAP. IV.

SOME GENERAL RULES TO DIRECT OUR REASONING.

MOST of the general and special directions given to form our judgment aright in the preceding part of logic might be rehearsed here; for the judgments which we pass upon things are generally built on some secret reasoning or argument by which the proposition is supposed to be proved. But there may be yet some farther assistance given to our reasoning powers in their search after truth, and an observation of the following rules will be of great importance for that end.

RULE I. "Accustom yourselves to clear and distinct ideas, to evident propositions, to strong and convincing arguments." Converse much with those friends, and those books, and those parts of learning, where you meet with the greatest clearness of thought, and force of reasoning. The mathematical sciences, and particularly arithmetic, geometry, and mechanics, abound with these advantages: And if there were nothing valuable in them for the uses of human life, yet the very speculative parts of this sort of learning are well worth our study; for by perpetual examples they teach us to conceive with clearness, to connect our ideas and propositions in a train of dependence, to reason with strength and demonstration, and to distinguish between truth and falsehood. Something of these sciences should be studied by every man who pretends to learning, and that, as Mr. Locke expresses it, not so much to make us mathematicians, as to make us reasonable creatures.

We should gain such a familiarity with evidence of perception and force of reasoning, and get such a habit of discerning clear truths, that the mind may be soon offended with obscurity and confusion: Then we shall, as it were, naturally and with ease restrain our minds from rash judgment, before we attain just evidence of the proposition which is offered to us; and we shall with the

same ease, and, as it were naturally, seize and embrace every truth that is proposed with just evidence.

The habit of conceiving clearly, of judging justly, and of reasoning well, is not to be attained merely by the happiness of constitution, the brightness of genius, the best natural parts, or the best collection of logical precepts: it is custom and practice that must form and establish this habit. We must apply ourselves to it till we perform all this readily, and without reflecting on rules. A coherent thinker and a strict reasoner is not to be made at once by a set of rules, any more than a good painter or musician may be formed extempore, by an excellent lecture on music or painting. It is of infinite importance therefore in our younger years to be taught both the value and the practice of conceiving clearly and reasoning right: For, when we are grown up to the middle of life, or past it, it is no wonder that we should not learn good reasoning, any more than that an ignorant clown should not be able to learn fine language, dancing, or a courtly behavior, when his rustic airs have grown up with him till the age of forty.

For want of this care, some persons of rank and education dwell all their days among obscure ideas; they conceive and judge always in confusion; they take weak arguments for demonstration; they are led away with the disguises and shadows of truth. Now, if such persons happen to have a bright imagination, a volubility of speech, and a copiousness of language, they not only impose many errors upon their own understandings, but they stamp the image of their own mistakes, upon their neighbors also, and spread their errors abroad.

It is a matter of just lamentation and pity, to consider the weakness of the common multitude of mankind in this respect, how they receive any thing into their assent upon the most trifling grounds. True reasoning hath very little share in forming their opinions. They resist the most convincing arguments by an obstinate adherence to their prejudices, and believe the most improbable things with the greatest assurance. They talk of the abstrusest mysteries, and determine upon them with the utmost confidence, and without just evidence either from reason or

revelation. A confused heap of dark and inconsistent ideas, make up a good part of their knowledge in matters of philosophy as well as religion, having never been taught the use and value of clear and just reasoning.

Yet it must be still confessed that there are some mysteries in religion, both natural and revealed, as well as some abstruse points in philosophy, wherein the wise as well as the unwise must be content with obscure ideas. There are several things, especially relating to the invisible world, which are unsearchable in our present state, and therefore we must believe what revelation plainly dictates, though the ideas may be obscure. Reason itself demands this of us; but we should seek for the brightest evidence both of the ideas, and of the connexion of them, wheresoever it is attainable.

RULE II. "Enlarge your general acquaintance with things daily, in order to attain a rich furniture of topics, or middle terms, whereby those propositions which occur may be either proved or disproved; but especially meditate and inquire with great diligence and exactness into the nature, properties, circumstances, and relations of the particular subject about which you judge or argue." Consider its causes, effects, consequences, adjuncts, opposites, signs, &c. so far as is needful to your present purpose. You should survey a question round about, and on all sides, and extend your views as far as possible to every thing that has a connexion with it. This practice has many advantages in it; as,

1. It will be a means to suggest to your mind proper topics for argument about any proposition that relates to the same subject.

2. It will enable you with greater readiness and justness of thought to give an answer to any sudden question upon that subject, whether it arises in your own mind, or is proposed by others.

3. This will instruct you to give a plainer and speedier solution of any difficulties that may attend the theme of your discourse, and to refute the objections of those who have espoused a contrary opinion.

4. By such a large survey of the whole subject in all its properties and relations, you will be better secured from

inconsistencies, that is, from asserting or denying any thing in one place, which contradicts what you have asserted or denied in another: And to attain these ends, an extensiveness of understanding, and a large memory, are of unspeakable service.

One would be ready to wonder sometimes how easily great, wise, and learned men are led into assertions in some parts of the same treatise, which are found to be scarce consistent with what they have asserted in other places: But the true reason is, the narrowness of the mind of man, that it cannot take in all the innumerable properties and relations of one subject with a single view; and therefore, whilst they are intent on one particular part of their theme, they bend all their force of thought to prove or disprove some proposition that relates to that part, without attention to the consequences which may flow from it, and which may unhappily affect another part of the same subject; and by this mean they are sometimes led to say things which are inconsistent. In such a case, the great dealers in dispute and controversy take pleasure to cast nonsense and self-contradiction on their antagonist, with huge and hateful reproaches. For my part, I rather choose to pity human nature, whose necessary narrowness of understanding exposes us all to some degrees of this frailty. But the most extensive survey possible of our whole subject is the best remedy against it. It is our judging and arguing upon a partial view of things, that exposes us to mistakes, and pushes us into absurdities, or at least to the very borders of them.

RULE III. "In searching the knowledge of things, always keep the precise point of the present question in your eye. Take heed that you add nothing to it while you are arguing, nor omit any part of it." Watch carefully lest any new ideas slide in to mingle themselves either with the subject or the predicate. See that the question be not altered by the ambiguity of any word taken in different senses; nor let any secret prejudices of your own, or the sophistical arts of others, cheat your understanding by changing the question, or shuffling in any thing else in its room.

And for this end it is useful to keep the precise matter of inquiry as *simple* as may be, and disengaged from a complication of ideas, which do not necessarily belong to it. By admitting a complication of ideas, and taking too many things at once into one question, the mind is sometimes dazzled and bewildered; and the truth is lost in such a variety and confusion of ideas; whereas, by limiting and narrowing the question, you take a fuller survey of the whole of it.

By keeping the whole point of inquiry in our constant view, we shall be secured from sudden, rash, and impertinent responses and determinations, which some have obtruded instead of solutions and solid answers, before they perfectly knew the questions.

RULE IV. "When you have exactly considered the precise point of inquiry, or what is unknown in the question, then consider what and how much you know already of this question, or of the ideas and terms of which it is composed." It is by a comparison of the known and unknown parts of the question together that you find what reference the part known hath unto, or what connexion it hath with the thing that is sought: Those ideas, whereby the known and unknown parts of the question are connected, will furnish you with middle terms or arguments whereby the thing proposed may be proved or disproved.

In this part of your work, namely, comparing ideas together, take due time, and be not too hasty to come to a determination, especially in points of importance. Some men, when they see a little agreement or disagreement between ideas, they presume a great deal, and so jump into the conclusion: This is a short way to fancy, opinion and conceit, but a most unsafe and uncertain way to true knowledge and wisdom.

RULE V. "In choosing your middle terms or arguments to prove any question, always take such topics as are surest, and least fallible, and which carry the greatest evidence and strength with them." Be not so solicitous about the number, as the weight of your arguments, especially in proving any proposition which admits of natural certainty, or of complete demonstration. Many times we do injury to a cause by dwelling upon trifling

arguments. We amuse our hearers with uncertainties, by multiplying the number of feeble reasonings, before we mention those which are more substantial, conclusive, and convincing. And too often we yield up our assent to mere probable arguments, where certain proofs may be obtained.

Yet it must be confessed, there are many cases wherein the growing numbers of probable arguments increases the degree of probability, and gives a great and sufficient confirmation to the truth which is sought; as,

(1.) When we are enquiring the true sense of any word or phrase, we are more confirmed in the signification of it, by finding the same expression so used in several authors, or in several places of the same author.

(2.) When we are searching out the true meaning or opinion of any writer, or inquiring into any sacred doctrine of scripture, we come to a surer determination of the truth by several distinct places wherein the same thing is expressed or plainly implied; because it is not so probable that an honest skilful reader should mistake the meaning of the writer in many places, as he may in one or two.

(3.) When we would prove the importance of any scriptural doctrine or duty, the multitude of texts wherein it is repeated and inculcated upon the reader, seems naturally to instruct us that it is a matter of greater importance than other things which are but slightly or singly mentioned in the Bible.

(4.) In searching out matters of fact in times past or in distant places, in which case moral evidence is sufficient, and moral certainty is the utmost which can be attained, here we derive a greater assurance of the truth of it by a number of persons, or a multitude of circumstances concurring to bear witness to it.

(5.) From many experiments in natural philosophy we more safely infer a general theorem, than we can form one or two.

(6.) In matters which require present practice, both sacred and civil, we must content ourselves oftentimes with a mere preponderation of probable reasons or arguments. Where there are several reasons on each side, for

and against a thing that is to be done or omitted, a small argument added to the heap may justly turn the balance on one side, and determine the judgment, as I have noted in the Second Part of Logic.

To conclude: A growing acquaintance with matters of learning, and a daily improvement of our understandings in affairs human and divine, will best teach us to judge and distinguish in what cases the number of arguments adds to their weight and force: It is only experience can fully inform us when we must be determined by probable topics, and when we must seek and expect demonstrations.

RULE VI. "Prove your conclusion (as far as possible) by some propositions that are in themselves more plain, evident, and certain, than the conclusion; or at least such as are more known, and more intelligible to the person whom you would convince." If we shall neglect this rule, we shall endeavour to enlighten that which is obscure by something equally or more obscure, and to confirm that which is doubtful by something equally or more uncertain. Common sense dictates to all men, that it is impossible to establish any truth, and to convince others of it, but by something that is better known to them than that truth is.

RULE VII. "Labour in all your arguings to enlighten the understanding, as well as to conquer and captivate the judgment." Argue in such a manner as may give a natural, distinct, and solid knowledge of things to your hearers, as well as to force their assent by a mere proof of the question. Now, to attain this end, the chief topic or medium of your demonstration should be fetched, as much as possible, from the nature of the thing to be proved, or from those things which are most naturally connected with it.

Geometricians sometimes break this rule without necessity, two ways, namely,

1. When they prove one proposition only by shewing that absurdities will follow if the contradictory proposition be supposed or admitted: This is called *Reductio ad ab-*

surdum,* or *Demonstratio per impossibile*. As, for instance, When they prove all the *radii* of a circle to be equal, by supposing one *radius* to be longer or shorter than another, and then shewing what consequences will follow. This, I confess, forces the assent, but it does not enlighten the mind, by shewing the true reason and cause why all *radii* are equal, which is derived from the very construction of a circle: For, since a circle is formed by fixing one end of a straight line in the centre, and moving the other end round, (or, which is all one, by compasses kept open to a certain extent,) it follows evidently that every part of the circumference being thus described, must be equally distant from the centre, and therefore the *Radii* which are lines from the centre to the circumference, must be all equal.

2. Geometricians forget this rule when they heap up many far-fetched lines, figures, and propositions to prove some plain, simple, and obvious proposition. This is called a *Demonstration per aliena et remota*, or an argument from unnatural and remote mediums: As if, in order to prove the *radii* of a circle are all equal, I should make several triangles and squares about the circle, and then from some properties and propositions of squares and triangles prove that the *radii* of a circle are equal.

Yet it must be confessed, that sometimes such questions happen, that it is hardly possible to prove them by direct arguments drawn from the nature of things, &c. and then it may not only be lawful but necessary to use indirect proofs, and arguments drawn from remote mediums, or from the absurdity of the contradictory suppositions.

Such indirect and remote arguments may also be sometimes used to confirm a proposition, which has been before proved by arguments more direct and immediate.

* Note—This rule chiefly refers to the establishment of some truth, rather than the refutation of error. It is a very common and useful way of arguing, to refute a false proposition, by shewing what evident falsehood or absurdity will follow from it: For what proposition soever is really absurd and false, does effectually prove that principle to be false, from which it is derived; so that this way of refuting an error is not so usually called Reductio ad Absurdum.

THE

Fourth Part of Logic.

OF DISPOSITION AND METHOD.

IT is not merely a clear and distinct idea, a well formed proposition, or a just argument, that is sufficient to search out and communicate the knowledge of a subject. There must be a variety and series of them disposed in a due manner, in order to attain this end: And therefore it is the design of the last part of Logic to teach us the art of method. It is that must secure our thoughts from that confusion, darkness, and mistake, which unavoidably attend the meditations and discourse even of the brightest genius who despises the rules of it.

I. We shall here consider the nature of method, and the several kinds of it.

II. Lay down the general rules of method, with a few particulars under them.

CHAP. I.

OF THE NATURE OF METHOD, AND THE SEVERAL KINDS OF IT, NAMELY, NATURAL AND ARBITRARY, SYNTHETIC AND ANALYTIC.

METHOD, taken in the largest sense, implies the placing of several things, or performing several operations in such an order, as is most convenient to attain some end proposed: And in this sense it is applied to all *the* works of nature and art, to all the divine affairs of

eation and providence; and to the artifices, schemes, ntrivances and practices of mankind, whether in natural, ril, or sacred affairs.

Now this orderly disposition of things includes the ideas prior, posterior, and simultaneous; of superior, inferior, d equal; of beginning, end, and middle, &c. which are scribed more particularly among the general affections being, in ontology.

But in logic, method is usually taken in a more limited nse, and the nature of it is thus described: *Method is disposition of a variety of thoughts on any subject in such der as may best serve to find out unknown truths, to con- in and confirm truths that are known, or to fix them to memory.*

It is distributed into two general kinds, namely, natural d arbitrary.

Natural method is that which observes the order of na- e, and proceeds in such a manner as that the knowledge the things which follow depends in a great measure on things which go before, and this is twofold, *viz.* *tic* and *analytic*.*

* The word analysis has three or four senses, which it may not be proper to take notice of here.

. It signifies the general and particular heads of a discourse, with ir mutual connexions, both co-ordinate and subordinate, drawn out way of abstract into one or more tables, which are frequently pla- like an INDEX at the beginning or end of a book.

. It signifies the resolving of a discourse into its various subjects l arguments, as when any writing of the ancient prophets is re- ed into the prophetical, historical, doctrinal, and practical parts t; it is said to be analysed in general. When a sentence is dis- guished into the nouns, the verbs, pronouns, adverbs, and other par- s of speech, which compose it, then it is said to be analysed gram- tically. When the same sentence is distinguished into subject and dicate, proposition, argument, act, object, cause, effect, adjunct, posite, &c. then it is analysed logically and metaphysically. This is what is chiefly meant in the theological school, when they k of analysing a text of scripture.

. Analysis signifies particularly the science of algebra, wherein estion being proposed, one or more letters, as, x, y, z, or vow- s, a, e, i, &c. are made use of to signify the unknown number, ich being intermingled with several known numbers in the ques-

Synthetic method is that which begins with the par and leads onward to the knowledge of the whole; it gins with the most simple principles, and general tru and proceeds by degrees to that which is drawn from th or compounded of them: And therefore it is called method of composition.

Analytic method takes the whole compound as it fi it whether it be a species or an individual, and leads us to the knowledge of it, by resolving it into its first prir ples or parts, its generic nature, and its special properti and therefore it is called the method of resolution.

As synthetic method is generally used in teaching sciences after they are invented, so analytic is most pr tised in finding out things unknown. Though it must confessed that both methods are sometimes employed find out truth and to communicate it.

If we know the parts of any subject easier and be than the whole, we consider the parts distinctly, and putting them together, we come to the knowledge of i whole. So in grammar we learn first to know letters, join them to make syllables, out of syllables we comp words, and out of words we make sentences and discours So the physician and apothecary knows the nature a powers of his simples, namely, his drugs, his herbs, minerals, &c. and putting them together, and consideri their several virtues, he finds what will be the nature a powers of the bolus, or any compound medicine: This the synthetic method.

But if we are better acquainted with the whole tl

tion, is at last, by the rules of art, separated or released from that tanglement, and its particular value is found out by shewing its eq tion or equality to some known number.

4. It signifies analytical meothd, as here explained in logic.

*Note, It is confessed that synthesis often begins with the ge and proceeds to the species and individuals. But the genus or ge ic nature is then considered only as a physical or essential part of species, though it be sometimes called an universal or logical wh Thus synthetic method maintains its own description still, for it gins with the parts, and proceeds to the whole; which is comp of them.

we are with particular parts, then we divide or resolve the whole into its parts, and thereby gain a distinct knowledge of them. So in vulgar life we learn in the gross what plants or minerals are; and then by chemistry we gain the knowledge of salt, sulphur, spirit, water, earth, which are the principles of them. So we are first acquainted with the whole body of an animal, and then by anatomy or dissection we come to learn all the inward and outward parts of it. This is the analytic method.

According to this most general and obvious idea of synthetic and analytic method, they differ from each other as the way which leads up from a valley to a mountain differs from itself, considered as it leads down from the mountain to the valley; or, as St. Matthew and St. Luke prove *Christ to be the son of Abraham*; *Luke* finds it out by analysis, rising from Christ to his ancestors; Matthew teaches it in the synthetic method, beginning from Abraham, and shewing that Christ is found among his posterity. Therefore it is a useful thing in the sciences, when we have by analysis found out a truth, we use the synthetic method to explain and deliver it, and prove it to be true.

In this easy view of things, these two kinds of method may be preserved conspicuously, and entirely distinct: But the subjects of knowledge being infinite, and the ways whereby we arrive at this knowledge being almost infinitely various, it is very difficult, and almost impossible, always to maintain the precise distinction between these two methods.

This will appear evidently in the following observations.

Observ. I. The analytic method being used chiefly to find out things unknown, it is not limited or confined merely to begin with some whole subject, and proceed to the knowledge of its parts, but it takes its rise sometimes from any single part or property, or from any thing whatsoever that belongs to a subject which happens to be first and most easily known, and thereby inquires into the more abstruse and unknown parts, properties, causes, effects, and modes of it, whether absolute or relative: As, for instance.

(1.) Analysis finds out causes by their effects. So in the speculative part of natural philosophy, when we ob-

serve light, colours, motion, hardness, softness, and oth properties and powers of bodies, or any of the common uncommon appearances of things, either on earth or heaven, we search out the causes of them. So by the v rious creatures we find out the Creator, and learn his wi dom, power and goodness.

(2.) It finds out effects by their causes. So the pract cal and mechanical part of natural philosophy conside such powers of motion, as the wind, the fire, and the wate &c. and then contrives what uses they may be applied t and what will be their effects, in order to make mills an engines of various kinds.

(3.) It finds out the general and special nature of thing, by considering the various attributes of the indivi uals, and observing what is common and what is prope what is accidental, and what is essential. So by surve ing the colour, the shape, motion, rest, place, solidity, an extension of bodies, we come to find that the nature body in general is solid extension; because all other qua ities of bodies are changeable; but this belongs to *all* bo dies, and it endures through all changes; and becaus this is proper to body alone, and agrees not to any thin else: and it is the foundation of all other properties.

(4.) It finds out the remaining properties or parts of thing, by having some parts or properties given. So t area of a triangle is found by knowing the height and t base. So by having two sides and an angle of a triang given, we find the remaining side and angles. So wh we know cogitation is the prime attribute of a spirit, v infer its immateriality, and thence its immortality.

(5.) Analysis finds the means necessary to attain a pr posed end, by having the end first assigned. So in mor political, economical affairs, having proposed the gover ment of self, a family, a society, or a nation, in order their best interest, we consider and search out what a the proper laws, rules and means to effect it. So in t practices of artificers, manufacturers of various kinds, t end being proposed, as making cloth, houses, ships, & we find out ways of composing those things for the seve al uses of human life. But the putting any of these mea in execution to attain the end, is synthetic method.

Many other particulars might be represented to shew the various forms of analytic method, whereby truth is found out, and some of them come very near to synthetic, so hardly as to be distinguished.

Observ. II. Not only the investigation of truth, but the communication of it also, is often practised in such a method, as neither agrees precisely to synthetic or analytic. Some sciences, if you consider the whole of them in general, are treated in synthetic order; so physics, or natural philosophy, begins usually with an account of the general nature and properties of matter or bodies, and by degrees descend to consider the particular species of bodies, with their powers and properties; yet it is very evident, that when philosophers come to particular plants and animals, then by chemistry and anatomy they analyse or resolve those bodies into their several constituent parts. On the other hand, logic is begun in analytic method; the whole is divided into its integral parts, according to the four operations of the mind; yet here and there synthetic method is used in the particular branches of it, for it treats of ideas in general first, and then descends to the several species of them; it teaches how propositions are made up of ideas, and syllogisms, of propositions, which is the order of composition.

The ancient scholastic writers have taken a great deal of pains, and engaged in useless disputes, about these two methods, and after all have not been able to give such an account of them as to keep them entirely distinct from each other, neither in the theory nor in the practice. Some of the moderns have avoided this confusion in some measure by confining themselves to describe almost nothing else but the synthetic, analytic methods of geometricians and algebraists, whereby they have too much narrowed the nature and rules of method, as though every thing were to be treated in mathematical forms.

Upon the whole, I conclude that neither of these two methods should be too scrupulously and superstitiously pursued, either in the invention or in the communication of knowledge. It is enough, if the order of nature be but observed in making the knowledge of things following depend on the knowledge of the things which go before.

Arbitrary method leaves the order of natur
commodates itself to many purposes: such as,
up things, and retain them in memory; to hai
persuade mankind to any practice in the relig
civil life; or to delight, amuse, or entertain the

As for the assistance of the memory, in mo
natural order has an happy influence; for reasc
ducing one thing from another, greatly assists tl
by the natural connection and mutual dependenc
But there are various other methods which ma
made use of for this purpose, and indeed there
subjects that can hardly be reduced either to
synthesis.

In reading or writing history, some follow tl
the governors of a nation, and dispose every
under their particular reigns: So the sacre
Kings and Chronicles are written. Some wri
or journals, and make a new chapter of every y
put all those transactions together which rel
subject; that is, all the affairs of one war, one
confederacy, one council, &c. tho' it lasted
and under many rulers.

So in writing the lives of men, which is called
some authors follow the tract of their years, an
ery thing in the precise order of time when i

ricus, the periods all begin with C.: as, Creation, Cataclysm, or deluge, Chaldean, Empire, Cyrus, Christ, Constantine, &c. Some divide their accounts of time according to the four great monarchies; Assyrian, Persian, Grecian, and Roman. Others think it serves the memory best to divide all their subjects into the remarkable number of sevens: so Prideaux has written an introduction to history. And there is a book of divinity called *Fasiculus Contriversarium*, by an author of the same name, written in the same method, wherein every controversy has seven questions belonging to it; though the order of nature seems to be too much neglected by a confinement to this septenary number.

Those writers and speakers whose chief business is to amuse or delight, to allure, terrify, or persuade mankind, do not confine themselves to any natural order, but in a cryptical or hidden method adapt every thing to their designed ends. Sometimes they omit those things which might injure their design, or grow tedious to their hearers, though they seem to have a necessary relation to the point in hand: Sometimes they add those things which have no great references to the subject, but are suited to allure or refresh the mind and the ear. They dilate sometimes, and flourish long upon little incidents, and they skip over, and but slightly touch the drier parts of their theme. They place the first things last, and the last things first, with wonderous art; and yet so manage it as to conceal their artifice, and lead the senses and passions of their hearers into a pleasing and powerful captivity.

It is chiefly poesy and oratory that require the practice of this kind of arbitrary method: They omit things essential which are not beautiful, they insert little needless circumstances, and beautiful digressions, they invert times and actions, in order to place every thing in the most affecting light; and for this end, in their practice they neglect all logical forms; yet a good acquaintance with the forms of logic and natural method is of admirable use to those who would attain these arts in perfection; hereby they will be able to range their own thoughts in such a method and scheme, as to take a more large and comprehen-

sive survey of their subject and design in all the parts of it; and by this mean they will better judge what to choose and what to refuse, and how to dress and manage the whole scene before them, so as to attain their own ends with greater glory and success.

CHAP. II.

THE RULES OF METHOD, GENERAL AND PARTICULAR.

THE general rules of true method in the pursuit or communication of knowledge, may be all comprised under the following heads. It must be (1.) *Safe*. (2.) *Plain* and *easy*. (3.) *Distinct*. (4.) *Full* or without *defect*. (5.) *Short* or without *superfluity*. (6.) *Proper* to the *subject* and the *design*. (7.) *Connected*.

RULE. I. Among all the qualifications of a good method, there is none more necessary and important than that it should be safe, and secure from error; and to this end these four particular or special directions should be observed.

1. "Use great care and circumspection in laying the foundation of your discourse, or your scheme of thoughts upon any subject." Those propositions which are to stand as first principles, and on which the whole argument depends, must be viewed on all sides with the utmost accuracy, lest an error being admitted there, should diffuse itself through the whole subject. See therefore that your general definitions or descriptions are as accurate as the nature of the thing will bear: See that your general divisions and distributions be just and exact, according to the rules given in the first part of logic: See that your *axioms* be sufficiently evident, so as to demand the assent of those that examine them with due attention: See that your first and more immediate consequences from these

nciples be well drawn; and take the same care of all ier propositions that have a powerful and spreading in- ence through the several parts of your discourse.

For want of this care, sometimes a large treaties has n written by a long deduction of consequences from or two doubtful principles, which principles have been ctually refuted in a few lines, and thus the whole trea- has been destroyed at once: So the largest and fairest ilding sinks and tumbles to the ground, if the foundation l corner-stones of it are feeble and insufficient.

2. "It is a very adviseable thing that your primary and damental propositions be not only evident and true, but y should be made a little familiar to the mind by dwell- upon them before you proceed farther." By this an you will gain so full an acquaintance with them, t you may draw consequences from them with much re freedom, with greater variety, brighter evidence, and h a firmer certainty, than if you have but a slight and lden view of them.

3. "As you proceed in the connexion of your argu- nts, see that your ground be made firm in every step." e that every link of your chain of reasoning be strong d good: For if but one link be feeble and doubtful, the ole chain of arguments feels the weakness of it, and lies posed to every objector, and the original question re- ins undetermined.

4. "Draw up all your propositions and arguments with much caution, and express your ideas with such a just itation, as may preclude or anticipate any objections." t remember this is only to be done, as far as it is possi- , without too much entangling the question, or intro- cing complicated ideas, and obscuring the sense. But such a cautious and limited dress of the question should der the ideas too much complicated, or the sense ob- ure, then it is better to keep the argument more simple, ar, and easy to be understood, and afterwards mention objections distinctly in their full strength, and give a tinct answer to them.

RULE II. Let your method be plain and easy, so that ur hearers or readers, as well as yourself, may run

through it without embarrassment, and may ta
and comprehensive view of the whole scheme.
end the following particular directions will be u

1. "Begin always with those things whic
known and most obvious, whereby the mind m
difficulty or fatigue, and proceed by regular
steps to things that are more difficult." And
possible let not the understanding, or the proo
your positions, depend on the positions that
always on those which go before. It is a matt
der that in so knowing an age as this, there sh
many persons offering violence daily to this rule,
ing the Latin language by a grammar written
which method seems to require a perfect knowl
unknown tongue, in order to learn the first
of it.

2. "Do not effect excessive haste in learnin
ing any science, nor hurry at once into the midst
you be too soon involved in several new and str
and propositions which cannot be well unders
out a longer and closer attention to those which g
Such sort of speed is but a waste of time, an
strain you to take many steps backward ag
would arrive at a regular and complete knowle
subject.

3. "Be not fond of crowding too many tho
reasonings into one sentence or paragraph, beyc
prehension or capacity of your readers or hearer
are some persons of a good genius and a capaci
who write and speak very obscurely upon this
they affect a long train of dependencies, before
to a period; they imagine that they can never
page with too much sense; but they little think
bury their own best ideas in the crowd, and rer
in a manner invisible and useless to the great
mankind. Such men may be great scholars,
are but poor teachers.

4. "For the same reason, avoid too many sul
Contrive your scheme of thoughts in such a
will finish your whole argument with as fe
branches as reason will admit; and let them

are obvious and open to the understanding, that they may be within one single view of the mind." This will not only assist the understanding to receive, but it will aid the memory also to retain truth: Whereas a discourse cut out into a vast multitude of gradual subordinations, has many inconveniences in it; it gives pain to the mind and memory, in surveying and retaining the scheme of discourse, and exposes the unskilful hearer to mingle the superior and inferior particulars together; it leads them into a thick wood instead of open day-light, and places them in a labyrinth instead of a plain path.

5. "Give all diligence in your younger years to obtain a clear and easy way of expressing your conceptions, that your words, as fast as you utter them, may stamp your own ideas exactly on the mind of the hearer." This is a most happy talent for the conveyance of truth, and an excellent security against mistakes and needless controversies.

RULE III. Let your method be distinct, and without the perplexing mixture of things that ought to be kept separate, and this will be easily practised by four directions.

1. "Do not bring unnecessary or heterogeneous* matter into your discourse on any subject; that is, do not mingle an argument on one subject with matters that relate entirely to another, but just so far as is necessary to give a clearer knowledge of the subject in hand." Examples in logic may be borrowed from any of the sciences to illustrate the rules; but long interpositions of natural philosophy, of the imagination and passions, of agency of spirits united to bodies, &c. break the thread of discourse, and perplex the subject.

2. "Let every complicated theme or idea be divided into its distinct single parts, as far as the nature of the subject and your present design require it." Though you must not abound in needless subdivisions, yet something of this work is very necessary; and it is a good judgment alone can dictate how far to proceed in it, and when to stop.

* Things of one kind are called homogeneous, things of different kinds are heterogeneous.

Compound ideas must be reduced to a simple form in order to understand them well. You may easily master that subject in all the parts of it by a regular succession, which would confound the understanding to survey them at once. So we come at the knowledge of a very completed diagram in geometry, or a complicated machine in mechanics, by having it parcelled out to us in its several parts and principles, according to this and the foregoing rules of method.

3. "Call every idea, proposition and argument to its own place. Put those things all together that belong to one part or property, one consideration or view of your subject." This will prevent needless repetitions, and keep you from intermixing things which are different. We must maintain this distinction of things and places if we would be safe from error. It is confusion that leads us into endless mistakes, which naturally arise from a variety of ideas ill-joined, ill-sorted, or ill-disposed. It is one great use of method, that a multitude of thoughts and propositions may be so distinctly ranged in their proper situations, that the mind may not be overwhelmed with a confused attention to them all at once, nor be distracted with their variety, nor be tempted to unite things which ought to be separated, nor to disjoin things which should be united.

4. "In the partition of your discourse into distinct heads, take heed that your particulars do not interfere with the generals, nor with each other." Think it is not enough that you make use of distinct expressions in each particular, but take care that the ideas be distinct also. It is mere foolery to multiply distinct particulars in treating of *things*, where the difference of your particulars lies only in *names* and *words*.

RULE IV. The method of treating a subject should be plenary or full, so that nothing may be wanting; nothing which is necessary or proper should be omitted.

When you are called to explain a subject, do not pass by, nor skip over any thing in it which is very difficult or obscure.

/hen you enumerate the parts or the properties of any ect, do it in a complete and comprehensive manner.
/hen you are asserting or proving any truth, see that y doubtful or disputable part of the argument be well orted and confirmed.
you are to illustrate or argue a point of difficulty, be oo scanty of words, but rather become a little copious diffusive in your language: Set the truth before the er in several lights, turn the various sides of it to view, der to give a full idea and firm evidence of the proposition.
/hen you are drawing up a narative of any matter of see that no important circumstances be omitted.
/hen you propose the solution of any difficulty, con- all the various cases wherein it can happen, and r how they may be solved.
short, let your enumerations, your divisions, and dis- tions of things, be so accurate, that no needful idea or may be left out.
his fulness of method does not require that every g should be said which can be said upon any subject; his would make each single science endless; But you ld say every thing which is necessary to the design ew, and which has a proper and direct tendency to end; always proportioning the amplitude of your er, and the fulness of your discourse, to your great gn, to the length of your time, to the convenience, de- t, and profit of your hearers.
ule V. As your method must be full without defi- cy, so it must be short, or without superfluity. The ess of a discourse enlarges our knowledge, and the concerted brevity saves our time. In order to ob- e this rule, it will be enough to point out the chief of e superfluities or redundancies, which some persons guilty of in their discourses, with a due caution against n.

"Avoid all needless repetitions of the same thing fferent parts of your discourse." It must be confessed e are several cases wherein a review of some forego- proposition is needful to explain or prove several of the wing positions; but let your method be so contrived, r as possible, that it may occasion the fewest rehears-

als of the same thing; for it is not grateful to the hearer without evident necessity.

2. "Have a care of tedious prolixity, or drawing out any part of your discourse to an unnecessary and tiresome length." It is much more honourable for an instructor, an orator, a pleader, or a preacher, that his hearers should say, I was afraid he would have done, than that they should be tempted to shew signs of uneasiness, and long for the conclusion.

Besides, there is another inconvenience in it; when you affect to amplify on the former branches of a discourse you will often lay a necessity upon yourself of contracting the latter and most useful parts of it, and perhaps prevent yourself in the most important part of your design. Many a preacher has been guilty of this fault in former days, nor is the present age without some instances of this weakness.

3. Do not multiply explications where there is no difficulty, or darkness, or danger of mistake." Be not fond of tracing every word of your theme, through all the grammatical, the logical and metaphysical characters and relations of it; nor shew your critical learning in spreading abroad the various senses of a word, and the various origins of those senses, the etymology of terms, the synonymous and the paronymous or kindred names, &c. where the chief point of discourse does not at all require it. You would laugh at a pedant, who professing to explain the Athanasian creed, should acquaint you that Athanasius is derived from a Greek word, which signifies immortality, and that the same word Athanasia signifies also the herb *tansy*.

There are some persons so fond of their learned distinctions, that they will shew their subtilty by distinguishing where there is no difference. And the same silly affectation will introduce distinctions upon every occurrence and bring three or four negatives upon every subject of discourse; first to declare what it is not, and then what it is: Whereas such negatives ought never to be mentioned where there is no apparent danger of mistake. How ridiculous would that writer, who, if he were speaking of the N[illegible] would declare negatively, (1.) that it did n[illegible] which the inhabitants of

ed; nor, (2.) A creed written by them; but, (3.) ively, a creed composed by several Christian Bishops ogether in the city of Nice? The positive is suffi-here, and the two negatives are impertinent.

"Be not fond of proving those things which need oof." Such as self-evident propositions and truths rsally confessed, or such as are entirely agreed to, ranted by our opponents. It is this vain affectation oving every thing that has led geometricians to form ss and intricate demonstrations to support some the-s, which are sufficiently evident to the eye by in-ion; or to the mind by the first mention of them; and he same humour that reigns sometimes in the pulpit, pends half the sermon in proving some general which is never disputed or doubted, and thereby loses ditory of more useful entertainment.

As there are some things so evidently true, that want no proof, so there are others so evidently false, hey want no refutation. It is mere trifling, and a of our precious moments, to invert and raise such tions as no man would ever make in earnest, and that ly for the sake of answering and solving them: This s in notoriously upon the due brevity of method.

"Avoid in general all learned forms, all trappings of nd ceremonies of the schools, where there is no need m." It is reported concerning the late Czar of ovy, that when he first acquainted himself with math-ical learning, he practised all the rules of circum-ion and contravallation, and the siege of a town in ia; and by the length of those formalities he lost the tunity of taking the town.

"Do not suffer every occasional and incidental ght to carry you away into a long parenthesis, and to stretch out your discourse, and divert you from oint in hand." In the pursuit of your subject, if any thought occur which belongs to some other theme, it down for the sake of your memory on some other r, and lay it by in reserve for its proper place and n: but let it not incorporate itself with your present e, nor draw off your mind from your main business, gh it should be ever so inviting. A man who walks

directly but slowly toward his journey's end, will thither much sooner than his neighbour, who runs in ery crooked turning which he meets, and wanders as gaze at every thing that strikes his eyes by the way gather every gaudy flower that grows by the side road.

To sum up all: "There is a happy medium observed in our method, so that the brevity may nc der the sense obscure, nor the argument feeble, nc knowledge merely superficial: And, on the other that the fulness and copiousness of our method m waste the time, tire the learner, or fill the mind wi fles and impertinencies."

The copious and the contracted way of writing hav their peculiar advantages. There is a proper use made of large paraphrases, and full, particular, an fusive explications and arguments; these are fitte those who design to be acquainted thoroughly with part of the subject. There is also an use of shorter abstracts, and compendiums, to instruct those whc only a slight and general knowledge, as well as to r the memory of those who have learned the scien ready, and gone through a large scheme. But i gross abuse of these various methods of instruction, a person has read a mere compendium or epitome science, and he vainly imagines that he understan whole science. So one boy may become a philos by reading over the mere dry definitions and divisi *Scheibler's Compendium of Peripateticism*: So anothe boast that he understands *anatomy* because he has skeleton; and a third profess himself a learned c when he can repeat the apostles creed.

RULE IV. "Take care that your method be pro the subject in hand, proper to your present design, a as proper to *the age* and *place* wherein you dwell.

1. Let your method be proper to the subject. sciences must not be learned or taught in one m Morality and theology, metaphysics and logic, will easily and happily reduced to strict mathematical m Those who have tried, have found much inconve therein.

Some things have more need to be *explained* than to be proved; as axioms, or self-evident propositions; and indeed all the first great principles, the chief and most important doctrines both of natural and revealed religion; for when the sense of them is clearly explained, they appear so evident in the light of nature or scripture, that they want no other proof. There are other things that stand in need of proof, as well as explication, as many mathematical theorems, and several deep controversies in morality and divinity. There are yet other sorts of subjects which want rather to be warmly impressed upon the mind by fervent exhortations, and stand in more need of this than they do either of proof or explication; such are the most general, plain and obvious duties of piety towards God, and love towards men, with the governments of all our inclinations and passions. Now these several subjects ought to be treated in a different manner and method.

Again there are some subjects in the same treatise which are more useful and necessary than others, and some parts of a subject which are eminently and chiefly designed by a writer or speaker: True method will teach us to dwell longer upon these themes, and to lay out more thought and labour upon them; whereas the same art of method will teach us to cut short those things which are used only to introduce our main subject, and to stand as scaffolding merely to aid the structure of our discourse. It will teach us also to content ourselves with brief hints of those matters which are merely occasional and incidental.

2. Your method must be adjusted by your design; for if you treat of the same subject with two different views and designs, you will find it necessary to use different methods. Suppose the doctrine of the sacred Trinity were your theme, and you were to read a lecture to young students on the subject, or if you designed a treatise for the conviction of learned men, you would pursue a very different method from that which would be proper to regulate a practical discourse or a sermon to instruct common christians merely in the pious improvement of this doctrine, and awaken them to the duties which are derived thence.

In short we must not first lay down certain and precise rules of method, and resolve to confine the matter we discourse of to that particular form and order of topics; but we must well consider, and study the subject of our discourse thoroughly, and take a just survey of our present design, and these will give sufficient hints of the particular form and order in which we should handle it, provided that we are moderately skilled in the general laws of method and order.

Yet let it be noted here, that neither the subject, nor matter of a discourse, nor the particular design of it, can so precisely determine the method, as to leave no room for liberty and variety. The very same theme may be handled, and that also with the same design, in several different methods, among which it is hard to say which is the best. In writing a system of divinity, some begin with the scriptures, and thence deduce all other doctrines and duties. Some begin with the being of God and his attributes, so far as he is known by the light of nature; and then proceed to the doctrines of revelation. Some distinguish the whole subject into the credenda and agenda, that is, Things to be believed, and things to be done. Some think it best to explain the whole Christian religion by an historical detail of all the discoveries which God has made of himself to this lower world, beginning at the *creation* in the first chapter of Genesis, and so proceeding onward according to the narative of the Old and New Testament. And there are others that endeavour to include the whole of religion under these four heads, namely, *The apostles creed, the Lord's prayer, the ten commandments, and the two sacraments*; though I cannot but think this is the least accurate of any. The same variety may be allowed in treating other subjects. This very *treatise of logic* is an instance of it, whose method differs very considerably from any others which I have seen, as they differ also greatly from one another, though several of them are confessed to be well written.

3. Though a just view of our subject and our design may dictate proper rules of natural method, yet there must be some little difference at least paid to the custom of the age wherein we live, and to the humour and genius

of our readers or hearers ; which if we utterly reject and disdain, our performances will fail of the desired success, even though we may have followed the just rules of method. I will mention but this one instance ; In the former century it was frequent with learned men to divide their theme or subject into a great multitude of co-ordinate members or parts, they abounded also in the forms of logic and distinction, and indulged numerous ranks of subordination. Now, though we ought not to abandon the rules of just method and division, in order to compare with the modish writers in our age who have renounced them, yet it is prudent to pay so much respect to the custom of the age, as to use these forms of division with due moderation, and not affect to multiply them in such a manner, as to give an early and needless disgust to the generality of your present readers. The same may be said concerning various other methods of conduct in the affairs of learning, as well as the affairs of life, wherein we must indulge a little to custom : And yet we must by no means suffer ourselves so far to be imposed upon and governed by it as to neglect those rules of method which are necessary for the safe, easy, and complete inquiry into truth, or the ready and effectual communication of it to others.

RULE VII. The last requisite of method is, that the parts of a discourse should be well connected ; and these three short directions will suffice for this purpose.

1. " Keep your main end and design ever in view, and let all the parts of your discourse have a tendency towards it, and as far as possible make that tendency visible all the way :" Otherwise the readers or hearers will have reason to wonder for what end that or this particular was introduced.

2. " Let the mutual relation and dependence of the several branches of your discourse be so just and evident, that every part may naturally lead onward to the next, without any huge chasms or breaks which interrupt and deform the scheme." The connexion of truths should arise and appear in their successive rank and order, as the several parts of a fine prospect ascend just behind each other, in their natural and regular elevations and distan-

ces, and invite the eye to climb onward with constant pleasure till it reach the sky. Whatsoever horrid beauty a precipice or a cataract may add to the prospect of a country, yet such sort of hideous and abrupt appearances in a scene of reasoning are real blemishes and not beauties. When the reader is passing over such a treatise, he often finds an wide vacancy, and makes an uneasy stop, and knows not how to transport his thoughts over to the next particular, for want of some clue or connecting idea to lay hold of.

3. "Acquaint yourself with all the proper and decent forms of transition from one part of a discourse to another, and practise them as occasion offers." Where the ideas, propositions and arguments, are happily disposed, and well connected, the truth indeed is secure; but it renders the discourse much more agreeable, when proper and graceful expression joins the parts of it together in so entertaining a manner, that the reader knows not how to leave off till he hath arrived at the end.

These are the general and most important rules of true METHOD; and though they belong chiefly to the communication of knowledge, yet an early and thorough acquaintance with them will be of considerable use towards the pursuit and attainment of it.

Those persons who have never any occasion to communicate knowledge by writing or by public discourses, may also with great advantage peruse these rules of method, that they may learn to judge with justice and accuracy concerning the performances of others. And besides, a good acquaintance with method, will greatly assist every one in ranging, disposing and managing all human affairs. The *particular means* or *method* for a farther improvment of the understanding are very various, such as *meditation, reading, conversing, disputing by speech or by writing, question and answer*, &c. And in each of these practices some special forms may be observed, and special rules may be given to facilitate and secure our inquiries after truth: But this would require a little volume by itself, and a treatise of *logic* has always been esteemed sufficiently complete without it.

THE END.

A TABLE OF CONTENTS.

The Second Part, *viz.*

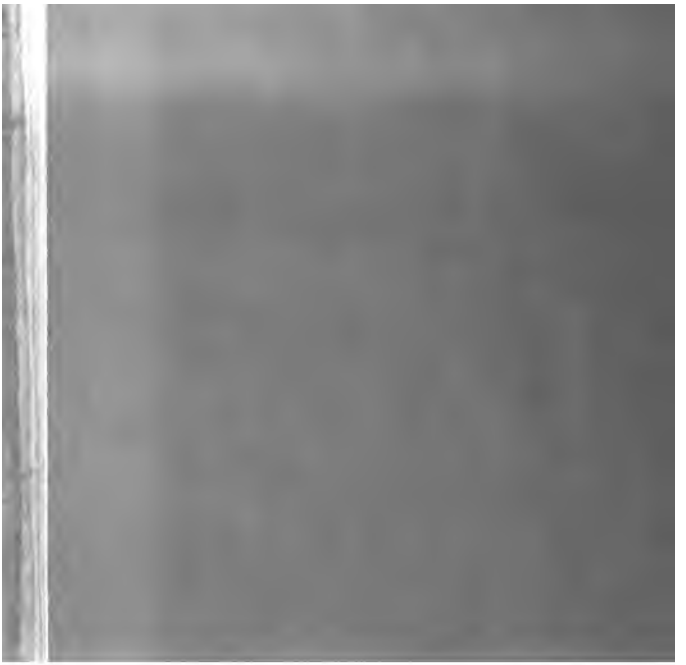
Of Judgment and Proposition.

The Third Part, *viz.*

Of Reasoning and Syllogism.

The Fourth Part, *viz.*

Of Disposition and Method.

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