

A free enquiry into the vulgarly receiv'd notion of nature; made in an essay, address'd to a friend / By R.B., fellow of the Royal society.

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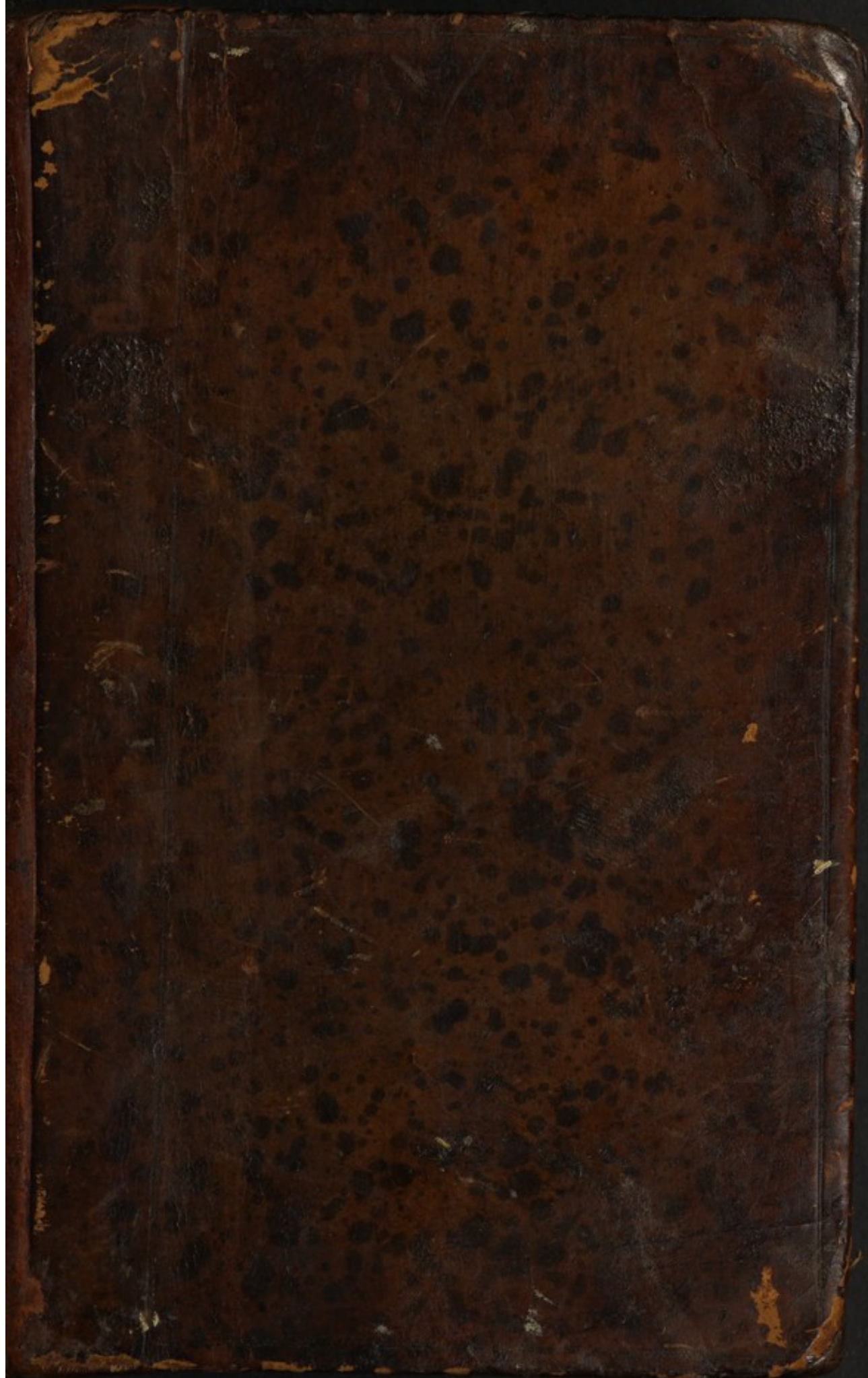
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NATURE

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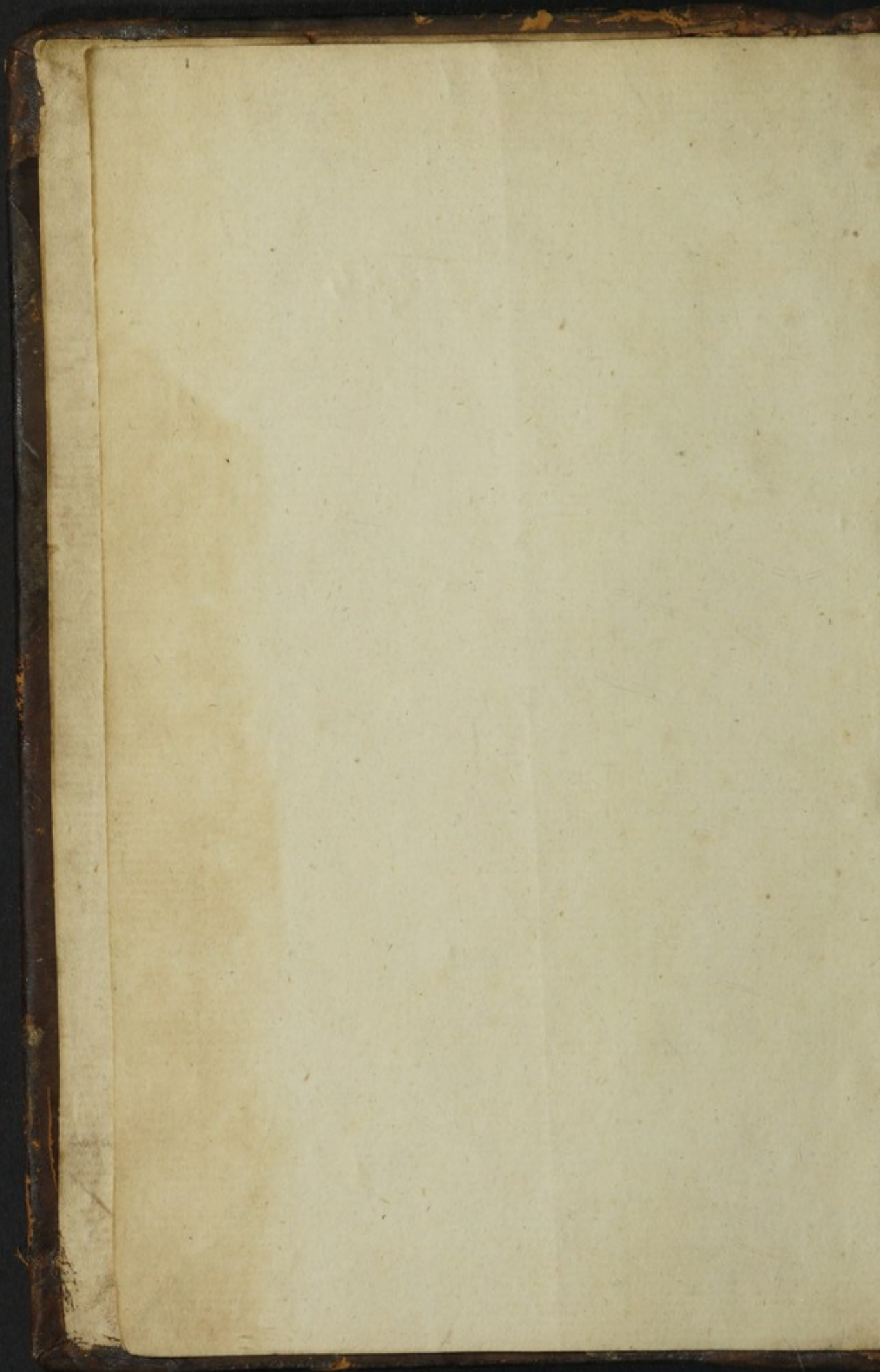
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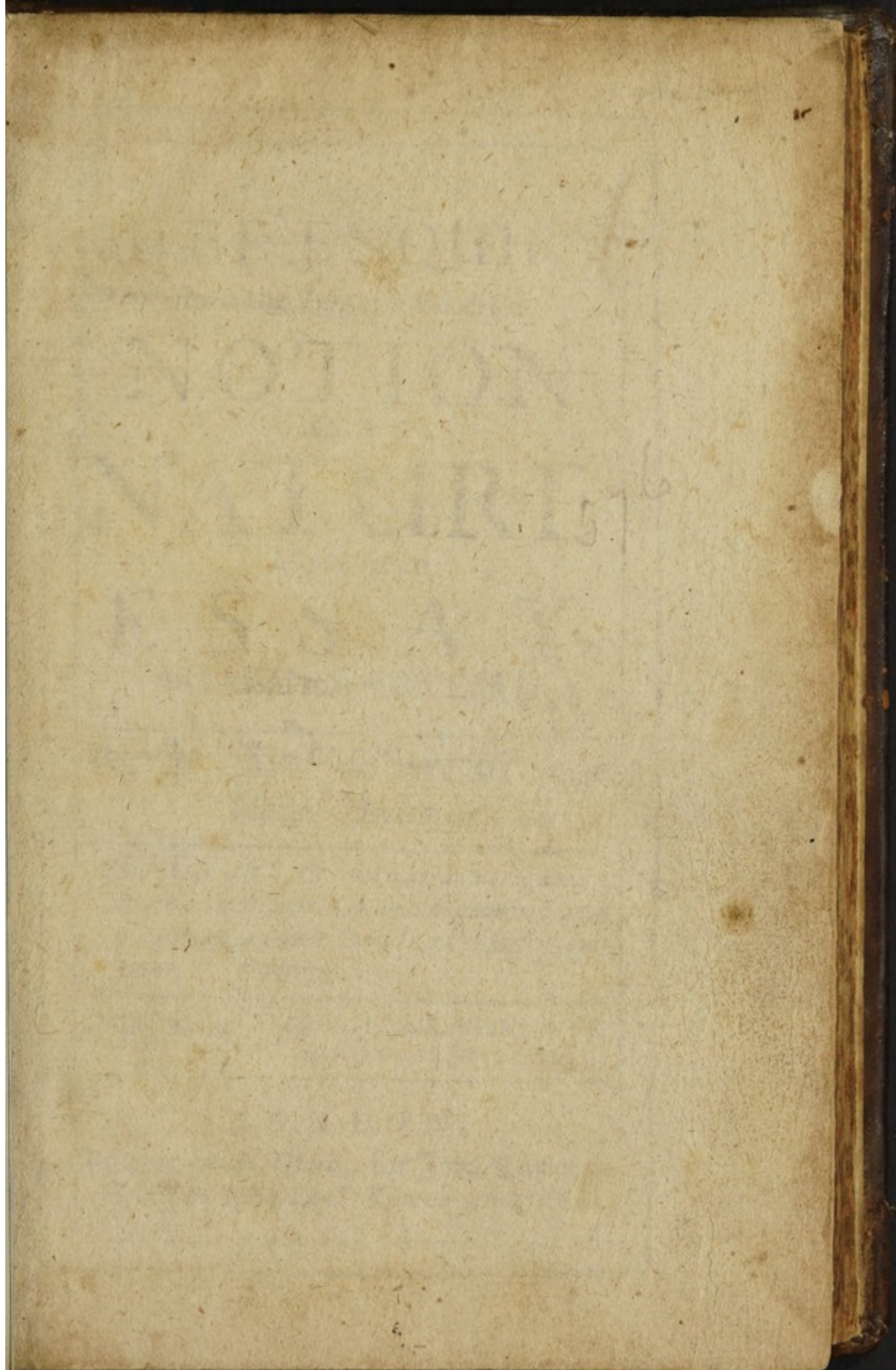
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The Singing

by the Honorable
Robert Boyle

H. Downman

A
FREE ENQUIRY
Into the Vulgarly Receiv'd
NOTION
OF
NATURE;
Made in an
ESSAY,
Address'd to a FRIEND.

By R. B. Fellow of the
Royal Society.

*Audendum est, & veritas investiganda;
quam etiamsi non assequamur, omnino tamen
propius, quam nunc sumus, ad eam perveni-
emus. Galenus.*

Imprimatur. *Carolus Alston, R.P.D. Hen. Episc.
Lond. à Sacris, Jan. 29. 1685.*

L O N D O N,
Printed by *H. Clark*, for *John Taylor* at
the *Globe* in *St. Paul's Church-yard*, 1685.

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T H E
P R E F A C E.

I Have often wonder'd, that, in so Inquisitive an Age as This, among those many Learned Men, that have with much *Freedom*, as well as *Acuteness*, written of the *Works of Nature*, (as They call Them,) and some of Them of the *Principles* too, I have not met with any, that has made it his *business* to write of *Nature Herself*. This will perhaps hereafter be
A 2 thought

The Preface.

thought such an Omission, as if, in giving an Account of the Political Estate of a Kingdom, One should Treat largely of the Civil Judges, Military Officers, and other Subordinate Magistrates, and of the particular Ranks and Orders of Inferior Subjects and Plebeians, but should be silent of the Prerogatives and Ways of Administration of the *King*; or, (to use a Comparison more suitable to the Subject,) as if One should particularly treat of the Barrel, Wheels, String, Ballance, *Index*, and other Parts of a *Watch*, without examining

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ning the *Nature* of the *Spring*, that sets all These a moving. When I say this, I do not forget, that the Word *Nature* is every where to be met with in the Writings of Physiologists. But, though they frequently employ the *Word*, they seem not to have much consider'd, what Notion ought to be fram'd of the *Thing*, which they *suppose* and *admire*, and upon Occasion *celebrate*, but do not call in *Question* or discuss. Weighing therefore with my self, of what great Moment the framing a right or a wrong *Idea* of *Nature* must be, in

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Reference both to the Speculative and Practical Part of Physiology ; I judg'd it very well worth the while, to make, with Philosophical Freedom, a serious *Enquiry* into the Vulgarly Receiv'd *Notion of Nature* ; that, if it appeared *well-grounded*, I might have the Rational Satisfaction of not having acquiesc'd in It, till, after a previous *Examen* ; if I should find it *confus'd* and *ambiguous*, I might endeavour to remedy that Inconvenience, by distinguishing the Acceptions of the Word ; if I found it *dubious* as to its Truth, I might

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might be shy in trusting too much to a distrusted Principle ; and, *if* I found *erroneous*, I might avoid the raising Superstructures of my Own, or relying on those of Others, that must owe their Stability to an unsound and deceitful Foundation. And, because many Atheists ascribe so much to Nature, that they think it needless to have Recourse to a Deity, for the giving an Account of the *Phænomena* of the Universe : And, on the other side, very many Theists seem to think the commonly Received Notion of *Nature*, little less,

A 4 than

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than necessary to the Proof of the Existence and Providence of God ; I, who differ from both these Parties, and yet think every true *Theist*, and much more every true *Christian*, ought to be much concerned for Truths, that have so powerful an Influence on *Religion*, thought my self, for Its sake, oblig'd to consider this Matter, both with the more *Attention* and with regard to *Religion*.

And yet, being to write this Treatise as a *Physiologer*, not a *Christian*, I could not rationally build any positive Doctrine upon mere
Reve-

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Revelation, which would have been judg'd a *Foreign Principle* in this *Enquiry*. Only, since the Person, I intentionally address'd my Thoughts to, under the Name of *Eleutherius*, was a good Christian, I held it not impertinent, now and then, upon the by, to intimate something to prevent or remove some Scruples, that I thought he might have, on the score (I say not of Natural Theology, for That is almost directly pertinent, but) of the Christian Faith. But these Passages are very few, and but transiently touch'd upon.

Since

The Preface.

Since the Reader will be told by and by both That, and Why the Papers, that make up the following Treatise, were not written in one continued *Series* of Times, but many Years were interpos'd between the Writing of some of Them, and that of Those which precede and follow Them: I hope it will be thought but a venial Fault, if the Contexture of the whole Discourse do not appear so Uniform, nor all the Connections of its Parts so apt and close, as, if no Papers had been lost and supply'd, might reasonably be look'd for. I

The Preface.

I expect the Novelty of
divers of the Sentiments
and Reasonings, propos'd in
the following Discourse,
will be surprizing, and en-
cline Many to look upon
the Author as a bold Man,
and much addicted to *Pa-
radoxes*. But, having for-
merly, in a distinct Essay,
deliver'd my Thoughts a-
bout *Paradoxes* in general,
I shall not now ingage in
that Subject, but confine
my self to what concerns
the ensuing Paper. I say
then, in short, That in an
Opinion, I look upon its
being *New* or *Antient*, and
its being *Singular* or *common-
ly Receiv'd*, as Things that
are

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are but *Extrinsical* to its being *true* or *false*. And, as I would never reject a *Truth*, for being generally Known or Receiv'd, so will I not conclude an Opinion to be a *Truth*, merely because great *Numbers* have thought it to be so; nor think an Opinion *Erroneous*, because

great many 'tis not yet Known to Many, or because it opposes a Tenent embrac'd by Many. For I am wont to judge of Opinions, as of Coins: I consider much less in any One, that I am to Receive, whose Inscription it bears, than what Metal 'tis made of. 'Tis indifferent enough to me, whether 'twas Stamp'd

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Stamp'd many Years or Ages since, or came but Yesterday from the Mint. Nor do I regard through how many, or how few, Hands it has pass'd for Current, provided I know by the Touch-stone, or any sure Tryal, purposely made, whether or no it be genuine, and does or does not deserve to have been Current. For, if upon due proof it appears to be Good, its having been long and by Many receiv'd for such, will not tempt me to refuse It. But, if I find it Counterfeit, neither the Princes Image or Inscription, nor its Date (how Antient so ever,)

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ever,) nor the Multitude of Hands, through which it has pass'd unsuspected, will engage me to receive It. And one disavouring tryal, well made, will much more discredit It with me, than all those specious Things, I have nam'd, can recommend It.

By this Declaration of my Sentiments about *Paradoxes* in General, I hope it will be thought, that the Motive I had to Question that *Notion of Nature*, which I dissent from, was not, that this *Notion* is Vulgarly Receiv'd. And I have this to say, to make it probable, That I was not engag'd in
this

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this Controversie, by any Ambition of appearing in Print an Heresiarch in Philosophy, by being the Author of a strange Doctrine, that the following Discourse was written about the Year 1666. (that is, some Lustres ago,) and that not long after, the Youth, to whom I dictated it, having been inveigled to steal away, unknown to me or his Parents, into the *Indies*, (whence we never heard of him since,) left the loose Sheets, wherein (and not in a Book) my thoughts had been committed to Paper, very incoherent, by the Omission of divers necessary Passages.

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Passages. Upon which Account, and my Unwillingness to take the Pains to supply what was wanting, those Papers lay by me many Years together neglected, and almost forgotten; 'till the Curiosity of some Philosophical Heads, that were pleas'd to think they deserv'd another Fate, oblig'd me to tack them together, and make up the Gaps that remain'd between their Parts, by retrieving, as well as, after so many Years, my bad Memory was able to do, the Thoughts I sometimes had, pertinent to those purposes. And indeed, when I consider'd of how
vast

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vast importance it is in Philosophy, and the Practice of Physick too, to have a right Notion of *Nature*; and how little the Authority of the generality of Men ought, in so nice and intricate a Subject, to sway a free and impartial Spirit; as I at first thought myself oblig'd, since *others* had not sav'd me the labour, to make a *Free Enquiry* into this Noble and Difficult Subject, so I was afterwards the more easily prevail'd with, by those that press'd the Publication of It. With what Success I have made this Attempt, I must leave others to judg. But if I be not much flatter'd, a what-

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whatever becomes of the main Attempt, there will be found suggested here and there, in the following Discourse, some Reflections and Explications, that will at least oblige the zealous Assertors of the *Vulgar Notion of Nature*, to clear up the Doctrine, and speak more distinctly and correctly about Things that relate to it, than hitherto has been usual. And that will be Fruit enough to recompense the Labour, and justify the Title, of a *Free Enquiry*. In Prosecution of which, since I have been oblig'd to travel in an untrodden Way, without a Guide, 'twill be thought,

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thought, I hope, more pardonable than strange, if, in attempting to discover divers *general* Mistakes, I be not so happy as to escape falling into some *particular* Ones myself. And, if among *These*, I have been so unhappy, as to make any that is injurious to Religion, *as* I did not at all intend it, *so*, as soon as ever I shall discover it, I shall freely disown it *Myself*, and pray that it may never mislead *Others*. What my Performance has been, I have already acknowledged that I may be unfit to judg; but, for my Intentions, I may make bold to say, they were, *to keep the*
a 2 Glory

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Glory of the Divine Author of Things from being usurp'd or intrench'd upon by His Creatures, and to make His Works more thoroughly and solidly understood, by the Philosophical Studiers of Them.

I do not pretend, and I need not, that every one of the Arguments, I employ in the following Tract, is cogent, especially if consider'd as single. For Demonstrative Arguments would be unsuitable to the very Title of my Attempt; since, if about the *Receiv'd Notion of Nature*, I were furnish'd with unanswerable Reasons, my Discourse ought
to

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to be styl'd, not a *Free Enquiry* into the Vulgar Notion of *Nature*, I consider, but a *Confutation* of It. And a heap of bare Probabilities may suffice to justify a Doubt of the Truth of an Opinion, which they cannot clearly evince to be False. And therefore, if any Man shall think fit to Criticize upon the less Principal or less necessary Parts of this Treatise, perhaps I shall not think my self oblig'd to be concern'd at It. And even, if the main Body of the Discourse itself shall be attack'd from the Press; I, who am neither Young nor Healthy, nor ever made Divinity, Philosophy, or
Phy-

The Preface.

Phyſick, my Profeſſion, am not like to oppoſe him in the ſame Way: Since, as I ought not to wiſh, that any Errors of mine (if this Eſſay teach any Such,) ſhould prevail; ſo, if the Things I have deliver'd be True for the Main, I need not *deſpair* but that, in ſuch a Free and Inquiſitive Age as Ours, there will be found Generous Spirits, that will not ſuffer weighty Truths to be oppreſs'd, tho' the Propoſers of them ſhould, by averſeneſs from Contention, or by want of Time or Health, be themſelves kept from defending them. Which I have thought fit to take Notice of in this Place,

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Place, that the Truth (if I have been so happy, as to have found and taught It,) may not suffer by my Silence ; nor any Reader surmize, that, if I shall leave a Book Unanswered, I thereby acknowledg it to be Unanswerable. But This regards only the main Substance of our Essay, not the Order or Disposition of the Parts : Since, if any shall censure That, I shall not quarrel with him about It. For *indeed, considering* in how *preposterous* an Order the Papers, I have here tack'd together, came to Hand ; and how many Things are upon that score unduly plac'd, I shall not only be content, but

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but must desire, to have this Rhapsody, of my own loose Papers, look'd upon but as an *Apparatus*, or Collection of Materials, in order to [what I well know this maim'd and confus'd Essay is not,] a compleat and regular Discourse. Yet (to conclude,) I thought, that the affording even of a little Light, in a Subject so Dark and so very Important, might keep an *Essay* from being uselefs; and that to fall short of *Demonstration* would prove a pardonable Fault, in a Discourse, that pretends not to *Dogmatize*, but only to make an *Enquiry*.

Sept. 29, 1682.

Ad-

ADVERTISEMENT.

THE Reader is here to be advertis'd of a great Oversight that happen'd to be made by several Transpositions of the loose Sheets, wherein (and not in a Book,) the Copy was sent to the Press. For the Discourse beginning at the sole Break that is to be met with in the Hundred and Fiftieth Page, and ending with another Break at the second Line of the Hundred Fifty and Sixth Page, ought to have been plac'd at the sole Break that is to be met with in the Hundred Sixty and Second Page. And the Discourse that reaches from the beginning of the Hundred Seventy and Eighth Page, to the Close of the V. Section, which ends in the Hundred Eighty and Second Page, ought to have been Printed among the Arguments that may be alledg'd by the Naturalists, among which it should, if I misremember

remember not, have been brought in at the Close of the Two Hundred Forty and Eighth Page, and thence have reach'd to the end of the Sixth Section. These Transpositions are thought necessary to have notice given of Them, to avoid Confusion, since the Printed Sheets did not come to Hand, 'till too much of the Book was wrought off before the Transpositions could be discern'd; which makes it fit to give Notice of what 'tis too late to remedy. And though also some Connections and Transitions, relating to the Transpos'd Papers, be not such as they should be, yet 'tis not judg'd fit, that the Reader be troubled with long Advertisements about them; because his Discretion may easily correct them, and the Incongruities are not of Moment enough to spoil the Discourses they relate to.

A

A
Free Enquiry
Into the Received
NOTION
OF
NATURE.

S E C T. I.

I Know not Whether or no it be a
Prerogative in the human Soul,
that, as 'tis itself a True and
Positive Being, so 'tis apt to
conceive all other things, as True
and Positive Beings also. But, Whe-
B ther

ther or no this Propensity, to frame such kind of *Idea's*, *suppose* an excellency, I fear it *occasions* mistakes; and makes us think and speak, after the manner of True and Positive Beings, of such things, as are but Chimerical, and some of them Negations or Privations themselves; as Death, Ignorance, Blindness, and the like.

It concerns us therefore, to stand very carefully upon our Guard, that we be not insensibly misled by such an innate and unheeded Temptation to error, as we bring into the World with us. And consequently I may be allowed to consider, whether, among other Particulars, in which this deluding Propensity of our minds has too great, though unsuspected, an Influence upon us; it may not have impos'd on us, in the *Notion* we are wont to frame concerning *Nature*. For this being the fruitful Parent of other Notions, as *Nature* herself is said to be of the Creatures of the Universe; the *Notion* is so general in its Applications,
and

and so important in its Influence ; that we had need be jealously careful, of not over-easily admitting a Notion, than which there can scarce be any that more deserves to be warily examin'd, before it be thoroughly entertain'd.

Let me therefore make bold to enquire freely, Whether That, of which we affirm such great Things, and to which we ascribe so many Feats, be that *almost Divinething*, whose works among others *we* are ; or a *Notional thing*, that in some sense is rather to be reckon'd among *our* works ; as owing its Being to Human Intellects.

I know, most men will be forestall'd with no mean prejudices against so venturous an Attempt ; but I will not do *Eleutherius* the Injury, to measure Him by the prepossess'd generality of Men ; yet there are two scruples which I think it not amiss to take notice of, to clear the way for what shall be presented you in the following Discourse.

And first, it may seem an ingrateful and unfilial thing, to dispute against *Nature*, that is taken by Mankind for the *Common Parent* of us all. But though it be an undutiful thing, to express a want of respect for an acknowledg'd Parent, yet I know not, why it may not be allowable to *question* One, that a Man looks upon but as a pretended one, or at least does upon probable grounds doubt, Whether she be so or no; and, 'till it appear to me that she is so, I think it my duty to pay my gratitude, not to I know not what, but to that Deity, whose Wisdom and Goodness, not only design'd to make me a Man, and enjoy what I am here blest'd with, but contriv'd the World so, that even those Creatures of his, who by their inanimate condition are not capable of intending to gratifie me, should be as serviceable and useful to me, as they would be, if they could and did design the being so; and you may be pleas'd to remember, that, as men may now accuse such an Enquirer

rer, as I am, of impiety and ingratitude towards *Nature*: So the *Persians*, and other Worshipers of the Cœlestial Bodies, accus'd several of the Ancient Philosophers, and all the Primitive Christians, of the like Crimes, in reference to the Sun; whose Existence, and whose being a Benefactor to Mankind, was far more unquestionable, than that there is such a *Semi-Deity* as Men call *Nature*: And it can be no great disparagement to me, to suffer on the like Account with so good Company, especially, when several of the considerations that Justifie them, may also Apologize for me. I might add, that, it not being half so evident to me, that what is called *Nature* is my Parent, as that all Men are my Brothers, by being the

Act. 17.
Off-spring of God; (for the
 τὸ θεὸν ὑποκείμενον of *Aratus* is adopted
 by St. Paul) I may justly prefer the
 doing of *them* a service, by disabusing
 them, to the paying of *Her* a Ceremonial Respect. But setting Allego-

ries aside, I have sometimes seriously doubted, whether the *Vulgar Notion of Nature* has not been both injurious to the Glory of God, and a great Impediment to the solid and useful Discovery of his Works.

And first, it seems to detract from the Honour of the great Author and Governor of the World; that Men should ascribe most of the admirable things that are to be met with in it, not to him, but to a certain *Nature*, which themselves do not well know what to make of. 'Tis true that many confess, that this *Nature* is a thing of His establishing, and subordinate to Him; but, though many confess it when they are ask'd, Whether they do or no? yet, besides that many seldom or never lifted up their eyes to any higher Cause, he that takes notice of their way of ascribing things to *Nature*, may easily discern, that, whatever their words sometimes be, the Agency of God is little taken notice of in their thoughts: And however, it does not a little
darken

darken the Excellency of the Divine management of things, that, when a strange Thing is to be effected or accounted for, men so often have recourse to *Nature*, and think *she* must extraordinarily interpose to bring such things about: Whereas it much more tends to the Illustration of God's Wisdom, to have so fram'd things at first, that there can seldom or never need any extraordinary Interposition of his Power. And, *as* it more recommends the skill of an Engineer, to contrive an Elaborate Engine, so as that there should need nothing to reach his ends in it, but the contrivance of parts devoid of understanding; *than* if it were necessary, that ever and anon a discreet Servant should be employ'd, to concur notably to the Operations of this or that Part, or to hinder the Engine from being out of order: So it more sets off the Wisdom of God in the Fabrick of the Universe, that he can make so vast a Machine, perform all

those many things which he design'd it should, by the meer contrivance of Brute matter, managed by certain Laws of Local Motion, and upheld by his ordinary and general concurrence; *than* if he imployed from time to time an Intelligent Overseer, such as *Nature* is fancied to be, to regulate, assist, and controul the Motions of the Parts. In confirmation of which, you may remember, that the later Poets justly reprehended their Predecessors, for want of skill, in laying the Plots of their Plays, because they often suffered things to be reduced to that Pass, that they were fain to bring some Deity (*Θεὸς ἀνὸ μηχανῆς*) upon the Stage, to help them out.

(*Nec Deus interfit, nisi dignus vindice nodus,*) &c.

And let me tell you freely, that, though I will not say, That *Aristotle* meant the mischief his Doctrine did, yet I am apt to think, that the Grand
Enemy

Enemy of God's Glory made great use of *Aristotle's* Authority and Errors, to detract from it.

For *as Aristotle*, by introducing the Opinion of the Eternity of the World, (whereof he owns himself to have been the first Broacher) did, at least in almost all Mens Opinion, openly deny God the Production of the World: So, by ascribing the admirable Works of God, to what he calls *Nature*, he tacitly denies him the Government of the World. Which suspicion, if you judg severe, I shall not, at more leisure, refuse to acquaint you, (in a distinct Paper) why I take divers of *Aristotle's* Opinions relating to Religion, to be more unfriendly, not to say pernicious, to It, than those of several other Hea-then Philosophers.

And here give me leave to prevent an Objection, that some may make, as if, to deny the *receiv'd Notion of Nature*, a Man must also deny *Providence*; of which *Nature* is the Grand Instrument. For in the first place,
my

my Opinion hinders me not at all from acknowledging God to be the Author of the Universe, and the continual Preserver and Upholder of it; which is much more than the *Peripatetick Hypothesis*, which (as we were saying) makes the World Eternal, will allow its Embracers to admit; and those things which the School-Philosophers ascribe to the Agency of *Nature*, interposing according to Emergencies, I ascribe to the Wisdom of *God* in the first Fabrick of the Universe; which He so admirably contrived, that, if He but continue his ordinary and general concurrence, there will be no necessity of extraordinary interpositions, which may reduce him, to seem as it were to Play *After-Games*; all those Exigencies, upon whose account Philosophers and Physicians seem to have devis'd what they call *Nature*, being foreseen and provided for in the first Fabrick of the World; so that meer Matter, so ordered, shall in such and such Conjunctions of Circumstances,

ces, do all that Philosophers ascribe on such occasions to their almost Omniscient *Nature*, without any knowledg of what it does, or acting otherwise than according to the Catholick Laws of Motion. And methinks the difference betwixt their Opinion of God's Agency in the World, and that which I would propose, may be somewhat adumbrated, by saying, That *they* seem to imagine the World to be after the nature of a Puppet, whose Contrivance indeed may be very Artificial, but yet is such, that almost every particular motion the Artificer is fain (by drawing sometimes one Wire or String, sometimes another) to guide, and oftentimes over-rule, the Actions of the Engine; whereas, according to us, 'tis like a rare Clock, such as may be that at *Strasbourg*, where all things are so skilfully contriv'd, that the Engine being once set a Moving, all things proceed according to the Artificers first design, and the Motions of the little Statues, that at
such

such hours perform these or those things, do not require, like those of Puppets, the peculiar interposing of the Artificer, or any Intelligent Agent employed by him, but perform their functions upon particular occasions, by vertue of the General and Primitive Contrivance of the whole Engine. The Modern *Aristotelians* and other Philosophers would not be tax'd as injurious to Providence, though they now ascribe to the ordinary course of *Nature*, those regular Motions of the Planets, that *Aristotle* and most of his Followers (and among them the Christian *Schoolmen*) did formerly ascribe to the particular guidance of Intelligent and Immaterial Beings, which they assign'd to be the Movers of the Cœlestial Orbs. And when I consider, how many things, that seem *Anomalies* to us, do frequently enough happen in the World, I think it is more consonant to the respect we owe to Divine Providence, to conceive, that as God is a most free, as well as a most

most wise Agent, and may in many Things have ends unknown to us: He very well foresaw, and thought fit, that such seeming *Anomalies* ^{*Irregularities*} should come to pass, since he made them (as is evident in the Eclipses of the Sun and Moon) the Genuine consequences of the Order, He was pleas'd to settle in the World; by whose Laws the Grand Agents in the Universe were impower'd and determin'd, to act according to the respective Natures he had given them; and the course of things was allowed to run on, though that would infer the happening of seeming *Anomalies*, and things really repugnant to the Good or Welfare of divers particular Portions of the Universe. This, I say, I think to be a Notion more respectful to Divine Providence, than to imagine, as we commonly do, that God has appointed an Intelligent and Powerful Being, called *Nature*, to be as his *Vice-gerent*, continually watchful for the good of the Universe in general, and of the particu-

particular Bodies that compose it; whilst in the mean time, this Being appears not to have the skill, or the power, to prevent such *Anomalies*, which oftentimes prove destructive to multitudes of Animals, and other Noble Creatures, (as in Plagues, &c.) and sometimes prejudicial to greater Portions of the Universe, (as in Earth-quakes of a large spread, Eclipses of the Luminaries, great and lasting Spots on the Sun, Eruptions of Vulcan, great Comets or new Stars that pass from one Region of Heaven to another.) And I am the more tender of admitting such a *Lieutenant* to Divine Providence, as *Nature* is fancied to be, because I shall hereafter give you some Instances, in which it seems, that, if there were such a thing, she must be said to act too blindly and impotently, to discharge well the Part she is said to be trusted with.

I shall add, that the Doctrine, I plead for, does much better than its Rival comply with what Religion teaches

teaches us, about the *extraordinary* and *supernatural* Interpositions of *Divine Providence*. For when it pleases God to over-rule, or controul, the establish'd course of things in the World, by his own Omnipotent Hand, what is thus perform'd may be much easier discern'd and acknowledg'd to be *miraculous*, by them that admit, in the ordinary course of Corporeal Things, nothing but Matter and Motion, whose Powers Men may well judg of; than by those who think there is besides, a certain *Semi-Deity*, which they call *Nature*, whose Skill and Power they acknowledg to be exceeding great, and yet have no sure way of estimating how great they are, and how far they may extend. And give me leave to take notice to you, on this occasion, that I observe the Miracles of our Saviour and his Apostles, pleaded by Christians on the behalf of their Religion, to have been very differingly look'd on by *Epicurean* and other Corpuscularian Infidels, and by those other

Unbelievers

Unbelievers who admit of a Soul of the World, or Spirits in the Stars, or, in a word, think the Universe to be Governed by Intellectual Beings, distinct from the Supream Being we call *God*. For this later sort of Infidels have often admitted those matters of Fact, which we Christians call Miracles; and yet have endeavour'd to solve them by Astral Operations, and other Ways not here to be specified: Whereas the *Epicurean* Enemies of Christianity have thought themselves oblig'd, resolutely to deny the matters of Fact themselves; as well discerning, that the things, said to be perform'd, exceeded the Mechanical Powers of Matter and Motion, (as they were managed by those, that wrought the Miracles,) and consequently must either be deny'd to have been done, or be confess'd to have been truly Miraculous.

See the III, the IV, and also the last Section of this Treatise.

But there may hereafter be occasion, both to improve the things already said, and add others,

others, to satisfy Theological scruples about our *Hypothesis*.

I formerly told you, that 'twas not only to the Glory of God, (as that results from his Wisdom, Power, and Goodness, express'd in the World) that I suspected the *Notion of Nature*, that I am examining, to be prejudicial, but also to the Discovery of his Works. And you will make no great difficulty to believe me, if you consider, that, whilst Men allow themselves so general and easie a way, of rendring accounts of things that are difficult, as to attribute them to *Nature*; *shame* will not reduce them to a more industrious scrutiny into the Reasons of Things, and *curiosity* itself will move them to it the more faintly: Of which we have a clear and eminent Example, in the Ascension of Water in *Pumps*, and in other *Phænomena's* of that kind, whose true Physical Causes had never been found out, if the Moderns had acquiesced, as their Predecessors did, in that imaginary one, that the

C World

World was Govern'd by a Watchful Being, call'd *Nature*, and that she abhors a *vacuum*, and consequently is still in a readiness, to do irresistibly whatever is necessary to prevent it: Nor must we expect any great Progress, in the discovery of the true Causes of natural Effects, whilst we are content to sit down with other, than the particular and immediate ones.

'Tis not that I deny, that there are divers things, as the number and situation of the Stars, the shapes and sizes of Animals, &c. About which, even a Philosopher being ask'd can say little, but that it pleased the Author of the Universe to make them so; but when we give such general Answers, we pretend not to give the particular Physical Reasons of the things propos'd, but do in effect confess we do not know them. To this I add, that the veneration, wherewith Men are imbued for what they call *Nature*, has been a discouraging impediment to the Empire of Man over
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the inferior Creatures of God. For many have not only look'd upon it, as an *impossible* thing to compass, but as something of *impious* to attempt, the removing of those Boundaries which *Nature* seems to have put and settled among her Productions. And whilst they look upon her as such a venerable thing, some make a kind of scruple of Conscience, to endeavour so to emulate any of her Works, as to excel them.

I have staid so long, about removing the first of the *two* scruples I formerly propos'd against my present attempt, that, not to tire your Patience, I shall in few words dispatch the second, which is, That I venture to contradict the sense of the generality of Mankind: To which I answer, That in Philosophical Inquiries, it becomes not a Naturalist to be so solicitous, *what has been*, or is believ'd, as *what ought to be so*; and I have also elsewhere, on another occasion, shew'd, how little the sense of the generality of Men, ought to

sway us in some Questions : But that which I shall at present more directly reply, is, First, That 'tis no wonder, Men should be generally prepossess'd with such a *Notion of Nature*, as I call in question, since Education (especially in the Schools) has imbued them with it from their Infancy, and even in their maturer years they find it taken for granted, and employed not only by the Most but by the Learnedst Writers, and never hear it call'd in question by any ; and then it exceedingly complies with our Innate Propensity, to think that we know more than we do, and to appear to do so. For to vouch *Nature* for a Cause, is an Expedient, that can scarce be wanting to any Man, upon any occasion, to seem to know what he can indeed render no good reason of.

And to *this* first part of my Answer, I shall subjoin this second. That the general custom of Mankind, to talk of a Thing as a real and positive Being, and attribute great matters

matters to it, does but little weigh
with me ; when I consider , that,
though *Fortune* be not any Physical
thing, but a certain loose & undeter-
min'd Notion, which a Modern Meta-
Physician would refer to the *Classis*
of his *non Entia*, yet not only the
Gentiles made it a Goddess,

(*Nos te facimus, Fortuna, Deam,
Cæloque locamus,*)

which many of them seriously Wor-
ship'd , but eminent Writers, in
Verse and in Prose, Ethnick and
Christian, Ancient and Modern, and
all sorts of Men, in their common
Discourse do seriously talk of It, as
if it were a kind of *Antichrist*, that
usurped a great share in the Govern-
ment of the World ; and ascribe lit-
tle less to It, than they do to *Nature*.
And not to speak of what Poets, Mo-
ralists and Divines tell us of the Pow-
ers of Ignorance and Vice, which
are but Moral defects : Let us consi-
der what things are not only by these

see c. 11.

Men, but by the generality of Mankind seriously attributed to Death, to which so great and fatal a Dominion is assign'd; and then if we consider too, that this Death, which is said to do so many and such wonderful things, is neither a Substance, nor a Positive Entity, but a meer Privation; we shall, I trust, the less believe, that the Feats ascribed to *Nature* do infer, that there is really such a Physical Agent as is suppos'd.

And now having, as I presume, clear'd our Enquiry, as far as 'tis yet necessary, [and 'twill be further done hereafter] from those Prejudices, that might make the Attempt be censur'd before it be examin'd, I proceed to the Inquiry it self; wherein I shall endeavour (but with the brevity my want of leisure exacts) to do these six things. *First*, To give you a short account of the great Ambiguity of the word *Nature*, arising from its various acceptions. *Secondly*, To shew you, that the Definition also, that *Aristotle* himself gives

gives of *Nature*, does not afford a clear or satisfactory Notion of it. *Thirdly*, To gather from the several things, that are wont to be affirmed of, or attributed to, *Nature*, the received Notion of it, which cannot be well gathered from the Name, because of its great ambiguity. *Fourthly*, I will mention some of those Reasons, that dissuade me from admitting this Notion of *Nature*. *Fifthly*, I shall endeavour to answer severally the chief things, upon which Men seem to have taken up the *Idea* of *Nature*, that I disallow. And, *Sixthly*, I shall propose some of the chief *Effata* or *Axioms*, that are wont to be made use of, concerning *Nature* in general, and shall shew, how far, and in what sense I may admit them.

And here it may be opportune, to prevent both mistakes and the necessity of interrupting the *Series* of our Discourse, to set down two or three Advertisements.

1. When any where in this Tract I speak of the Opinions of *Aristotle* and the *Peripateticks*, as I would not be thought to impute to him all the sentiments of those that will be thought his followers, some of which seem to me to have much mistaken his true meaning; so (on the other side) I did not conceive, that my Design oblig'd me to inquire anxiously into his true sentiments, whether about the Origine of the Universe, (as whether or no it were self-existent, as well as Eternal) or about less important Points: Since, besides that his expressions are oftentimes dark and ambiguous enough, and the things he delivers in several passages do not seem always very consistent; it suffic'd for my purpose, which was to question Vulgar Notions, to examine those Opinions, that are by the generality of Scholars taken for the *Aristotelian* and *Peripatetick* Doctrines, by which, if he be mis-represented, the blame ought to light upon his Commentators and Followers.

2. The

2. The *Rational Soul* or *Mind* of Man, as it is distinct from the sensitive Soul, being an immaterial Spirit; is a substance of so Heteroclite a kind, in reference to things so vastly differing from it as mere *Bodies* are, that since I could neither, without injuring it, treat of it promiscuously with the Corporeal Works of God, nor speak worthily of it, without frequently interrupting and disordering my Discourse by Exceptions, that would either make it appear intricate, or would be very troublesome to you or any other that you may think fit to make my Reader; I thought I might, for others ease and my own, be allow'd to set aside the considerations of it in the present Treatise: And the rather, because all other parts of the Universe being, according to the receiv'd Opinion, the Works of *Nature*, we shall not want in them Subjects more than sufficiently numerous, whereon to make our *Examen*. Though I shall here consider the World but as the great System

System of things Corporeal, as it once really was, towards the close of the sixth day of the Creation, when God had finish'd all his material Works, but had not yet Created *Man*.

S E C T. II.

I. **A** Considering Person may well be tempted to suspect, that Men have generally had but imperfect and confused Notions concerning *Nature*; if he but observes, that they apply that *Name* to several things, and those too such, as have some of them very little dependance on, or connexion with, such others. And I remember that in *Aristotle's Metaphysics*, I met with a whole Chapter expressly written, to enumerate the various Acceptions of the *Greek* word, φύσις, commonly render'd *Nature*; of which, if I mistake not, he there reckons up six.

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In *English* also we have not fewer, but rather more numerous significations of that Term. For *sometimes* we use the word *Nature*, for that *Author of Nature*, whom the Schoolmen, harshly enough, call *Natura Naturans* ; as when 'tis said, that *Nature* hath made Man partly Corporeal, and partly Immaterial. *Sometimes* we mean by the *Nature* of a thing, the *Essence*, or that which the Schoolmen scruple not to call the *Quiddity* of a thing, namely, the *Attribute* or *Attributes*, on whose score it is, what it is ; whether the thing be corporeal or not ; as, when we attempt to define the *Nature* of an *Angle*, or of a *Triangle*, or of a *Fluid Body* as such. *Sometimes* we confound that which a Man has by *Nature*, with what accrues to him by Birth ; as, when we say, that such a Man is noble by *Nature*, or such a Child naturally forward, or sickly, or frightful. *Sometimes* we take *Nature* for an Internal Principle of Motion ; as, when we say, that a Stone let fall in
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the Air, is by *Nature* carried towards the Centre of the Earth ; and, on the contrary, that Fire or Flame does Naturally move upwards towards Heaven.

Sometimes we understand by *Nature*, the Establish'd course of things, as, when we say, that *Nature* makes the Night succeed the Day : *Nature* hath made Respiration necessary to the Life of Men.

Sometimes we take *Nature* for an Aggregate of Powers belonging to a Body, especially a Living one ; as, when Physicians say, that *Nature* is strong, or weak, or spent ; or that in such or such Diseases, *Nature* left to her self, will do the Cure. *Sometimes* we take *Nature* for the Universe, or System of the Corporeal works of God ; as, when 'tis said of a *Phœnix*, or a *Chimera*, that there is no such thing in *Nature*, (*i. e.*) in the World. And *sometimes* too, and that most commonly, we would express by the Word *Nature*, a Semi-deity, or other strange
kind

kind of Being, such as this Discourse examines the Notion of. And besides these more Absolute Acceptions, if I may so call them, of the word *Nature*; it has divers others (more Relative) as *Nature* is wont to be set in Opposition or Contradistinction to other things; as, when we say of a Stone when it falls downwards, that it does it by a *Natural motion*; but that if it be thrown upwards, its motion that way is violent. So Chymists distinguish Vitriol into *Natural* and *Fictitious*, or made by Art, (*i. e.*) by the Intervention of Human Power or Skill; so 'tis said, that water kept suspended in a sucking Pump, is not in its *natural* place, as that is, which is Stagnant in the Well. We say also, that Wicked Men are still in the state of *Nature*; but the Regenerate, in a state of *Grace*: That Cures wrought by Medicines, are *Natural* Operations; but the miraculous ones, wrought by Christ and his Apostles, were Supernatural. Nor are these the only Forms of
Speech

Speech, that a more diligent Collector, than I think it necessary I should here be, might instance in, to manifest the Ambiguity of the word *Nature*, by the many and various things 'tis applied to signifie; tho' some of those already mentioned, should be judged too near to be co-incident. Among *Latin* Writers I found the acceptions of the word *Nature* to be so many, that I remember, one Author reckons up no less than fourteen or fifteen. From all which 'tis not difficult to gather, how easie 'tis for the generality of Men, without excepting those that write of *Natural* Things, to impose upon others and themselves, in the use of a word so apt to be misimploy'd.

On this occasion I can scarce forbear to tell you, that I have often look'd upon it as an unhappy thing, and prejudicial both to Philosophy and Physick; that the word *Nature* hath been so frequently, and yet so unskilfully imploy'd, both in Books
and

and in Discourse, by all sorts of Men, Learned and Illiterate. For the very great Ambiguity of this term, and the promiscuous use Men are wont to make of it, without sufficiently attending to its different Significations, makes many of the Expressions wherein they imploy it, (and think they do it well and truly) to be either not intelligible, or not proper, or not true : Which Observation, tho' it be not heeded, may, with the help of a little attention, be easily verified ; especially because the Term *Nature* is so often used, that you shall scarce meet with any Man, who, if he have occasion to discourse any thing long of either Natural or Medicinal Subjects, would not find himself at a great loss, if he were prohibited the use of the word *Nature*, and of those Phrases whereof it makes the principal part. And I confess I could heartily wish, that Philosophers, and other Learned Men (whom the rest in time would follow) would by common (tho' perhaps

perhaps Tacite) consent, introduce some more Significant, and less ambiguous Terms and Expressions in the room of the too licenciously abused word *Nature*, and the Forms of Speech that depend on it. Or would, at least, decline the use of it, as much as conveniently they can; and where they think they must imploy it, would add a word or two, to declare in what clear and determinate sense they use it. For without somewhat of this kind be done, Men will very hardly avoid being led into divers mistakes, both of things, and of one another; & such wranglings about Words and Names, will be (if not continually multiplied) still kept on foot, as are wont to be manag'd with much heat, tho' little use, and no necessity.

And here I must take leave to complain, in my own excuse, of the scarce superable Difficulty of the Task, that the design of a *Free Inquiry* puts me upon. For 'tis far more difficult than any one that hath not try'd,

try'd, (and I do not know that any Man hath,) would imagine, to Discourse long of the Corporeal Works of God, and especially of the *Operations* and *Phænomena's* that are attributed to *Nature*, and yet decline making oftentimes use of that Term, or Forms of Speech whereof 'tis a main part; without much more frequent, and perhaps tedious, Circumlocutions, than I am willing to trouble you with. And therefore I hope you will easily excuse me, if, *partly* to shun these, and to avoid using often the same words too near one another, and *partly* out of unwillingness to imploy Vulgar Terms, likely to occasion or countenance Vulgar Errors; I have *several times* been fain to use Paraphrases or other Expressions, less short than those commonly received: And *sometimes* for one or other of these Reasons, or out of Inadvertence, miss'd of avoiding the Terms used by those, that admit and applaud the Vulgar Notion of *Nature*: whom, I must *here* advertise

D. you,

you, that *partly* because they do so, and *partly* for brevity's sake, I shall *hereafter* many times call, *Naturists*: Which Appellation I rather chuse than that of *Naturalists*; because, many, even of the Learned among them, as Logicians, Orators, Lawyers, Arithmeticians, &c. are not Physiologers.

But if on this occasion you should be very urgent to know, what Course I would think expedient, if I were to propose any, for the avoiding the Inconvenient use of so Ambiguous a Word, as *Nature*: I should *first* put you in mind, that, having but very lately declar'd, that I thought it very difficult, in Physiological Discourses especially, to decline the frequent of that Term; you are not to expect from me the satisfaction you may desire in an Answer. And *then* I would add, that yet my unwillingness to be altogether silent, when you require me to say somewhat, makes me content to try, whether the mischief complain'd of, may not be
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be in some measure either obviated or lessen'd, by looking back upon the (Eight) various significations, that were not long since deliver'd of the Word *Nature*, and by endeavouring to express them in other Terms, or Forms of Speech.

1. Instead then of the Word *Nature* taken in the first sense, [*for Natura Naturans*,] we may make use of the Term 'tis put to signifie, namely, *God*; wholly discarding an Expression, which, besides that 'tis harsh and needless, and in use only among the School-men, seems not to me very suitable to the profound Reverence we owe the Divine Majesty; since it seems to make the *Creator* differ too little by far from a *Created* (not to say an *Imaginary*) Being.

2. Instead of *Nature* in the second sense, [*for, That on whose account a Thing is what it is, and is so call'd*,] we may imploy the Word *Essence*, which is of great Affinity to it, if not of an adequate import. And some-

times also we may make use of the Word *Quiddity*, which, though a somewhat Barbarous Term, is yet frequently imploy'd, and well enough understood, in the Schools; and, which is more considerable, is very comprehensive, and yet free enough from Ambiguity.

3. What is meant by the Word *Nature* taken in the third sense of it, [for, *what belongs to a living Creature at its Nativity, or accrues to it by its Birth,*] may be express'd, sometimes, by saying, that a Man or other Animal is *Born* so; and sometimes by saying, that a Thing has been *Generated* such; and sometimes also, that 'tis thus or thus Qualifi'd by its *Original Temperament and Constitution*.

4. Instead of the Word *Nature* taken in the fourth Acception [for, an *Internal Principle of Local Motion*] we may say sometimes, that this or that Body *Moves as it were*, or else that it *seems to Move, spontaneously* (or of *its own accord*) upwards, down-

downwards, &c. or, that 'tis put into this or that Motion, or determin'd to this or that Action, by the concurrence of such or such (proper) Causes.

5. For *Nature* in the fifth signification, [for, the *establish'd course of Things Corporeal*] 'tis easie to substitute what it denotes, *the establish'd Order, or the settled Course of Things.*

6. Instead of *Nature* in the sixth sense of the Word [for, *an Aggregate of the Powers belonging to a Body, especially a Living one*] we may imploy the *Constitution, Temperament, or the Mechanism, or the Complex of the Essential Properties or Qualities*, and sometimes the Condition, the Structure, or the Texture of that Body. And if we speak of the greater Portions of the World, we may make use of one or other of these Terms, *Fabrick of the World, System of the Universe, Cosmical Mechanism, or the like.*

7. Where Men are wont to imploy the Word *Nature* in the seventh

sense [for, the *Universe*, or the *Sy-
steme of the Corporeal Works of God*]
'tis easie, and as short, to make use
of the Word *World* or *Universe*; and
instead of the *Phænomena of Nature*
to substitute the *Phænomena of the
Universe*, or of the *World*.

8. And, as for the Word *Nature*
taken in the eighth and last of the
fore-mention'd Acceptions [for, ei-
ther (as some *Pagans* styl'd Her) a
Goddeſs, or a kind of *Semi-Deity*]
the best way is not to imploy it in
that sense at all ; or at least as seldom
as may be, and that for divers Rea-
sons, which may in due place be met
with in several Parts of this Essay.

But though the foregoing Diverſi-
ty of Terms and Phrases may be
much increas'd, yet I confess it makes
but a part of the Remedy, I propose,
against the future mischiefs of the
confus'd Acception of the Word *Na-
ture*, and the Phrases grounded on it.
For besides the Synonymous Words,
and more literal Interpretations late-
ly propos'd, a dextrous Writer may
oftentimes

oftentimes be able to give fuch a Form (or, as the Modern *Frenchmen* fpeak, fuch a *Tour*) to his many-ways variable Expreffions, as to avoid the neceffity of making ufe of the Word *Nature*; or fometimes fo much as of thofe fhorter Terms, that have been lately fubftituted in its place. And to all this I muft add, that *though* one or two of the eight fore-mention'd Terms or Phrafes, as *Quiddity* and *Cosmical Mechanifm*, be Barbarous or Ungenteel; and fome other expreffions be lefs fhort than the Word *Nature*: Yet 'tis more the Interelt of Philofophy to tolerate a harfh Term, that has been long received in the Schools in a determinate fenfe, and bear with fome Paraphraftical Expreffions, than not to avoid an Ambiguity that is liable to fuch great inconveniences as have been lately, or may be hereafter, re- prefented.

There are, I know, fome Learned Men, who, (perhaps being ftartled to find *Nature* ufually fpoken of fo

I think
this Sense
of the word
to be both
pious and
intelligible

much like a kind of *Goddeſs*,) will have the *Nature* of every thing, to be only the *Law* that it receives from the Creator, and according to which it acts on all occasions. And this Opinion ſeems much of kin to, if not the ſame with, that of the famous *Helmont*, who juſtly rejecting the *Ariſtotelian* Tenent of the Contrariety or Hoſtility of the Elements, will have every Body, without any ſuch reſpect, to act that which 'tis commanded to act. And indeed this Opinion about *Nature*, though neither clear nor comprehensive enough, ſeems capable of a fair Conſtruction. And there is oftentimes ſome reſemblance between the orderly and regular Motions of inanimate Bodies, and the Actions of Agents, that, in what they do act, conformably to Laws. And even I ſometimes ſcruple not, to ſpeak of the Laws of Motion and Reſt, that God has eſtabliſh'd among things Corporeal, and now and then, (for brevities ſake, or out of Cuſtom) to call them,

them, as Men are wont to do, the *Laws of Nature*: Having in due place declar'd, in what sense I understand and imploy these Expressions.

But to speak strictly, (as becomes Philosophers in so weighty a matter) to say that the *Nature* of this or that Body, is but *the Law of God prescrib'd to it*, is but an improper and figurative Expression. For, *besides* that this gives us but a very defective *Idea* of *Nature*, since it omits the general Fabrick of the World, and the Contrivances of particular Bodies, which yet are as well necessary as Local Motion itself, to the production of particular *Effects* and *Phænomena's*; *besides* this, I say, and other imperfections of this *Notion of Nature*, that I shall not here insist on, I must freely observe, that, to speak properly, a *Law* being but a *Notional Rule of Acting according to the declar'd Will of a Superior*, 'tis plain, that nothing but an Intellectual Being can be properly capable of receiving and
 acting

acting by a *Law*. For if it does not understand, it cannot know what the Will of the *Legislator* is; nor can it have any Intention to accomplish it, nor can it act with regard to it; or know, when it does, in Acting, either conform to it or deviate from it. And 'tis intelligible to me, that God should at the Beginning impress determinate Motions upon the Parts of Matter, and guide them, as he thought requisite, for the Primordial Constitution of Things: and that ever since he should, by his ordinary and general Concourse, maintain those Powers, which he gave the Parts of Matter, to transmit their Motion thus and thus to one another. But I cannot conceive, how a Body, devoid of understanding and sense, truly so call'd, can moderate and determine its own Motions; especially so, as to make them conformable to Laws, that it has no knowledg or apprehension of. And that Inanimate Bodies, how strictly soever call'd *Natural*, do properly act by Laws, cannot be evinc'd

evinc'd by their sometimes acting Regularly, and, as Men think, in order to determinate Ends: Since in Artificial things we see many Motions very orderly perform'd, and with a manifest Tendency to particular and pre-design'd Ends; as in a Watch, the Motions of the Spring, Wheels and other parts, are so contempered and regulated, that the Hand upon the Dyal moves with a great Uniformity, and seems to moderate its Motion, so as not to arrive at the Points, that denote the time of the day, either a minute sooner, or a minute later, than it should do, to declare the hour. And when a Man shoots an Arrow at a Mark, so as to hit it, though the Arrow moves towards the Mark, as it would if it could and did design to strike it, yet none will say, that this Arrow moves by a Law, but by an External, tho' well directed, Impulse.

S E C T.

S E C T. III.

II. **B**UT possibly the Definition of a Philosopher may exempt us from the perplexities, to which the Ambiguous expressions of common Writers expose us. I therefore thought fit to consider, with a somewhat more than ordinary attention, the Famous Definition of *Nature* that is left us by *Aristotle*, which I shall recite rather in *Latin* than in *English*, not only because 'tis very familiarly known among Scholars, in that Language, but because there is somewhat in it, that I confess seems difficult to me, to be without Circumlocution render'd intelligibly in *English*: *Natura* (says
 2 *Phyf. c. 1.* He) *est Principium &*
 1. 3. *causa Motus & Quietis*
ejus, in quo inest, primo per se, & non
secundum accidens. But though when I consider'd that according to *Aristotle*,

tle, the whole World is but a System
 of the Works of *Nature*; I thought
 it might well be expected, that the
 Definition of a thing, the most im-
 portant in Natural Philosophy, should
 be clearly and accurately deliver'd;
yet to me this celebrated Definition
 seem'd so dark, that I cannot brag of
 any assistance I received from it, to-
 wards the framing of a clear and sa-
 tisfactory *Notion of Nature*. For I
 dare not hope, that what, as to me,
 is not itself intelligible, should make
 me understand what is to be decla-
 red or explicated by it. And when
 I consulted some of *Aristotle's* Inter-
 preters upon the sense of this Defini-
 tion, I found the more considerate
 of them so puzzled with it, that their
 Discourses of it seem'd to tend, rather
 to free the Maker of it from Tauto-
 logy and Self-contradiction, than to
 manifest that the Definition itself is
 good and instructive, and such as af-
 fords a fair account of the thing De-
 fin'd. And indeed, *though* the immode-
 rate Veneration they cherish for their
 Master,

Master, engages them to make the best they can of the Definition given by him, even when they cannot justify it without strain'd Interpretations, yet what every one seems to defend in gross, almost every one of them censures in parcels; this Man attacking one part of the Definition, and that Man another, with Objections so weighty, (not to call some of them so unanswerable) that if I had no other Arguments to urge against it, I might borrow enough from the Commentators on it, to justify my dislike of it.

However, we may hereafter have occasion to consider some of the main parts of this Definition, and in the mean while, it may suffice that we observe, that several things are commonly receiv'd as belonging to the *Idea*, or *Notion of Nature*, that are not manifestly or not at all comprehended in this *Aristotelian* Definition, which doth not declare, whether the Principle or Cause (which Expression already makes the sense doubtful) here

here mention'd is a Substance, or an Accident; and if a Substance, whether Corporeal or Immaterial, nor is it clearly contain'd in this Definition, that *Nature* does all things most wisely, and still acts by the most compendious ways without ever missing of her end, and that she watches against a *vacuum* for the welfare of the Universe, to omit divers other things, that you will find ascrib'd to her in the following Section: To which I now proceed.

That the great shortness of this Third Section may not make it too disproportionate in length, to the others, this Tract consists of; I shall in this place, though I doubt it be not the most proper that could be chosen, endeavour to remove betimes the Prejudice, that some Divines and other Pious Men may perhaps entertain, upon the account, as they think, of Religion, against the care I take, to decline the frequent use of that Word *Nature*, in the Vulgar Notion of it: Reserving to another and fitter

ter place some other things, that may relate to the Theological scruples, if any occur to me, that our *Free Inquiry* may occasion.

The Philosophical Reason that inclines me to forbear, as much as conveniently I can, the frequent use of the Word *Nature*, and the Forms of Speech that are deriv'd from it, is, That 'tis a Term of great Ambiguity: On which score I have observ'd, that, being frequently and unwarily imploy'd, it has occasion'd much darkness and confusion in many Mens Writings and Discourses. And I little doubt, but that others would make the like Observations, if early Prejudices and universal Custom did not keep them from taking notice of it.

Nor do I think my self oblig'd, by the just Veneration I owe and pay *Religion*, to make use of a Term so inconvenient to *Philosophy*. For I do not find that for many Ages the *Israelites*, that then were the only People and Church of God, made
use

use of the Word *Nature* in the Vulgar Notion of it. *Moses* in the whole History, of the Creation, where it had been so proper to bring in this first of second Causes, has not a word of *Nature*. And whereas Philosophers presume, that she, by her Plastick Power and Skill, forms Plants and Animals out of the Universal Matter; the Divine Historian ascribes the Formation of them to Gods immediate *Fiat*. Gen. i. 11. *And God said, let the Earth bring forth Grass, and the Herb yielding Seed, and the Fruit-tree yielding Fruit after his kind, &c.* And again, *Vers. 24, God said, Let the Earth bring forth the living Creature after its kind, &c.* *Vers. 25, And God* (without any mention of *Nature*) *made the Beast of the Earth after his kind.* And I do not remember, that in the Old Testament, I have met with any one *Hebrew* word that properly signifies *Nature*, in the sense we take it in. And it seems, that our *English* Translators of the Bible were not more
E fortunate

fortunate in that, than I ; for, having purposely consulted a late Concordance, I found not that Word *Nature* in any Text of the Old Testament. So likewise, though *Job*, *David* and *Solomon*, and other *Israelitish* Writers, do, on divers occasions, many times mention the *Corporeal Works of God*, yet they do not take notice of *Nature*, which our Philosophers would have his great *Vicegerent* in what relates to *them*. To which, perhaps it may not be impertinent to add, that, though the late famous *Rabbi Menasseh Ben Israel*, has purposely written a Book of numerous Problems touching the Creation, yet I do not remember that he imployes the Word *Nature*, in the receiv'd Notion of it, to give an account of any of Gods Mundane Creatures. And when *St. Paul* himself, who was no stranger to the Heathen Learning, writing to the *Corinthians* who were *Greeks*, speaks of the Production of Corn out of Seed sown, he does not attribute the produc'd

duc'd Body to *Nature*, but when he had spoken of a *grain of Wheat, or some other seed* ^{1 Cor. xv. 37, 38.} put into the ground, he adds, that *God gives it such a Body as he pleaseth, and to every seed its own Body*, i. e. the Body belonging to its kind. And a greater than *St. Paul*, speaking of the gaudiness of the *Lilies*, (or, as some will have it, *Tulips*) uses this Expression, *If God so cloath the grass of the Field, &c. Matt. vi. 28, 29, 30.* The Celebrations that *David, Job*, and other Holy *Hebrews*, mention'd in the Old Testament, make an occasion of the admirable Works they contemplated in the Universe, are address'd directly to *God* himself, without taking notice of *Nature*. Of this, I could multiply Instances, but shall here, for brevity's sake, be contented to name a few, taken from the Book of *Psalms* alone. In the hundredth of those *Hymns*, the Penman of it makes this, *That God has made us*, the ground of an Exhortation, *To enter into his*

Gates with Thanksgiving, and into his Courts with Praise, Psal. lxxix. 34. And in another, Let the Heaven and Earth praise God, [that is, give Men ground and occasion to Praise Him] congruouſly to what David elſewhere ſays to the Great Creator of the Uniuerſe. All thy work's ſhall praise thee, O Lord, and thy Saints ſhall bleſs thee, Psal. cxlv. 10. And in another of the Sacred Hymns, the ſame Royal Poet ſays to his Maker, Thou haſt cover'd me in my Mothers womb. I will praise thee, for I am fearfully and wonderfully made, marvellous are thy works, and that my ſoul knoweth right well, Psal. cxxxix. 13, 14.

I have ſometimes doubted, whether one may not on this occaſion add, that, if Men will need takes in a Being ſubordinate to God, for the management of the World ; it ſeems more conſonant to the Holy Scripture, to depute *Angels* to that charge, than *Nature*. For I conſider, that, as to the *Cæleſtial* Part of the Uni-
verſe,

verse, in comparison of which the *Sublunary* is not perhaps the tenthousandth part ; both the Heathen *Aristotelian's*, and the School Philosophers among the *Christians*, teach, the *Cælestial Orbs* to be moved or guided by *Intelligences*, or *Angels*. And as to the lower or *sublunary World*, besides that the Holy Writings teach us, that *Angels* have been often imploy'd by God for the Government of Kingdoms, (as is evident out of the Book of *Daniel*) and the Welfare and Punishment of particular Persons ; one of those Glorious Spirits, is, in the *Apocalypse*, expressly styl'd *the Angel* Rev. xvi. 5. *of the Waters* : Which

Title divers Learned Interpreters think to be given him, because of his Charge or Office, to oversee and preserve the Waters. And I remember, that in the same Book there is mention made of an Angel, that had *Power, Authority, or* Rev. xiv. 18. *Jurisdiction*, (*ἐξουσία*) *over the Fire* : And though the Excel-

lent *Grotius* gives another conjecture of the Title given the *Angel of the Waters* ; yet in his Notes

Verſe 7. upon the next Verſe ſave one, he teaches, That

there was an Angel appointed to preſerve the Souls that were kept under the Altar there-mention'd. And if we take the *Angel of the Waters* to be the Guardian or Conſerver of them, (perhaps as the *Romans* (in whoſe Empire *St. John* wrote) had ſpecial Officers to look to their Aqueducts and other Waters ;) it may not be amiſs to obſerve. (upon the by) that he is introduc'd Praiſing his and his fellow-Spirits Great Creator : Which is an Act of Religion, that, for ought I know, none of the *Naturaliſts*, whether *Pagan* or even *Chriſtians*, ever mention'd their *Nature* to have perform'd.

I know it may on this occaſion be alledg'd, that *ſubordinata non pugnant*, and *Nature* being God's *Vicegerent*, her Works are indeed *his*. But that he has ſuch a Vicegerent, it is one

one of the main businessses of this Discourse to call in Question, and till the Affirmative be solidly prov'd, (nay, and tho' it were so) I hope I shall be excus'd, if with *Moses*, *Job*, and *David*, I call the Creatures, I admire in the visible World, *the Works of God*, (not of *Nature*) and praise rather *Him* than *Her*, for the wisdom and goodness displayed in them: Since among the *Israelites*, till they were over-run and corrupted by Idolatrous Nations, there was for many Ages a deep silence of such a Being, as we now call *Nature*. And I think it much more safe and fit, to speak as did those, who for so long a time were the peculiar People of *God*, than which the *Heathen Poets* and *Philosophers*, who were very prone to ascribe Divinity to *his* Creatures, and sometimes even to *their own*.

I mention these things, not with Design to ingage in the Controversie, about the Authority or Use of the Scripture in Physical Speculati-

ons, but to obviate or remove a prejudice, that (as I formerly intimated) I fear may be taken up, upon the account of Theology or Religion, against my studiously unfrequent imploying the word *Nature*, in the vulgar sense of it; by shewing, that, Whether or no the Scriptures be not design'd to teach us higher and more necessary Truths than those that concern Bodies, and are discoverable by the meer light of Reason; both its expressions and its silence give more countenance to our *Hypothesis*, than to that of the *Naturists*.

S E C T. IV.

III. **H**AVING shewn, that the Definition given of *Nature* by *Aristotle* himself, as great a *Logician* as he was, has not been able to satisfy so much as his Interpreters and Disciples, what his own *Idea of Nature* was; 'twould be to little purpose

pose to trouble you and my self, with enquiring into the Definitions and Disputes of other *Peripateticks*, about so obscure and perplex'd a Subject; especially, since 'tis not my business in this Tract, solicitously to examine what *Aristotle* thought *Nature* to be, but what is to be thought of the *vulgarly receiv'd Notion* of *Nature*; and *tho'* of this, the Schools have been the chief Propagators, for which Reason it was fit to take notice of their Master *Aristotle's* Definition; yet the best way, I know, to investigate the commonly receiv'd Opinion of *Nature*, is, to consider what *Effata* or *Axioms* do pass for current about Her; and what Titles and Epithets are unanimously given Her, both by Philosophers and other Writers, and by the generality of Men that have occasion to Discourse of Her and Her actings.

Of these Axioms and Epithets, the principal seen to be these that follow.

Natura

*Natura est sapientissima, adeoque
opus Naturæ est opus Intelligentiæ.*

* *Arist. de Cœ-
lo, l. II. c. II.*

* *Natura nihil facit fru-
stra.*

*Natura sine suo nunquam
excidit.*

† *Arist. de Cœ-
lo l. II. c. 5.*

† *Natura semper facit
quod optimum est.*

*it. de Gen.
l. II. c. 10. §. 22.*

*Natura semper agit per
vias brevissimas.*

*Natura neque redundat in superfluis,
neque deficit in necessariis.*

Omnis Natura est conservatrix sui.

Natura est morborum medicatrix.

*Natura semper invigilat conserva-
tioni Universi.*

Natura vacuum horret.

From all these Particulars put to-
gether, it may appear, that the
vulgar Notion of Nature may be
conveniently enough expres'd by
some such Description as this.

Nature is a most wise Being, that
does nothing in vain, does not miss of
her Ends; does always that which
(of the things she can do) is best to
be done; and this she does by the
most

most direct or compendious ways, neither employing any things superfluous, nor being wanting in things necessary; she teaches & inclines every one of her Works to preserve it self. And, as in the Microcosm (Man) 'tis she that is the Curer of Diseases, so in the Macrocosm (the World,) for the conservation of the Universe, she abhors a Vacuum, making particular Bodies act contrary to their own Inclinations and Interests, to prevent it, for the publick Good.

What I think of the Particulars, that make up this Panegyrical Description of *Nature*, will (God permitting) be told you in due place; my present work being only to make you the clearest Representation I can, of what Men generally (if they understand themselves) *do*, or with Congruity to the Axioms they admit and use, *ought* to conceive *Nature* to be:

'Tis not unlike that you may expect, or wish, that on this occasion, I should propose some Definition or Description

Description of *Nature*, as my own. But declining (at least at present) to say any thing, Dogmatically, about this matter, I know not whether I may not, on this occasion, confess to you, that I have sometimes been so Paradoxical, or (if you please) so Extravagant, as to entertain, as a serious Doubt, what I formerly intimated, *viz. Whether Nature be a Thing, or a Name?* I mean, whether it be a *real* Existent Being, or a *notional* Entity, somewhat of kin to those fictitious Terms, that Men have devis'd, that they might compendiously express several things together, by one Name? as when, for Instance, we speak of the *Concocting Faculty* ascrib'd to Animals; those that consider, and are careful to understand, what they say, do not mean I know not what Entity, that is distinct from the Human Body, as 'tis an Engine curiously contriv'd, and made up of stable and fluid parts; but, observing an actuating power and fitness in
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the Teeth, Tongue, Spittle, Fibres and Membranes of the Gullet and Stomach, together with the natural Heat, the Ferment, or else the *Menstruum*,) and some other Agents, by their Co-operation, to cook or dress the Aliments, and change them into Chyle ; observing these things, I say, they thought it convenient, for brevity's sake, to express the *Complex* of those Causes, and the *Train of their Actions*, by the summary Appellation of *concocting Faculty*.

Whilst I was indulging my self, in this kind of Ravings, it came into my mind, that the *Naturalists* might demand of me, How, without admitting their Notion, I could give any tolerable Account of those, most useful, Forms of Speech, which Men imploy, when they say, That *Nature does this or that* ; or, That *such a thing is done by Nature*, or *according to Nature*, or else happens *against Nature*? And this Question I thought the more worth answering, because these Phrases are so very frequently us'd
by

by Men of all sorts, as well Learned as Illiterate, that this Custom hath made them be thought, not only very convenient, but necessary ; inso-much, that I look upon it as none of the least things, that has procur'd so general a reception to the *vulgar notion of Nature*, that these ready and commodious Forms of Speech suppose the Truth of it.

It may therefore, in this place, be pertinent to add, That such Phrases, as, that *Nature*, or *Faculty*, or *Faculty*, or *Suction*, *doth this or that*, are not the only ones, wherein I observe, that Men ascribe to a *notional* thing, that which, indeed, is perform'd by *real* Agents ; as, when we say, that the *Law* punishes Murder with Death, that it protects the Innocent, releases a Debtor out of Prison, when he has satisfied his Creditors (and the Ministers of Justice) on which, or the like occasions, we may justly say, That 'tis plain that the *Law*, which, being in it self a dead Letter, is but a *notional*

nal Rule, cannot, in a Physical sense, be said to perform these things; but they are really performed by Judges, Officers, Executioners, and other Men, acting according to that Rule. Thus, when we say, that *Custom does this or that*, we ought to mean only, that such things are done by proper Agents, acting with Conformity to what is usual, (or customary) on such Occasions. And, to give you an yet more apposite Instance, do but consider, how many Events are wont to be ascrib'd to *Fortune* or *Chance*; and yet *Fortune* is, in reality, no Physical Cause of any thing, (for which Reason probably it is, that Ancients Naturalists than *Aristotle*, as himself intimates, take no notice of it, when they treat of *Natural Causes*,) and only denotes, that those Effects, that are ascribed to it, were produc'd by their true and proper Agents, without intending to produce them; as, when a Man shoots at a Deer, and the Arrow lightly glancing up-
on

on the Beast, wounds some Man that lay beyond him, unseen by the Archer ; 'tis plain, that the Arrow is a Physical Agent, that acts, by virtue of its Fabrick and Motion, in both these Effects ; and yet Men will say, that the slight hurt it gave the Deer, was brought to pass according to the course of *Nature*, because the Archer design'd to shoot the Beast ; but the mortal Wound, it gave the Man, happen'd by *Chance*, because the Archer intended not to shoot Him, or any Man else. And, whereas divers of the old *Atomical Philosophers*, pretending (without good Reason, as well as against Piety) to give an account of the Origin of things, without recourse to a Deity, did sometimes affirm the World to have been made by *Nature*, and sometimes by *Fortune*, promiscuously employing those Terms : They did it, (if I guess aright) because they thought neither of them to denote any true and proper *Physical Cause*, but rather certain
Conceptions,

Conceptions, that we Men have, of the manner of acting of true and proper Agents. And therefore, when the *Epicureans* taught, the World to have been made by *Chance*, 'tis probable, that they did not look upon *Chance*, as a True and Architectonick Cause of the System of the World, but believ'd all things to have been made by the *Atoms*, considered as their Conventions and Concretions into the Sun, Stars, Earth, and other Bodies, were made without any Design of Constituting those Bodies.

Whilst this Vein of framing Paradoxes yet continued, I ventur'd to proceed so far, as to Question, Whether one may not infer, from what hath been said, That the chief Advantage a Philosopher receives from what Men call *Nature*, be not, that it affords them, on divers occasions, a Compendious way of expressing themselves? Since (thought I,) to consider things otherwise than in a Popular way, when a Man tells me,

F that

that *Nature does such a thing*, he does not really help me to understand, or to explicate, how it is done. For it seems manifest enough, that whatsoever is done in the World, at least wherein the rational Soul intervenes not, is really effected by Corporeal Causes and Agents, acting in a World so fram'd as Ours is, according to the Laws of Motion settled by the Omniscient Author of things.

When a Man knows the contrivance of a *Watch* or *Clock*, by viewing the several pieces of it, and seeing how, when they are duely put together, the Spring or Weight sets one of the Wheels a work, and by that another, till by a fit Consecution of the Motions of these and other parts, at length the *Index* comes to point at the right Hour of the Day: The Man, if he be wise, will be well enough satisfied with this knowledge of the Cause of the propos'd Effect, without troubling himself to examine, whether a Notional Philosopher will call the time-measu-

measuring Instrument, an *Ens per se*, or an *Ens per accidens*? And whether it performs its Operations by virtue of an internal Principle, such as the Spring of it ought to be? or of an external one, such as one may think the appended Weight? And, as he, that cannot, by the Mechanical affections of the parts of the Universal matter, explicate a *Phænomenon*, will not be much help'd to understand, how the Effect is produc'd, by being told, that *Nature* did it: So, if he can explain it Mechanically, he has no more need to think, or (unless for brevity's sake) to say, that *Nature* brought it to pass, than he, that observes the Motions of a Clock, has to say, that 'tis not the *Engine*, but 'tis *Art*, that shews the Hour; whereas, without considering that general and uninstruative Name, he sufficiently understands how the parts, that make up the Engine, are determin'd by their Construction, and the *Series* of their Mo-

F 2 tions,

tions, to produce the Effect that is brought to pass.

When the lower end of a Reed, being dipp'd, for Instance, in Milk or Water, he that holds it, does cover the upper end with his Lips, and fetches his Breath, and hereupon the Liquor flows into his Mouth : We are told, that *Nature* raiseth it to prevent a *Vacuum*, and this way of raising it, is call'd *Suction* ; but, when this is said, the word *Nature* does but furnish us with a short Term, to express a concurrence of several Causes ; and so does in other Cases, but what the Word *Suction* does in this. For neither the one, nor the other, helps us to conceive, how this, seemingly spontaneous, Ascension of a heavy Liquor is effected ; which they that know, that the outward Air is a heavy fluid, and gravitates, or presses, more upon the *other parts* of the Liquor, than the Air, contained in the Reed, (which is rarefy'd by the Dilatation of the Sucker's *Thorax*) does upon the
the

the *included part* of the Surface, will readily apprehend, that the smaller pressure will be surmounted by the greater, and, consequently yield to the Ascension of the Liquor, which is, by the prevalent external pressure, impell'd up into the Pipe, and so into the Mouth, (as I, among others, have elsewhere fully made out.) So that, according to this Doctrine, without recurring to *Nature's* Care, to prevent a *Vacuum*, one that had never heard of the Peripatetick Notions of *Nature*, or of *Suction*, might very well understand the mention'd *Phænomenon*. And if afterwards he should be made acquainted with the receiv'd Opinions, and Forms of Speech, us'd on this occasion, he would think, that so to ascribe the Effect to *Nature*, is needless, if not also erroneous ; and that the common Theory of *Suction* can afford him nothing, but a compendious Term, to express, at once the Concourse of the Agents, that make the Water ascend.

How far, I think, these extravagant Reasonings may be admitted, you will be enabled to discern, by what you will hereafter meet with, relating to the same Subjects, in the VII. Section of this Discourse. And therefore, returning now to the rise of this Digression, namely, That 'tis not unlike you may expect, I should, after the Vulgar Notion of *Nature*, that I lately mention'd, without acquiescing in it, substitute some Definition or Description of *Nature*, as Mine: I hope you will be pleas'd to remember, that the Design of this Paper was, to *examine* the Vulgar Notion of *Nature*, not *propose* a new one of my own. And indeed the Ambiguity of the Word is so great, and 'tis, even by Learned Men, usually employ'd to signifie such different things; that, without enumerating & distinguishing its various Acceptions, 'twere very unsafe to give a Definition of it, if not impossible to deliver one that would not be liable to Censure.

I shall not therefore presume to Define a thing, of which there is yet no settled and stated Notion agreed on among Men. And yet, that I may, as far as I dare, comply with your curiosity, I shall tell you, that if I were to propose a Notion, as less unfit than any I have met with, to pass for the *principal Notion* of *Nature*, with regard to which, many Axioms and Expressions, relating to that Word, may be not inconveniently understood, I should distinguish between the *universal*, and the *particular Nature* of Things. And, of *universal Nature*, the Notion, I would offer, should be some such as this, *That Nature is the Aggregate of the Bodies, that make up the World, framed as it is, considered as a Principle, by virtue whereof, they Act and Suffer according to the Laws of Motion, prescrib'd by the Author of Things.* Which Description may be thus Paraphras'd, *That Nature, in general, is, The Result of the Universal Matter, or Corporeal Substance of the U-*
F 4
niverse,

universe, considered as it is contrived into the present Structure and Constitution of the World, whereby all the Bodies, that compose it, are inabled to act upon, and fitted to suffer from, one another, according to the settled Laws of Motion. I expect, that this Description will appear *Prolix*, and require to be heedfully perus'd : But the Intricateness and Importance of the Subject hindred me from making it shorter, and made me chuse rather to presume upon your Attention, than not endeavour to express myself intelligibly and warily, about a Subject of such moment. And this will make way for the other (*Subordinate*) Notion, that is to attend the former Description : Since the *particular Nature*, of an *Individual Body*, consists in the *general Nature*, apply'd to a *distinct portion of the Universe*. Or rather, supposing it to be plac'd, as it is, in a World, fram'd by God, like Ours, it consists in a *Convention of the Mechanical affections* (such as Bigness, Figure, Order, Scituation, Context-

Contexture, and Local Motion) of *its parts*, (whether sensible or insensible) *convenient and sufficient to constitute in, or to entitle to, its particular Species or Denominations, the particular Body they make up, as the Concourse of all these is considered as the Principle of Motion, Rest, and Changes, in that Body.*

If you will have me give to these two Notions more compendious Expressions, now that, by what hath been said, I presume, you apprehend my Meaning; I shall express, what I call'd *General Nature*, by *Cosmical Mechanism*, that is, a Comprisal of all the Mechanical Affections (Figure, Size, Motion, &c.) that belong to the matter of the great System of the Universe. And, to denote the *Nature* of this or that Particular Body, I shall style it, the Private, the Particular, or (if you please) the *Individual Mechanism* of That Body; or, for Brevity's sake, barely the *Mechanism* of it, that is, the *Essential Modification*, if I may
so

so speak, by which, I mean, the Comprisal of all its Mechanical Affections conven'd in the Particular Body, consider'd, as 'tis determinately plac'd, in a World so constituted, as Ours is.

'Tis like, you will think it strange, that in this Description I should make the *present Fabrick of the Universe*, a Part, as it were, of the Notion I frame of *Nature*, though the generality of Philosophers, as well as other Men, speak of Her, as a plastick Principle of all the Mundane Bodies, as if they were Her Effects; and therefore they usually call them, the *Works of Nature*; and the Changes that are observ'd in them, the *Phænomena of Nature*. But, for my part, I confess, I see no need to acknowledg any Architectonick Being, besides *God*, Antecedent to the first Formation of the World.

The *Peripateticks*, whose School either devis'd, or mainly propagated, the Received Notion of *Nature*, conceiving (not only Matter, but) the World to be Eternal, might look
upon

upon it, as the *Province*, but could not, as the *Work of Nature*, which, in their *Hypothesis*, is its *Guardian*, without having been its *Architect*.

The *Epicureans* themselves, that would refer all things, that are done in the World, to *Nature*, cannot, according to their Principles, make what they now call *Nature*, to have been Antecedent to the first Formation of our present World. For, according to their *Hypothesis*, whilst their numberless *Atoms* wildly rov'd in their infinite *Vacuity*, they had nothing belonging to them, but *Bigness*, *Figure* and *Motion* : And 'twas by the Coalition, or Convention of these *Atoms*, that the World had its Beginning. So that, according to them, it was not *Nature*, but *Chance*, that Fram'd the World; though afterwards, this Original Fabrick of things, does, by virtue of its Structure, and the innate and unloseable motive power of *Atoms*, continue things in the same state for the main; & this course, though casually
fallen

fallen into, & continued without Design, is that, which, according to their *Hypothesis*, ought to pass for *Nature*.

And, as meer Reason doth not oblige me to acknowledge such a *Nature*, as we call in Question, Antecedent to the Origin of the World; so neither do I find, that any *Revelation*, contain'd in the *Holy Scriptures*, clearly teaches, that there was then such a Being. For, in the History of the *Creation*, 'tis expressly said, that *In the beginning God made the Heavens and the Earth*; and, in the whole Account that *Moses* gives of the progress of it, there is not a word of the Agency of *Nature*; and, at the later end, when God is introduc'd, as making a re-view of all the

Parts of the Universe, 'tis said, that God saw every thing that he had made; and 'tis soon after added,

Gen. ii. 3. that *He blessed and sanctified the Seventh Day, because, in it, (or rather, just before it, as I find the Hebrew Particle elsewhere us'd,)*

He

He had rested from all his Works,
which God created and made. And tho'
 there be a passage in the Book of
Job, that, probably e- Job. xxxviii.
 nough, argues the *Angels* 4, 6, 7.

(there call'd, the *Sons of God*) to have
 existed, either at the beginning of the
 first Day's Work, or some time be-
 fore it ; yet 'tis not there so much
 as intimated, that they were Co-
 operators, with their Maker, in the
 Framing of the World, of which
 they are represented as *Spectators*
 and *Applauders*, but not so much as
Instruments. But since *Revelation*,
 as much as I always reverence it, is,
 I confess, a Foreign Principle in
 this *Philosophical Enquiry*, I shall
 wave it here, and tell you, That,
 when I consult only the Light of
 Reason, I am inclin'd to apprehend
 the First Formation of the World,
 after some such manner as this.

I think it probable, (for I would not
 Dogmatize on so weighty, and so
 difficult a Subject,) that the Great
 and Wise Author of Things, did,
 when

when he first Form'd the universal and undistinguish'd matter, into the World, put its Parts into various Motions, whereby they were necessarily divided into numberless Portions of differing Bulks, Figures, and Scituations, in respect of each other. And that, by his Infinite Wisdom and Power, he did so guide and overrule the Motions of these Parts, at the beginning of things, as at (whether in a shorter or a longer time, Reason cannot well determine) they were *finally* dispos'd into that Beautiful and Orderly Frame, we call the *World* ; among whose Parts some were so curiously contriv'd, as to be fit to become the Seeds, or Seminal Principles, of Plants and Animals. And I further conceive, that he settled such Laws or Rules, of Local Motion, among the Parts of the Universal Matter, that by his ordinary and preserving *Concourse*, the several Parts of the Universe, thus once completed, should be able to maintain the great Construc-
tion,

ction, or System and Oeconomy, of the Mundane Bodies, and propagate the *Species* of Living Creatures. So that, according to this *Hypothesis*, I suppose no other Efficient of the Universe, but God himself, whose Almighty Power, still accompanied with his Infinite Wisdom, did at first Frame the Corporal World, according to the Divine *Idea's*, which he had, as well *most freely*, as *most wisely*, determin'd to conform them to. For, I think, it is a Mistake to imagine, (as we are wont to do) that what is call'd, the *Nature* of this or that Body, is wholly compris'd in its *own Matter*, and its (I say not *Substantial*, but) *Essential Form*; as if from that, or these only, all its Operations must flow. For an Individual Body, being but a Part of the World, and incompass'd with other Parts of the same great *Automaton*, needs the Assistance, or Concourse, of other Bodies, (which are external Agents) to perform divers of its Operations,
and

and exhibit several *Phænomena's*, that belong to it. This would quickly and manifestly appear, if, for Instance, an Animal or an Herb could be remov'd into those Imaginary Spaces, the School-men tell us of, beyond the World ; or into such a place, as the *Epicureans* fancy their *Intermundia* , or empty Intervals, between those numerous Worlds, their Master dream'd of. For, whatever the Structures of these living Engines be, they would as little, without the Co-operations of external Agents, such as the *Sun*, *Æther*, *Air*, &c. be able to exercise their Functions, as the great Mills, commonly us'd with us, would be to Grind Corn, without the assistance of Wind or running Water. Which may be thought the more credible, if it be considered, that by the meer Exclusion of the Air, (tho' not of Light, or the Earth's Magnetical *Effluvia*, &c.) procur'd by the Air-pump, Bodies plac'd in an extraordinary large Glass, will presently
come

come into so differing a state, that warm Animals cannot live in it; nor flame (tho' of pure Spirit of Wine) burn; nor Syringes draw up Water; nor Bees, or such winged Insects, fly; nor Caterpillars crawl; nay, nor Fire run along a train of dryed Gunpowder: All which I speak upon my own experience. According to the foregoing *Hypothesis*, I consider the frame of the World already made, as a Great, and, if I may so speak, Pregnant *Automaton*, that, like a *Woman* with Twins in her Womb, or a *Ship* furnish'd with Pumps, Ordnance, &c. is such an Engine as comprises, or consists of, several lesser Engines. And this Compounded *Machine*, in conjunction with the *Laws of Motion*, freely establish'd and still maintain'd, by God among its Parts; I look upon as a *Complex Principle*, whence results the settled Order, or Course, of things Corporeal. And that which happens according to this course, may, generally speaking, be said to come to pass

according to Nature, or to be done by *Nature*, and that which thwarts this Order may be said to be *Preternatural*, or *contrary to Nature*. And indeed, though Men talk of *Nature* as they please, yet whatever is done among things Inanimate, which make incomparably the greatest part of the Universe, is really done but by particular Bodies, acting on one another by *Local Motion*, Modifi'd by the other *Mechanical Affections* of the Agent, of the Patient, and of those other Bodies, that necessarily concur to the Effect, or the *Phænomenon* produc'd.

N. B. Those, that do not relish the knowledg of the Opinions and Rights of the Ancient *Jews* and *Heathens*, may pass on to the next or V. Section, and skip the whole following Excursion, compris'd between double Paratheses's, which, though neither impertinent nor useless to the scope of this Treatise, is not absolutely necessary to it.

[In the foregoing (III.) Section of this Treatise, I hope I have given a sufficient Reason of my backwardness to make frequent use of the Word *Nature*, and now, in this (IV.) Section, having laid down such a Description of *Nature*, as shews that her Votaries represent her as a *Goddeſs*, or at least a *Semi-Deity* : 'Twill not be improper in this place, to declare *ſome of the Reasons* of my diſſatisfaction with the *Notion* or *Thing* it ſelf, as well as with the uſe of the *Name* ; and to ſhew, why I am not willing to comply with thoſe Many, that would impoſe it upon us as very friendly to *Religion*.

And theſe reaſons I ſhall the rather propoſe, becauſe not only the Generality of other Learned Men, (as I juſt now intimated) but that of Divines themſelves, for want of Information, or for ſome other cauſe, ſeem not to have well conſider'd ſo weighty a matter.

To manifeſt therefore the Malevolent Aſpect, that the *Vulgar Notion*

of Nature has had, and therefore possibly may have, on *Religion*; I think fit, in a general way, to premise, what things they are, which seem to me to have been the Fundamental Errors, that mis-led the Heathen World, as well Philosophers as others. For, if I mistake not, the looking upon meerly Corporeal, and oftentimes Inanimate Things, as if they were endow'd with Life, Sense, and Understanding; and the ascribing to *Nature*, and some other *Beings*, (whether real or imaginary) things that belong but to *God*, have been some, (if not the chief) of the Grand Causes of the *Polytheism* and *Idolatry* of the *Gentiles*.

The most Ancient *Idolatry*, (taking the word in its laxer sense) or at least one of the earliest, seems to have been the Worship of the *Cælestial Lights*, especially the *Sun* and *Moon*: That kind of *Aboda zara*, עברה זרה (as the *Jewish* Writers call strange or false Worships) being the most Natural, as having for its Objects,
Glorious

Glorious Bodies, Immortal, always regularly mov'd, and very beneficial to Men. There is Recorded, in the *Holy Scripture*, a Passage of *Job*, who is probably reputed to be, at least, as Antient as *Moses*, which seems to argue, that this Worship, of the two great Luminaries, was practis'd in his time, and look'd upon as *Criminal* by Religious Men, and, as our *English* Version renders the *Hebrew* Words, *Punishable by the Civil Magistrate*. If, says *Job*, *I beheld the Sun when it shined, or the Moon walking in brightness: And my heart hath been secretly inticed, or my mouth hath kiss'd my hand, &c.* *Job* xxxi. 26, 27. And that this *Idolatry* was practis'd in *Moses's* time, may be gather'd from that Passage in *Deuteronomy*. And lest thou lift up thine eyes unto Heaven, & when thou seest the Sun, & the Moon, and the Stars, even all the Host of Heaven, shouldst be driven to worship them, & serve them, &c. *Deut.* 4. 19. The *Sabaans*, or, as many Criticks call them, the *Zabians*, are by some very

Learned Men thought to have been
the earliest *Idolaters* :

More Nevoch. lib.
iii. cap. 30.

And the ablest of the
Jewish Rabbies, *Maimonides*, makes them to be so Antient,
that *Abraham* was put to Dispute
against them. And their Superstiti-
on had so over-spread the East, in
Moses's time, that the same *Maimo-
nides* judiciously observes, that di-
vers of the Ceremonial Laws, given
to the *Jews*, were instituted in oppo-
sition to the Idolatrous Opinions,
Magical Rites, and other Superstiti-
tions, of these *Zabians*. Of this, he
(seconded therein by our Famous
Selden) gives several Instances ; to

Histor. Orientalis.
lib. i. cap. 8.

which, some are ad-
ded by the Learned
Hottinger. But this
only upon the By ; my purpose, in
mentioning these *Zabians*, being to
observe to you, that they look'd upon
the *Planets*, and especially the *Sun* and
Moon, as *Gods*, & Worshipp'd them
accordingly, taking them for *Intelli-
gent Beings*, that had a great Interest
in

in the Government of the World.

This may be prov'd out of some *Eastern* Writers, especially *Maimonides*, who, in one place, asserts the *Za-* Lib. iii. cap. 36.
bians to have Ador'd

the *Sun* and *Moon*, and the *Host of Heaven*, (as the Scripture styles the *Cæle-* 2 King. xvii. & 16.
stial Lights) as true 2 Chron. xxxiii.
& 3.

Gods. And this we shall the less wonder at, if we consult another place of the same

Learned Author, Mor. Nevoch. lib.
iii. cap. 25.

where he informs the Readers, that these Idolaters (the *Zabians* or *Chaldeans*) made Statues of Silver and Gold, those for the *Sun*, and these for the *Moon*; which, being Consecrated by certain Rites and Ceremonies, did invite, and, as it were, attract the Spirits of these Stars into those Shrines: Whence they would speak to their Worshippers, acquaint them with things Profitable, and even Predict to them things to come. And of some such sort of

speaking-Images, some learned Criticks suppose the *Terraphim* (as the Original Text calls them)

Gen. xxxi. & xix.
vers. 30.

to have been, that *Laban* so priz'd, as to call them *his Gods*: Which 'tis guess'd *Rachel* stole from her Father, lest, by consulting them, he might learn what way her Husband and his Company had taken in their flight. And the same great *Rabbi*, having inform'd his Readers that he saw several Books of the *Zabian Superstition*, somewhere mentions one or two, that treated of *speaking-Images*. And 'twas perhaps from these *Zabians*, or their Disciples, that *Zeno*, the Founder of the Stoical Sect, taught, as *Stobæus* informs us, that the Sun, Moon, and the rest of the Stars were indow'd with Understanding and Prudence. And *Seneca*, an eminent

* Sen. de Benef.
lib. vii. cap. 21.

Champion of that rigid Sect, * reprehends *Epicurus* and *Anaxagoras*, (whose Disciple he was in that Opinion) that they held the Sun

Sun to be a burning Stone, or an aggregate of Casual Fires, and any thing rather than a God.

I am sorry, I could not avoid thinking the Great *Hippocrates*, to have been involv'd in the great Error we are speaking of, when in his Book *De Principiis aut carnibus*, near the beginning, I met with this Passage. *Videtur sane mihi id, quod (Θερμὸν) calidum vocamus, immortale esse, & cuncta intelligere & videre, & audire & scire omnia, tum præsentia tum futura.* According to which Supposition, he presently attempts to give some such Account of the Origin of the World's Frame, as he could in a very few lines; and then spends the rest of the Book, in giving particular Accounts, how the Parts of the Human Body come to be Fram'd, wherein, *though* I commend the Attempt in general, because, without acquiescing in I know not what Faculties, he endeavours to give an intelligible and particular Account, how things come to be perform'd

perform'd and produc'd ; yet I cannot but look on this Book, as a Remarkable Instance of this Truth, that, without having recourse to the True God, a satisfactory Account cannot be given of the Original or Primitive Production of the Greater and Lesser *World*, since so great a Naturalist as *Hippocrates*, by the help of his Idoliz'd Θεοῦ, was unable to perform this Task, with any satisfaction to an Attentive and Intelligent Enquirer. And *Galen* himself, who was not unacquainted with *Moses's* Writings, and liv'd where Christianity was propagated thro' a great Part of the World ; *Galen*, I say, even in that admirable Treatise, *De usu Partium*, where he so excellently Declares and Celebrates the most Wise Author of Things, was so far transported with the Error, which infected so many other Heathen Philosophers, that he Phancied the Earth itself, though he speaks contemptibly of it, had a certain Soulor Mind, imparted to it
by

by the Superior Bodies, which, he saith, is so conspicuous, first in the Sun, next in the Moon, and afterwards in the other Stars; that by their Beauty the

Galenus de usu
Partium, l. xvii. a-
pud Lacunam in
Epitome Oper.
Galenii.

Contemplator will be induc'd to think it reasonable, that the more pure their Corporeal Substance is, 'tis inhabited by a Mind, so much the better and more perfect, than that of these Terrestrial Bodies. And having spoken of the reasoning Nature, that shin'd in *Plato, Aristotle, Hipparchus, Archimedes, &c.* He thus infers. *Si igitur in tanta colluvie (quo enim alio nomine quis appellet id quod ex carne, sanguine, pituita, ac bile utraque est conflatum) mens gignatur, adeo eximia & excellens; quantum ejusdem putandum est esse excellentiam in Sole, Luna, aliisque etiam Sideribus? (to which he subjoins) Mihi quidem, dum hæc mecum voluto, non exigua quadam mens talis, per ipsum etiam nos Aerem ambientem, esse*
extensa

extensa videtur. Fieri enim non potest, quum lucis ipsius Solis sit particeps, quin vim etiam ab ipso assumat.

But this upon the By. Nor did this Opinion, of the Divinity of the Cœlestial Bodies, die with the *Zabians*, or the *Greek* Philosophers. For I found, by some Questions I propos'd to an Inquisitive Person, who, having liv'd many years in *China* and several of the Neighbouring Kingdoms, had acquired Skill enough in the Tongues to converse with the Natives; I found, I say, that in a solemn Conference he had with some of the more Eminent and Philosophical Doctors of the *Chineses* Religion, they frankly profess, that they Believe the Heavenly Bodies to be truly Divine, and to be Worshipp'd, and that upon this particular Ground, That they imparted to Men such good things, as Light, Heat, Rain, &c. and the Productions and Consequences of these. And this Belief they declar'd, they thought more Rational, than that of

of the *Europeans*, who Worship a Deity, whose neither Shape, nor Colour, nor Motion, nor Efficacy on Sublunary things, were at all visible. It agrees very well with the Opinion of the

Ancient *Greeks*, who, as *Origen* relates,

Origen. cont. Celsum. l. v.

call'd the Sun, Moon, and the Stars *ἐμφανέας*

Θεοὺς καὶ αἰδντῆς, *Conspicuous and Sensible Gods*. And we are taught by *Eusebius*, that the Ancient *Ægyptian Theologizers*,

whose Religion was neerer of kin to that of the *Chaldeans*, if not borrow'd of it, look'd upon the Sun and Moon, whom they Worshipp'd under the Names of *Osiris* and *Isis*, not only as the Chief Gods, but as the Makers and Governours of much, if not of all, of the rest of the Universe.

Præparat. l. iii. c. 4. Damascius vita Isidori apud Photium: Colunt præ cæteris Diis *Ægyptii* *Osirim* & *Isin* (*i. e.* Solem & Lunam,) illum omnia condere, & figuris numerisque materiam adornare arbitrati.

I will not here enquire, whether these Old Heathen Philosophers did, besides the Stars and other Beings, that they ador'd as Gods, Believe one only *Numen* or Supream Deity. But that may suffice for my present purpose, which seems manifest, *viz.* that they ascrib'd to Sensible Beings, Attributes peculiar to the True God; that this was occasion'd by their thinking them Intelligent and Governing, and that these Inferiour Beings were, by far, the most usual and familiar Objects both of their Discourses and their Worship, and that they did (to use the Phrase of the Apostle of the Gentiles) Worship the *Creature besides, or more than,* (for the Greek Word *ὃν* may signify either) the *Creator*, who by *Moses*, the Prophets, and the Apostles, expressly declares a dislike of this Worship, and even in that more specious and seemingly excusable kind of it, which was in use among the Ten Tribes, that Profess'd,

feſs'd, and perhaps Believ'd, their
Worſhip to be directed to the one
Supream God, and him the true God
of *Israel*. But this alſo upon the
By.

This Belief, that the World and
divers of its Principal

Parts, as the Sun,
Moon, Stars, &c.

were animated and
endowed with Intel-

ligent Minds, was
ſo Contagious, that,

not only it help'd to
ſeduce the Emperor

Julian from Chri-
ſtianity to Heathen-

iſm, (inſomuch that
He gives the Sun ſolemn Thanks for

His Advancement to the *Roman* Mo-
narchy;) but it infected very Lear-

ned Men among the *Jews* and *Chri-*
ſtians. Of the former, I ſhall need

to name but two; the *fiſt* being the
Famouſeſt and Judiciouſeſt of the

Ancienter *Rabbins*, *Maimonides*, in
whom, I confeſs, I wonder'd to find

this

Sed nec illam, quam
ejuſdem Numinis
(Solis) beneficio a-
deptus ſum, ſortem
conditionemq; par-
vi facio; quod ex
eo genere, penes
quod Terrarum
Dominatus atque
Imperium eſt, tem-
poribus noſtris or-
tum acceperim. Ju-
lian. ad Regem So-
lem.

More Nevochim.
l. 3. c. 29. (ni fal-
lor.

this Assertion, That the Sun and Stars were animated Beings, endow'd with Understanding and Will: And the other, being reputed the Chief and the most Learned of the Moderns, *Menasseh Ben Israel*, (with whom I have Convers'd at *Amsterdam*) in his Problems, *De Creatione*, hath this notable Passage. — *Quod de Intelligentiis tradunt id vero mera Fabula est; nam Cæli, secundum Rabbi Mosem, & rei veritatem, habent animas proprias rationali vita præditas, sicut alibi à me demonstrabitur.* And a Greater Man than *Maimonides*, *Origen* himself, among the Christians, not only in one place adventures to say, *Siquidem etiam Cælestes Stellæ Animalia sunt Rationalia, virtute prædita, illustrata Cognitionis Lumine, à Sapientia illa quæ est Splendor æterni Luminis*; but in another proceeds so far, that I found

*Origen-contrà Cel-
sum. l. v.*

found (not without surprize) that
 He says, *The Christians sing Hymns to*
God the Lord of all, Origen. contra Cel-
 sum. lib. 8.
and God the Word ; no otherwise than
do the Sun, Moon, and Stars, and the
whole Heavenly Host, since all these, be-
ing a Heavenly Quire, do with just
Men celebrate the Supream God, and his
only Begotten [Son.] The Boldness
 of these unjustified Paradoxes I the
 the less wonder at, when I consider,
 what has for many Ages been taught
 by the School Philosophers, from
Aristotle ; namely, that the Cœle-
 stial Spheres had their peculiar *Intel-*
ligences, that is, Rational, Immor-
 tal, Powerful and Active Beings.
 'Tis true, that in the Jews and
 Christians, I have been speaking of,
 the malignity of the Error, they em-
 brac'd, was Corrected and Master'd
 by the sound and Orthodox Princi-
 ples they held together with it.
 But still 'tis dangerous for those, that
 would be Loyal to Him,
 that styles himself a *Jea-*

Exod. xx.

H

lous

lous God, to Adopt Premises that have been able to Mis-lead such Great Persons, and from which many Famous Philosophers have plausibly enough drawn Consequences very repugnant to true Religion. Nor are Christians themselves so much out of danger of being seduc'd by these Heathenish Notions, about an Intelligent World, but that (not again to mention the Apostate Emperor) even in these times there is lately sprung up a Sect of Men, as well professing Christianity, as pretending to Philosophy; who (if I be not mis-inform'd of their Doctrine) do very much symbolize with the Ancient Heathens, and talk much indeed of God, but mean such a One, as is not really distinct from the Animated and Intelligent Universe; but is, on that account, very differing from the True God, that we Christians Believe and Worship. And, though I find the Leaders of this Sect to be look'd upon, by some more Witty than Knowing Men, as
the

the Discoverers of unheard of Mysteries in Physicks and Natural Theology ; yet their *Hypothesis* does not at all appear to me to be *new*, especially when I remember, besides the Passages of the Ancients, cited in this Paper, some others of the same Import, such as is particularly that of *Lucan*.

*Estque Dei sedes, ubi Terra, &
Pontus, & Aer,*

*Et Cælum, & Virtus: Superos
quid quærimus ultra?*

*Jupiter est quodcunque vides,
quocunque moveris.*

The great Affinity between the *Soul of the World*, so much talk'd of among the Heathen Philosophers, and the thing that Men call *Nature*, makes it fit for me to take notice, in this place, of the Influence which the Belief of that *Imaginary Soul* had upon the *Gentiles* with reference to Religion.

That divers of the Ancient Philosophers held the *World* to be Animated

mated, hath been observed by more than one Learned Man. But that which makes more for my present purpose, is, that the same Old Sages did also (at least for the most part) Believe, that this *Mundane Soul* was not barely a Living, but a most Intelligent and wisely Active Being. This may be easily enough discerned by him, that shall heedfully peruse *Diogenes Laertius's* Lives of the Philosophers, and particularly of *Zeno*. But at present I shall rather make use of an Author, who, though he be very seldom cited for Philosophical History, seems to me to have been very well vers'd in it. The Writer I mean, is the Acute Sceptick *Sextus Empiricus*, (who is thought to have lived about *Plutarch's* time, and by some, to have been his Nephew;) who recites a long Ratiocination of *Xenophon*, which, whether it be solid or not, is at least ingenious and plausible, but too prolix to be Transcrib'd in this place, where it may suffice to say, that he
thus

thus concludes : *Est ergo Mundus mente præditus & Intelligentis, &c.* which Assertion *Sextus* himself thus proposes for

Sextus Empir. adversus Mathematic. lib. 8.

him ; *Si non esset aliqua Mens in Mundo, neque ulla Mens in te esset. Est autem in te Mens aliqua ; ergo est etiam in Mundo. Et Ideo Mundus est Mente & Intelligentia præditus.* The same Sceptick introduces *Zeno Cit-tiens.* discoursing thus ; *quod immittit semen ejus quod est particeps rationis, est ipsum quoque rationis particeps. Mundus autem emittit Semen ejus quod est particeps rationis ; est ergo Mundus rationis particeps.* To which Testimonies I might add many others out of the same Author, who, in the same Discourse, tells us, That the *Stoicks* held the *World* to be an *Animal*. But the Opinion that the Old Philosophers, we have been speaking of, held of the *World's* being endowed with an Understanding or Rational Soul, will be yet more evident by what I now proceed to alledge, to manifest how this Opinion

of theirs led them to the Worship of another, than the True God.

Sextus Empiricus, in the lately cited Discourse of *Xenophon*, infers from the *Worlds* being an *Intelligent* Being, that it is also a *Divine* One; for to the lately recited Conclusion, *Est ergo Mundus mente præditus & intelligens*, he immediate-

P. M. 326. ly subjoins this Other, *Et ideo Deus*. And alittle

after, repeating their Discourse that defended this Argumentation of *Xenophon* against an Objection, he concludes their Reasoning thus; *Ideo Mundus est mente & Intelligentia præditus: Cum sit autem Mente & Intelligentia præditus, est etiam Deus. Quemadmodum* (says also *Phurnutus* the Philosopher,) *nos anima gubernamur, sic & Mundus animam habet, quæ vindicet illum ab interitu; & hæc vocatur Jupiter*. To which agrees that in *Cicero's* Academick Questions; *Mundum esse sapientem, & habere mentem, quæ seipsam Fabricata sit, & omnia moderatur, regat*. And the Reasoning of the *Stoicks* in *St. Augustin* is very

ryclear to the same
purpose ; * *Dicunt*

* August. de
Civit. Dei. l. 7. c. 2.

(saith he, speaking
of the Embracers of that Sect) *omnia Sidera partes Jovis esse, & omnia
vivere atque rationales animas habere,
& ideo sine Controversia Deos esse.*
And *Socrates* is introduc'd by *Aristo-
phanes*, as no less than Invocating
the Air and the Æther together, in
these words.

O Rex, O Imperator, Aer vaste,
qua Terram continet suspensam,
Nec non splendide Æther.

Which brings into my Mind that
plain Confession of the Poet *Mani-
lius*.

*Qua pateat, Mundum divino Nu-
mine verti,
Atque ipsum esse Deum.*

To all these I shall add that notable
and express Passage
of the Elder *Pliny* ;

† Natur. Hist.
l. 2. c. 1.

† *Mundum & hoc*

*quod alio nomine Cælum appellare li-
buit, cujus circumflexu teguntur omnia,
Numen esse credi par est, æternum, im-*

H 4

mensum,

mensum, neque genitum, neque interiturum unquam. Sacer est, aternus, immensus, totus in toto, vero ipse totum, finitus & infinito similis, extra, intra, cuncta complexus in se, idemque Naturæ opus, & rerum ipsa Natura.

If it be objected, that the Passages, I have cited out of Heathen Philosophers, concern the *Soul of the World*, and not *Nature* ; I Answer, that the Affinity of these Two is so great, that divers of the Old Sages seem to have confounded them, and not to have made account of any other *Universal Nature*, than the *Soul of the World*. And however, the great and pernicious Errors they were led into, by the Belief that the Universe itself, and many of its nobler Parts, besides Men, were endowed, not only with Life, but Understanding and Providence, may suffice to make us *Christians* very Jealous of admitting such a Being, as that which Men venerate under the Name of *Nature* : Since they ascribe to it as many wonderful Powers and Prerogatives,
as

as the Idolaters did to their Ador'd
Mundane Soul. But I shall give a
 further Answer to the above-pro-
 pos'd Objection, if I can shew, how
 Sacrilegiously they abus'd the Being
 we are speaking of, as well under
 the very *Name of Nature*, as under
 that of the *Soul of the World*. On
 this occasion I remember a Passage
 in * *Seneca*, that I * Natur. Quæst.
 did not expect to l. 2. c. 45.

meet with, where, speaking of some
 Ethnick Opinions about Thunder,
Non Jovem, (says he) *qualem in Ca-*
pitolio colimus, fulmina mittere, sed
custodem rectoremque Universi, animam
ac Spiritum Mundani hujus Operis Do-
minum & Artificem, cui nomen omne
convenit. To which, within a few
 lines after, he adds, *Vis illam Natu-*
ram vocare? Non peccabis, est enim
ex quo nata sunt omnia, cujus Spiritu
vivimus. Vis illam vocare Mundum?
Non falleris, ipse enim est totum quid,
totus suis partibus inditus & se susti-
nens vi sua. And the
 same Author else- De Benef. l. 4. c. 7.

where,

where, *Nihil* (says he) *Natura sine Deo est, nec Deus sine Natura, sed idem est Uterque.* And, in another of the Roman Sages, we have this Passage; *Natura est Igitur quæ continet Mundum omnem, eumque tuetur, & quidem non sine sensu ac ratione.* And the Opinion, not of a Private Philosopher, but of the Sect of *Stoicks*, is thus delivered by
Lib. 7. Cap. 1. Lactantius: Isti uno Naturæ nomine res diversissimas comprehenderunt, Deum & Mundum, Artificem & Opus, dicuntque alterum sine altero nihil posse, tanquam Natura sit Deus Mundo permixtus. Nam interdum sic confundunt, ut sit Deus ipsa mens Mundi, & Mundus sit Corpus Dei; quasi vero simul esse ceperint Mundus & Deus. And, to let you see, that in this our *Free Enquiry*, I do not, without Cause, here and there style *Nature* sometimes a *Semi-Deity*, and sometimes a *Goddeß*, and talk of some *Mens Idolizing Her*; I shall here annex part of a Hymn of *Orpheus's*, address'd immediately to *Nature*. Ω

Ἡ φύσις πανμύητις Θεὰ, &c.
 which his Interpreter thus renders
 into *Latin*;

*O Natura omnium Mater Dea,
 artificiosa admodum Dea,
 Suscitatrix honorabilis, multa
 creans, Divina Regina,
 Omnidomans, indomita guberna-
 trix, ubique splendens.*

And after a few Lines;

*Aetheria, Terrestris, & Marina
 Regina, &c.*

I know *Aristotle*, and his Commen-
 tators, do not so directly Idolize *Na-
 ture*, as did *Orpheus* (or whoever was
 the Antient Author of the Hymns,
 that bear his Name;) but yet I
 doubt they pass further than they
 can justifie, when they so freely and
 often assert, that *Natura est sapientis-
 sima*, that *Opus Naturæ est opus Intelli-
 gentiæ*, that *Natura sine suo nunquam
 excidit*, that *Natura semper quod opti-
 mum est facit*, (to which may be
 added other-like Axioms:) And
 when they most commonly call the
Works of God, the *Works of Nature*,
 and

and mention *Him* and *her* together, not as a *Creator* and a *Creature*, but as two Co-ordinate Governors, like the two *Roman* Consuls; as when they say frequently, and without scruple,

Deus & Natura
nihil prorsus faci-
unt frustra. Arist.
de Cœlo, lib. ii.
cap. 5.

(what I find to have been first by *Aristotle* himself) that *Deus* & *Natura nihil faciunt frustra*; to which

Phrase may agree that Expression of *Ovid*, where, speaking of the *Chaos*, whilst the Bodies, that compos'd it, lay shuffled together, and were not yet pack'd, he says,

Hanc Deus & melior litem Natura diremit.

To the *recital* of the Irreligious Errors of the Ancient Heathens, about the *Divinity of the World*, and some of its Principal Parts, as the *Sun*, *Moon*, *Stars*, *Æther*, &c. I should add a *redargution* of them; if I thought it necessary, in this place, solemnly to refute Opinions, some of which are altogether *precarious*, and others very *improbable*. Those Greek
and

and *Latin* Philosophers, that held the *Sun* to be a Fire, were much at a loss to find out Fuel to maintain the Flame. But those *Zabians* and *Chaldeans* that thought him indow'd, not only with a living Soul, but with Understanding and Will, must, if they had duly consider'd things, have ben much more puzzled, to find not only Food for so vast a Body, (above 160 times bigger than the *Terraqueous Globe*) but to find in him the Organs necessary to the preparation and digestion of that Food, and to the other Functions that belong to Animal-Nutrition. And, if we admit the *Cartesian Hypothesis*, the Way whereby the Sun, fix'd Stars, and Planets, are Generated, will sufficiently manifest them to be neither Intelligent nor Living Bodies. And, perhaps, I could here propose a quite other *Hypothesis*, about the *Nature* of the Sun, and the Fuel of its Fire, that may be countenanc'd by some *Phænomena* and *Experiments*, without making him other than an Ignéous,

ous and altogether Inanimate Body, whose Flame needs to be repair'd by Fuel furnish'd to it nearer hand, than from the Sea or Earth. But I purposely omit such Objections against the Opinion I oppose, as, though drawn from the Dictates of sound Philosophy, about the Origine of things, may be question'd without being to be clear'd in few words. 'Tis also without proof, that 'tis presum'd and asserted, That the Cœlestial Bodies, newly mention'd, are indow'd with Understanding and Prudence, especially, so as to be able to know the particular Conditions and Transactions of Men, and hear and grant the Prayers of their Worshippers. And the Moon, which was one of their Principal Deities, and by them prefer'd before all the other Planets and Stars, the Sun excepted, is so Rude and Mountainous a Body, that 'tis a wonder that Speculative Men, who consider'd how many, how various, and how noble Functions belong to a sensitive Soul, could

could think, a Lump or Mass of Matter, so very remote from being fitly Organiz'd, should be Animated and Govern'd by a true living & sensitive Soul. I know that both these Deifiers of the Cœlestial Globes, and also the Heathen Disciples of *Aristotle*, besides divers of the same mind, even among the *Christians*, say great and lofty things of the Quintessential Nature of the Heavenly Bodies, and their consequent Incorruptibility; of the Regularity of their Motions, and of their Divine Quality of Light, that makes them refulgent. But the persuasion they had, of this Quintessential Nature of the Superior Part of the World, was not, if I guess aright, grounded upon any solid Physical Reason, but was entertain'd by them for its Congruity to the Opinion they had of the Divinity of the Cœlestial Bodies: Of which, *Aristotle* himself, especially in his Books *De Cælo*, speaks in such a way, as hath not a little contributed

See Lib. xi. cap. 3.

tributed, among his Followers, to such an excessive Veneration for those Bodies, as is neither agreeable to true Philosophy, nor friendly to true Religion. He himself takes notice, that

Aristot. de Cœlo.
l. xi. c. 13.

the *Pythagoreans* held our *Earth* to be One of the Planets, and that it moved about the Sun, which they plac'd in the middle of the World. And since this Hypothesis, of the Earths Motion, was in the last Age reviv'd by *Copernicus*, not only those great Men *Keplerus*, *Galileo*, and *Gassendus*, but most of the best Modern Astronomers; and, besides *Des-Cartes* and his Sect, many other Naturalists have imbrac'd this *Hypothesis*: Which, indeed, is far more agreeable to the *Phænomena*, not only than the Doctrine of *Aristotle*, (who was plainly mistaken about the Order and Consistence of the Heavens) but than the Ancient and generally received *Ptolomaick* System. Now, supposing the *Terraqueous Globe* to be a Planet, he that considers, that 'tis
but

but a round Mass of very Heterogeneous Substances, (as appears by the differing Natures of its great constituent Parts, *Land* and *Sea*) whose Surface is very rude and uneven, and its Body opacous, unless as it happens to be inlightned by the the Sun, Moon, and Stars, and so very Inorganical for so much as Nutrition, that it seems wholly unfit to be a living Animal, much less a Rational one. I say, he that considers such things will scarce be forward to ascribe Understanding and Providence, much less a Divine Nature, to the other Stars. As for Instance, to the Moon, which our best Telescopes manifest to be a very Craggy and Mountainous Body, consisting of Parts of very differing Textures, (as appears by her brighter Parts and permanent Spots) and which of herself is Opacous, having no manifest Light, but what she borrows from the Sun, and perhaps from the Earth.

As for the boasted Immutability of the Heavenly Bodies, besides that it may be very probably call'd in question by the *Phænomena* of some (for I do not say every one) of the Comets, that by their *Parallax* were found to be above the Moon, and consequently in the Cœlestial Region of the World; besides this, I say, the Incorruptibleness and Immutability of the Heavenly Bodies is more than probably disproveable by the sudden and irregular Generation, Changes and Destruction, of the Spots of the Sun: Which are sometimes so suddenly destroyed, that, I remember, in the Year 1660. on the 8th of *May*, having left in the Morning a Spot, whose Motions we had long observ'd through an excellent Telescope, with an expectation, that it would last many days visible to us, we were surpriz'd to find, that when we came to observe it again in the Evening, it was quite dissipated, though it seem'd thick; and by comparing it to the Sun, we estimated

estimated the extent of its Surface to be equal to that of all *Europe*. As to the constancy of the motions of the Stars; if the Earth, which we know to be Inanimated, be a Planet, it moves as constantly and regularly about the Sun, (in that which they call the Great Orb,) as the other Planets do, or as the Moon doth about the Earth. And I consider, that though we should suppose our Globe not to be a Planet, yet there would manifestly be a constant motion, and Regular enough, of a great Part of it: Since (bating some Anomali's, that Shores, Winds, and some other Extrinseck things, occasion,) there is a Regular Ebbing and Flowing twice a Day, and also Spring-Tides twice a Month, of that vast Aggregate of Waters, the Ocean; which perhaps is not inferior in Bulk to the whole Body of the Moon, and whereof also vast Tracts are sometimes observed to Shine.

And Lastly, Whereas a great Proof of the Divinity of the Stars

is taken from their Light ; though I grant it to be the noblest of Sensible Qualities , yet I cannot think it a good proof of the Divine, or very Excellent, *Nature* of Bodies endow'd with it, whether they be Cœlestial or not. For whereas the *Zabians* and *Chaldeans* Consider'd and Ador'd the Planets, as the Chief Gods, our Telescopes discover to us, that, except the Sun, (if he be one, rather than a Fix'd Star) they Shine but by a borrow'd Light ; in so much that *Venus*, as vividly Luminous as it appears to the naked Eye , is sometimes seen (as I have beheld it) Horn'd like the Moon in no long time after her Change. And at this rate also the Earth, whether it be a Planet or no, is a Luminous Body, being enlightned by the Sun : And possibly, as a Body forty times bigger, communicates more Light to the Moon, than it receives from Her, as is probably Argued from the Light seen on the Surface of the Moon in some of Her Eclipses. And, though

though in the Night, when the darkness hath widened the Pupils of our Eyes, and the Moon Shines with an unrival'd Lustre, she seems exceeding Bright, yet she may be, for ought I know, more Opacous than the solid Part of the Terrestrial Globe. For I remember, that I have more than once heedfully observ'd a small Cloud in the West, where the Moon then was, about Sun-set ; and comparing them together, the little Cloud, as Opacous and Loose a Body as it was, reflected the Light as strongly to my Eye, as did the Moon, that seem'd perhaps to be not far from It, both of them appearing like little whitish Clouds, though afterwards, as the Sun descended lower and lower beneath the Horizon, the Moon grew more and more Luminous. And, speaking of Light Indefinitely, 'tis so far from Arguing a Divine Nature in the Bodies that are endow'd with it, whether, as the *Planets*, by participation from an External Illuminant, or as the *Sun*, from an In-

ternal Principle ; that a burn'd Stone, witness that of *Bolonia*, will afford, in proportion to its Bulk, incomparably more borrow'd Light than one of the Planets. And a Light from its Internal Constitution may be found, not only in such abject Creatures as Insects, whether winged, as the *Cucupias* of *Hispaniola*, or creeping, as our Glow-worms ; but also in Bodies Inanimate and Corrupted, as in rotten Wood, in stinking Whittings, and divers other putrify'd Fishes. I cannot now stay to Enquire, how the *Zabians*, and such Idolaters as they, could make out the Connexion, Symmetry, and Subordination or Dependance of the several Parts of the World, compos'd of so many different and distant Beings, endowed not only with Animal Souls, but with their Distinct and Peculiar Understandings and Wills, and many of them also with Divine Nature. Nor shall I consider, how strange a Monster, rather than an Animal and a Deity, those many
Heathen

Heathen Philosophers and their Adherents must make of the Universe, who held it to be but *one*; and yet were of the Paradoxical Opinion, that (as hath been elsewhere noted) is roundly profess'd by *Stobæus*, at the very beginning of his Physical Eclogues, *Ζεύς ἑν, &c. i. e. Jupiter (quidem) totus Mundus est: Animal ex Animalibus; Numen ex Numinibus compositum.*

These, I say, and the like Objections against the Pagan Doctrine, I must not now insist on, because I perceive that I have slipp'd into a somewhat long Digression, which yet perhaps may not be altogether unreasonable or useless,) which therefore I shall here break off, to resume and conclude the Discourse, that this Section was allotted to, which I might easily have enlarg'd, but I presume there is enough said in it already, to let you see, that 'tis a dangerous thing to Believe other Creatures, than Angels and Men, to be Intelligent and Rational; espe-

cially to ascribe to any of them an Architectonick, Provident and Governing Power. And though I readily acknowledge, that that there is no great danger, that *well Instructed* Christians should, like some Heathens, Worship *Nature* as a *Goddeſs*; yet the things I formerly alledg'd, to ſhew it unſafe to cheriſh Opinions, of kin to thoſe that miſ-led a Multitude even of Philoſophers, make me fear too many, and not a few of the Learned themſelves, may have a Veneration for what they call *Nature*, much greater than belongs to a meer Creature: If they do not, to uſe a Scripture Exprefſion, *Worſhip the Creature, above or beſides the Creator*, who, and not the *World*, nor the *Soul* of It, is the True God. And though I ſhould grant, that the received Notion of *Nature* doth neither ſubvert, nor much endanger any Principle of *Religion*: Yet that is not enough for the purpoſe of thoſe *Naturiſts* I Reaſon with, ſince

since they are here supposed to make it a fault in others, not to ascribe to the *Nature* they Venerate, as much as themselves do : And they represent their own Notion of it, not only as Innocent, but as very Useful, if not necessary to Religion.]

S E C T. V.

IV. **I** Come now, *Eleutherius*, to acquaint you with some of the Reasons, that have made me backward to entertain such a Notion of *Nature*, as I have hitherto Discours'd of. And I shall at present comprise them under the following five.

I. The first whereof, is, That such a *Nature*, as we are speaking of, seems to me to be either asserted, or assum'd without sufficient Proof. And this single Reason, if it be well made out, may, I think, suffice for my turn. For, in matters of Philosophy,

phy, where we ought not to take up any thing upon Trust, or believe it without Proof, 'tis enough to keep us from believing a thing, That we have no positive Argument to induce us to assent to it, though we have no particular Arguments against it. And, if this Rule be to take place in lesser Cases, sure it ought to hold in this, where we are to entertain the belief of so *Catholick* an *Agent*, that all the others are look'd upon but as its Instruments, that act in subordination to it; and which, being said to have an immediate Agency in many of the *Phænomena* of the World, cannot but be suppos'd to be Demonstrable by divers of them. I have yet met with no Physicall Arguments, either Demonstrative, or so much as considerably Probable, to evince the Existence of the *Nature*, we examin. And, though I should admit the use, that some Divines contend for, of the *Holy Scriptures* in Philosophical Controversies, yet I should not be persuaded
of

of the Existence of the *Nature*, we Dispute of. For, I do not remember, that the *Scripture* any where declares to us, that there is such a thing, (in the sense by me question'd) though (as I formerly noted more fully in the IV. Section,) in *Genesis* and some other places, where the Corporeal Works of God are expressly treated of, (though in order to Spiritual ends) one might probably enough expect to find some mention of God's Grand Vicegerent in the Universe of Bodies, if he had establish'd any such. But, whatever be the true cause of the *Scriptur's* silence about this matter, the silence itself is sufficient to justify me, for examining freely, by *Reason*, a thing that is not impos'd on my belief by *Revelation*. And, as for the Physical Arguments that may be brought in favour of the question'd Notion of *Nature*, I shall, ere long, examine the Principal of them, and shew that they are not Convincing. To these things may be added, as to the Proof
drawn

drawn from the *General Opinion* about *Nature*, That, being a Popular, not a Physical Argument, it may indeed pass for current with the Vulgar, but ought not to do so with Philosophers.

II. The second Reason is taken from the Unnecessariness of such a *Nature*, as is pretended. For, since a great part of the Work of true Philosophers has been, to reduce the Principles of things to the smallest Number they can, without making them insufficient; I see not, why we should take in a Principle, of which we have no need. For, supposing the common *Matter* of all Bodies to have been at first divided into innumerable minute Parts, by the Wise Author of *Nature*, and these Parts to have been so dispos'd of, as to form the World, constituted as it now is; and especially, supposing that the *Universal Laws of Motion*, among the Parts of the *Matter*, have been establish'd, and several Conventions of Particles contrived into the Seminal Principles

Principles of various things; all which may be effected by the meer *Local Motion* of *Matter*, (not left to itself, but skilfully guided at the beginning of the World) if (I say) we suppose these things, together with God's ordinary and general Concourse, which we very reasonably may: I see not, why the same *Phænomena*, that we now observe in the World, should not be produc'd, without taking in any such Powerful and Intelligent Being, distinct from God, as *Nature* is represented to be. And, 'till I see some Instance produc'd to the contrary, I am like to continue of this mind, and to think that the *Phænomena*, we observe, will genuinely follow from the meer Fa-brick and Constitution of the World. As, supposing the *Sun* and *Moon* to have been put, at first, into such Motions about the Earth, as Experience shews they have; the determinate Celerity of these Motions, and the Lines, wherein they are performed, will make it necessary, that the Moon should

should be sometimes Full, sometimes
 scarce Illuminated at all to us-ward,
 sometimes Horned, and, in a word,
 should exhibit such several *Phases*
 as every Month she doth, and that
 at some times *She* and the *Sun* should
 have a Trine, or a Quadrate Aspect,
 &c. and that now one, and now the
 other of them, should at set times
 suffer an *Eclipse*: Though these *E-*
clipses were by the *Romans* and
 others of old, and are by many Un-
 learn'd Nations at this day, look'd
 upon as Supernatural things; and
 though also *Aristotle*, and a multi-
 tude of his Followers, fancy'd, that
 such Regular Motions could not be
 maintain'd without an Assistent In-
 telligence, which He and They there-
 fore Assign'd to each of the Heaven-
 ly Orbs. And indeed the difficulty,
 we find, to conceive, how so great a
 Fabrick, as the World, can be pre-
 served in Order, and kept from run-
 ning again to a *Chaos*, seems to arise
 from hence, that Men do not suffici-
 ently consider the unsearchable Wis-
 dom

dom of the Divine Architect or
 Δημιουργος (as the
 Scripture styles him) Heb. xi. 10.
 of the World, whose
 piercing Eyes were able to look at
 once quite through the Universe, and
 take into his Prospect both the be-
 ginning and end of Time : So that
 perfectly fore-knowing, what would
 be the Consequences of all the possi-
 ble Conjunctions of Circumstances,
 into which *Matter*, divided and
 mov'd according to such *Laws*, could,
 in an *Automaton* so Constituted as
 the Present World is, happen to
 be put; there can nothing fall out,
 unless when a Miracle is wrought,
 that shall be able to alter the Course
 of things, or prejudice the Constitu-
 tion of them, any further, than He
 did from the Beginning foresee, and
 think fit to allow.

Nor am I sure, that the received
 Notion of *Nature*, though it be not
necessary, is at least *very useful*, to ex-
 plicate Physical *Phænomena*. For,
 besides that, I shall shew e're long,
 that

that several Explications, where recourse to it is presum'd to be the most advantageous, are not to be allow'd: To give the *Nature* of a Thing for the Cause of this or that particular Quality, or Operation of it, is to leave Men as ignorant as they were before; or, at least, is to acknowledg, that a Philosopher can, in such Cases, assign no better particular and immediate *Causes* of Things, than a Shepherd or a Tradesman, that never learnt Natural Philosophy, can assign of the same things, and of a Thousand others. And though it be true, (as I formerly also intimated) that, in many Cases, Philosophers themselves can answer no otherwise, to such Questions as may be Propos'd to them, than by having recourse to the *Nature* of the Thing; yet such Answerers do not declare the proper Cause of a Dark *Phænomenon*, but only that he, who employs them, does not yet know it: And so this indefinite Notion of *Nature*, which is equally applicable to the

the resolving of all difficulties, is not useful to disclose the thing, but to delude the Maker of the Question, or hide the ignorance of the Answerer.

III. My third Argument is, That the *Nature*, I question, is so dark and odd a thing, that 'tis hard to know what to make of it, it being scarce, if at all, intelligibly propos'd, by them that lay most weight upon it. For it appears not clearly, whether they will have it to be a *Corporeal* Substance, or an *Immaterial* One, or some such thing, as may seem to be betwixt both; such as many *Peripateticks* do represent *Substantial Forms*, and what they call *real Qualities*, which divers School-men hold to be (at least by Miracle) separable from all *Matter* whatsoever. If it be merely *Corporeal*, I confess, I understand not, how it can be so Wise, and almost Omniscient an Agent, as they would have it pass for. Besides that, if it be a Body, I would gladly know, what kind of Body it is, and how,

K since,

since, among Bodies, there can be no Penetration of Dimensions, this Body can so intimately pervade, as they pretend *Nature* does, all the other Bodies of the World? And to this I would add divers other Questions, that would not be easily answered. (But I shall resume this Third Argument in another place.) If it be said, that *Nature* is a *Semi substantialia*, as some of the Modernest Schoolmen are pleas'd to call *substantial Forms*, and *real Qualities*; I roundly answer, that I acknowledg no such Chymical and Unintelligible Beings, and shall only desire you to apply to them a good part of the Discourse, made in certain Papers, occasion'd by a Chymico-Physical Essay about *Salt-petre*, against the pretended *Origine*, and inexplicable *Nature*, of the imaginary *substantial Forms* of the *Peripateticks*. It remains therefore, that this *Nature*, we speak of, if it be any thing positive, should be an *Immaterial Substance*. But to have Recourse to such an one,

as

as a Physical Agent, and not only a Determiner, but the Grand Author, of the Motion of Bodies, and that, especially in such familiar *Phænomena*, as the Ascension of Water in *Pumps*, the Suspension of it in *Watering-Pots* for Gardens, the running of it through *Siphons*, and I know not how many others) and to *Explain its Casualty*, as they speak, will, I think, prove a Work exceeding difficult: Though I shall not here spend time to shew you the farther inconveniences of such a Supposition, being to do that hereafter ; and, in the mean-while, contenting myself to observe, as to many of the *Naturists*, That, though their Doctrine may favour it, they seem rather content to talk darkly, and uncertainly, of what they call *Nature*, than by clearly Defining it, expose it to Objections not easie to be answered, and *who* foresee the advantage, that the unsettledness of the Notion gives them, to pretend Knowledg, or disguise Ignorance.

IV. Since many of the most Learned amongst the *Naturists* are Christians, and not few of them Divines too, it may not be improper (which else I should, perhaps, think it would be,) to add, in this place, that the next thing, for which I dislike the Vulgar Notion (or *Idea*) of *Nature*, is, That I think it dangerous to Religion in general, and consequently to the Christian.

For this Erroneous Conceit defrauds the True God of divers Acts of Veneration and Gratitude, that are due to Him from Men, upon the account of the Visible World, and diverts them to that Imaginary Being they call *Nature*, which has no Title to them; for, whilst *Nature* is suppos'd to be an Intelligent Thing, that wisely and benignly Administers all that is done among Bodies, 'tis no wonder that the generality of Philosophers, and, after their Example, of other Men, should admire and praise Her, for the wonderful, and for the useful things that they observe

serve in the World. And, in effect, though *Nature*, in that sense of the Word I am speaking of, be never (that I remember) to be found in the Sacred Writings ; yet, nothing is to be more frequently met with (and that adorn'd with *Titles* and *Encomiums*) in the Books of Philosophers, than *Nature* and Her Effects. And, if we consider, that, whatever has been said, by some, in excuse of *Aristotle* himself, yet the generality of the *Peripateticks*, from whom the Vulgar Notion of *Nature* is chiefly receiv'd, made the World to be Eternal, and referr'd all the Transactions among the Bodies it contains, to what they call'd *Nature*. Whence, 'twill not be difficult to perceive, that, if they do not quite exclude God, yet, as they leave him no Interest in the first Formation of the Universe, so they leave him but very little in the Administration of the Parts it consists of, especially the Sublunary Ones. So that, instead of the True God, they have substituted, for us, a

kind of a *Goddeſs*, with the Title of *Nature*: Which, as they look upon as the immediate Agent and Director in all excellent Productions, ſo they aſcribe to Her the Praise and Glory of Them.

Whether this great Error, in a Point of ſuch Importance, may not Undermine the Foundation of Religion, I think it may not irrationally be ſuſpected. For, ſince the moſt General and Efficacious Argument, that has perſuaded Philoſophers, and other Men, that there is a *God* and a conſideration of the *Providence*, is afforded by the viſible World, wherein ſo many Operations and other Things are obſerv'd, that are manag'd (or perform'd) with ſuch Conduct and Benignity, as cannot juſtly be aſcrib'd but to the Wiſdom and Goodneſs of a Deity: They that aſcribe theſe Things to mere *Nature*, do much weaken the force of that Argument, if they do not quite take away the neceſſity of acknowledging a Deity, by ſhewing,
that,

that, without any need of having Recourse to Him, of the Administration of the World and of what is perform'd among Things Corporeal, an Account may be given. *Though*, when Men are put upon considering the matter, and press'd to declare themselves more clearly, they are asham'd to affirm, that *God* and *Nature* are the same Thing, and, will confess, that She is but his Vicegerent; yet, in Practise, their Admiration and their Praises are frequently given to *Nature*, not to *God*: In like manner, as, *though* the Sun be the Fountain of Light, and the Moon derives all Hers from the Sun; yet the Sea, in Its grand Motions of Ebbing and Flowing, appears to respect the Moon, and not the Sun: For thus, the generality of Men, *though* they will acknowledg that *Nature* is inferior and subordinate to *God*, do yet appear to regard *Her* more than *Him*.

To be short, *Nature* uses to be so frequently recurr'd to, and is so magnifi'd in the Writings of Physiolo-

gers, that the excessive Veneration Men have for *Nature*, as it has made some Philosophers (as the *Epicureans*) deny God, so, 'tis to be fear'd, that it makes many forget *Him* : And, perhaps, a suspicious Person would venture to add, That, *if other Principles hindred not* (as, I know, that in many, and, think, that in most, of the Christian *Naturists* they do,) the Erroneous *Idea* of *Nature* would, too often, be found to have a strong tendency to shake, if not to subvert, the very Foundations of all Religion ; mis-leading those that are inclin'd to be its Enemies, from overlooking the Necessity of a God, to the Questioning, if not to the denial, of his Existence.

V. My Fifth and Last Argument is taken from hence ; That I observe divers *Phenomena*, which do not agree with the Notion or Representation of *Nature*, that I Question, For, if indeed there were such an Intelligent, Powerful and Vigilant Being, as Philosophers are wont to Describe

Describe *Nature* to be, divers things would not be done, which Experience assures us are done.

And here I shall once for all give an Advertisement, which I desire may be call'd to mind, whenever there shall be Occasion, in the following part of this Tract, which is this; That, because Inanimate Bodies are usually more simple, or less compounded, and of a slighter and less complicated or curious Contrivance, than Animals or Plants, I thought fit to chuse most of the Instances I employ, rather among *lifeless Bodies*, whose Structure and Qualities are more easy to be Intelligibly and with Brevity Discours'd of, than among *living Creatures*, whose Textures, being Organical, are much more intricate and subtil. And this Course I did not scruple to take, because the Celebrators of *Nature* give her a Province, or rather an Empire, as large as the World, and will have her Care and Jurisdiction reach, as well
to

to Inanimate as to Living Bodies ; and accordingly most of the conspicuous Instances they Alledge, of her Providence and Power, are taken from Bodies destitute of Life ; as when they tell us, That the Ascension of Water in Sucking-Pumps, and the Sustentation of it in Gardeners Watering-Pots, are caus'd by *Nature's* abhorrence of a *Vacuum* : That heavy Bodies (unhinder'd) fall to the Ground in a Perpendicular Line, because *Nature* directs them the shortest way to the Centre of the Earth ; and that Bubbles Rise thro' the Water, and Flames Ascend in the Air, because *Nature* directs these Bodies to re-join themselves to their respective Elements ; to omit other Instances of this sort, that there will be occasion to mention hereafter : Till when, these may suffice to warrant my taking most of my Instances from Inanimate Bodies ; though I shall not confine my self to these, especially when I shall come to Answer Objections that are taken from *living Creatures*. The

The foregoing Advertisment will be, I hope, found conducive to clear the way for my Fifth Argument, lately propos'd, which concludes, that, if indeed there were such a Being, as *Nature* is usually Represented to be, several things would be otherwise Administred in the Universe, than Experience shews they are.

To enumerate all the Particulars that may be propos'd to make this good, would swell this Discourse much beyond the Bulk to which my Haste obliges me to confine it. But, to make you amends for the *Paucity* of *Instances*, I shall now name, by the *kind* of them, I shall propose such as, for the most part, are taken from those very things, whence the Wisdom and Vigilancy of *Nature* is wont to be confidently Argued, which I the rather do, that by such I may make way for, and shorten the Answers I am to give to the Arguments e're-long to be Examined.

First

First then, Whereas the great Care and Vigilancy of *Nature*, for the common Good of the Universe, is wont to be Demonstrated from the watchful Care she takes, to prevent or replenish a *Vacuum*, which would be very Prejudicial to the Fabrick of the World: I Argue the quite contrary from the *Phænomena*, that occur about a *Vacuum*. For whereas 'tis Alledg'd, that *Nature*, in great Pumps, and in the like Cases, lifts up the heavy Body of Water in spite of its tendency towards the Centre of the Earth, to obviate, or fill up a Vacuity; and that out of a Gardener's Pot, or Inverted Pipe, stopp'd at one end, neither the Water, nor even Quick-Silver, that is near fourteen times as heavy, will fall down, lest it should leave a *Vacuum* behind it; I demand how it comes to pass, that, if a Glass-Pipe be but a Foot longer than 34 or 35 Feet; or an Inverted Tube, fill'd with Quick-silver, be but a Finger's breadth longer than 30 Inches, the
Water

Water in the one, and the Quick-silver in the other, will subside, though the one will leave but about a Foot, and the other but about an Inch, of deserted Space, which they call *Vacuum*, at the top of the Glass. Is it possible, that *Nature*, that in Pumps is said to raise up every Day so many Hundred Ton of Water, and, if you will believe the Schools, would raise it to any height, (lest there should be a *Vacuum*) should not have the Discretion, or the Power, to lift up, or sustain, as much Water as would serve to fill one Foot in a Glass-Tube, or as much Quick-silver as an Inch of a slender Pipe will contain, to obviate or replenish the *Vacuum*, she is said so much to abhor? sure, at this rate, she must either have very little Power, or very little Knowledge of the Power she has. So likewise, when a Glass-Bubble is blown very thin at the Flame of a Lamp, and Hermetically seal'd whilst 'tis very hot, the Cause, that is rendered, why 'tis apt to break, when

when it grows cold, is, that the inward Air, which was before rarefied by the Heat, coming to be Condens'd by the Cold, left the space deserted by the Air, that thus Contracts itself, should be left void, *Nature*, with violence, breaks the Glass in pieces. But, by these Learned Mens favour, if the Glass be blown but a little stronger than ordinary, though at the Flame of a Lamp, the Bubble, as I have often tryed, will continue unbroken, in spight of *Natures* pretended abhorrency of a *Vacuum*: Which needs not at all to be recurr'd to in the Case. For the Reason, why the thin Glass-Bubble broke not when 'twas hot, and did when it grew cold, is plainly this; That, in the former state, the Agitation of the Included Air, by the Heat, did so strengthen the Spring of it, that the Glass was thereby assisted and enabled to resist the weight of the Incumbent Air: Whereas, upon the Cessation of that Heat, the Debilitated Spring of the *Internal*, being unable to assist the
Glass

Glass, as formerly, to resist the Pressure of the *External* Air, the Glass itself being too thin becomes unable to support the Weight or Pressure of the Incumbent Air, the Atmospherical Pillar, that leans upon a Bubble of about two Inches Diameter, amounting to above one Hundred Pound Weight; as may be manifestly concluded from a late Experiment that I have try'd, and you may meet with in another Paper. And the Reason, why, if the Bubble be blown of a due thickness, it will continue whole after it is Cold, is, that the thickness of it, though but faintly assisted by the weakned Spring of the Included Air, is sufficient to support the Weight of the Incumbent Air, though, several times, I have observed, the Pressure of the Atmosphere, and the resistance of the Bubble, to have been, by Accident, so near the *equipollent*, that a much less outward Force, than one would imagine, applyed to the Glass, as, perhaps, a Pound, or a less Weight, gently
laid

laid on it, would enable the outward Air to break it, with Noise, into a Multitude of pieces. And, now give me leave to consider, how ill this Experiment, and the above-mentioned *Phænomena*, that happen in Glass-Pipes, wherein Water and Quicksilver subside, agree with the Vulgar Apprehension, Men have of *Nature*. For, if in case She did not hinder the falling down of the Water, or the Quicksilver, there would be no such *Vacuum* produced, as She is said to abhor; Why does She seem so solicitous to hinder it? And why does She keep three or four and thirty Foot of Water in Perpendicular height, contrary to the nature of all heavy Bodies, suspended in the Tube? And, Why does she furiously break in pieces a thin seal'd Bubble, such as I come from speaking of, to hinder a *Vacuum*? if in case She did not break it, no *Vacuum* would ensue. And, on the other side, if we admit her Endeavours, to hinder a *Vacuum*, not to have been superfluous, and
 confe-

consequently foolish, we must confess, that, where these endeavours succeed not, there is really produc'd such a *Vacuum*, as She is said to abhor. So that, as I was saying, either She must be very indiscreet to trouble Herself, and to transgress Her own ordinary Laws, to prevent a danger She need not fear; or Her strength must be very small, that is not able to fill a Vacuity, that half a Pint of Water, or an Ounce of Quick-silver, may replenish; or break a tender Glass-Bubble, which, perhaps, a Pound Weight on it, would, with the help of so light a Body as the Incumbent Air, crush in pieces.

The other Grand Instance, that is given of the Wisdom of *Nature*, and Her watchfulness for the Good of the whole World, is, the Appetite She has Implanted in all heavy Bodies, to descend to the Centre of the Earth, and in all light Ones, to ascend towards Heaven; or, as some would have it, towards the Element of Fire, contiguous to the Orb of the

L Moon.

Moon. But, for positive Levity, 'till I see it better prov'd, than it hath hitherto been, I allow no such thing Implanted in Sublunary Bodies; the *propollent* Gravity of some, sufficing to give others a Comparative or Respective Lightness. As a piece of Oak, or the like Wood, being let go in the Air, falls down by its own Gravity, or rather by virtue of the Efficient of that Gravity; but if it be let go under Water, it will, though it be never so great a Log or piece of Timber, ascend, with a considerable force, to the top of the Water; which, I hope, will not be ascribed to a positive Levity, since, when it descended in the Air, 'twas by its Gravity that it did so. But not to insist on this, nor to take notice, how wisely *Nature* has Implanted into all heavy Bodies an Appetite to Descend to the Centre of the Earth, which, being but a Point, is not able to contain any one of Them; not to urge these things, I say, I will only invite you to consider one of the
 most

most familiar things that occur among heavy Bodies.

For, if, for Example, you let fall a Ball upon the Ground, it will Rebound to a good height, proportionable to that from whence you let it fall, or, perhaps, will make several lesser Rebounds, before it come to rest. If it be now ask'd, Why the Ball, being let out of your Hand, does not fall on this or that side, or move upwards, but falls directly toward the Centre of the Earth, by that shortest Line, (which Mechanicians call *Linea Directionis*) which is the Diameter of the Earth prolong'd to the Centre of Gravity of the Ball? 'Twill be readily Answer'd, That this proceeds from the Balls Gravity, *i. e.* an Innate Appetite, whereby it tends to the Centre of the Earth the nearest way. But then I demand, Whence comes this Rebound, *i. e.* this Motion upwards? For, 'tis plain, 'tis the Genuine Consequence of the Motion downwards, and therefore is encreas'd according

as that Motion in the Ball was encreas'd, by falling from a greater height: So that it seems, that *Nature* does, in such Cases, play a very odd Game, since She forces a Ball, against the Laws of heavy Bodies, to ascend divers times upwards, upon the Account of that very Gravity, whose Office it is to carry it downwards the directest way: And, at least, She seems, in spite of the Wisdom ascribed to Her, to take Her Measures very ill, in making the Ball move downwards with so much violence, as makes it, divers times, fly back from the place She intended it should go to. As if a Ball which a Child can play with, and direct as he pleases, were so unweildy a Thing, that *Nature* cannot manage it, without letting it be hurried on with far greater violence, than her Design requires.

The Reflection, I have been making on a *Ball*, may (*mutatis mutandis*, as they speak) be applyed to a *Pendulum*. For, since 'tis unanimously

ly affirm'd, by all that have written of it, that it falls to the Perpendicular, upon the Account of its Gravity: It must not be deny'd, that 'tis from a Motion proceeding from the same Gravity, that the swinging Weight passes beyond the Perpendicular, and consequently ascends, and oftentimes makes a multitude of Diadroms, or Vibrations; and consequently, does very frequently ascend, before it comes to rest in the Perpendicular: Which is the Position wherein its Gravity is best comply'd with, and which therefore it had been best settled in at first.

I shall not here mention those Grand *Anomalies*, or *Exorbitances*, even in the vaster Bodies of the Universe; such as Earth-quakes, that reach some Hundreds of Leagues, Deluges, Destructive Eruptions of Fire, Famines of a large spread, Raging Pestilences, Cœlestial Comets, Spots in the Sun, that are recorded to have obscured it for many Months; the sudden Appearing, the Dis-appearing, and

the Re-appearing of Stars, that have been judg'd to be as high, as the Region of the fix'd Ones. I will not, I say, enquire how far these *Anomalies* agree to the Character wont to be given of *Natures* Watchfulness and Vigilancy, because, probably, I may have hereafter a fit opportunity to do it, and must now proceed to the remaining Instances I promis'd you, which are taken from what happens to *Animals*: As soon as I shall have dispatch'd some Considerations and Advertisements, that seem necessary to be premis'd, to what I have to offer about that difficult Subject.

If the past Discourse give rise to a Question, *Whether the World, and the Creatures that compose it, are as perfect as they could be made?* The Question seems to me, because of the Ambiguity of the Terms, too intricate to be resolv'd by a single Answer. But yet, because the Problem is not wont to be discuss'd, and is, in my Opinion, of Moment, in reference to Natural Theology; I shall venture

venture briefly to intimate some of the Thoughts that occur'd to me about it: Having first declar'd, that I am, with reason, very backward to be positive in a matter of this Nature, the Extent of the *Divine Power* and *Wisdom* being such, that its Bounds, in case it have any, are not known to me.

This premis'd, I consider, that the sense of the Question may be, *Whether* God could make the Material World, and the Corporeal Creatures It consists of, better and more perfect than they are? speaking in a general way and absolute sense: Or else, *Whether* the particular Kinds or Orders of the Creatures, in the World, could any of them be made more perfect or better, than they have been made?

To Answer the Question in the first-nam'd sense of it, I think it very unsafe to deny, that God, who is Almighty and Omniscient, and an Owner of Perfections, which, for ought we know, are participable in more different manners and degrees

than we can comprehend, could not *Display*, if it be not fitter to say *Adumbrate*, them, by Creating a Work more excellent than this World. And, his Immense Power and Unexhausted Wisdom considered, it will not follow, either, that because this World of Ours is an admirable piece of Workmanship, the Divine Architect could not have better'd It; or, because God himself is able to make a greater Master-piece, this exquisitely contriv'd System is not admirably Excellent.

But the propos'd Question, in the other sense of it, will require some more words to resolve it. For, if we look upon the several *Species* of Visible Creatures, under a more absolute Consideration, without respect to the Great *System* of the Universe, of which they are Parts, or to the more particular *Designs* of the Creator; it seems manifest, that many sorts of Creatures might have been more perfect than they are, since they want many compleating things,
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that others are indow'd with ; as an Oyſter, that can neither hear, nor ſee, nor walk, nor ſwim, nor fly, &c. is not ſo perfect a Creature, as an Eagle, or an Elephant, that have both thoſe Senſes that the Oyſter wants, and a far more active Faculty of changing places : And, of this inequality of perfection in Creatures of differing kinds, the Examples are too obvious to need to be enumerated. But if the Queſtion be better propos'd, and it be inquir'd, not *whether* God could have made more perfect Creatures, than many of thoſe he has made, for that, 'tis plain, He could do, becauſe He has done it ; but, *Whether* the Creatures were not ſo curiouſly and ſkilfully made, that 'twas ſcarce poſſibly they could have been better made, with due regard to all the wiſe Ends He may be ſuppos'd to have had in making them, it will be hard to prove a Negative Answer.

This I ſhall endeavour to illuſtrate by a Suppoſition. If one ſhould come
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into the well-furnish'd Shop of an excellent Watch-maker, and should there see a plain Watch, design'd barely to shew the Hour of the Day; another, that strikes the Hours; a third that is also furnish'd with an Alarm; a fourth, that, besides these, shews the Month Current, and the Day of it; and lastly, a fifth, that, over and above all these, shews the Motions of the Sun, Moon and Planets, the Tydes, and other Things, which may be seen in some Curious Watches. In this Case, I say, the Spectator, supposing him judicious, would, indeed, think one of these Watches far more Excellent and Compleat than another; but yet he would conclude each of them to be perfect in its own kind, and the Plain Watch to answer the Artificer's *Idea* and Design in making it, as well as the more Compounded and Elaborate one did. The same thing may, in some Circumstances, be further Illustrated, by considering the Copy of some excellent Writing-Master, for, though

though there we may find some Leaves written in an *Italian* Hand, others in a *Secretary*, and, in others, Hands of other Denominations; though one of these Patterns may be much Fairer, and more Curious than another, if they be compar'd together; yet, if we consider their equal Conformity to the respective *Idea's* of the Author, and the suitableness to the Design he had of making each Copy, not as Curious, Sightly and Flourishing as he could, but as Conformable to the true *Idea* of the sort of Hand he meant to exhibit, and the Design he had to shew the Variety, Number and Justness of his Skill, by that of the Patterns he made Compleat in the respective Kinds; we shall not think, that any of them could have been better'd by him: And if he should have made a *Text-Hand* as fair as a *Roman-Hand*, by giving it more Beauty and Ornament, he would not have made it better in its Kind, but spoil'd it, and, by a Flourish of his Skill, might have
given

given a Proof of his want of Judgment.

But, to return thither whence I began to make this Excursion, perhaps, *Eleutherius*, you will object against the Examples I have produc'd before it, that the Exceptions, I have taken at some of the Proceedings of *Nature*, may be as well urg'd against *Providence*, and exclude the One as well as the Other, from the Government of the World.

But to this I Answer, that this Objection is Foreign to the Question, which is about *Mens Notion of Nature*, not *God's Providence*; which, if it were here my Task to Assert, I should establish It upon Its proper and solid Grounds: such, as *the Infinite Perfections of the Divine Nature*, which both engage and enable Him to Administer His Dominion over all things; *His* being the Author and Supporter of the World; *The* exquisite Contrivance of the Bodies of Animals, which could not proceed but from a stupendious Wisdom;
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The supernatural Revelations and Discoveries He has made of Himself, and of His particular care of His Creatures, by Prophecies, Apparitions, true Miracles, and other ways, that transcend the Power, or overthrow, or, at least, over-rule the Physical Laws of Motion in Matter: By these, I say, and the like proper Means, I would evince Divine Providence. But being not now oblig'd to make an Attempt, which deserves to be made very solemnly, and not in such haste as I now write in. I shall, at present, only observe to you, that the Case is very differing between *Providence* and *Nature*, and therefore there is no necessity, that the Objections, I have made against the Latter, should hold against the Former. As, (to give you a few Instances of the Disparity) in the *first* place, it appears not, nor is it likely, that 'tis the Design of *Providence* to hinder those *Anomalies* and *Defects*, I have been mentioning: Whereas, 'tis said, to be the Duty and Design of *Nature*,
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and Her only Task, to keep the Universe in Order, and procure, in all the Bodies that compose it, that things be carried on, in the best and most regular way that may be, for their Advantage. *Secondly, Nature* is confess'd to be a Thing inferior to God, and so but a subordinate Agent, and therefore cannot, without disparagement to Her Power, or Wisdom, or Vigilancy, suffer divers things to be done, which may, without Degradation to God, be permitted by *Him*; *who* is not only a self-existent and Independent Being, but the Supream and Absolute Lord, and, if I may so speak, the Proprietor of the whole Creation: Whence both *Melchizedec* and *Abram* style Him, (*Gen. xiv. 19, 23.*) not only the most High God, but, קנה *Koneh*, Possessing (or, as our Version has it, Possessor of) Heaven and Earth: And *Who*, when He made the World, and established the Laws of Motion, gave them to *Matter*, not to *Himself*. And so, being obliged to none, either as His Superior,

or, or Benefactor, He was not bound to Make, or Administer, Corporeal Things after the best manner, that He could, for the good of the things themselves: Among which, those that are capable of Gratitude, ought to Praise and Thank Him, for having vouchsafed them so much as they have, and have no Right to except against His having granted them no more. And, as being thus oblig'd to none of his Works, He has a Sovereign Right to dispose of them; so, He has other Attributes, which He may justly Exercise, and both intend And expect to be Glorified for, besides his Goodness to Inferior Creatures: and His Wisdom may be better set off to Men, and perhaps to Angels or Intelligences, by the great Variety of His Contrivances in His Works, than by making them all of the excellentest Kind: As *Shadows* in Pictures, and *Discords* in Musick, skilfully Plac'd and Order'd, do much recommend the Painter, and the Musician. Perhaps it may be added, That the
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permitting the Course of Things to be somewhat violated, shews, by the Mischief such Exorbitances do, how good God has been in settling and preserving the *orderly Course* of Things. *Thirdly*, As God is a most Absolute and Free, so He is an Omniscient, Being; and, as, by His Supreme Dominion over the Works of His Hands, He has a Right to dispose of them, as He thinks best for His own Glory, so upon the score of His unfathomable Wisdom, He may have Designs, and, if I may so speak, Reaches, in the *Anomalies* that happen in the World, which we Men are too short-sighted to discern; and may exercise as much Wisdom, nay, and as much Providence (in reference to Man, the Noblest Visible Object of His Providence) in sometimes (as in Divine Miracles) receding from what Men call the *Laws of Nature*, as He did at first in establishing them: Whereas the Office of *Nature*, being but to preserve the Universe in General, and Particular Bodies

Bodies in It, after the best manner that their respective Conditions will permit; we know, what 'tis She aims at, and, consequently, can better discern, when She misses of Her Aims, by not well Acting what is presum'd to be Her Part. *Fourthly*, We must consider, that, as God is an Independent, Free and Wise, so He is also a Just Agent; and therefore may very well be suppos'd to cause many Irregularities and Exorbitances in the World, to punish those, that Men have been guilty of. And, whereas *Nature* is but a Nursing-Mother to the Creatures, and looks e'ne upon wicked Men, not in their Moral but in their Physical capacities, God expressly declares, in the Sacred Scriptures, that, upon *Adam's* Fall, He *Curs'd the Ground, or Earth, for Man's sake*, Gen.iii.17,18. and that there is no penal evil in the *City* that is not deriv'd from Him, *Amos* iii. 6. He is not over-rul'd, as Men are fain to say of Erring *Nature*, by the head-strong Motions of

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the Matter, but sometimes purposely over-rules the regular Ones, to execute His Justice; & therefore Plagues, Earth-quakes, Inundations, and the like destructive Calamities, though they are sometimes Irregularities in *Nature*, yet, for that very Reason, they are design'd by *Providence*; which intends, by them, to deprive wicked Men of that Life, or of those blessings of Life, whereof their Sins have render'd them unworthy. But, whil'st I mention *Designs*, I must not forget, that Mine was only to give you a Tast of the Considerations, by which one may shew, that such things, as manifest *Nature* to act unsuitably to the Representation that is made of Her, may yet, when attributed to *Divine Providence*, be made out to have nothing inconsistent with It.

And yet, somewhat further to clear this weighty matter, and particularly some things, but briefly hinted in what I have been lately Discoursing, I think it fit, before I descend to the
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Particulars, that I am to employ against the Vulgar Notion of *Nature*, to premise somewhat by way of Caution, that I may do *some* Right (though I can never do *enough*,) to *Divine Providence*; and take care betimes, that no Use, Injurious to It, may be made of any thing that my Argument hath oblig'd me, or will oblige me, to say about that Imaginary Thing, Vulgarly call'd *Nature*, either in This or the VI. Section, or any other Part of our present *Enquiry*.

I conceive then, that the Divine Author of Things, in making the World, and the particular Creatures that compose it, had respect to several Ends; some of them knowable by us Men, and others hid in the Abyſs of the Divine Wisdom and Counſels. And that of thoſe Ends, which are either manifeſt enough to us, or, at leaſt, diſcoverable by Human Sagacity and Induſtry, ſome of the Principal are, *The* manifeſtation of the Glory of God, *The* Utility of Man,

and *The* maintenance of the System of the World ; under which is comprised, the Conservation of particular Creatures, and, also, the Propagation of some Kinds of them.

But this General Design of God, for the welfare of Man and other Creatures, is not (as I conceive) to be understood, but with a twofold Limitation.

For, First, *though* Men, and other Animals, be furnish'd with Faculties or Powers, and other Requisites, to enable them to preserve themselves, and procure what is necessary for their own welfare, *yet* this Provision, that God has been pleas'd to make for them, is made with reference to what *regularly*, or what *most usually*, happens to Beings of that *Species* or Sort that they belong to ; but not with regard to such things as may happen to them irregularly, contingently, and (in comparison of the others,) unfrequently. Thus it is, in General, far better for Mankind, that Women, when they are brought
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to Bed, should have their Breasts fill'd with Milk, to give Suck to the new-born Babe, than that they should not; though sometimes, as, if the Child die in the Delivery, or presently after, and in some other Cases also, the plentiful recourse of Milk to the Mothers Breasts proves troublesome and inconvenient, and sometimes also dangerous, to her. Thus a Head of Hair is, for the most part, useful to the Person, whether Man or Woman, that *Nature* has furnish'd with it, though, in some Cases (as of Consumptions, and in a few other Circumstances) it happens to be prejudicial to the Wearer; and therefore Physicians do often, with good success, prescribe, that it be shaven off. Thus the Instinct, that Hens have to Hatch their Eggs and take care of their Young, is, in General, very useful, if not necessary, for the Conservation of that *Species* of Birds; and yet it sometimes mis-guides and deludes them, when it makes them take a great deal of pains to Brood

upon those Duck-eggs, that Housewives, (having taken away the Birds own Eggs) lay in her Nest, which makes her very solicitous to Hatch and take care of Ducklings, instead of Chickens. Thus 'tis an Institution that ordinarily is profitable for Man, that his Stomach should nauseate or reject things that have a loathsome taste or smell, because the generality of those things, that are provided for his Nourishment, are well, or, at least, not ill-tasted; and yet, on some occasions of Sicknes, that disposition of the Stomach to refuse, or vomit up, nauseous Purges, and other distastful Medicines, (as such Remedies are usually loathsome enough) proves very prejudicial, by being a great impediment to the Recovery of Health. And thus (to be short) the Passions of the Mind, such as Fear, Joy and Grief, are given to Man, for his Good; and, when rightly us'd, are very advantageous, if not absolutely necessary, to him: Though, when they grow unruly, or
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are ill-manag'd, as it but too often happens, they frequently prove the Causes of Diseases, and of great Mischief, as well to the passionate Man himself, as to Others.

The second Limitation (which has a natural Connexion with the former,) is this, That the Omniscient Author of Things, who, in His Vast and Boundless Understanding, comprehended, at once, the whole System of His Works, and every Part of it, did not *mainly* intend the Welfare of such or such particular Creatures, but *subordinated* His Care of their Preservation and Welfare, to His Care of maintaining the Universal System and Primitive Scheme or Contrivance of His Works, and especially those Catholick Rules of Motion, and other Grand Laws, which He at first establish'd among the Portions of the Mundane Matter. So that, when there happens such a Concourse of Circumstances, that particular Bodies, fewer or more, must suffer, or else the settled Frame,

or the usual Course of Things, must be alter'd, or some general Law of Motion must be hinder'd from taking place: In such Cases, I say, the Welfare and Interest of Man himself (as an Animal) and much more That of inferior Animals, and of other Particular Creatures, must give way to the Care, that *Providence* takes of Things of a more General and Important Nature or Condition.

Thus (as I formerly noted) God establish'd the Lines of Motion, which the Sun and the Moon observe, tho' he foresaw, that, from thence, there would necessarily, from time to time, ensue *Eclipses* of those Luminaries; which he chose rather to permit, than to alter that Course, which, on several accounts, was the most convenient. Thus a blown Bladder, or a Foot-Ball, falling from a considerable height upon the Ground, rebounds upwards, and so, contrary to the Nature of Heavy Bodies, moves from the Centre of the Earth, lest the Catholick Laws of Motion, whereby
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the Springyness and Reflection of Bodies, in such Circumstances, are established, should be violated or intrench'd upon.

Thus, He thought not fit to furnish *Sheep* with Paws, or Tusks, or Swift-ness, or Animosity, or Craft, to defend or preserve themselves from Wolves and Foxes, and other Beasts of Prey. And tame and fearful *Birds*, such as Hens, are so ill provided for defence, that they seem designed to be the food of Hawks, Kites, and other rapacious Ones. Thus *Oysters*, having neither Eyes nor Ears, are not near so well provided for, as the generality of Beasts and Birds, and even most other Fishes. And thus *Silk-Worms* (to name no other Catterpillars,) usually (at least in these Countries,) live not much above half a Year, being less furnish'd with the Requisites of longævity, than the generality of Birds, and Beasts, and Fishes.

I have thought fit to lay down the two foregoing Limitations, partly, because

because they will be of use to me hereafter, and, partly, because they contain something, that may be added to what hath been lately Represented on behalf of the *Divine Providence* (as it falls under the *Naturalist's* Consideration.) For, by these Limitations, we may perceive, that 'tis not just, presently to deny, or censure the Providence of God, *when-ever* we see some Creatures less compleatly furnish'd to maintain themselves; or some Cases less provided for, than we think they might be; or seeming *Anomalies* permitted, which we look upon as mischievous Irregularities. For the Welfare of Men, or of this or that other Particular sort of Creatures, being not the Only, nor, in likelihood, the Principal End of God, in making the World; it is neither to be admir'd nor reprehended, that He has not provided for the safety and convenience of Particular Beings, any further, than well consists with the Welfare of Beings of a more considerable Order,

Order, and, also, will comport with his Higher Ends, and with the maintenance of the more General Laws and Customs, settled by Him among Things Corporeal: So that divers seeming *Anomalies* and *Incongruities*, whence some take occasion to Question the Administration of Things, and to deny the Agency of Providence, do not only comport with it, but serve to accomplish the Designs of It.

I have the more expressly declar'd my Mind on this occasion, because, indeed, of the two main Reasons, which put me upon so difficult a Work, as I foresaw this Treatise would be, *as* one was, the Love I bear to *Truth* and *Philosophical Freedom*; *so* the other was, a just Concern for *Religion*. For thinking it very probable, that, in so Inquisitive an Age as This, some Observations, like Mine, about *Nature itself*, might come into the minds of Persons ill-affected to *Divine Providence*, who would be glad and forward to wrest them,

them, and make a perverse use of them; I thought it better, that such Notions should be candidly propos'd, by One that would take care to accompany them with those Cautions, that may keep them from being injurious to *Religion*.

Having premis'd the two foregoing Advertisements, to obviate Misconstructions, I hope, I may now safely proceed to Particulars; whereof, for Brevity's sake, I shall here mention but a few, leaving you to add to them those others, that occur in other parts of this Treatise.

In the first place then, I shall take notice, that there are several Instances of Persons that have been choak'd with a Hair, which they were unable, either to cough up, or swallow down. The reason of this fatal Accident, is, probably, said to be the Irritation that is made, by the stay of so unusual a thing, as a Hair, in the Throat; which Irritation occasions very violent and disorderly, or convulsive, Motions to expel it, in the
Organs

Organs of Respiration, by which Means the continual Circulation of the Blood, necessary to the Life of Man, is hinder'd, the Consequence whereof is speedy Death. But this agrees very ill with the Vulgar Supposition of such a Kind and Provident Being, as they represent *Nature*, which is always at hand to preserve the Life of Animals, and succour them in their (Physical) dangers and distresses, as occasion requires. For since a Hair is so slender a Body, that it cannot stop the Throat, so as to hinder, either, the free passage of Meat and Drink into the Stomach, or, that of the Air to or from the Lungs; (as may be argued from divers no-way Mortal Excrescences and Ulcers in the Throat,) were it not a great deal better for *Nature*, to let the Hair alone, and stay, 'till the Juices of the Body have resolv'd or consum'd it, or some favourable Accident have remov'd it, than like a passionate and transported Thing, oppose it, like a Fury, with such blind violence,

violence, as, instead of ejecting the Hair, expels the Life of him, that was troubled with it?

How the Care and Wisdom of *Nature* will be reconcil'd to so improper and disorderly a Proceeding, I leave Her Admirers to consider. But it will appear very reconcileable to *Providence*, if we reflect back upon the lately given Advertisement. For, in regard of the use and necessity of Deglutition, and in many Cases of Coughing and Vomiting, it was, in the General, most convenient, that the Parts that minister to these Motions, should be irritated by the sudden Sense of things that are unusual, though, perhaps, they would not be otherwise dangerous or offensive, because (as we formerly noted,) 'twas fit, that the *Providence of God* should, in making Provision for the Welfare of Animals, have more regard to that, which usually and regularly befalls them, than to extraordinary Cases or unfrequent Accidents.

Though

Though most Women are offended with the Stink of the smoaking Wick of a Candle, which is no more than Men also are, yet it has been frequently observ'd, that Big-bellied Women have been made to Miscarry, by the smell of an extinguish'd Candle, which would before have indeed displeas'd, but not endanger'd, the same Persons: So that it seems, *Nature* is, in these Cases, very far from being so prudent and careful, as Men are wont to fancy Her, since, by an Odour, (which, if calmly receiv'd, would have done no harm to the Teeming Woman,) She is put into such unruly Transports: And, instead of watching for the Welfare of the Teeming Woman, whose Condition needed a more than ordinary measure of Her care and tenderness, She violently precipitates her poor Charge into a danger, that oftentimes proves fatal, not only to the Mother, but the Child also.

The

The improper, and oftentimes hurtful, Courses that *Nature* takes, in Persons that are sick, some of one Disease, some of another, will be, hereafter, taken notice of in opportune places; and therefore, for the present, I shall only observe, that *Nature* seems to do Her Work very weakly, or bunglingly, in the Production of Monsters, whose Variety and Numerousness is almost as great as their Deformity, or their Irregularity; insomuch that several Volumes have been written, and many more might have been, to give the Description of them. How these gross Aberrations will agree with that great Uniformity, and exquisite Skill, that is ascrib'd to *Nature*, in her seminal Productions, I leave the *Naturalists* to make out. I know, that some of them lay the fault upon the stubbornness of the Matter, that would not be obsequious to the *Plastick Power* of *Nature*, but I can hardly admit of this Account from Men of such Principles, as they are that give it :
For

for 'tis strange to me, they should pretend, that *Nature*, which they make a kind of *Semi-Deity*, should not be able to mould and fashion so small, and soft, and tractable, a Portion of Matter, as that wherein the first Model and Efformation of the *Embrio* is made ; when, at the same time, they tell us, That 'tis able, in Sucking-Pumps, to raise, and, if need be, sustain, whole Tons of Water, to prevent a *Vacuum*: And can, in Mines, toss up into the Air, Houses, Walls, and Castles, and, perhaps, the Rocks they are built on, to give the kindled Gun-powder the Expansion, that its New state requires.

Other Arguments, that, by a light Change and easie Application, may be made use of and added to these, against the Vulgar Notion of *Nature*, may be met with in divers Parts of this Treatise, and especially in the VII. Section ; for which Reason (among others) I decline lengthning this Part of my Discourse with the mention of them.

I foresee it may be said, that, unless we admit such a Being as *Nature*, to contrive and manage Things Corporeal, and, in a Regular and Methodical way, direct them to their respective Ends, there will appear no visible Footsteps or Proof of a Divine Wisdom in the Corporeal World. And this Argument, I confess, is so specious, that 'twas one of the things that made me the longest hesitate, what I should think of the Receiv'd Notion of *Nature*. But having further consider'd the matter, I saw it might be answer'd, that the curious Contrivance of the Universe, and many of Its Parts, and the orderly Course of Things Corporeal, with a manifest Tendency to determinate Ends, are *Matters of Fact*, and do not depend upon the Supposition of such a Being, as they call *Nature*; but, setting aside this or that *Hypothesis*, may be known by Inspection, if those that make the Inspection be Attentive and Impartial: As, when a Man sees a Humane
Body

Body skilfully Dissected by a dexterous Anatomist, he cannot, if he be intelligent and unprejudic'd, but acknowledg, that there is a most curious and exquisite Contrivance in that Incomparable Engine, and in the various Parts of it, that are admirably fitted for distinct and determinate Functions or Uses. So that I do not at all, nor indeed can, suppress the manifest Tokens of Wisdom and Design, that are to be observed in the wonderful Construction and orderly Operations of the World and Its Parts : But I endeavour to refer these Indications of Wisdom to the true and proper Cause. And whereas, in the *Hypothesis* of the Objectors, there may be three Causes assign'd of these Specimens or Foot-steps of Wisdom, namely, *God*, *Nature*, and *Chance* ; if, according to the Doctrine by me propos'd, *Nature* be laid aside, the Competition will remain only between *God* and *Chance* : And sure he must be very dull, or very strongly prejudic'd, that shall think

it reasonable to attribute such admirable Contrivances and such regular Conducts, as are observable in the Corporeal World, rather to *Chance*, (which is a blind and senseless Cause, or indeed no proper Cause at all, but a kind of *Ens rationis*) than to a *most Intelligent Being*, from which the curiousest Productions may with Congruity be expected: Whereas, if such a Celebrated Thing, as *Nature* is commonly thought, be admitted, 'twill not be near so easie to prove the Wisdom (and consequently the Existence) of God by His Works, since they may have another Cause, namely, that most watchful and provident Being, which Men call *Nature*. And this will be especially difficult in the *Peripatetick Hypothesis* of the Eternity (not of Matter only, for in that the *Atomists* and others agreed with them, but) of the World. For, according to this Account of the Universe, there appears no necessity, that God should have any thing to do with it, since he did
not

not make this *Automaton*, but it was always Self-existent, not only as to Matter, but to Form too: And as for the Government or Administration of the Bodies it consists of, that is the proper business of *Nature*. And if it be Objected, That this Being is by its Assertors acknowledg'd to be subordinate to God; I shall answer, *That*, as, upon the Reasons and Authorities I elsewhere deliver, it may justly be question'd, Whether many Philosophers, and perhaps some Sects of them who are Adorers of *Nature*, confess'd Her to be but the Substitute of a Superior and Divine Being? So, this distinction and subordination is not so easie to be prov'd against those that side with those other Ancient Philosophers, who either acknowledg'd no such thing, or expressly deny'd it. Besides that, this Objection *supposes* the Existence and Superiority of a Deity, which therefore needs to be prov'd by other ways; whereas in the

See the IV. Section.

Hypothesis I propose, the same *Phænomena* that discover admirable Wisdom and manifest Designs in the Corporeal World, do themselves afford a solid Argument, both of the Existence and of some of the grand Attributes of God, with which the rest, that properly belong to Him, have a necessary Connexion.

S E C T. VI.

V. **H**AVING, in the foregoing Section, propos'd some of the Considerations, that have dissatisfied me with the *Receiv'd Notion of Nature*, it may now be justly expected, that I should also consider, what I foresee will be alledg'd in Its behalf, by the more Intelligent of Its Favourers. And I shall not deny the Objections, I am going to name against my Opinion, to be considerable, especially for this Reason, that I am very unwilling to seem to put
such

such an Affront upon the generality as well of Learned Men as of Others, as to maintain, that they have built a Notion of so great weight and importance upon slight and inconsiderable Grounds.

The Reasons, that I conceive may have induced Philosophers to take up, and rely on, the *Receiv'd Notion of Nature*, are such as these that follow.

And the first Argument, as one of the most obvious, may be taken from the general Belief, or, as Men suppose, Observation, that divers Bodies, as particularly Earth, Water, and other Elements, have each of them its natural Place assign'd it in the Universe; from which Place, if any portion of the Element, or any mixt Body, wherein that Element predominates, happens to be remov'd, it has a strong incessant Appetite to return to it; because, when 'tis there, it ceases either to *gravitate*, or (as some School-men speak) to *levitate*, and is now in a place, which

Nature has qualifi'd to preserve it, according to the Axiom, that *Locus conservat locatum*.

To this Argument I answer, that I readily grant, that, there being such a Quantity of very bulky Bodies in the World, 'twas necessary they should have Places adequate to their bigness; and 'twas thought fit by the wise Architect of the Universe, that they should not be all blended together, but that a great Portion of each of them should, at the beginning of things, be dispos'd of and lodg'd in a distinct and convenient Place. But when I have granted this, I see not any necessity of granting likewise, what is asserted in the Argument above-propos'd. For Inanimate Bodies having no Sense or Perception, (which is the Prerogative of Animadversive Beings) it must be all one to them in what Place they are, because they cannot be concern'd to be in one Place rather than in another, since such a preference would require a knowledg, that

that Inanimate things are destitute of. And, for the same reason, a Portion of an Element, remov'd, by force or chance, from what they call its proper Place, can have no real Appetite to return thither : For, who tells it 'tis in an undue Place, and that it may better its Condition by removing into another ? And who informs it, whether that Place lies on this hand of it, or that hand of it, or above it, or beneath it ? Some Philosophers indeed have been somewhat aware of the weakness of the Argument, drawn from the vulgarly propos'd Instance (which yet is the best that is wont to be imploy'd,) of Earthy Bodies, which being let fall from the top of an House, or thrown into the Air, do of themselves fall, in a direct Line, towards the Centre of the Earth ; and therefore they have strengthened this Argument, as far as might be, by pretending, that these Bodies have not indeed, as former Philosophers were wont to think, an Appetite to descend to the
Centre

Centre of the Earth, but to the great Mass of their Connatural Bodies. I will not therefore accuse these Philosophers of the inconsiderate Opinion of their Predecessors, who would have *Nature* make all heavy Things affect to lodg themselves in the Centre of the Earth, which (as was formerly noted,) being but a Point, cannot contain any one of them, (how little soever it be;) but yet the *Hypothesis* of these Moderns is liable, though not to *that*, yet, to *other* weighty Objections.

For the First Argument, I lately imploy'd, will hold good against these Philosophers too, it not being conceivable, how an Inanimate Body should have an Appetite to re-joyn Homogeneous Bodies, neither whose situation, nor whose distance from it, it does at all know.

Secondly, It does not appear that all Bodies have such an Appetite, as is presum'd, of joyning themselves to greater Masses of Connatural Bodies; as, if you File the end of an Ingot or
Bar

Bar of *Silver* or of *Gold*, the Filings will not stick to their own Mass, though it be approach'd never so near, or made to touch them, and much less will they leap to it, when 'tis at a distance from them. The like may be said almost of all Consistent Bodies we are acquainted with, except the *Loadstone* and *Iron*, and Bodies that participate of one of those two.

Thirdly, 'Tis obvious to them that will observe, that, that which makes Lumps of Earth, or Terrestrial Matter, fall through the Air to the Earth, is some general Agent, whatever that be, which, according to the wise disposition of the Author of the Universe, determines the Motion of those Bodies, we call heavy, by the shortest ways that are permitted them, towards the Central part of the Terrestrial Globe; Whether the Body, put into Motion downwards, be of the same, or a-like, or a quite differing nature, from the greater Mass of Matter, to which, when 'tis aggregated,

ted, it rests there? If, from the side of a Ship, you let fall a Chip of Wood out of your Hand, when your Arm is so stretch'd out, that the Perpendicular, or shortest Line, between that and the Water, lies never so little without the Ship, that Chip will fall into the Sea, which is a fluid Body, and quite of another Nature than itself, rather than swerve in the least from the *Line of Direction*, as Mechanicians call it, to rejoin itself to the great bulk of Wood, whereof the Ship, though never so big, consists. And, on the other side, if a Man, standing upon the Shore just by the Sea, shall pour out a Glass of Water, holding the Glass just over his Feet, that Water will fall into the Sand, where 'twill be immediately soak'd up and dispersed, rather than deviate a little, to join itself to so great a Mass of Connatural Body, as the Ocean is.

And as to what is generally believ'd, and made part of the Argument that I am answering, That
Water

Water does not weigh in Water, because it is in its own natural Place, and *Elementa in proprio loco non gravitant*. I deny the matter of Fact, and have convinc'd divers curious Persons by Experi-

ment, * that Water

does *gravitate in*

Water, as well as out

of it, though indeed it does not *pre-gravitate*, because 'tis Counter-balanc'd by an equal weight of Collateral Water, which keeps it from descending.

* See the Appendix to the *Hydrostat. Paradoxes*.

And Lastly, For the Maxim, that *Locus conservat locatum*; besides that, it has been prooflessly asserted, and therefore, unless it be cautiously explain'd, I do not think my self bound to admit it; besides this, I say, I think, that either the proper Place of a Body cannot be inferr'd, as my Adversaries would have it, from the Natural tendency of a Body to it; or else it will not hold true in general, that *Locus conservat locatum*; as when, for Instance, a poor unlucky

unlucky Seaman falls, from the Main-yard of a Ship, into the Water, does the Sea, to which he makes such hast, preserve him or destroy him? And when in a foul Chimney, a lump of Soot falls into the Hearth, and presently burns up there, can we think that the Wisdom of *Nature* gave the Soot an Appetite to hasten to the Fire, as a greater Bulk of its Connatural Body, or a Place provided by *Nature* for its Conservation.

And now I speak of such an Innate Appetite of Conjunction between Bodies; I remember, what I lately forgot to mention in a fitter place; That Bubbles themselves may overthrow the Argument, I was Answering. For if a Bubble happens to arise from the bottom of a Vessel to the upper Part of it, we are told, that the Haste, wherewith the Air moves thorow Water, proceeds from the Appetite it has to quit that Preternatural Place, and re-joyn the Element, or great Mass of Air, detain'd

tain'd at the very Surface of the Water by a very thin skin of that Liquor, together with which it constitutes a Bubble. Now I demand, how it comes to pass, that this Appetite of the Air, which, when it was at the bottom of the Water, and also in its passage upwards, is suppos'd to have enabled it to Ascend with so much eagerness and force, as to make its way thorow all the incumbent Water, (which possibly was very deep,) should not be able, when the Air is arriv'd at the very top of the Water, to break thorow so thin a Membrane of Water, as usually serves to make a Bubble, and which suffices to keep it from the beloved Conjunction with the great Mass of the External Air? especially since they tell us, that Natural Motion grows more quick, the nearer it comes to the End or Place of rest; the Appetites of Bodies encreasing, with their approaches to the Good they aspire to; upon which account, Falling Bodies, as Stones, &c.

are

are said (though falsely) to encrease their swiftneſs, the nearer they come to the Earth. But if, ſetting aſide the Imaginary Appetite of the Air, we attribute the Aſcenſion of Bubbles to the Gravity and Preſſure upwards of the Water, 'tis eaſie Hydroſtatically to Explicate, why Bubbles often move ſlower when they come near the Surface of the Water, and why they are detain'd there; which laſt *Phænomenon* proceeds from this, that the Preſſure of the Water being There inconfiderable, 'tis not able to make the Air quite Surmount the Reſiſtence made by the Tenacity of the Superficial Part of the Water. And therefore in good *Spirit of Wine*, whoſe Tenacity and Glutinousneſs is far leſs than that of *Water*, Bubbles rarely continue upon the Surface of the Liquor, but are preſently broken and vaniſh.

And to make this preſum'd Appetite, of the ſmaller Portions of the Air to unite with the great Maſs of it, appear the leſs probable; I ſhall add
That

that I have often observ'd, that Water, in that state which is usually call'd its Natural State, is wont to have store of Aerial Particles mingled with it, notwithstanding the Neighbourhood of the External Air, that is incumbent on the Water, as may appear by putting a Glass full of Water into the Receiver of the new Pneumatical Engine. For the Pressure of the External Air being by the Pump taken off, there will, from time to time, disclose themselves in the Water, a multitude of Bubbles, made by the Aerial Particles, that lay conceal'd in that Liquor.

And I have further try'd, as I doubt not but some others also have done, that, by exactly inclosing, in a conveniently shap'd Glass, some Water, thus freed from the Air, and leaving a little Air at the top of the Vessel, which was afterwards set by in a quiet place; the Corpuscles of that incumbent Air did, one after another, insinuate themselves into the Water, and remain'd

O lodg'd

lodg'd in it ; so little Appetite has Air, in general, to flee all Association with Water, and make its escape out of that Liquor ; though, when sensible Portions of it happen to be under Water, the great inequality in Gravity, between those two Fluids, makes the Water press up the Air. But, though 'twere easie to give a Mechanical Account of the *Phænomena* of mingled Air and Water, yet, because it cannot be done in few Words, I shall not here undertake it ; the *Phænomena* themselves being sufficient, to render the Supposition of my Adversaries improbable.

Another Argument, in favour of the Received Opinion of *Nature*, may be drawn from the strong Appetite, that Bodies have to recover their *Natural State*, when by any means they are put out of it, and thereby forced into a State that is called *Preternatural* ; as we see, that Air being violently compress'd in a blown Bladder, as soon as the force
is

is remov'd, will return to its first Dimensions : And the Blade of a Sword being bent by being thrust against the Floor, as soon as the force ceases, restores itself, by its innate power, to its former straightness: And Water, being made Hot by the fire, when 'tis removed thence, hastens to recover its former Coldness.

But though I take this Argument to have much more weight in it, than the foregoing; because it seems to be grounded upon such real *Phænomena of Nature*, as those newly recited, yet I do not look upon it as Cogent.

In Answer to it therefore, I shall represent, that it appears by the Instances lately mention'd, that the Proposers of the Argument ground it on the affections of Inanimate Bodies. Now, an Inanimate Portion of Matter being confessedly devoid of Knowledge and Sense, I see no Reason, why we should not think it incapable of being concern'd to be

in One state or constitution, rather than Another, since it has no knowledge of that, which it is in at present, nor remembrance of that, from which it was forc'd; and consequently, no Appetite to forsake the Former, that it may return to the Latter. But every Inanimate Body, (to say nothing now of Plants and Brute Animals, because I want time to launch into an ample Discourse) being of itself indifferent to all Places and States, continues in in that Place or State to which the action and resistance of Other Bodies, and especially Contiguous Ones, effectually determine it.

As to the Instance afforded by Water, I consider, that before it be asserted, That Water, being Heated, returns of itself to its Natural Coldness, it were fit, that the Assertors should determine, what degree or measure of Coldness is Natural to that Liquor; and this, if I mistake not, will be no easie Task. 'Tis true indeed, that, in reference to us Men,
Water

Water is usually Cold, because its minute Parts are not so briskly agitated, as those of the Blood and Juices, that are to be found in our Hands, or other Organs of Feeling. But, that Water is actually cold in reference to Frogs, and those Fishes that live in it, whose Blood is cold as to our Sense, has not, that I know of, been prov'd, nor is easie to be so. And I think it yet more difficult to determine, what degree of Coldness is natural to Water, since this Liquor perpetually varies its Temperature, as to Cold and Heat, according to the temper of the Contiguous or the Neighbouring Bodies, especially the Ambient Air. And therefore the Water of an unshaded Pond, for Instance, though it rests in its proper and natural Place, as they speak, yet in Autumn, if the Weather be fair, the Temperature of it will much vary in the compass of the same Day, and the Liquor will be much hotter at Noon, than early in the Morning, or at Midnight; though this great

diversity be the Effect only of a Natural Agent, the *Sun*, acting according to its regular Course. And, in the depth of Winter, 'tis generally confess'd, that Water is much colder than in the Heat of Summer; which seems to be the Reason of what is observ'd by Watermen, as a wonderful thing, namely, that in Rivers, Boats equally Laden will not sink so deep in Winter as in Summer, the cold Condensing the Water, and consequently making it heavier *in specie*, than it is in Summer, when the Heat of the Ambient Air makes it more thin. In divers parts of *Africk*, that Temperature is thought natural to the Water, because 'tis that which it usually has, which is far hotter than that which is thought natural to the same Liquor in the frigid Zone. And, I remember, on this occasion, what perhaps I have elsewhere mention'd upon another, that the *Russian* *Czars* chief Physician inform'd me, that in some Parts of *Siberia*, (one of the more *Northern* Provin-

Provinces of that Monarch's Empire, Water is so much more Cold, not only than in the *Torrid Zone*, but than in *England*, that two or three foot beneath the surface of the Ground, all the Year long (even in Summer itself,) it continues Concreted in the form of Ice, so Intense is the Degree of Cold that there seems natural to it. This odd *Phænomenon* much confirms what I lately intimated, of the Power of Contiguous Bodies, and especially of the Air, to vary the Degree of the coldness of Water. I particularly mention the Air, because, as far as I have try'd, it has more Power to bring Water to its own Temperature, than is commonly suppos'd. For *though*, if, in Summer-time, a Man puts his Hand into Water, that has lain expos'd to the Sun, he will usually feel it Cold, and so conclude it much colder, than the Ambient Air; *yet*, that may often happen upon another Account, namely, that the Water being many Hundred times a more Dense

Fluid than the Air, and consisting of Particles more apt to insinuate themselves into the Pores of the Skin, a greater Part of the Agitation of the Blood and Spirits, contained in the Hand, is communicated to the Water, and thereby lost by the Fluids that part with it. And the Minute Particles of the Water, which are, perhaps, more Supple and Flexible, insinuating themselves into the Pores of the Skin, which the Aerial Particles, by Reason of their Stifness, and perhaps Length, cannot do ; they come to affect the somewhat more Internal Parts of the Hand, which, being much Hotter than the *Cuticula* or Scarf-skin, makes us feel them very Cold ; as, when a Sweating Hand is plung'd into Luke-warm Water, the Liquor will be judg'd Cold by Him, who, if his Other Hand be very Cold, will with it feel the same Water Hot. To confirm which Conjecture, I shall add, that, having sometimes purposely taken a Seal'd Weather-glass, whose included

ded Liquor was brought to the Temperature of the Ambient Air, and thrust the Ball of it under Water, kept in the same Air, there would be discover'd no such Coldness in the Water, as One would have expected ; the former Reason of the sensible Cold the Hand feels, when thrust into that Liquor, having here no Place. To which I shall add, that having, for Tryal's sake, made Water very Cold, by dissolving *Sal-armoniac* in it, in Summer time, it would, after a while, return to its usual degree of Warmth. And, having made the same Experiment in Winter, it would return to such a Coldness, as belong'd to it in that Season : So that it did not return to any Determinate degree of Coldness, as Natural to it, but to that Greater or Lesser, that had been Accidentally given it by the Ambient Air, before the *Sal-armoniac* had Refrigerated It.

As to the Motion of Restitution, observable upon the Removal or Ceasing

sing of the Force in Air violently compress'd, and in the Blade of a Sword forcibly bent ; I confess it seems to me a very difficult Thing, to assign the true Mechanical Cause of It. But yet, I think it far more likely, that the Cause should be Mechanical, than, that the Effect proceeds from such a Watchfulness of *Nature*, as is pretended. For First, I question, Whether we have any Air here Below, that is in Other than a Preternatural or Violent State ; the Lower Parts of our Atmospheric Air being constantly compress'd by the weight of the Upper Parts of the same Air, that lean upon them.

As for the Restitution of the bent Blade of a Sword, and such like Springy Bodies, when the force that bent them is remov'd ; my Thoughts about the Theory of *Springynes* belong to another Paper. And therefore, I shall here only, by way of Argument *ad Hominem*, consider, in Answer to the Objection ; That if, for Example, you take a somewhat

what long and narrow Plate of Silver, that has not been hammer'd, or compress'd, or, which is surer, has been made red-hot in the Fire, and suffer'd to cool leasurely, you may bend it which way you will, and it will constantly retain the last curve Figure, that you gave It. But if, having again streightned this Plate, you give it some smart stroaks of a Hammer, it will, by that meerly Mechanical Change, become a Springy Body : So that, if with your Hand you force it a little from its Rectitude, as soon as you remove your Hand, it will endeavour to regain its former Streightness. The like may be observ'd in Copper, but nothing near so much, or scarce at all, in Lead. Now upon these *Phænomena*, I demand, Why, if *Nature* be so careful to restore Bodies to their former State, She does not restore the Silver Blade or Plate to its Rectitude, when it is bent this way or that way, before it be Hammer'd ? And why a few stroaks of a Ham-

Hammer (which, acting violently, seems likely to have put the Metal into a Preternatural State,) should entitle the Blade to *Nature's* peculiar Care, and make Her solicitous to restore it to its Rectitude, when it is forc'd from It? And Why, if the Springy Plate be again Ignited and Refrigerated of itself, *Nature* abandons Her former Care of It, and suffers it quietly to continue in what crooked Posture, One pleases to put it into? Not, now, to demand a Reason of *Nature's* greater Partiality to Silver, and Copper and Iron, than to Lead and Gold itself, in Reference to the Motion of Restitution; I shall add to what I was just now saying, that even in Sword-Blades it has been often observ'd, That though, if soon after they are bent, the force that bent them be withdrawn, they will nimbly return to their former straightness; yet, if they (which are not the only Springy Bodies, of which this has been observ'd,) be kept too long bent, they will

will lose the Power of recovering their former streightness, and continue in that crooked Posture, though the force that put them into it cease to act : So that, it seems, *Nature* easily forgets the care She was presum'd to take of it, at first.

There is an Axiom that passes for current among Learned Men, *viz.* *Nullum violentum durabile*, that seems much to favour the Opinion of the *Naturists*, since 'tis grounded upon a Supposition, that what is *violent*, is, as such, contrary to *Nature*, and, for that Reason, cannot last long. And this trite Sentence is, by the Schools and even some Modern Philosophers, so particularly apply'd to Local Motion, that some of them have, not improbably, made it the Characteristick token, whereby to distinguish Natural Motions from those that are not so ; that the Former are perpetual, or at least very durable, whereas the Later, being continually check'd more and more by the Renitency of *Nature*, do continually decay, and
within

within no long time are suppress'd or extinguish'd : But, on this occasion, I must crave leave to make the following Reflections.

1. It may be justly Question'd, upon Grounds laid down in another Part of this Essay, Whether there be any Motion, among Inanimate Bodies, that deserves to be call'd *Violent*, in Contradistinction to *Natural* ; since among such, all Motions, where no Intelligent Spirit intervenes, are made according to Catholick, and almost, if not more than almost, Mechanical Laws.

2. Methinks, the *Peripateticks*, who are wont to be the most forward to imploy this Axiom, should find but little Reason to do so, if they consider how unsuitable it is to their Doctrine, That the vast Body of the Firmament and all the Planetary Orbs are, by the *Primum Mobile*, with a stupendious swiftness, whirl'd about, from *East* to *West*, in four and twenty Hours, contrary to their Natural tendency ; and, That this violent

olent and rapid Motion, of the incomparably greater Part of the Universe, has lasted as long as the World itself, that is, according to *Aristotle*, for innumerable Ages.

3. We may observe here below, that the Ebbing and Flowing of the Sea, which is generally suppos'd to proceed either from the Motion of the Moon, or that of the Terrestrial Globe, or some other External Cause, has lasted for some Thousands of Years, and probably will do so, as long as the present System of our *Vortex* shall continue. I consider also, that the other great Ocean, the Atmosphere, consists of numberless Myriads of Corpuscles, that are here below continually kept in a violent State; since they are Elastical Bodies, whereof the Lower are still compress'd by the weight of the Higher. And, to make a Spring of a Body, it is requisite that it be forcibly bent or stretch'd, and have such a perpetual endeavour to fly open, or to shrink in, that it will not fail to do so, as soon

soon as the External Force, that hinder'd it, is remov'd. And, as for the States of Inanimate Bodies, I do not see, that their being or not being *Natural* can be, with any certainty, concluded, from their being or not being very *Durable*. For, not to mention, that Leaves that wither in a few Months, and even Blossoms that often fade and fall off in few Days, are as well Natural Bodies, as the solid and durable Trees that bear them; 'tis obvious, that, whether we make the State of Fluidity, or that of Congelation, to be that which is Natural to Water, and the other that which is Violent; Its change from one of those States into another, and even its return to its former State, is oftentimes, at some Seasons, and in some Places, made very speedily, perhaps in an Hour or less, by Causes that are acknowledg'd to be Natural. And Mists, Hail, Whirlwinds, Lightning, Falling-Stars, to name no more, notwithstanding their being Natural Bodies, are far from
being

being lasting, especially in comparison of Glass, wherein the Ingredients, Sand and Fixt Salt, are brought together by great violence of Fire. And the Motion that a thin Plate, or slender Wire, of this Glass can exercise, to restore itself to its former Position, when forcibly bent, is (in great part) a lasting Effect of the same violence of the Fire. And so is the most durable perseverance of the Indissolubleness of the Alcalifate Salt, that is one of the two Ingredients of Glass, notwithstanding its being very easily dissoluble in Water and other Liquors, and not uneasily e'ne in the moist Air itself.

There is a distinction of *Local Motion*, into *Natural* and *Violent*, that is so generally receiv'd and us'd, both by Philosophers and Physicians, that, I think, it deserves to have special Notice taken of it in this Section; since it implicitly contains an Argument for the Existence of the Thing call'd *Nature*, by supposing it so manifest a Thing, as that an Important

tant Distinction may justly be grounded on It.

This imply'd Objection, I confess, is somewhat difficult to clear; not for any great Force, that is contained in It, but because of the Ambiguity of the Terms, wherein the Distinction is wont to be imploy'd: For most Men speak of the propos'd Distinction of *Motion*, in so obscure, or so uncertain a way, that 'tis not easie to know what they mean by either of the Members of It. But yet some there are, who endeavour to speak Intelligibly, (and for that are to be commended) and define *Natural Motion* to be That, whose Principle is within the Moving Body itself; and *Violent Motion*, That which Bodies are put into by an External Agent or Cause. And, in regard these speak more clearly than the rest, I shall here principally consider the lately mention'd Distinction, in the Sense They give It. I say then, that, even according to this Explication, I am not satisfied with

with the Distinction : For, whereas 'tis a Principle received, and frequently employ'd, by *Aristotle* and his Followers, *Quicquid movetur ab alio movetur* ; it seems, that, according to this Axiom, all Motion may be called *Violent*, since it proceeds from an External Agent ; and indeed, according to the School Philosophers, the Motion of far the greatest Part of the Visible World, though this Motion be most Regular and Lasting, must, according to the propos'd Distinction, be reputed *Violent* ; since they assert, that the Immense Firmament itself, and all the Planetary Orbs, (in comparison of which vast Cœlestial Part of the World, the Sublunary Part is little more than a Physical Point,) is perpetually (and against its Native Tendency,) hurry'd about the Centre of the World, once in Twenty four Hours, by an External, though Invisible, Agent, which they therefore call the *Primum Mobile*. And as for the *Criterion* of Natural

P 2 Motion,

Motion, that, *Its Principle is within the Moving Body*, it may be said, that all Bodies, once in the State of Actual Motion, whatever Cause first brought them to It, are mov'd by an Internal Principle: As, for Instance, an Arrow, that actually flies in the Air towards a Mark, moves by some Principle or other residing within itself; for, it does not depend on the Bow 'twas shot out of, since 'twould continue, tho' That were Broken, or even annihilated; nor does it depend upon the *Medium*, which more resists than assists its Progress, as might be easily shewn, if it were needful; and, if we should suppose the Ambient Air either to be annihilated, or (which in our Case would be *Equivalent*,) render'd incapable of either furthering or hindring its Progress, I see not why the Motion of the Arrow must necessarily cease, since in this Case there remains no *Medium* to be penetrated, and on that account oppose its Progress. When in

a Watch that is wound up, the Spring endeavours to unbend or display itself; and when the String of a drawn Bow is broken or let go, the Spring of the former, and the woody Part of the later, does each, return to a less crooked Line. And though these Motions be occasioned by the forcible Acts of External Agents, yet the Watch, Spring, and the Bow, have in themselves (for ought appears to those I Reason with,) an inward Principle, by which they are mov'd till they have attain'd their Position. Some, perhaps, would add, that a Squib, or a Rocket, though an artificial Body, seems, as well as a falling Star, to move from an Internal Principle: But I shall rather observe, that, on the other side, External Agents are requisite to many Motions, that are acknowledg'd to be *Natural*, as, to omit the Germination and Flourishing of divers Plants, as Onions, Leeks, Potato's, &c. though hung up in the Air, by the heat of the

Sun in the Spring ; to pass by this, I say, if in the Pneumatical Engine or Air-Pump, you place divers Insects, as Bees, Flies, Catterpillars, &c. and withdraw the Common Air from the Receiver, they will lye moveless, as if they were dead, though it be for several hours, whilst they are kept from enjoying the presence of the Air : But, when the External Air is permitted again to return upon them, they will presently be reviv'd, (as I have with pleasure try'd,) and be brought to move again, according to their respective Kinds ; as if a Fly, for Instance, resembled a little Windmill in this, that being Moveless of itself, it required the Action of the Air to put its Wings and other Parts into Motion. But, to insist no farther on these Arguments *ad Hominem*, we may consider, that, since Motion does not essentially belong to Matter, as Divisibility and Impenetrableness are believ'd to do ; the Motions of all Bodies, at least at the beginning of

of Things, and the Motions of most Bodies, the Causes of whose Motions we can discern, were impress'd on them, either by an External Immaterial Agent, God; or by other Portions of Matter (which are also Extrinsic Impellers) acting on them.

And this occasion invites me to observe, that, though *Motion* be deservedly made one of the Principal Parts of *Aristotle's* Definition of *Nature*, yet Men are wont to call such Motions *Natural*, as are very hard to distinguish from those, they call *Violent*. Thus, when Water falls down to the Ground, they tell us, that this *Motion* is *Natural* to that Liquor, as 'tis a heavy Body; but when a Man spurts up Water out of his Mouth into the Air, they pronounce that *Motion*, because of its tendency upwards, to be *contrary to Nature*. And yet when he draws

Natura est Principium quoddam & Causa, cur id moveatur & quiescat, in quo inest, &c. Aristot. Auscult. lib. II. cap. I.

Water into his Mouth, by sucking it through a long Pipe held Perpendicularly, they will have this *Motion* of the Water, though directly upwards, to be not *Violent*, but *Natural*. So when a Foot-Ball, or Blown Bladder, being let fall upon a hard Floor, rebounds up to a good height, the Descent and Ascent are both said to be *Natural Motions*, though the former tends towards the Centre of the Earth, and the later recedes as far as it can do from it. And so if from a considerable height you let fall a Ball of some close Wood, that yet is not too heavy, as Oak or the like, into a deep Vessel of Water, it will descend a great way in that Liquor, by a *Natural Motion*; and yet its contrary *Motion* upwards ought not to be esteem'd *Violent*, since, according to the Schools, being lighter *in Specie* than Water, 'tis *Natural* to it to affect its proper Place, for which purpose it must ascend to the top of the Liquor, and lye afloat there; and yet 'tis from these tendencies to
opposite

opposite Points, (as the *Zenith* and the *Nadir*) that Men are wont to judg many *Motions* of Bodies to be *Natural* or *Violent*.

And indeed, since it must be indifferent to a Lifeless and Insensible Body, to what place 'tis made to move, all its *Motions* may, in some respect, be said to be *Natural*, and in another, *Violent*: For as very many Bodies of visible Bulk are set a moving by External Impellents, and, on that score, their *Motions* may be said to be *Violent*; so the generality of Impell'd Bodies do move either upwards, downwards, &c. toward any Part of the World, in what Line or Way soever they find their *Motion* least resisted; which Impulse and Tendency, being given by vertue of what they call the general Laws of *Nature*, the *Motion* may be said to be *Natural*.

I might here take notice, that, according to the *Epicurean Hypothesis*, it need not at all be admitted, that *Motion* must be produc'd by such a Principle,

Principle, as the Schoolmens *Nature*. For, according to that great and ancient Sect of Philosophers, the *Atomists*, every indivisible Corpuscle has actual Motion, or an incessant endeavour to change Places, essentially belonging to it, as 'tis an *Atom*: In-
 somuch that in no case it can be de-
 priv'd of this Property or Power. And all sensible Bodies being, according to these Physiologers, but casual Concretions or Coalitions of *Atoms*; each of them needs no other Principle of Motion, than that unloseable endeavour of the *Atoms* that compose it, and happen, on the account of Circumstances, to have the Tendency of the more numerous, or at least the predominant, Corpuscles, determin'd one way. And to these I might add some other such Reflections. But I shall, in this place, say no more concerning Motion, *not only* because, even after having consider'd the differing Definitions, that *Aristotle*, *Cartesius*, and some other Philosophers, have given of it, I take it to be

be too difficult a Subject, to be clearly explicated in few words; *but* because the only occasion I had to mention it here, was, to shew that the vulgar Distinction of it into *Natural* and *Violent* is not so clear and well-grounded, as to oblige us to admit (what it supposes,) that there is such a Being, as the *Naturists* assert.

I come now to consider the Argument, that may be drawn in favour of the *Receiv'd Notion of Nature*, from the *Critical Evacuations* which happen at certain times in Diseases, and the strange Shifts that *Nature* sometimes makes use of in them, to free Herself from the Noxious Humours that oppress'd Her.

This Argument I willingly acknowledg to be very considerable. For we really see, that in Continual Feavers, especially in hotter Climates, there do usually happen, at certain times of the Diseases, Notable and Critical Commotions or Conflicts, after which the Morbifick Matter is dispos'd of and discharg'd
by

by Ways strange and surprising, to the great and speedy Relief of the Patient, if not to his perfect Cure; as may appear by many Instances, to be met with in the Observations of Physicians about Feavers, Pleurifies, &c. Upon this Account, I take the Argument drawn from *Crises's* to be much the weightiest, that can be urg'd for the Opinion from which I Dissent, and therefore I shall employ the more words in clearing this important Difficulty.

In order to this, I desire it may be kept in mind, that I do not only *acknowledg*, but *teach*, that the Body of a Man is an incomparable *Engine*, which the most wise *Author* of Things has so skilfully fram'd, for lasting very many Years, that, if there were in it an Intelligent Principle of Self-preservation, (as the *Naturists* suppose there is) Things would not, in *most Cases*, be better or otherwise manag'd, for the Conservation of the Animals Life, than they generally are. So that the *Question* is not, Whether

Whether there is a great deal of Providence and Wisdom exercis'd, in the *Crises's* of Diseases, but upon what Account it is, that these apposite Things are perform'd? The Universal Opinion of Physicians is, that 'tis that Intelligent Principle they call *Nature*, which, being solicitous for the Welfare of the Patient, and distress'd by the quantity or hurtfulness of the Morbifick Matter, watches Her opportunity (especially when 'tis concocted) to expel it hastily out of the Body, by the most safe and convenient Ways, which, in the present condition of the Patient, can be taken. And I, on the other side, attribute *Crises's* to the Wisdom and ordinary Providence of God, exerting Itself by the Mechanism, *partly* of that great Machine, the *World*, and *partly* of that smaller Engine, the *Human Body*, as 'tis constituted in the Patients present Circumstance. And the Reasons that hinder me, from acquiescing in the general Opinion of Physicians about *Crises's*, are principally these.

First,

First, I observe that *Crises's*, properly so call'd, do very seldom happen in other than Feavers, and the like acute Diseases; where, according to the common Course of Things, the Malady is terminated, in no long time, either by Recovery, or Death, or a change into some other Disease: But Chronical-sicknesses, such as Coughs, Dropsies, Gouts, &c. unless they happen to be accompany'd with Feaverish Distempers, are not wont to have *Crises's*; which argues, that *Nature* doth not make Critical Evacuations, upon the account of such Care and Watchfulness, as Physicians ascribe them to: Since She neglects to employ so Salutary an Expedient in Diseases, that are oftentimes no less Dangerous and Mortal, than divers acute Diseases, which She attempts to Cure by *Crises's*.

Next I consider, that *Critical Evacuations* may be procur'd by the bare Mechanism of the Body. For, by virtue of *That*, it will often happen, that

that the Fibres, or motive Organs of the Stomach, Bowels, and other Parts, being Distended or Vellicated by the Plenty or Acrimony of the Peccant Matter, will, by that Irritation, be brought to contract themselves vigorously, and to throw out the Matter that offends the Parts, either by the Emunctories or Common-Shores of the Body, or by whatever Passages the proscrib'd Matter can be, with most ease, discharg'd. Thus, when some Men find their Stomachs burden'd with a Clog of Meat or Drink, they use to thrust their Fingers into their Throats, and, by that Mechanical way, provoke the Stomach to disburden itself of its offensive Load, without being beholden to *Natures* Watchfulness for a *Crisis*, which probably She would not (at least so seasonably) attempt. And thus, whereas 'tis usual enough, for *Crises's* to be made in Feavers by large *Hæmorrhagi's* at the Nose, and sometimes at other Parts, which is ascrib'd to *Natures* Watchful Solitude

tude for the Patients Recovery ; I must take leave to add, that it hath been divers times observ'd, that, even after Death, large Bleedings have succeeded, at the Nose and other Parts of the Body : Which shews, that such Excretions may be made by vertue of the Structure of it, and the Turgescence and Acrimony of the Humours, without any Design of *Nature*, to save the Life of the Patient, already Dead.

Indeed, if it did appear by Experience, that all, or almost all, the *Crises's* of Diseases, did either expel the Morbifick Matter, or at least notably relieve the Patient, the Critical Attempts of *Nature* would much favour the Opinion Men have conceiv'd of her Vigilance and Conduct: But unwelcome Instances daily shew, that, as some *Crises's* are *Salutary*, (as they call them) so others prove *Mortal*. And among those that do not directly or presently kill the Patient, there are divers that leave him in a worse Condition, than he was
was

was before. And therefore, I wonder not, that Physicians have thought themselves oblig'd to lay down several Circumstances, as necessary Requisites of a laudable *Crisis*, if any of which be wanting, 'tis not thought of the best kind; and if the contrary to some of them happen, 'tis to be judg'd either pernicious, or at least hurtful. For, whereas there are two general Ways, suppos'd to be employ'd by *Nature* in making *Crises's*, the one by expulsion of the Peccant Matter out of the Body, and the other by the settling of the Matter somewhere within it: Neither of these two Ways is constantly successful.

And therefore Experience hath oblig'd Physicians to divide *Crises's*, *not only* into *perfect*, that fully determine the event of the Disease, and *imperfect*, that do but alter it for the better or the worse; but into *Salutary*, that quite deliver the Patient, and *Mortal*, that destroy him. And to a Perfect and Salutary *Crisis*, some

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Learned

Learned Men require no less than six Conditions; namely, that it be preceded by Signs of Coction of the Peccant Matter; that it be made by a manifest and sufficiently copious Excretion or Translation; that it be made upon a Critical Day, as the seventh, fourteenth, twentieth, &c. that it leave no Relicks behind it, that may indanger a Relapse; that it be made safely, that is, without dangerous Symptoms: And lastly, that it be suitable to the *Nature* of the Disease, and the Patient. By this it may appear, that 'tis no common thing to meet with a Perfect and Salutary *Crisis*, so many laudable Conditions must concur in it; and indeed *Nature* doth usually take up with but imperfectly good Ones, and it were happy if She made not better, provided She made no worse. But 'tis found, by sad Experience, that She rouses Herself up to make a *Crisis*, not only upon improper, and, as Physicians call them, Intercident Days, such as the Third, Fifth, Ninth, &c.

or

or upon those they call Empty or Medicinal Days, which seldom afford any *Crisis*, and much seldomer a good One, but also when there appear not any signs of Coction, or at least of due Coction, and by these unseasonable Attempts weaken the Patient, and encrease the Malady, or perhaps make it speedily Mortal. Nor will it justifie *Nature*, to say, with some Learned Physicians, that these Attempts are Accidentally brought on by the Acrimony or Importunity of the Morbifick Matter, by which She is provok'd, before the time, to endeavour an Expulsion of it. For if *Nature* be indeed so Prudent and Watchful a Guardian, as She is thought, She ought not to suffer Herself to be provok'd to act Preposterously, and make furious Attempts, that lavish to no purpose, or worse than no purpose, that little strength the Patient hath so much need of. And therefore Physicians do oftentimes very well, when, to act agreeably to the Dictates of Prudence,

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they forget, how much Wisdom they are wont to ascribe to *Nature*, and employ their best Skill and Remedies to suppress or moderate the inordinate Motions, or the improper and profuse Evacuations, that irritated *Nature* rashly begins to make. And *though* the *Crises's* that are made by a Metastasis of the Peccant Matter, or by lodging it in some particular Part of the Body, whether External or Internal, be oftentimes, when they are not Salutary, somewhat less Hurtful, than those that are made by Excretion; yet these do frequently, though perhaps more slowly, prove Dangerous enough, producing sometimes inward Imposthumes, and sometimes External Tumors, in Parts that are either Noble by their Functions, or by their Situation, or Connexion, or Sympathy with others, that are not to be without Hazard or great Inconvenience oppress'd.

I know that Physicians make it a great Argument of *Nature's* Providence and Skill, that She watches
for

for the Concoction of the Peccant Matter, before She rouses Herself up to expel it by a *Crisis*. What is to be meant by this *Coction of Humours*, (for it ought not to be confounded with the *Coction of the Aliments*) they are not wont so clearly to declare. But, as I understand it, when they say that a Portion of Peccant Matter is brought to Coction, they mean, that it has acquir'd such a Disposition, as makes it more fit, than before, to be separated from the sounder Portion of the Mass of Blood, or from the consistent Parts, to which it perhaps formerly adhered, and to be afterwards expell'd out of the Body. This may be partly exemplifi'd by what happens in some recent Colds, where the Lungs are affected, in which we see, that, after a few days, the Phlegm is made more fluid; and that which is lodg'd in the Lungs, (not sticking so fast to the inside of the *Aspera Arteria*) is easily brought up by Coughing, which could not dislodge it before. And in Feavers, that

separation in the Urine, formerly Cloudless, that Physicians look upon as a good sign of *Coction*, seems to be produc'd by some part of the Pecant Matter, that, beginning to be separated from the Blood, mingles with the Urine, and is not usually distinguish'd from it, whilst this Liquor is warm; but when it is grown cold, does, on the score of its Weight or Texture, somewhat recede, and appear in a distinct Form, as of a Cloud, a Sediment, &c. But whatever they mean by *Coction*, 'tis plain enough, by what hath been lately noted, that, on many occasions, *Nature* doth not wait for it, but unseasonably, and oftentimes dangerously, attempts to proscribe the Matter that offends Her, before it be duly prepar'd for Expulsion.

I come now to that Circumstance of *Crises's*, that is thought the most Wonderful, which is, that *Nature* does oftentimes by very unusual Ways, and at unexpected Places, discharge the Matter that offends Her,
and

and thereby either Cures, or notably Relieves, the Patient. And it must not be deny'd, that, in some cases, the Critical Evacuations have somewhat of Surprising in them ; and I shall also readily grant, that, *N. B.* [Divine Providence may expressly interpose, not only in the infliction of Diseases by way of Punishment, but in the removal of them in the way of Mercy.] But, setting aside these extraordinary Cases, I think it not absurd to conjecture, that the performances of *Nature*, in common *Crises's*, may be probably referr'd, *partly* to the particular condition of the Matter to be expell'd, and *partly*, (and indeed principally) to some peculiar Disposition in the Primitive Fabrick of some Parts of the Patients Body, or some unusual change made in the Construction of these Parts by the Disease itself, or other Accidents ; which Original or Adventitious disposition, of the Sick Man's Body, not being visible to us, at least whilst he is a-

live, we are apt to ascribe the unexpected Accidents of a *Crisis*, if it prove Salutary, to the wonderful Providence of *Nature*. And, if it happen to be other than Salutary, we are wont to overlook them. To illustrate this Matter, we may consider, that plentiful Evacuations, procured by Medicines, are a kind of Artificial *Crisis's* : We see, that some Bodies are so constituted, that, *although* the peccant Humour, wrought on by the Medicine, ought, as the Physitian thinks, to be expell'd by Siege, and indeed is wont to be so, in the Generality of those that take that kind of Medicine, as, for Instance, Rhubarb or Senna ; *yet* the peculiar disposition of the Patient's Stomach will make that an *Emetick*, which was intended to be, and regularly should be, a *Cathartick*. Nor does this Constitution of the Stomach equally regard all Purging Medicines ; for the same Stomach, that will reject them in the Form, for Instance, of a Potion, will quietly entertain

entertain them, being in the Form of Pills. And to this let me add what we observe of the Operation of Mercury ; which though, if it be duly prepared, it is usually given to procure Salivation, especially to Succulent Bodies ; yet there are some Patients, wherein, instead of Salivating, 'twill violently and dangerously work downwards, like a Purge, or make some other unexpected Evacuation. And I have seen a Patient, who, though Young and very Fat, could not be brought to Salivate, neither by the Gentler ways, nor by Turbith-Mineral and Other harsher Medicines, though administred by very skilful Physicians and Chyrurgeons. And this Peculiarity may be as well *Contracted*, as *Native*. For some Persons, especially after Surfeits, having been rufly dealt with, or at least tyr'd out with a Medicine of this or that kind of Form, will afterwards Nauseate and Vomit up the like Medicine, tho' in other Bodies it be never so far from being Emetick. We see also, that
some-

sometimes Sudorifick Medicines, instead of procuring Sweat, prove briskly Diuretick, and sometimes either Purgine or Vomitive. From all this we may Argue, that the qualities of the irritating Matter, and much more the particular disposition of the Patients Body, may procure Evacuations at unexpected Places. I remember too, that, among the Observations I have met with of famous Physicians, there are Instances of Periodical and Critical Evacuations, at very inconvenient, as well as unusual, Vents; as some Women are Recorded to have had their *Menses*, sometimes at the Eyes, sometimes at the Navil, and sometimes at the Mouth; of which there seems no cause so probable, as some peculiar Structure, whether Native or Adventitious, of the Internal Parts concern'd in that discharge; and of such unusual Structures, Anatomists must have seen Many, since I my self have observ'd more than One or Two. If these uncommon Ways of disposing
of

of the Morbifick Matter were always Salutary to the Patient, the Argument grounded on them would have more weight : But though most Men take notice of this sort of *Crises's*, but when they are Lucky, yet an Impartial Observer shall often find, that ill-condition'd and hurtful *Crises's* may be made by unusual and unexpected ways. And, in some Translations of the Morbifick Matter to distant and nobler Parts, perhaps it will be as difficult to shew, by what Channels or known Ways the Matter pass'd from one to another, as 'tis to determine, how it was conducted to those Parts, at which it was the most happily Vented.

In the foregoing Discourse about *Crises's*, there is, I confess, much of Paradox ; and 'twas unwillingly enough, that I made an Excursion, or In-road, into a Subject that has been look'd upon as the Physitians peculiar Province. And, you may remember, that not far from the
begin-

beginning of this little Book, I told you, that I was willing to decline meddling with Other, than Inanimate Bodies : Living Ones being, as of a less simple Sort, so of a more intricate Speculation ; which Reflexion will, I hope, excuse me to you, if you find, that my propos'd Brevity, or the difficulty of the Subject, has had any great Influence on what I write, about Health, Diseases and *Crises's*. And, as for the Sons of *Æsculapius*, it may be represented to them, in my favour, that, besides that I have treated of Sicknes and *Crises's*, rather as a Physiologer than a Physician, I could not leave them unconsider'd, without being thought, if not to betray, at least to be wanting to, the Cause I was to plead for.

If it should be dislik'd, that I make the *Phænomena* of the merely Corporeal Part of the World, under which I comprize the Bodies of Animals, though not the Rational Souls of Men, to be too generally re-
ferr'd

ferr'd to Laws Mechanical; I hope you will remember, for me, several things dispers'd in this Treatise, that may, when laid together, afford a sufficient Answer to this Surmize; and particularly, that almost all the Modern Philosophers, and among Them divers eminent Divines, scruple not to forsake the spread Opinion, That the Cœlestial Orbs were mov'd and guided by Intelligences; and to explicate, by Physical Causes, the Eclipses of the Sun and Moon, the Production or Apparition and *Phænomena* of Comets, and other Things, that the *Romans*, as well as other Heathens, both Ancient and Modern, have ascrib'd to the immediate Agency of Divine Causes. This allows me to observe to you, that, since these Modern *Naturalists* and Divines are wont to explicate the *Phænomena* of the vast Cœlestial Bodies, by their Local Motions and the Consequences of Them; *They do, as well as I, endeavour to account for what happens in the incomparably greatest*

greatest Part of the Universe, by *Physico-Mechanical Principles and Laws*. And, even in the Terrestrial Part of the World, which we Men inhabit, most of the Moderns, that have freed themselves from the Prejudices of the Schools, do not stick to give *Statical, Hydro-Statical*, and other Mechanical Explications of the Ascension of Water in Pumps, the Detention of it in Watering-Pots, whose upper Orifices are clos'd, and of other various *Phænomena*, which were formerly unanimously ascrib'd to *Nature's* wonderful Providence, express'd in Her care to hinder a *Vacuum*.

But perhaps you will think it fitter for me to provide against their Censure, who will dislike what I have written about *Crises's*, not because I have ascrib'd too much to merely Physical Causes, but (on the contrary,) because I do not strictly confine my self to Them. For I doubt, that if you should shew these Papers to some of your Friends, that
affect

affect to be strict *Naturalists*, they will think it strange, that in one of the Clauses in the foregoing Discourse about *Crises's*, (I mean, that to which this Mark *N. B.* is prefix'd,) I admit that their Events may sometimes be vary'd by some peculiar Interposition of God. But yet I own to you, that the Clause, 'tis like they would take Exceptions at, did not unawares slip from my Pen. For 'tis my settled Opinion, that Divine Prudence is often, at least, conversant in a peculiar manner about the Actions of Men, and the things that happen to Them, or have a necessary Connexion with the One, or the Other, or Both. And *tho'* I think it probable, that in the Conduct of that far greatest Part of the Universe, which is merely Corporeal, the Wise Author of it does seldom *manifestly* procure a Recession from the settled Course of the Universe, and especially from the most Catholick Laws of Motion: Yet, where Men, who are Creatures, that

that He is pleas'd to indow with Free Wills, (at least in reference to things not Spiritual,) are nearly and highly concern'd ; I think he has, not only sometimes by those *signal* and *manifest* Interpositions we call *Miracles*, acted by a Supernatural way, but, as the Sovereign Lord and Governor of the World, doth divers times, (and perhaps oftner than mere Philosophers imagine) give by the Intervention of Rational Minds, as well united, as not united, to human Bodies, divers such determinations to the Motion of Parts in those Bodies, and of Others, which may be affected by Them, as by Laws merely Mechanical, those Parts of Matter would not have had : By which Motions, so determin'd, either Salutory or Fatal *Crises's*, and many other Things, conducive to the Welfare or Detriment of Men, are produc'd.

The Interposition of Divine Providences, in cases of Life and Death, might be easily shewn to Christians out of divers Passages of Scripture, which

which exprefly propos'd long Life as
 a Reward to Obedi-
 ent Children, and to
 other Righteous Per-
 fons among the *Jews*,
 and threatens *bloody*
and deceitful Men,
 that they *shall not*
live out half their
days; and which relates, that a King
 of *Israel* had his Disease made Mortal
 by his Impious recourfe to the false
 God of *Eckron*; and
 that, upon *Hezekiah's*
 Prayers and Tears,
 God was pleas'd to
 add fifteen Years to
 his Life, and grant a fpecial Benedi-
 ction to an outward Medicine, ap-
 ply'd to his threatning Sore. To
 which Paflages divers may be added
 out of the New-Testament alfo, and
 efpecially that of
 St. *James*, who ex-
 horts the Sick to
 feek for Recovery by Prayer; and
 that of St. *Paul*, where, fpeaking
 R to

The Fifth Com-
 mandment, in *Ex-*
odus xx.

Pfaln v. 6.

Pfaln lv. 23.

2 Kings i. 16.

Ifa. xxxviii.

James v. 25.

to the *Corinthians* of the unworthy
Receivers of the Sacrament of the
Eucharist, he tells them, that, *For*

*that cause, divers were
become sick and weak
among them, and ma-
ny also died.*

1 Cor. xi. 30.

But though the nature
of this Discourse dissuades me from
imploying here the Authority of
Scripture, yet it allows me to observe,
(what is considerable on this occasi-
on) that Natural Theology and
Right Reason comport very well
with our propos'd Doctrine. For, as
I lately intimated, and do more ful-
ly shew in another

* A Discourse re-
lating to Miracles.

Paper, * God has
left to the Will of
Man the direction of

many Local Motions in the Parts of
his own Body, and thereby of some
others; though the Mechanical
Laws, on which the ordinary Course
of Things mainly depends, do not
only regulate the Motions of Bodies,
but the Determinations too: And
since Man himself is vouchsaf'd a
Power,

Power, to alter, in several Cases, the usual Course of Things, it should not seem incredible, that the latent Interposition of Men, or perhaps Angels, or other Causes unthought of by Us, should sometimes be imploy'd to the like purposes by God, who is not only the All-wise Maker, but the Absolute, and yet most Just and Benign, Rector of the Universe, and of Men.

To conclude the Excursion, which I hope will not appear useless, that has been occasion'd by the Discourse of *Crises's*, I think it becomes a Christian Philosopher, to admit, in general, that God doth sometimes in a peculiar, though hidden way, interpose in the ordinary *Phænomena* and events of *Crises's*; but yet, that this is done so seldom, at least in a way that we can certainly discern, that we are not hastily to have recourse to an extraordinary *Providence*, and much less to the strange care and skill of that question'd Being call'd *Nature*, in this or that particular

ticular Case, though perhaps unexpected, if it may be probably accounted for by Mechanical Laws, and the ordinary Course of Things.

And here, though in a place less proper than I might have chosen, if I had timely remembred it, I shall, both in reference to the extraordinary Accidents that sometimes happen in *Crises's*, and more generally to the seemingly irregular *Phænomena* of the Universe, venture to offer you a Notion, that perhaps you will not dislike. I think then, that, when we consider the World, and the Physical Changes that happen in It, with reference to the Divine Wisdom and Providence; the Arguments for the *Affirmative* ought, in their kind, to have more force than those for the *Negative*. For it seems more allowable, to argue a Providence from the exquisite Structure and Symmetry of the Mundane Bodies, and the apt Subordination and Train of Causes, than to infer from some Physical *Anomalies*, that Things are not fram'd
and

and administred by a wise Author and Rector. For the Characters and Impressions of Wisdom, that are Conspicuous in the curious Fabrick and orderly Train of Things, can, with no probability, be referr'd to blind Chance, but must be to a most Intelligent and Designing Agent. Whereas, on the other hand, besides that the *Anomalies*, we speak of, are incomparably fewer, than those Things which are regular, and are produc'd in an orderly Way; besides this, I say, the Divine Maker of the Universe being a most free Agent, and having an Intellect infinitely Superior to Ours, may, in the Production of seemingly irregular *Phænomena*, have Ends unknown to us, which even the *Anomalies* may be very fit to compass.

Thus, when a Man, not vers'd in the Mathematicks, looks upon a curious Geographical Globe, though, as soon as he perceives that the differing Bignesses, and particular Confines of Kingdoms and Provinces,

and the apt Situations, true Distances and Bearings of the Cities and Towns he knows by Sight or Fame, be rightly set down; he cannot but conclude, from these Impresses of Art or Skill, that this was the Work of a designing Artificer. But though he also sees on the same Globe several Circles, as the *Tropicks*, the *Zodiack*, the *Meridians*, &c. if he be a sober Man, he will not think that these were made by Chance only, because he knows not the Reasons or Uses of Them, or because some of the Lines, as those Curve-Lines the Seamen call *Rumbs*, are not, like the other, Circular, but do oddly, and with a seeming Irregularity, intersect them: But will rather think, that the Artist, that had knowledg enough to represent the Globe of the Earth and Waters, in a Body not two foot in Diameter, had also skill enough to draw those Lines, with some Design worthy of the same Skill, though not obvious to those that are unacquainted with his Art.

I did not incogitantly speak of *Irregularities*, as if they might sometimes be *but seeming* Ones. For I think it very possible, that an Artificer of so vast a Comprehension, and so piercing a Sight, as is the Maker of the World, might, in this great *Automaton* of His, have so order'd Things, that divers of Them may appear to us, and as it were break out, abruptly and unexpectedly, and at great distances of Time or Place from one another, and on such accounts be thought Irregular; which yet really have, both in his Preordination, and in the Connection of their Genuine Causes, a reference that would, if we discern'd it, keep us from imputing it either to *Chance*, or to *Nature's Aberrations*. To illustrate this a little, let us consider, that if, when the Jesuits, that first came into *China*, presented a curious striking Watch to the King, he that look'd to it had wound up the Alarm, so as to strike a little after One; if, I say, this had been done, and that

these *Chineses*, that look'd upon it as a living Creature, or some *European* Animal, would think, that when the *Index*, pointing at two of the Clock, likewise struck the same Hour, and so three, four, and onward, they would judg that these Noises were regularly produc'd, because they (at equal Intervals of time) heard them, and whensoever the *Index* pointed at an Hour, and never but then; but when the Alarm came unexpectedly to make a loud, confus'd, and more lasting Noise, they could scarce avoid thinking, that the Animal was sick, or exceedingly disorder'd: And yet the Alarming noise did as properly flow from the Structure of the little Engine, and was as much design'd by the Manager of it, as those Sounds of the Clock, that appear'd manifestly Regular.

S E C T. VII.

I proceed now to the Sixth and Difficuldest part of my Task, which is to shew, That the most general and current *Effata* and *Axioms* concerning *Nature*, that are wont to be imploy'd in the Writings of Philosophers, may have a fair Account given of them, agreeably to the Doctrine I have hitherto propos'd, tho' these *Axioms* do some of them *suppose*, and others seem strongly to *support*, the receiv'd Notion of *Nature*.

To clear the way for the ensuing Explications, I must desire you to recall to mind the two Cautions I have formerly offer'd you (in the Fifth Section,) wherewith I would have the common Doctrine, about the Ends or Designs of *Nature*, to be understood or limited. And therefore I shall not here repeat, what I there said, but only add in two words,
that

that if those, and some few other such things, had been observ'd and duly consider'd, they might perhaps have prevented much of the Obscurity, and some of the Errors, that relate to the Notion of *Nature*.

I hope you have not forgot, that the design of this Paper was, to examine the Vulgar Notion of *Nature*, not to establish a new One of my own. And indeed the Ambiguity of the Word is so great, (as hath in the Second Section been made appear) and 'tis, even by Learned Men, frequently imploy'd to signify such different Things; that, without Enumerating and Distinguishing its various Acceptions, it were very *unsafe* to venture a giving a *Definition* of it, and perhaps it were very *impossible* to give any, that would not be liable to censure. I shall not therefore here presume to *define* a Thing, of which I have not found a stated and settled Notion so far agreed on amongst Men, but that I was oblig'd, out of *Aristotle* and Others, to compile,

pile, in the Fourth Section, a Collective *Representation* of the vulgarly receiv'd *Idea*, or Notion of *Nature*: And afterwards to draw up, as well as I could, instead of an accurate *Definition*, tolerable *Descriptions* of what, on most occasions, may be intelligibly meant by It. Wherefore, desiring and presuming, that you will retain in your Mind, and, as occasion shall require, apply, in the following Part of this Essay, the Things already delivered in the Fourth Section, I will not trouble you with the Repetition of Them.

But before I descend to treat of the particular *Effata* or Sentences, that are Receiv'd concerning *Nature's* Actings, it may not be improper, nor unuseful, to try if we can clear the way, by considering in what sense *Nature* may, or may not, be said to *act at all*, or to *do this or that*. For, for ought I can clearly discern, whatsoever is perform'd in the merely Material World, is really done by particular Bodies, acting
 accor-

according to the Laws of Motion, Rest, &c. that are settled and maintain'd by God among Things Corporeal. In which *Hypothesis*, *Nature* seems rather a Notional Thing, than a true Physical, and distinct or separate, Efficient; such as would be, in case *Aristotles* Doctrine were true, one of those Intelligences, that he presum'd to be the Movers of the Cœlestial Orbs. But Men do oftentimes express themselves so very ambiguously or intricately, when they say, that *Nature does this and that*, or, that *She acts thus and thus*; that 'tis scarce (if at all) possible to translate their Expressions into any Forms of Speech, adequate to the Original and yet Intelligible. For which Reason, though I have in the Section said something to the same purpose with what I am now to propose, yet the difficulty and weight of the Subject makes me think it may be expedient, if not necessary, in this place somewhat more fully to declare what Men do, or should, mean,

mean, when they speak of *Nature's acting*, or of a Thing's being Naturally done or performed, by giving their Words and Phrases sometimes one Interpretation, and sometimes another.

I. *Sometimes* when 'tis said, that *Nature does this or that*; 'tis less proper to say, that 'tis done *by Nature*, than, that it is done *according to Nature*. So that, *Nature* is not here to be look'd on, as a distinct or separate Agent, but as a Rule, or rather a Systeme of Rules, according to which, those Agents, and the Bodies they work on, are, by the Great Author of Things, determin'd to act and suffer.

Thus, when Water is rais'd in a Sucking-Pump, 'tis said, that *Nature* makes the Water ascend after the Sucker, to prevent a *Vacuum*; though in reality this Ascension is made, not by such a separate Agent, as *Nature* is fancied to be, but by the Pressure of the Atmosphere, acting upon the Water, according to
 Statical

Statical Rules, or the Laws or the *Æquilibrium* of Liquors, settled by God among Fluids, whether Visible or Pneumatical. So, when the strict *Peripateticks* tell us, that all the Visible Cœlestial Orbs, being by a *Motion*, that they call *Violent*, hurried about the Earth every four and twenty Hours from East to West; each of the Planetary Orbs has a *Natural Motion*, that is quite contrary, tending from the West to the East: If they will speak congruously to their Master's Doctrine, they must use the term *Natural* in the sense our Observation gives It: Since *Aristotle* will have the Cœlestial Orbs to be moved by external or separate Agents namely, Spiritual *Intelligences*. Our Observation may be also illustrated by other forms of Speech, that are in use; as when 'tis said, that the Law takes care of Infants and Lunatics, that their indiscreet Actions or Omissions should not damnify their Inheritances; and, that the Law Hangs Men for Murther, but only

only Burns them in the Hand for some lesser Faults ; of which Phrases the Meaning is, that Magistrates and other Ministers of Justice, acting according to the Law of the Land, do the things mention'd. And it tends yet more directly to our purpose to take Notice, that 'tis common to ascribe to Art those things that are really perform'd by Artificers, according to the Prescriptions of the Art, as when 'tis said, that Geometry (as the Name imports,) measures Lands, Astrology foretels Changes of Weather and other future Accidents, Architecture makes Buildings, and Chymistry prepares Medicines.

II. *Sometimes*, when divers Things, such as the Growth of Trees, the Maturation of Fruits, &c. are said to be perform'd by the course of *Nature*, the Meaning ought to be, that such things will be brought to pass by their proper and immediate Causes, according to the wonted *Manner* and *Series* or *Order* of their Actings,

ings. Thus 'tis said, that, by the course of *Nature* the Summer days are longer than those of the Winter : That, when the Moon is in Opposition to the Sun, (that is in the Full Moon,) that Part of Her Body which respects the Earth, is more Enlightned than at the New Moon, or at either of the Quadratures : And lastly, That when She enters more or less into the Conical Shadow of the Earth, She suffers a total or a partial Eclipse. And yet these and other Illustrious *Phænomena* may be clearly explicated without recourse to any such Being as the *Aristotelians Nature*, barely by considering the Situations and wonted Motions of the Sun or Earth, and the Moon, with reference to each other, and to the Terrestrial Globe.

And here it may not be amiss to take notice, that we may sometimes usefully distinguish between the *Laws of Nature*, more properly so call'd, and the *Custom of Nature*, or, if you please, between the Fundamental

mental and General Constitutions among Bodily Things, and the Municipal Laws, (if I may so call them,) that belong to this or that particular sort of Bodies. As, to resume and somewhat vary our Instance drawn from Water ; when this falls to the Ground, it may be said to do so by virtue of the *Custom of Nature*, it being almost constantly usual for that Liquor to tend downwards, and actually to fall down, if it be not externally hinder'd. But when Water ascends by Suction in a Pump, or other Instrument, that Motion, being contrary to that which is wonted, is made in virtue of a more Catholick *Law of Nature*, by which 'tis provided, that a greater Pressure, which in our case the Water suffers from the weight of the Incumbent Air, should surmount a lesser, such as is here the Gravity of the Water, that ascends in the Pump or Pipe.

The two foregoing Observations may be farther illustrated, by considering

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dering, in what sense Men speak of things which they call *Præter-natural*, or else *Contrary to Nature*. For divers, if not most, of their Expressions of this kind, argue, that *Nature* is in Them taken for the Particular and Subordinate, or, as it were, the Municipal Laws establish'd among Bodies. Thus Water, when 'tis intensely Hot, is said to be in a *Præter-natural* State, because it is in One that 'tis not usual to It, and, Men think, doth not regularly belong to It; though the Fire or Sun, that thus agitates It and puts it into this State, is confess'd to be a Natural Agent, and is not thought to act otherwise than according to *Nature*. Thus, when a Spring, forcibly bent, is conceiv'd to be in a State contrary to its *Nature*, as is argued from its incessant Endeavour to remove the compressing Body; this State, whether *Præter-natural*, or contrary to *Nature*, should be thought such, but in reference to the Springy Body. For otherwise 'tis as agreeable to the
grand

grand Laws, that obtain among Things Corporeal, that such a Spring should remain bent by the degree of Force, that actually keeps it so, as that it should display itself in spight of a less, or incompetent, Degree of Force. And to omit the Six *Non-natural* Things, so much spoken of by Physitians, I must here take notice, that though a Disease be generally reckon'd as a *Præter-natural* Thing, or, as Others carry the Notion further, a State *contrary to Nature*; yet, that must be understood only with reference to what customarily happens to a human Body: Since excessively cold Winds, and immoderate Rains, and sultry Air, and other Usual Causes of Diseases, are as Natural Agents, and act as agreeably to the Catholick Laws of the Universe, when they produce Diseases, as when they condense the Clouds into Rain or Snow, blow Ships into their Harbour, make Rivers overflow, ripen Corn and Fruit, and do such other Things,

S 2 whether

whether they be hurtful or beneficial to Men. And, upon a like Account, when Monsters are said to be *Præternatural* Things; the Expression is to be understood with regard to that particular *Species* of Bodies, from which the Monster does enormously deviate, though the Causes, that produce that Deviation, act but according to the general Laws, whereby Things Corporeal are guided.

3. I doubt, whether I should add as a Third Remark, or as somewhat that is referrable to one or both of the Two foregoing, that sometimes, when 'tis said, that *Nature performs this or that Thing*, we are not to conceive, that this Thing is an Effect really produc'd by other than by proper Physical Causes or Agents; but, in such Expressions, we are rather to look upon *Nature*, either as a Relative Thing, or as a Term employed to denote a Notional Thing, with reference whereunto Physical Causes are consider'd, as acting after some peculiar manner, whereby we
may

may distinguish their Operations from those that are produc'd by other Agents, or perhaps by the same, consider'd as acting in another Way. This, I think, may be Illustrated by some other receiv'd Expressions, or Forms of Speech. As, when many of the Ancient, and some of the Modern, Philosophers, have said, that *Things are brought Fatally to pass*; they did not mean, that *Fate* was a distinct and separate Agent, but only, that the Physical Causes perform'd the Effect, as, in their Actings, they had a necessary Dependence upon one another, or an inviolable Connexion that link'd them together. And on the other side, when Men say, as they too frequently do,

that *Fortune* or *Chance*, ἡ τύχη or τὸ αὐτόματον (for *Aristotle* and his Followers distinguish Them, ascribing to the former, what unexpectedly happens to

Differunt autem Fortuna & Casus, quia Casus latius patet. Quod enim à Fortuna est, Casu est: hoc autem non omne est à Fortuna. *Arist. Auscult. lib. ii. cap. 4.*

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Deliberating

Deliberating or Designing, and to the later, what happens to Inanimate or Undesigning Beings,) *has done this or that* : Considerate Philosophers do not look upon *Fortune* or *Chance* as a true and distinct Physical Cause, but as a Notional Thing, that denotes, that the proper Agents produc'd the Effect without an Intention to do so, (as I have more fully declar'd in the Fourth Section.)

One may, for ought I know, without Impertinence, refer to this our Third Observation, That many Things are wont to be attributed to *Time* ; as, when we say, that *Time* ripens some Fruits that are too early gather'd ; that it makes many things moulder and decay, (*Tempus edax rerum* ;) that 'tis the Mother of Truth ; that it produces great Alterations, both in the Affairs of Men, and in their Dispositions and their Bodies : To omit many other Vulgar Expressions, which represent Time as the Cause of several Things, whereof really it is but an Adjunct or a Concomitant

comitant of the Effects, (however Coincident with the successive Parts of Time, and so, some way, related to It) being indeed produc'd by other Agents, that are their true and proper Efficientes.

Sometimes likewise, when it is said, that *Nature does this or that*, we ought not to suppose, that the Effect is produc'd by a distinct or separate Being; but, on such Occasions, the Word *Nature* is to be conceiv'd to signifie a Complex or Convention of all the Essential Properties, or necessary Qualities, that belong to a Body of that *Species* whereof the real Agent is, or to more Bodies respectively, if more must concur to the Production of the Effect. To this sense we are to expound many of those Forms of Speech, that are wont to be imploy'd, when Physicians, or others, speak of what *Nature* does in reference to Diseases, or the Cure of them. And, to give a right sense to such Expressions, I consider *Nature*, not as a Principal and Distinct Agent, but a

kind of Compounded Accident, that is (as it were) made up of, or results from, the divers Properties and Qualities that belong to the true Agents. And, that the Name of a *Compounded Accident* may not be startled at, I shall, to explain what I mean by it, observe, that, as there are *some* Qualities or Accidents, that, at least in comparison of *others*, may be call'd *Simple*, as Roundness, Streightness, Heat, Gravity, &c. so there are *others*, that may be conceiv'd as *Compounded*, or made up of several Qualities united in one Subject: As, in divers Pigments, Greenness is made up of Blew and Yellow, exquisitely mix'd; Beauty is made up of fit Colours, taking Features, just Stature, fine Shape, graceful Motions, and some other Accidents of the Human Body and its Parts. And, of this sort of Compounded Accidents, I am apt to think, there are far more, than, at the first mention of them, one would imagine. And to this kind of Beings, the Expressions, that *Naturists* do

do on divers occasions imploy, incline me to think, that, what is call'd *Nature* has a great Affinity, at least in reference to those Occasions. On which Supposition, one may conceive, that, *as* when 'tis said, that *Health* makes a Man Eat well, Digest well, Sleep well, &c. Considering Men do not look upon *Health* as a Distinct and Separate Cause of these Effects; but, as what we lately call'd a *Compound'd Accident*, that is, a Complex of all the Real and Genuine Causes of good Appetite, Digestion, Sleep, &c. insomuch that *Health* is not so properly the Cause of these, as their Effect or Result: So in divers Things that *Nature* is said to do, we need conceive no more, than that the Effects are produc'd by Physical Bodies and Qualities, or other proper Causes; which, when we consider as conspiring, or rather concurring, to produce the same Effect, by a Compendious Term we call *Nature*.

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By these and the like ways of Interpretation, I thought fit to try, whether I could give an Intelligible and Commodious sense to divers of the *Maxims* or *Sentences*, and other Forms of Speech, that are employ'd by those, that, on many Occasions, and in differing Expressions, say, *That Nature does this or that, and acts thus and thus.* But I confess, that to clear all those ambiguous and unskilfully fram'd Axioms and Phrases, I found to be so intricate and difficult a Task, that, for want of Time, and perhaps too of Patience, I grew weary before I had prosecuted it to the utmost. For which Reason, *though* 'tis not improbable, that some Light may be given in this dark Subject, by what I have been now saying, (as immature and unfinish'd, as it is) especially if it be reflected on in Conjunction with what hath been formerly deliver'd (in the Fourth Section) about *Nature*, General and Particular; yet I shall, at present, make but very little use of the

the Things that have been now said, in expounding the *Axioms* I am particularly to consider in this Seventh Section; hoping, that I may, by the help of other *Mediums*, dispatch my Work without them. And, to do it the more easily, I shall, without tying myself to the Order wherein they are marshall'd after the beginning of the Fourth Section, treat of them in the Order wherein I think their Explications may give most Light to one another, or in That, wherein the Papers that belong'd to them were retriev'd.

The first of the receiv'd Axioms I shall consider, is, that which pronounces, that *Omnis Natura est conservatrix sui*; where, by the Word *Nature*, I suppose, they understand a Natural Body, for otherwise I know not what they meant: Now this Axiom easily admits of a twofold Interpretation. For, either it may signifie no more, than that no one Body does tend to its own Destruction, that is, to destroy Itself: Or else,
that

that in every Body there is a Principle call'd *Nature*, upon whose Score, the Body is vigilant and industrious to preserve Its Natural State, and to defend Itself from the Violence and Attempts of all other Bodies that op-pugn It, or endeavour to destroy or harm It.

In the former of these two Senses, the Axiom may be admitted, without any prejudice to our Doctrine. For since according to our *Hypothesis*, Inanimate Bodies can have neither Appetites, nor Hatreds, nor Designs, which are all of them Affections, not of Bruit Matter but of Intelligent Beings; I, that think Inanimate Bodies have no Appetites at all, may easily grant, that they have not any to destroy themselves.

But, according to the other Sense of the propos'd Axiom, 'twill import, that every Body has within itself a Principle, whereby it does desire, and with all its Power endeavour, to compass its own Preservation: And both to do those things,
that

that tend thereunto, and oppose all endeavours, that outward Agents, or internal Distempers, may use in order to the Destruction of It.

And as this is the most Vulgar Sense of this Axiom, so 'tis chiefly in this Sense, that I am concern'd to Examine It.

I conceive then, that the most Wise Creator of Things did at first *so* frame the World, and settle such Laws of Motion between the Bodies, that, as Parts, compose It; *that* by the Assistance of his General Concurrence, the Parts of the Universe, especially those that are the Greater and the more Noble, are lodg'd in such Places, and furnish'd with such Powers, that, by the help of his general Providence, they may have their Beings continued and maintained, as long and as far forth, as the Course he thought fit to establish, amongst Things Corporeal, requires.

Upon this Supposition, which is but a reasonable one, there will appear no necessity to have any recourse,
for

for the Preservation of particular Bodies, to such an Internal Appetite and Inbred Knowledg in each of them, as our Adversaries presume. Since, by virtue of the Original Frame of Things, and established Laws of Motion, Bodies are necessarily determined to act on such Occasions, after the Manner they would do, if they had really an Aim at Self-preservation: As you see, that, if a blown Bladder be compress'd, and thereby the included Air be forc'd out of its wonted Dimensions and Figure, it will unceffantly endeavour to throw off, and repel, that which offers Violence unto It; and first displace that Part of the compressing Body, that it finds Weakest; though in all this, there be no Appetite in the Air, (as I elswhere shew,) no more than in the Bladder, to that particular Figure, to maintain itself in which it seems so concern'd.

Thus, 'tis all one to a lump of Dough, whether you make it into a
round

round Loaf, or a long Rowl, or a flat Cake, or give it any other Form : For whatever Figure your Hands or your Instruments leave in It, that it will retain, without having any Appetite to return to that, which it last had. So, 'tis all one to a piece of Wax, whether your Seal Imprints on It the Figure of a Wolf, or that of a Lamb. And, for Brevity's sake, to pass by the Instances that might be drawn from what happens to Wood, and Marble, and Metals, as they are differently shap'd by the Statuaries Art and Tools ; I will only observe, that the Mariner's Needle, before it is excited, may have no particular Propensity to have respect to one Part of Heaven, more than another ; but when it has been duly touch'd upon a Load-stone, the *Flower-de-Luce* will be determin'd to regard the North, and the opposite Extreame the South. So that, if the *Lilly* be drawn aside, towards the East or towards the West, as soon as the Force, that detain'd

tain'd it, is remov'd, it will return to its former Position, and never rest, 'till it regard the North. But, in spite of this seeming Affection of the *Lilly* to that Point of the Horizon, yet, if the Needle be duly touch'd upon the contrary Pole of the same or another vigorous Loadstone, the *Lilly* will presently forget its former Inclination, and regard the Southern Part of Heaven; to which Position it will, as it were, spontaneously return, having been forc'd aside towards the East, or towards the West, if it be again left to its Liberty. So that, though it formerly seem'd so much to affect one Point of Heaven, yet it may, in a trice, be brought to have a strong Propensity for the Opposite: The *Lilly* having, indeed, no Inclination for one Point of Heaven, more than another, but resting in that Position, to which it was last determin'd by the prevalence of Magnetical *Effluvia*. And this Example may serve to illustrate and confirm, what we have

have been lately saying in General.

II. Another Received Axiom concerning *Nature*, is, That She never fails or misses of Her End, *Natura sine suo nunquam excidit.* This is a Proposition, whose Ambiguity makes it uneasy for me to deliver my Sense of It. But yet, to say somewhat, if by *Nature* we here understand that Being, that the School-men Style *Natura Naturans*, I grant, or rather assert, that *Nature* never misseth its End. For the Omniscient and Almighty Author of Things, having once fram'd the Word, and establish'd in It the Laws of Motion, which he constantly maintains, there can no Irregularity, or Anomaly, happen, especially among the greater Mundane Bodies, that he did not from the Beginning foresee and think fit to permit, since they are but genuine Consequences of that Order of Things, that, at the Beginning, he most wisely Instituted. As I have formerly declar'd in Instances of the *Eclipses* of

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of the Sun and Moon ; to which I could add Others, as the Inundations of *Nilus*, so necessary to the Health and Plenty of *Ægypt*. And though, on some special Occasions, this Instituted Order, either seemingly or really, has been violated, as when the *Sun* is said to have Stood still in the days of *Josbua*, and the *Red Sea* to have Divided itself to give free Passage to the *Israelites*, led by *Moses* ; yet these things having been rarely done, for weighty Ends and Purposes, by the peculiar Intervention of the first Cause, either guiding or over ruling the Propensities and Motions of Secondary Agents ; it cannot be said, that God is frustrated of his Ends by these design'd, though seeming, Exorbitances, by which he most Wisely and Effectually accomplishes Them. But, if by *Nature* be meant such a Subordinate Principle, as Men are wont to understand by that Name, I doubt the Axiom is in many Cases false ; for though it it be true, as I have often said, that
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the Material World is so constituted, that, *for the most part*, Things are brought to pass by Corporeal Agents, as regularly, as if they designed the Effects they produce, yet there are *several Cases*, wherein Things happen quite otherwise.

Thus 'tis confess'd, that when a Woman is with Child, the Aim of *Nature* is, to produce a Perfect or Genuine human *Fœtus*; and yet we often see, that *Nature* widely missing Her Mark, instead of That, produces a Monster. And of This we have such frequent Instances, that whole Volumes have been publish'd, to recount and describe these gross and deform'd Aberrations of *Nature*. We many times see, (and have formerly noted,) that in Feavers, and other acute Diseases, She makes Critical Attempts upon improper Days, and in these unseasonable Attempts does not only, for the most part, miss of her End, which is to Cure the Patient, but often brings him to a far worse Condition, than

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he was in, before She us'd those mis-
 carrying Endeavours. To this may
 may be referr'd the Cheats Men put
 upon *Nature* ; as when, by Grafting,
 the Sap, that *Nature* raises with In-
 tention to feed the Fruit of a white
 Thorn. (for Instance,) is by the
 Gardener brought to nourish a
 Fruit of quite another Kind. So,
 when Maulsters make Barley to
 sprout, that Germination, whereby
Nature intended to produce Stalks
 and Ears, is perverted to a far diffe-
 ring Purpose, and She deluded.
 And now, to annex some Arguments
ad Hominem, we are told, that *Na-
 ture* makes every Agent aim at as-
 simulating the Patient to itself, and
 that upon this account, the Fire aims
 at converting Wood, and the other
 Bodies it works on, into Fire : But,
 if this be so, *Nature* must often miss
 of Her End in Chymical Furnaces,
 where the Flame does never turn
 the Bricks, that it makes red-hot,
 into Fire ; nor the Crucibles, nor
 the Cuples, nor yet the Gold and
 Silver,

Silver, that it thoroughly pervades, and brings to be of a Colour, the same, or very near the same, with its own, and keeps in a very intense Degree of Heat, and in actual Fusion. And, even when Fire acts upon Wood, there is but one Part of it turn'd into Fire, since, to say nothing of the Soot and concreted Smoke, the Ashes remain fix'd and incombustible. And so, to add another Instance *ad Hominem*, when we are told, that *Nature* makes Water ascend in Sucking-Pumps, *ob fugam Vacui*, She must needs (as I formerly noted to another Purpose,) miss of Her Aim, when the Pump exceeds Five and Thirty, or Forty, Foot in Height ; for then, though you Pump never so much, and withdraw the Air from the upper Part of the Engine, the Water will not ascend to the Top ; and consequently, will leave a Cavity, for whose replenishing She was suppos'd to have rais'd that Liquor Two or Three and Thirty Foot.

III. Another of the celebrated Axioms concerning *Nature*, is, that She always acts by the shortest or most compendious Ways, *Natura semper agit per vias brevissimas*. But this Rule, as well as divers Others, does, I think, require to be somewhat explained and limited, before it be admitted. For, 'tis true, that, as I have frequently occasion to inculcate, the Omniscient Author of the Universe has so Fram'd It, that most of the Parts of it act as regularly in order to the Ends of It, as if they did it with Design. But, since Inanimate Bodies, at least, have no Knowledge, it cannot reasonably be suppos'd, that they moderate and vary their own Actions, according to the Exigency of particular Circumstances, wherewith they must of necessity be unacquainted, and therefore it were strange, if there were not divers Occurrences, wherein they are determin'd to Act by Other, than the shortest, Ways that lead to particular Ends, if those

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Other Ways be more congruous to the General Laws or Customs, established among Things Corporeal. This I prove by Instances taken from Gravity itself, which is, perhaps, that Quality, which of all others is most probably referr'd to an inbred Power and Propension. For 'tis true, that if a Stone, or another heavy Body, be let fall into the free Air, 'twill take its Course directly towards the Centre of the Earth; and, if it meet with an inclining Plane, which puts it out of its Way, it will not for all that lose its Tendency towards the Centre, but run along that Plane, by which Means its Tendency downwards is prosecuted, though not, as before, in a perpendicular Line, yet in the shortest Way it is permitted to take. These obvious *Phænomena*, I confess, agree very well with the Vulgar Axiom, and possibly were the chief Things that induc'd Men to frame it. But now let us suppose, that a small Bullet of Marble or Steel,

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after having for a pretty space fallen through the Air, lights upon a Pavement of Marble, or some such hard Stone, that lies, as Floors are wont to do, Horizontal; in this Case, Experience shews, (as was formerly noted on another occasion) that the falling Stone will rebound to a considerable Height, (in Proportion to That it fell from) and falling down again rebound the second time, tho' not so high as before; and, in short, rebound several times, before, by settling upon the Floor, it approaches, as near as is permitted it, to the Centre of heavy Bodies. Whereas, if *Nature* did in all Cases act by the most Compendious ways, this Bullet ought not to rebound at all; but, as soon as it found, by the hardness of the Floor, it could descend no lower, it ought to have rested there, as in the nearest place it could obtain to the Centre of the Earth, whence every Rebound must necessarily remove it to a greater Distance. And so likewise, when a *Pendulum*, or Bullet

Bullet fasten'd to the end of a String, is so held, that the String is (*præter propter*) Perpendicular to the Horizon, if it be thence let fall, it will not stop at the Perpendicular Line, or Line of Direction, which is suppos'd to reach from the Nail or other Prop, through the Centre of the Bullet, to the Centre of the Earth, but will pass beyond it, and vibrate or swing to and fro, 'till it have pass'd again and again the Line of Direction, for a great while, before the Bullet come to settle in it, though, whenever it removes out of it, towards either hand, it must really ascend or move upwards, and so go further off from the Centre of the Earth, to which, 'tis pretended, its innate Propensity determines it to approach, as much and as soon as is possible. But this Instance having been formerly touch'd upon, I shall now observe, to the same purpose, that having taken a good Sea-Compass, [and the Experiment succeeded with a naked, yet nicely pois'd, Needle] and suffer'd

fer'd the Magnetick Needle to rest North and South ; if I held the proper Pole of a good Loadstone at a convenient Distance, on the right or left hand of the Lilly, this would be drawn aside from the North Point towards the East or West, as I pleas'd ; and then the Loadstone being remov'd quite away, the Lilly of the Needle would indeed return Northward, but would not stop in the Magnetick Meridian, but pass on divers Degrees beyond it, and would thence return without stopping at the *Meridian Line* : And so would, by its Vibrations, describe many Arches still shorter and shorter, 'till at length it came to settle on *it*, and recover that Position, which, if *Nature* always acted by the most Compendious Ways, it should have rested at the first time, that by the removal of the Loadstone it had regain'd it. But the Truth is, that, at least, Inanimate Bodies, acting without knowledg or design of their own, cannot stop or moderate their own Action,

Action, but must necessarily move as they are determin'd by the Catholick Laws of Motion, according to which, in one Case, the *Impetus*, that the Bullet acquires by falling, is more powerful to carry it on beyond the Line of Direction, than the Action of the Causes of Gravity is to stop it, as soon as it comes to the nearest place they can give it to the Centre of the Earth. And something like this happens in *Levity*, as well as *Gravity*; for if you take an oblong and conveniently shap'd piece of light Wood, as Firr or Deal, and, having thrust or sunk it to the Bottom of a somewhat deep stagnant Water, give it Liberty to ascend, it will not only regain the Surface of the Water, where, by the Laws of Gravity, it ought to rest, and did rest before it was forc'd down, but it will pass far beyond that Surface, and in part as it were shoot itself up into the Incumbent Air, and then fall down again, and rise a second time, and perhaps much oftner, and fall again,

again, before it come to settle in its due place, in which it is in an *equilibrium* with the Water, that endeavours to press it upwards.

Another of the Sentences that are generally receiv'd concerning *Nature*, is, that She always does what is best to be done: *Natura semper quod optimum est facit.* But

Natura semper id facit quod est optimum eorum quæ fieri possunt. Arist. de Cælo. lib. ii. c. 4. See also Arist. de Gen. lib. ii. cap. 10. §. 22.

of this it will not be safe for me to deliver my Opinion, 'till I have endeavour'd to remove the ambiguity

of the Words; for they easily admit of two different Senses, since they may signifie, that *Nature* in the whole Universe does always that which is best, for the conservation of It in its present State; or, that in reference to each Body in particular, *Nature* does still what is best, that is, what most conduces to the Preservation and Welfare of that Body. If the first of these Senses be pitch'd upon, the Axiom will be less liable to Exception.

Exception. But then, I fear, it will be difficult to be positively made out, by such Instances as will prove, that *Nature* acts otherwise than necessarily according to Laws Mechanical; and therefore, 'till I meet with such Proofs, I shall proceed to the other Sense that may be given our Axiom, which, though it be the most usual, yet, I confess, I cannot admit, without it be both explain'd and limited. I readily grant, that the All-wise Author of Things Corporeal has so fram'd the World, that most things happen in it, as if the particular Bodies that compose it, were watchful both for their Own welfare, and That of the Universe. But, I think, withall, that particular Bodies, at least Those that are Inanimate, acting without either Knowledg or Design, their Actions do not tend to what is best for them in their private Capacities, any further than will comport with the general Laws of Motion, and the important Customs establish'd among Things

Things Corporeal : So that to conform to these, divers Things are done that are neither the Best, nor so much as Good, in reference to the welfare of particular Bodies.

These Sentiments I am induc'd to take up, not only by the more Speculative Considerations, that have been formerly discours'd of and therefore shall not here be repeated, but by daily Observations and obvious Experience.

We see oftentimes, that Fruit-Trees, especially when they grow old, will for one Season be so overcharg'd with Fruit, that soon after they decay and die ; and even whilst they flourish , the excessive Weight of the too numerous Fruits does not seldom break off the Branches they grow upon, and thereby both hinders the Maturity of the Fruit, and hastens the Death of the Tree : Whereas, this fatal Profuseness would have been prevented, if a wise *Nature*, harbour'd in the Plant, did, as is presum'd, solicitously intend its Welfare.

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We see also in divers Diseases, and in the unseasonable and hurtful *Crisis*'s of Feavers, how far, what Men call, *Nature* oftentimes is, from doing that, which is best for the Sick Man's Preservation. And indeed, (as hath been formerly noted on another Occasion,) in many Diseases, as Bleedings, Convulsions, Cholera's, &c. a great Part of the Physicians Work is, to appease the Fury, and to correct the Errors, of *Nature*, which being, as 'twere, transported with a blind and impetuous Passion unseasonably produces those dangerous Disorders in the Body, that, if She were wise and watchful of its Welfare, She would have been as careful to prevent, as the Physicians to remedy Them.

Add to all this, that, if *Nature* be so Provident and Watchful for the Good of Men and other Animals, and of that Part of the World, wherein they live; How comes it to pass, that from time to time, She destroys such Multitudes of Men and Beasts,
by

by Earthquakes, Pestilences, Famine, and other Anomalies? And, How comes it so often to pass in Teeming Women, that, perhaps by a Fright, or a longing Desire, or the bare Sight of any outward Object, *Nature* suffers Herself to be so disordered, and is brought to forget Her Plastick Skill so much, as, instead of well-form'd Infants, to produce hideous Monsters, and those oftentimes so mishapen and ill-contriv'd, that not only Themselves are unfit to live one Day, or perhaps one Hour, but cannot come into the World without killing the Mother that bare Them. These and such other Anomalies, though (as I have elsewhere shewn,) they be not repugnant to the Catholick Laws of the Universe, and may be accounted for in the Doctrine of God's General Providence; yet they would seem to be Aberrations, incongruous enough to the *Idea* the Schools give of *Nature*, as of a *Being*, that, according to the Axiom hitherto consider'd,

der'd, *does always that which is best.*
But 'tis time that we pass from that,
to the Examen of another.

Though I have had occasion to
treat of *Vacuum* in the Fifth Section,
yet I must also say something about
it in This, because I there consider'd
it, but as it is imploy'd by the *Peri-
pateticks* and others, to shew the Ne-
cessity of the Principle they call *Nature*. But *now* I am to treat of it, not
so much as an Argument to be con-
futed, as on the score of its belong-
ing to a (very plausible) Axiom to
be consider'd; although I fear, that,
by reason of the Identity of the Sub-
ject, (though consider'd in the Fifth
Sect. and here, to differing purposes)
I shall scarce avoid saying something
or other, co-incident with what has
been said already.

V. The Word *Vacuum* being ambi-
guous, and us'd in differing Senses, I
think it requisite, before I declare my
Opinion about the generally receiv'd
Axiom of the Schools, that *Natura
Vacuum horret*, (or, as some express
it,

it, *abhorret à Vacuo*) to premise the chief Acceptions in which, I have observ'd, the Term *Vacuum* to be made use of. For it has sometimes a *Vulgar*, and sometimes a *Philosophical* or strict, Signification. In common Speech, *To be empty*, usually denotes, not to be devoid of all Body whatsoever, but of that Body that Men suppose should be in the Thing spoken of, or of That which it was fram'd or design'd to contain; as when Men say that a Purse is empty, if there be no Mony in it; or a Bladder, when the Air is squeez'd out; or a Barrel, when either it has not been yet fill'd with Liquor, or has had the Wine or other Drink drawn out of it. The Word *Vacuum* is also taken in another sense by Philosophers that speak strictly, when they mean by it, a Space within the World, (for I here meddle not with the Imaginary Spaces of the School-men, beyond the bounds of the Universe,) wherein there is not contain'd any Body whatsoever. This Distinction being

being premis'd, I shall inform you, that taking the Word *Vacuum* in the strict Sense, though many, and, among them, some of my best Friends, press'd me to a Declaration of my Sense about that famous Controversie, *An detur Vacuum*, because, they were pleas'd to suppose, I had made more Tryals than others had done about it, yet I have refus'd to declare myself, either *Pro* or *Contra*, in that Dispute. Since the decision of the Question seems to depend upon the stating of the true Notion of a Body, whose Essence the *Cartesians* affirm, and most other Philosophers deny, to consist only in Extension, according to the three Dimensions, Length, Breadth, and Depth or Thickness: For, if Mr. *Des Cartes's* Notion be admitted, 'twill be irrational to admit a *Vacuum*, since any Space, that is pretended to be empty, must be acknowledg'd to have the three Dimensions, and consequently all that is necessary to Essentiate a Body. And all the Experiments, that can be

made with Quicksilver, or the *Machina Boyliana* (as they call it,) or other Instruments contriv'd for the like Uses, will be eluded by the *Cartesians*, who will say, that the space deserted by the Mercury, or the Air, is not empty, since it has Length, Breadth, and Depth, but is fill'd by their *Materia Subtilis*, that is fine enough to get freely in and out of the Pores of the Glasses, as the *Effluvia* of the Loadstone can do. But though, for these and other Reasons, I still forbear (as I lately said I have formerly done,) to declare either way in the Controversie about *Vacuum*, yet I shall not stick to acknowledge, that I do not acquiesce in the Axiom of the Schools, that *Nature abhors a Vacuum*.

For, First, I consider, that the chief, if not the only, Reason, that moves the Generality of Philosophers to believe, that *Nature abhors a Vacuum*, is, that in some Cases, as the Ascension of Water in Sucking-Pumps, &c. they observe, that there is

is an unusual endeavour, and perhaps a forcible Motion in Water and other Bodies, to oppose a *Vacuum*. But I, that see nothing to be manifest here, save that some Bodies, not devoid of Weight, have a Motion upwards, or otherwise differing from their usual Motions, (as in Determination, Swiftneſs, &c.) am not apt, without absolute neceſſity, to aſcribe to Inanimate and Senſeleſs Bodies, ſuch as Water, Air, &c. the Appetites and Hatreds that belong to Rational, or or leaſt to Senſitive, Beings; and therefore, think it a ſufficient Reaſon, to decline imploying ſuch improper Cauſes, if without them, the Motions, wont to be aſcrib'd to Them, can be accounted for.

2. If the *Carteſian* Notion of the Eſſence of a Body be admitted by us, as 'tis by many Modern Philoſophers and Mathematicians, it can ſcarce be deny'd, but that *Nature* does not produce theſe oftentimes Great, and oftner Irregular, Efforts to hinder a *Vacuum*; ſince, it being impoſſible there

should be any, 'twere a fond thing to suppose that *Nature*, who is represented to us as a most wise Agent, should bestir Herself, and do Extravagant Feats, to prevent an impossible Mischief.

3. If the Atomical *Hypothesis* be admitted, it must be granted, not only that *Nature* does not abhor a *Vacuum*, but that a great Part of the Things She does require it, since they are brought to pass by Local Motion; and yet there are very many Cases, wherein, according to these Philosophers, the necessary Motions of Bodies cannot be perform'd, unless the Corpuscles, that lie in their way, have little empty Spaces to retire, or be impell'd into, when the Body, that pushes them, endeavours to displace them. So that the *Effatum*, That *Nature abhors a Vacuum*, agrees with neither of the two great Sects of the Modern Philosophers.

But, without insisting on the Authority of either of them, I consider,
that,

that, for ought appears by the *Phænomena* imploy'd to demonstrate *Nature's* abhorrency of a *Vacuum*, it may be rational enough to think, either that *Nature* does not abhor a *Vacuum*, even when She seems solicitous to hinder It ; or, that She has but a very moderate Hatred of It, in that Sense wherein the Vulgar Philosophers take the Word *Vacuum*.

For if we consider, that, in almost all visible Bodies here below, and even in the Atmospherical Air Itself, there is more or less of Gravity, or Tendency towards the Centre of our Terraqueous Globe, we may perceive, that there is no need that *Nature* should disquiet Herself, and act irregularly, to hinder a *Vacuum* : Since, without Her abhorrence of It, it may be prevented or replenish'd, by Her affecting to place all heavy Bodies as near the Centre of the Earth, as heavier than they will permit. And even without any Design of Hers, not to say without Her Existence, a *Vacuity* will be as much

oppos'd, as we really find it to be,
 by the Gravity of most, if not of all,
 Bodies here below, and the Conflux-
 ibility of Liquors, and other Fluids.
 For, by vertue of their Gravity, and
 the Minuteness of their Parts, they
 will be determin'd to insinuate them-
 selves into and fill all the Spaces,
 that they do not find already pos-
 sess'd by other Bodies, either more
 ponderous in *Specie* than themselves,
 or, by reason of their firmness of Stru-
 cture, capable of resisting or hindring
 their Descent. Agreeably to which
 Notion we may observe, that, where
 there is no danger of a *Vacuum*, Bo-
 dies may move, as they do, when
 they are said to endeavour its Preven-
 tion. As, if you would thrust your
 Fist deep into a Pail full of Sand, and
 afterwards draw it out again; there
 will need nothing but the Gravity of
 the Sand to make it fill up the grea-
 test Part of the space deserted by
 your Fist. And if the Pail be reple-
 nish'd, instead of Sand, with an Ag-
 gregate of Corpuscles more Minute
 and

and Glib than the Grains of Sand ,
 as for Instance, with Quicksilver or
 with Water, then the Space, deserted
 by your Hand, will be, at least as to
 Sense , compleatly fill'd up by the
 Corpuscles of the Liquor, which, by
 their Gravity, Minuteness, and the
 Fluidity of the Body, they compose,
 are determin'd to replenish the Space
 deserted by the Hand , that was
 plung'd into either of those Liquors.
 And I elsewhere shew, that, if you
 take a Pipe of Glass, whose Cavity is
 too narrow to let Water and Quick-
 silver pass by one another in It ; if, I
 say, you take such a Pipe, and having
 (by the help of Suction,) lodg'd a
 small Cylinder of Mercury of about
 half an Inch long in the lower Part
 of It, you carefully stop the upper
 Orifice with the Pulp of your Fin-
 ger, the Quick-silver will remain
 suspended in the Pipe. And, if
 then you thrust the Quick-silver di-
 rectly downwards into a somewhat
 deep Glass, or other Vessel, full of
 Water, till the Quick-silver be de-
 press'd

press'd about a Foot or more beneath the Surface of the Water ; if then you take off your Finger from the Orifice of the Pipe which it stopt before , you shall immediately see the Quick-silver ascend swiftly five or six Inches, and remain suspended at this new Station. Which Experiment seems manifestly to prove, what I did long ago devise and do now alledge it for : Since here we have a sudden Ascent of so heavy a Body as is Quick-silver, and a Suspension of It in the Glass, not produc'd to prevent or fill a *Vacuum*, for the Pipe was open at both Ends, the *Phænomena* being but genuine Consequences of the Laws of the *Æquilibrium* of Liquors , as I elsewhere clearly and particularly declare.

When I consider , how great a Power the School-Philosophers ascribe to *Nature*, I am the less inclin'd to think, that Her abhorrence of a *Vacuum* is so great, as they believ'd. For I have shewn in the Fifth Section , that Her aversion
from

from It, and Her watchfulness against It, are not so great, but that, *in the sense of the Peripateticks*, She can quietly enough admit it in some Cases, where, with a very small Endeavour, She might prevent or replenish It, as I have particularly manifested in the fore-cited Section. I just now mention'd a *Vacuum in the Sense of the Peripateticks*, because when the *Torricellian* Experiment is made, *though* it cannot, perhaps, be cogently prov'd, either against the *Cartesians*, or some other *Plenists*, that, in the upper Part of the Tube, deserted by the Quick-Silver, there is a *Vacuum* in the strict Philosophical Sense of the Word; yet, as the *Peripateticks* declare their Sense, by divers of their Reasonings against a *Vacuum*, mention'd in that Section, 'twill to a heedful Peruser appear very hard for *them* to shew, that there is not One in that Tube. And, as by the School-mens Way of Arguing *Nature's* hatred of a *Vacuum*, from the Suspension of Water and other

ther Liquors in Tubes and Conical Watring-Pots, it appears, that they thought that any Space here below, deserted by a visible Body, not succeeded by another Visible Body, or at least by common Air, may be reputed Empty. So, by the Space deserted by the Quick-silver at the top of the Pipe of a Baroscope Thirty One Inches long, One may be Invited to doubt, Whether a *Vacuum* ought to be thought so formidable a Thing to *Nature*, as they imagine She does, and ought to, think It? For what Mischief do we see insue to the Universe upon the producing or continuance of such a *Vacuum*, though the deserted Space were many time greater than an Inch, and continued many Years, as has divers times happen'd in the taller sort of Mercurial Baroscopes? And those *Peripateticks* that tell us, that, if there were a *Vacuum*, the Influences of the Cœlestial Bodies, that are absolutely necessary to the Preservation of Sublunary Ones, would be
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Intercepted, since Motion cannot be made in *Vacuo*, would do well to *prove*, not *suppose*, such a Necessity; and also to consider, that in our Case the top of the Quick-silver, to which the *Vacuum* reaches, does usually appear Protuberant; which shews, that the Beams of Light (which they think of great Affinity to Influences, if not the Vehicle,) are able to traverse that *Vacuum*, being in spite of It reflected from the Mercury to the Beholder's Eye. And in such a *Vacuum*, as to common Air, I have try'd that a Load-stone will emit his *Effluvia* and move Iron or Steel plac'd in It. In short, it is not Evident, that here below *Nature* so much strains Herself to hinder or fill up a *Vacuum*, as to manifest an Abhorrence of It. And, without much peculiar Solitude, a *Vacuum*, at least a Philosophical One, is as much provided against, as the Welfare of the Universe requires, by Gravity and Confluxibility of the Liquors and other Bodies, that
are

are placed here below. And as for those that tell us, that *Nature* abhors and prevents a *Vacuum*, as well in the Upper Part of the World as the Lower, I think we need not trouble ourselves to answer the Allegation till they have *prov'd* It. Which I think will be very hard for Them to do; not to mention, that a *Cartesian* may tell Them, that 'twere as needless for *Nature* to oppose a *Vacuum* in Heaven as in Earth, since the Production of It is every where alike Impossible.

VI. I come now to the celebrated Saying, that *Natura est Morborum Medicatrix*, taken from *Hippocrat.* who expresses it in the plural, *ἡ φύσις ποιεῖς ἰν ὅσι.*

Hippocrat. Epidem. lib. 6. §. 5. 1. 1.

And because this Axiom is generally Receiv'd among Physicians and Philosophers, and seems to be one of the principal Things, that has made them introduce such a Being as they call *Nature*, I think it may be Time well employ'd, to consider somewhat

what attentively, in what Sense, and how far, this famous Sentence, *nothing* or should not, be admitted.

First then, I conceive it may be taken in a Negative Sense, so as to import, that Diseases cannot be cur'd in such Persons, in whom the Aggregate of the Vital Powers or Faculties of the Body is so far weaken'd or deprav'd, as to be utterly unable to perform the Functions necessary to Life, or at least to actuate and assist the Remedies employ'd by the Physitian to preserve or recover the Patient. This I take to be the Meaning of such usual Phrases, as, that *Physick comes too late*, and, that *Nature is quite spent*. And in this Sense I readily acknowledge the Axiom to be true. For, where the Engine has some necessary Parts, whether Fluid or Solid, so far deprav'd or weakn'd, as to render it altogether unable to co operate with the Medicine, it cannot be rationally expected, that the Administration of that Medicine should be effectual.

But

in this, I presume, there is no difficulty worthy to detain us. I proceed therefore to the positive Sense, whereof our Axiom is capable, and wherein it is the most usually employ'd. For Men are wont to believe, that there resides, in the Body of a sick Person, a certain Provident or Watchful Being, that still industriously employs itself, by its own Endeavours, as well as by any occasional Assistance that may be afforded it by the Physician, to rectify whatever is amiss, and restore the distemper'd Body to its Pristine state of Health. What I think of this Doctrine, I shall leave you to gather from the following Discourse.

I conceive then in the first Place, that the Wise and Beneficent Maker of the World and of Man, intending that Men should, for the most part, live a considerable number of Years, in a Condition to act their Parts on the Mundane Stage; He was pleas'd to frame those Living

Automata

Automata, Human Bodies, that, with the ordinary succours of Reason, making use of their exquisite Structure fitted for Durableness, and of the friendly, though undesign'd, Assistance of the various Bodies among which they are plac'd, they may in many Cases recover a State of Health, if they chance to be put out of it by lesser Accidents than those, that God, in compliance with the great Ends of his General Providence, did not think fit to secure them from, or enable them to surmount. Many things therefore, that are commonly ascrib'd to *Nature*, I think, may be better ascrib'd to the Mechanisms of the Macrocosm and Microcosm, I mean, of the Universe and the Human Body. And, to illustrate a little my Meaning by a gross Example or two, I desire you will consider with me a Sea-compass, wherein the excited Magnetick Needle, and the Box that holds It, are duly pois'd by Means of a competent number of opposite Pivats : For

X though,

though, if you give this Instrument a somewhat rude Shake, you will make the Box totter, and encline this way and that way, and at the same time drive the Points of the Magnetick Needle many Degrees to the East, or to the West ; *yet*, the Construction of the Instrument and the Magnetism of one main Part of It, are such, that, if the Force, that first put it into a disorderly Motion, cease from acting on It, the Box will, after some Reciprocations, return to its Horizontal Situation ; and the Needle, that was forc'd to deviate, will, after a few irregular Motions to this and to that side of the Magnetical Meridian, settle itself again in a Position, wherein the *Flower-de-Luce* stedfastly regards the North. And yet this recovery to its former State is effected in a factitious Body, by the bare Mechanism of the Instrument itself, and of the Earth, and other Bodies, within whose Sphere of Activity it is plac'd. But, because Many have not seen a Mariner's Compass,

spas, I will add a less apposite but more obvious and familiar Example: For, if when an empty Ballance is duly counterpois'd, you shall, by your Breath or Hand, depress one of the Scales, and thereby, for the time, destroy the *Æquilibrium*; yet, when the Force is once remov'd, the depress'd Ballance will presently ascend, and the Opposite will descend; and, after a few Motions up and down, they will both of them, of their own accord, settle again in an exact *Æquilibrium*, without the help of any such Provident Internal Principle, as *Nature*: The absence of whose Agency may be confirm'd by This, that the depress'd Scale does not at first stop at the Horizontal Line, beneath which it was first depress'd, (as it ought to do, if it were rais'd by an Intelligent Being,) but rises far above It. If it be here objected, that these Examples are drawn from Factitious, not from merely Physical, Bodies; I shall return this brief Answer, and desire

that it be apply'd not only to the Two freshly mention'd Examples, but to All of the like Kind, that may be met with in this whole Treatise. I say then, in short, that divers of the Instances, we are speaking of, are intended but for Illustrations ; and that Others may be useful Instances, if they should be no more than Analogous Ones : Since Examples, drawn from Artificial Bodies and Things, may have both the Advantage of being more clearly conceiv'd by ordinary Understandings , and That of being less obnoxious to be question'd in that Particular in which the Comparison or Correspondence consists. And I the less scruple to employ such Examples, because *Aristotle* himself and some of his more learned Followers make use of divers Comparisons drawn from the Figures and other Accidents of Artificial Things, to give an account of Physical Subjects, and even of the Generation, Corruption and Forms of Natural Bodies. This Adver-

Advertisement premis'd, I persue this Discourse, it interrupted, by adding, Thus in a human Body, the Causes that disorder it are oftentimes but Transient, whereas the Structure of the Body itself and the Causes that conduce to the Preservation of that Structure, are more stable and durable, and on that account may enable the Engine to out-last many Things, that are Hostile to It. This may be somewhat illustrated, by considering, that *Sleep*, though it be not properly a Disease, easily becomes One, when it frequently transgresseth its due Bounds ; and even whilst it keeps within them, it does, for the time it lasts, hinder the exercise of many Functions of the Body, more than several Diseases do ; and yet, according to the common course of Things, the Matter that lock't up the Senses being spent, the Man of himself recovers that sensible and active State, on whose score he is said to be *awake*. But to come somewhat closer to the Point ; We see, that many Persons, who

get a *Præternatural* Thirst with over-much Drinking, get rid of it again in a few days by forbearing such Excesses ; and many, that by too plentiful Meals are brought to a want of Appetite, Recover, as it were, of course, by a spare Diet, in a few days ; the renewed Ferment, or *Menstruum* of the Stomach, being able in that time to concoct by little and little, or expell the indigested Aliments or peccant Humours that offended the Stomach, and caus'd the want of Appetite.

And here I desire to have it taken Notice of, as a thing that may be considerable to our present Purpose, that I look not on a Human Body, as on a Watch or a Hand-mill, *i. e.* as a Machine made up only of Solid, or at least Consistent, Parts ; but as an Hydraulical, or rather Hydraulopneumatical Engine, that consists not only of Solid and Stable Parts, but of Fluids, and those in Organical Motion. And not only so, but I consider, that these Fluids, the Liquors and Spirits, are in a living Man so constituted,

tuted, that in certain Circumstances the Liquors are dispos'd to be put into a Fermentation or Commotion, whereby either some Depuration of Themselves, or some Discharge of hurtful Matter by Excretion, or both, are produc'd, so as, for the most part, to conduce to the Recovery or Welfare of the Body.

And, that even Consistent Parts may be so fram'd, and so connected with other Parts, as to act, as it were, *pro re nata*, varying their Motions, as differing Circumstances make it convenient they should be varied, I purposely shew in another Paper. To this I might altogether refer you; but, in regard the Thing is a Paradox, and lays a Foundation for Another not Inferior to itself, I shall here borrow thence one Instance, not mention'd that I know of by Others to this purpose, that may both declare my Meaning, and confirm the Thing itself: I consider then, that what is call'd the *Pupil* or *Apple* of the *Eye*, is not (as 'tis known,)

a substantial Part of the Organ, but only a round Hole or Window made in the *Uvea*, at which the Modify'd Beams of Light enter, to fall upon the Chrystalline Humour, and thence be refracted to the bottom of the Eye, or seat of Vision, to make there an Impression, that is usually a kind of Picture (for 'tis not always a neat One,) of the Object. Now the Wise and All-foreseeing Author of Things has so admirably contriv'd this Instrument of Sight, that, as it happens to be employ'd in differing Lights, so the Bigness or *Area* of the Pupil varies. For when the Light is vivid, and would be too great if all the Beams were let in, that might enter at an Aperture as large as the usual, the Curtain is every way drawn towards the Middle, and thereby the round Window made Narrower. And, on the other side, when the Light is but faint, and the Object but dimly illustrated, there being more Light requisite to make a sufficient Impression

sion at the bottom of the Eye, the
 Curtain is every way drawn open, to
 let in more Light: And when the
 Eye is well constituted, this is regu-
 larly done, according as the Organ
 has need of more or less Light. Of
 this, some late Masters of Opticks
 have well Treated, and I have spoken
 about it more fully in another place.
 And the truth of the Observation
 you may easily find, if you look upon
 the Eyes of a Boy or a Girl, (for in
 young Persons the change is the most
 notable) when the Eyes are turn'd
 from looking on dark Objects to-
 wards bright or more illuminated
 Ones. And I have found the Varia-
 tion yet more conspicuous in the
 Eyes of a young Cat, as I elsewhere
 particularly relate. So that, refer-
 ring you to the Writings already
 pointed at, I shall only add in this
 place, that these various Motions in
 the Eye are produc'd by mere Mecha-
 nism, without the Direction, or so
 much as Knowledg or Perception, of
 the Rational Soul. And, upon the
 like

like Account it is, that other Motions, in several Parts belonging to the Eye, are produc'd, as 'twere spontaneously, as occasion requires. And so, as to the Fluid Parts of the Body, we find, that, according to the Institution of the Author of Things, when healthy Women are of a fit Age, there is a Monthly Fermentation or Commotion made in the Blood, which usually produces a kind of Separation, and then an Excretion, advantageous to the Body.

And, that you may the better make out what I meant by the Disposition, or Tendency, of the Parts, to return to their former Constitution, I shall desire you to consider, with me, a thin and narrow Plate of good Steel, or refined Silver; for, if one End of it be forcibly drawn aside, the changed Texture of the Parts becomes such, or the Congruity and Incongruity of the Pores, in reference to the ambient *Aether*, that endeavours to permeate them, is made such, that, as soon as the Force that
bent

bent it is remov'd, the Plate does, as it were, spontaneously return to its former Position. And yet here is no internal watchful Principle, that is solicitous to make this Restitution, for otherwise it is indifferent to the Plate what Figure it settle in; for, if the Springy Body stand long Bent, then, as if *Nature* forgot her Office, or were unable to execute it, though the Force that held the Spring bent be remov'd, it will not endeavour to regain its former streightness: And, I have tryed, in a Silver Plate, that, if you only heat it red-hot, and let it cool, if you put it into a crooked Posture, it will retain it; but barely with two or three stroaks of a Hammer, which can only make an invifible change of Texture, the Plate will acquire a manifest and considerable Springyness, which you may again deprive it of, by sufficiently heating it in the Fire, without so much as melting it.

But, to return to the Discourse, formerly begun, about Distempers wont
to

to be harmless by being Transient, we may observe, that the third or fourth day after Women are brought to Bed, there is commonly a kind of Feaver produc'd, upon the plentiful resort of the Milk to the Breasts; for which cause, this Distemper is, by many, call'd the *Feaver of Milk*. And this is wont, in a short time, to pass away of itself, as depending upon Causes far less durable, than the Oeconomy of the Womans Body. And, if it be objected, that these are not *Diseases*, because they happen according to the Instituted Course of *Nature*; I will not now dispute the validity of the Consequence, though I could represent, that the Labour of Teeming Woemen, and the breeding of Teeth in Children, happen as much according to the Institution of *Nature*, and yet are usually very painful, and oftentimes dangerous: But I will rather answer, that, if the troublesome Accidents, I have alledg'd, cannot serve to prove, they may at least to illustrate, what I aim
at

at. And I shall proceed to take notice of a Distemper, that Physicians generally reckon among *Diseases*, I mean, the flowing of Blood at the *Hæmorrhoidal Veins*: For, *though* oftentimes this Flux of Blood is excessive, and so becomes very dangerous, and therefore must be check'd by the Physician, (which is no great Argument, that a Being, wise and watchful, manages this Evacuation,) *yet* frequently, if not for the most part, the Constitution of the Body is such, that the superfluous or vitiated Blood goes off, before it has been able to do any considerable mischief, or perhaps any at all, to the Body. And so we see, that many Coughs, and Hoarsenesses, and *Coryzas* are said to be cur'd, that is, do cease to trouble Men, though no Medicine be us'd against them, the Structure of the Body being durable enough to out-last the Peccant Matters, or the Operation of those other Causes, that produce these Distempers.

It

It is a known thing, that most Persons, the first time they go to Sea, especially if the Weather be any thing Stormy, are, by the unwonted Agitations, which those of the Ship produce in them, (assisted perhaps by the Sea-Air, and Smells of the Ship) cast into that Disease, that, from the Cause of it, is call'd the *Sea-sickness*, which is sometimes dangerous, and always very troublesome, usually causing a loss of Appetite, and almost continual Faintness, a pain in the Head, and almost constant Nauseousness, accompany'd with frequent, and oftentimes violent, Vomitings; which Symptoms make many complain, that, for the time, they never felt so troublesome a Sickness; and yet usually, after not many days, this Distemper, by degrees, is master'd by the Powers of the Body, tending still to persevere in their orderly and friendly Course, and suppressing the adventitious Motions that oppose it, and the sick Person recovers without other help. And so,

so, *though* Persons unaccustom'd to the Sea, whether they be sick or no, are, by the inconvenient Motions of the Ship, usually brought to a kind of habitual Giddiness, which disposes them to reel and falter, when they walk upon firm ground: Yet, when they come a Shore, they are wont in no long time to be freed from this uneasy Giddiness, without the help of any Medicine: The usual and regular Motions of the Parts of the Body obliterating by degrees in a few days (I us'd to be free from it within some hours,) that adventitious Impression, that caus'd the Discomposure. To the same purpose, we may take notice of that which happens to many Persons, who riding backwards in a Coach are not only much distemper'd in their Heads, but are made very sick in their Stomachs, and forced to Vomit, as violently and frequently, as if they had taken an Emetick: And yet all this Disorder is wont quickly to cease, when the Patient leaves the Coach, without

out the continuance of whose Motion, (that continues a preposterous One in some Parts of the Patient) the Distemper will quickly yield to the more ordinary and regular Motions of the Blood, and other Fluids of the Body. So, when in a Coach, or elsewhere, a Man happens to be brought to Faintness, or cast into a Swoon, by the closeness of the Place, or the over-charging of the Air with the fuliginous Reeks of Mens Bodies; tho' the Disease be formidable, yet, if the Patient be seasonably brought into the free Air, the friendly Operation of That External Body, assisting the usual Endeavours or Tendency of the Parts of the Patients Body to maintain his Life and Health, is wont quickly to restore him to the State he was in, before this sudden Sickness invaded him. Divers things, that happen in some Diseases, may be grossly illustrated, by supposing, that into a Vial of fair Water some Mud be put, and then the Vial be well shaken, for the Water will be troubled

troubled and dirty, and will lose its Transparency, upon a double Account; *that* of the Mud, whose opaque Particles are confounded with It; and *that* of the newly generated Bubbles, that swim at the top of it; and yet to clarify this Water, and and make it recover its former Limpidness, there needs no particular Care or Design of *Nature*, but according to the common Course of Things, after some time the Bubbles will break and vanish at the top, and the earthy Particles, that compose the Mud, will, by their Gravity, subside to the bottom, and settle there, and so the Water will become clear again. Thus also *Must*, which is the lately express'd Juice of Grapes, will for a good while continue a troubled Liquor; but though there be no Substantial Form to guide the Motions of this factitious Body, yet, according to the Course of Things, a Fermentation is excited, and some Corpuscles are driven away, in the Form of Exhalations or Vapours, others

Y are

are thrown against the sides of the Cask, and harden'd there into Tartar, and others again subside to the bottom, and settle there in the Form of Lees; and by this means leave the Liquor clear, and, as to Sense, uniform. And why may not some Depurations and Proscriptions of Heterogeneous Parts be made in the *Blood*, as well as they are usually in *Must*, without any peculiar and solicitous Direction of *Nature*.

There is indeed one Thing, to which the Sentence of *Nature's being the Curer of Diseases* may be very speciously apply'd, and that is the healing of Cuts and Wounds, which, if they be but in the Flesh, may oftentimes be cured without Plaisters, Salves, or other Medicines; but, not to mention Hæmorrhagies and some other Symptoms, wherein the Chirurgeon is fain to curb or remedy the Exorbitancies of *Nature*; this Healing of the *Solutio continui* seems to be but an Effect or Consequent of that Fabrick of the Body,
on

on which Nutrition depends. For the Alimental Juice, being, by the Circulation of the Blood and Chile, carried to all Parts of the Body to be nourish'd, if it meets any where, either with preternatural Concretions, or with a Gap made by a Cut or Wound, its Particles do there concreate into a kind of Bastard-flesh, or some such other Body, which that Juice, in the Place and other Circumstances 'tis in, is fitted to constitute. Thus we see, that not only Wens and Scrophulous Tumors are nourish'd in the Body, but mis-shapen *Mola's* do by Nutriment grow in the Womb, as well as *Embryo's* feed there. And, to come closer to the present Argument, we see, that, in Wounds, Proud-Flesh, and perhaps *Fungus's*, are as well produc'd and entertain'd by the Aliment brought to the wounded Part, as the true and genuine Flesh; so that either *Nature* seems much mistaken, if She designs the Production and Maintenance of such superfluous and inconvenient

Y 2 Bodies,

Bodies ; or the Chirurgeon is much to blame, who is industrious to destroy them, though oftentimes he cannot do it, without using painful Corrosives. But, for ought appears, *Nature* is not so shy and reserv'd in Her Bounty, but that She sends Nourishment, to repair *as well* Things that do not belong to the Body, as genuine Parts of It, *as* to restore Flesh to wounded Parts, as may appear by Warts and Corns, that grow again after they are skilfully cut. And, I remember, I have seen a Woman, in whose Forehead *Nature* was careful to nourish a Horn, about an Inch and more in length, which I fully examin'd, whilst it was yet growing upon Her Head, to avoid being impos'd upon.

But, besides the Diseases hitherto discours'd, there are many Others, as well Acute as Chronical, wherein, 'tis confess'd, that *Nature* alone does not work the Cure, so that as to these, (which are more numerous, than the former) I may well pretend,
that

that the Aphorism, that makes *Nature* the *Curer of Diseases*, is not true, otherwise than in a limited Sense. But, because I know 'tis pretended, that even in these Diseases *Nature* is the principal Agent, by whose Direction the Physician acts in subserviency to her Designs; and Physicians themselves (whether out of Modesty or Inadvertence, I now enquire not,) are wont to acknowledg, that they are but *Nature's Ministers*, I think it necessary to consider briefly, what Sense is fit, according to our Doctrine, to be given to these Assertions, to make them receivable by us.

But, to make way for what we are to say on this Occasion, it may be fit to observe, that one great Cause of the common Mistakes about this Matter, is, as hath been partly intimated already, That the Body of a Man is look'd upon, rather as a System of Parts, whereof Most are gross and consistent, and not a Few hard and solid too, than as, what

indeed it is, a very compounded Engine ; that, besides these Consistent Parts, does consist of the Blood, Chyle, Gall, and other Liquors ; also of more subtil Fluids, as Spirits and Air ; all which Liquors and Fluids are almost incessantly and variously moving, and thereby put divers of the Solid Parts, as the Heart and Lungs, the *Diaphragma*, the Hands, Feet, &c. into frequent and differing Motions. So that, *as*, when the Constitution or the Motions, that in a sound Body do regularly belong to the Fluid Parts, happens the former to be Deprav'd, or the later to grow Anomalous, the Engine is immediately out of Order, though the gross solid Parts were not primarily affected : So, when by proper Remedies (whether Visible or not,) the vitiated Texture or *Crafsis* of the Blood or other Juices is corrected, and the inordinate Motions, that They and the Spirits are put into, or, that they also put the consistent Parts into, are calm'd
and

and rectify'd, the groſſer and more ſolid Parts of the Body, and ſo the whole *Animal Oeconomy*, if I may ſo call It, will be reſtored to a more convenient State. Thus we ſee, that in many Hyſterical Women, by the fragrant *Effluvia* of a *Spaniſh Glove*, or ſome Other ſtrong Perfume, the Spirits and *Genus Nervosum* being affected, ſeveral diſorderly Symptoms are produc'd, and oftentimes the Motion of the Blood is ſo ſtopt or abated, that any Pulse at all is ſcarce-ly to be felt, nor Reſpiration diſcern'd, and the whole Engine, unable to ſuſtain itſelf, falls to the Ground, and lies moveleſs on It; and yet we have often, by barely holding to the Patient's Noſtrils a Vial full of very ſtrong Spirit, or Volatile Salt, or *Sal-armoniack*, or of *Harts-horn*, in leſs than a quarter of an Hour, ſometimes in a few Minutes, reſtor'd Women in that Condition to their Senſes, Speech and Motion.

We are also here to consider, what I have formerly inculcated, that the Oeconomy of the human Body is so constituted by the Divine Author of It, that it is usually fitted to last many Years, if the more General Laws, settled by the same Author of the Universe, will permit it. And therefore 'tis not to be wonder'd at, that in many Cases, the *Automaton* should be in a Condition to concur, though not with Knowledge and Design, to its own Preservation, when, though it had been put somewhat out of Order, 'tis assisted by the Physicians Hands or Medicines to recover a convenient State.

And if it be objected, that the Examples, that have been in this past Discourse frequently drawn from *Automata*, are not adequate, and do not fully reach the Difficulties we have been speaking of, I shall readily grant it, provided it be consider'd, that I avowedly and deservedly suppose the Bodies of living Ani-

Animals to be, Originally, Engins of God's own framing, and consequently Effects of an Omniscient and Almighty Artificer. So that, 'tis not Rational to expect, that in the incomparably inferior Productions of human Skill, there should be found Engins fit to be compar'd with These, which, in their Protoplasts, had God for their Author. Not to mention, (what yet may be considerable in reference to the Lastingness of human Life,) that a Man is not a mere Mechanical Thing, where nothing is perform'd for the Preservation of the Engine, or its Recovery to a good State, but by its own Parts, or by other Agents, acting according to Mechanical Laws without Counsel or Design; since, though the Body of a Man be indeed an Engine, yet there is united to It an Intelligent Being, (the Rational Soul or Mind,) which is capable, especially if instructed by the Physicians Art, to discern, in many Cases, what may hurt It, and what may con-

conduce to the Welfare of It, and is also able (by the Power it has to govern the Muscles and other Instruments of voluntary Motion,) to do many of those Things it judges most conducive to the Safety and the Welfare of the Body, 'tis join'd with. So that, a Man is not like a Watch, or an *Empty Boat*, where there is nothing but what is purely Mechanical; but like a *Mann'd Boat*, where, besides the Machinal Part, (if I may so speak) there is an Intelligent Being that takes Care of It, and both steers It, or otherwise guides It, and, when need requires, trims It; and, in a word, as Occasion serves, does what he can to preserve It, and keep It fit for the Purposes, 'tis design'd for.

These Things being premis'd, I think the Physitian (here suppos'd to be free from Prejudices and Mistakes,) is to look upon his Patients Body, as an Engine that is out of Order, but yet is so constituted, that, by his Concurrence with the
Endea-

Endeavours, or rather Tendencies, of the Parts of the *Automaton* itself, it may be brought to a better State. If therefore he find, that, in the present Disposition of the Body, there is a Propensity or Tendency to throw off the Matter that offends It, and (which ought to be some way or other expell'd,) in a convenient Way, and at commodious Places; he will then act so, as to comply with, and further, that Way of Discharge, rather than Another. As, if there be a great Appearance, that a Disease will quickly have a *Crisis* by Sweat; he will rather further It by covering the Patient with warm Cloaths and giving Sudorifick Medicines, than, by endeavouring to carry off the peccant Matter by Purging or Vomiting, unseasonably hinder a Discharge, that probably will be beneficial: And in this Sense Men may say, if they please, that the Physicians are Ministers or Servants of *Nature*; as Sea-Men, when the Ship goes before a good Wind,
will

will not shift their Sails, nor alter the Ships Motion, because they need not. But to shew, that 'tis as 'twere by Accident, that the Physitian does, in the fore-mention'd Case, obey *Nature*, (to speak in the Language of the *Naturists*, I reason with,) I need but represent, that there are many other Cases, wherein the Physitian, if he be skilful, will be so far from taking *Nature* for his Mistress, to direct him by Her Example, what should be done; that a great Part of his Care and Skill is employ'd, to hinder Her from doing what She seems to Design, and to bring to pass Other Things very differing from, if not contrary to, what She Endeavours.

Thus, though *Nature* in Dropsies inopportunately crave store of Drink, the Physician thinks himself oblig'd to deny It; as he does what they greedily desire, to his Patients of the *Green-Sickness*, or that Distemper they call *Pica*: Though the absurd and hurtful Things, as very unripe
Fruit,

Fruit, Lime, Coals, and other incongruous Things, be earnestly long'd for. Thus also the Chirurgeon does often hinder *Nature* from closing up the Lips of a Wound, as She would unskilfully do, before it be well and securely heal'd at the bottom. So the Physician does often, by Purging or Phlebotomy, carry off that Matter, that *Nature* would more dangerously throw into the Lungs, and expel by frequent and violent Coughs.

And so, if a Nerve or Tendon be prick'd, the Chirurgeon is fain, with Anodynes, and other convenient Medicines, to prevent or appease the unreasonable Transports of *Nature*, when, being in a Fury, by violent and threatening Convulsions, She not only much disorders, but endangers, the Patient. And so likewise, when in those Evacuations that are peculiar to Women, *Nature* affects, in some Individuals, to make them by undue and inconvenient Places, as the Nipples, the Mouth,
or

or the Eyes, whereof we have divers Instances, among the Observations collected by *Schenckius*, or related by other good Authors.

Schenk. Obser. l. IV. pag. m. 633. & seq.

The Physitian is careful by Bleeding the Patient in the Foot and by using other Means, to oblige *Nature* to alter Her Purpose, and make the intended Evacuations by the proper Uterine Vessels. And, *tho'* according to the Institution of *Nature*, as they speak, there ought to be a Monthly discharge of these Superfluities, and therefore, whilst this is moderately made, the Physician does rather further than suppress It: *Yet* if, as it often happens in other Patients, *Nature* over-lashes in making those Evacuations, to the great weakning or endangering the Sick Person, the Physitian is careful by contemperating Medicines and other Ways to correct *Nature's* exorbitancy and check Her profuseness of so necessary a Liquor, as the Blood. Other Instances, more
con-

considerable, than some of these hitherto mention'd, might be given to the same purpose ; but I forbear to do it, because, there being some, though perhaps very needless, Controversies about Them, I could not make out their fitness to be here alledg'd without more Words, than I am now willing to employ about unnecessary Proofs, fearing it might be thought, I have dwelt too long already upon the Explication of One Aphorism. I shall therefore only observe in short, that I look upon a good Physician, not so properly as a *Servant to Nature*, as One that is a *Counsellor* and a *Friendly Assistant*, who, in his Patient's Body, furthers these Motions and other Things, that he judges conducive to the Welfare and Recovery of It; but as to Those, that he perceives likely to be hurtful, either by encreasing the Disease, or otherwise endangering the Patient, he think it is his Part to oppose or hinder, though *Nature* do manifestly enough seem to endeavour

vour the exercising or carrying on those hurtful Motions.

On this occasion, I shall take notice of the Practice of the more Prudent among Physicians themselves, who, being call'd to a Patient, subject to the Flux of the *Hæmorrhoids*, if they find the Evacuation to be moderate, and likely either to benefit the Patient on another account, (as in some Cases 'tis,) or at least to end well, they do, as some of them speak, commit the whole business to *Nature*; that is, to speak intelligibly, they suffer It to take its Course, being encouraged to do so, in some

Hippocrat. Lib.vi.
Aphorism. xi.

Cases, by the Doctrine of *Hippocrates*, and in others by Experience. But, if the Evacuation prove to be too lasting, or too copious, they then are careful to hinder *Nature* from proceeding in it, and think themselves oblig'd to imploy both inward and outward Means, to put a stop to an Evacuation, which may bring on a Dropsie, or

or some other formidable Disease
 And if it be said, that *Nature* makes
 this Profusion of so necessary a Li-
 quor as *Blood*, only because She is
 irritated by the Acrimony of some
 Humour mix'd with it; I say, that
 this Answer, which, for Substance,
 is the same that *Naturists* may be
 compell'd to fly to, on many Occasi-
 ons, is in effect a Confession, that
Nature is no such wise Being as they
 pretend; since She is so often pro-
 vok'd to act, as it were, in a Fury,
 and do those things in the Body, that
 would be very mischievous to It, if
 the Physitian, more calm and wise
 than She, did not hinder Her. So
 that, notwithstanding the reverence
 I pay the great *Hippocrates*, it is not
 without due Caution and some Li-
 mitations, that I admit that nota-
 ble Sentence of his, where he thus
 speaks; * *Invenit*
Natura ipsa sibi-ipsi
aggressiones. And af-
 ter three or four lines,
Non edocta Natura & nullo Magi-
 Z *stro*

* *Hippocrat. Epi-*
dema. l. 6. § 5. text.
 2. 4.

stro usa, ea quibus opus est facit.
 Which, I fear, makes many Physicians less courageous and careful than they should, or perhaps would be, to employ their own Skill on divers Occasions, that much require It.

I shall now add, that, *as in some Cases*, the Physician relieves his Patient in a *Negative Way*, by opposing *Nature* in her unseasonable or disorderly Attempts: So in other Cases, he may do it in a *Positive Way*, by employing Medicines that *either* strengthen the Parts, as well Fluid as Stable, or make sensible Evacuations of Matters necessary to be proscrib'd by Them; or (he may do it,) by using Remedies, that by their manifest Qualities oppugn those of the Morbifick Matter or Causes; as when by Alcalys or absorbing Medicaments he mortify's *Præter-natural* Acids, or disables Them to do Mischief. And, perhaps, One may venture to say, that, in some Cases, the Physician may
 in

in a *Positive* Way, contribute more to the Cure even of an inward Disease, than *Nature* Herself seems able to do : For, if there be any such Medicine preparable by Art, as *Helmont* affirms may be made of *Paracelsus's* *Ludus*, by the Liquor Alkahest ; or, as *Cardan* relates, that an *Empirick* had in his Time, who, travell'd up and down *Italy*, curing Those where-ever he came, that were tormented with the Stone of the Bladder ; If, I say, there be any such Medicines, the Physitian may, by such Instruments, perform that, which, for ought appears, is not to be done by *Nature* Herself, since we never find, that She dissolves a confirm'd Stone in the Bladder. Nay, sometimes the Physician does, even without the help of a Medicine, controle and over-rule *Nature*, to the great and sudden Advantage of the Patient. For, when a Person, otherwise not very weak, happens by a Fright, or some surprising ill News, to be so discompos'd, that the Spirits hastily

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and

and disorderly thronging to some inward Part, especially the Heart, hinder the regular and wonted Motion of It, by which disorder the Circulation of the Blood is hinder'd, or made very imperfect : In this Case, I say, the Patient is by *Nature's* great Care of the Heart, (as is commonly suppos'd even by Physicians,) cast into a Swoon ; whence the Physician sometimes quickly frees him, by rubbing and pinching the Limbs, the Ears and the Nose, that the Spirits may be speedily brought to the External Parts of the Body ; which must be done by a Motion to the Circumference, (as they call It,) quite opposite to That towards the Centre or Heart, which *Nature* had given Them before. But as to the Theory of Swoonings, I shall not now examine its Truth, it being sufficient to warrant my drawing from thence an Argument *ad Hominem*, that the Theory is made Use of by Those I reason with.

By what has been discours'd One may perceive, that, as there are some *Phænomena*, that seem to favour the Doctrine of the *Naturists* about the Cure of Diseases, so there are Others, that appear more manifestly favourable to the *Hypothesis* we propose. And both these sorts of *Phænomena*, being consider'd together, may well suggest a Suspicion, that the most Wise and yet most Free Author of Things, having fram'd the first Individuals of Mankind, so as to be fit to last many Years, and endow'd those *Protoplasts* with the Power of propagating their *Species*; it thereupon comes to pass, that in the subsequent *Hydraulico-pneumatical* Engines we call Human Bodies, when neither particular Providence, nor the Rational Soul, nor over-ruling Impediments interpose, Things are generally perform'd according to Mechanical Laws and Courses; whether the Effects and Events of these prove to be conducive to the welfare of the Engine itself, or else

Z 3 cherish

cherish and foment Extraneous Bodies or Causes, whose Preservation and Prospering are hurtful to It. On which Supposition it may be said, That the happy things, referr'd to *Nature's* prudent Care of the Recovery and Welfare of sick Persons, are usually genuine Consequences of the Mechanism of the World, and the Patients Body; which Effects luckily happen to be co-incident with his Recovery, rather than to have been purposely and wisely produced in order to It; since, I observe, that *Nature* seems to be careful to produce, preserve, and cherish Things hurtful to the Body, as well as Things beneficial to It. For we see in the Stone of the Kidneys and Bladder, that out of Vegetable or Animal Substances of a slighter Texture, such as are the Alimental Juices, which, in Sucking Children (who are observ'd to be frequently subject to the Stone in the Bladder) are afforded by so mild a Liquor as Milk; *Nature* skilfully frames

frames a hard Body of so firm a Texture, that it puzzles Physicians and *Chymists* to tell, how such a *Coagulation* can be made of such Substances : And I have found more than one *Calculus* to resist both Spirit of Salt, that readily dissolves Iron and Steel, and that highly Corrosive *Menstruum*, Oyl of Vitriol itself. We see also, that, divers times, the Seeds or Seminal Principles of Worms, that lye conceal'd in unwholesome Fruits, and other ill qualifi'd Aliments, are preserv'd and cherish'd in the Body, so, as in spite of the *Menstruum's* ferments, &c. they meet with there, they grow to be perfect Worms, (of their respective kinds) that are often very troublesome, and sometimes very dangerous, to the Body that harbours them : Producing, though perhaps not immediately, both more and more various Distempers (especially here in *England*) than every Physician is aware of. This Reflection may very well be applied to

Z 4 those

* *Schenck. Observ.*
 Lib. 3. Pag. mihi
 337. & seq.

those Instances we
 meet with in good
 * Authors, of Frogs,
 and even Toads,
 whose Spawn, being taken in with
 corrupted Water, hath been cherish-
 ed in the Stomach 'till the Eggs be-
 ing grown to be compleat Animals,
 they produc'd horrid Symptoms in
 the Body, that had lodg'd and fed
 them. And if, according to the re-
 ceiv'd Opinion of Physicians, stub-
 born Quartans are produc'd by a Me-
 lancholy Humour seated in the
 Spleen; it may be said, that *Nature*
 seems to busie Herself to convert
 some Parts of the Fluid Chile into
 so tenacious and hardly dissipable a
 Juice, that, in many Patients, not-
 withstanding the Neighbourhood of
 the Spleen and Stomach, neither
 strong Emeticks, nor Purges, nor
 other usual Remedies, are able, in a
 long time, to dislodge it, or resolve it,
 or correct it. But that is yet more
 conducive to my present purpose,
 that is afforded me by the Considera-
 tion

tion of the Poyson of a Mad-dog, which *Nature* sometimes seems industriously and solicitously to preserve: Since we have Instances, in approved Authors, that a little Foam convey'd into the Blood by a slight hurt, (perhaps quickly heal'd up,) is, notwithstanding the constant Heat and perspirable Frame of the Human Body, and the dissipable Texture of the Foam, so preserved, and that sometimes for many Years, that, at the end of that long time, it breaks out, and displays its fatal Efficacy with as much vigour and fury, as if it had but newly been receiv'd into the Body.

To this agrees That which is well known in *Italy*, about the biting of the *Tarantula*. For, though the Quantity of Poyson can scarce be visible, since 'tis communicated by the Tooth of so small an Animal as a Spider, yet, in many Patients, 'tis preserved during a great part of of their Lives, and manifests its Continuance in the Body by Annual Paroxysms.

roxyfms. And, I know a Person of great Quality, who complain'd to me, that, being in the *East*, the biting or stinging of a Creature, whose offensive Arms were so small, that the Eye could very hardly discern the Hurt, had so lasting an Effect upon him, that, for about twelve Years after, he was reminded of his Misfortune, by a Pain he felt in the hurt Place, about the same time of the Year that the Mischief was first done him. And, in some Hereditary Diseases, as the Gout, Falling-sickness, and some kinds of Madness, *Nature* seems to act as if She did, with Care as well as Skill, transmit to the unhappy Child such Morbifick Seeds or Impressions of the Parents Disease, that, in spite of all the various Alterations the younger Body passes through, during the Course of many Years, this constantly protected Enemy is able to exert its Power and Malice, after forty, or perhaps fifty, Years concealment. Such Reflections as these, to which
 may

may be added, that the *Naturists* make no scruple to style That Death, which Men are brought to by Diseases, a *Natural* Death, make me backward to admit the fam'd Sentence of *Hippocrates* hitherto consider'd, *Morborum Naturæ Medici*, without limitations, especially those two that are deliver'd in the Fifth Section :

See Pag. 164. to
Pag. 173.

To which I refer you the rather, because they may help you to discern, that divers *Phænomena*, that favour not the receiv'd Notion of a kind and prudent Being, as *Nature* is thought to be, are yet very consistent with Divine Providence.

S E C T. VIII.

I have now gone through so many of the celebrated *Axioms*, concerning *Nature*, that, I hope, I may reasonably presume, that the other
Sentences

Sentences of this kind, that my Haste makes me leave unmention'd, will be thought capable of being fairly explicated, and with Congruity to our *Hypothesis*, by the help of the Grounds already laid, since, with light Variations, they may be easily enough improv'd, and apply'd to those other Particulars, to which they are the most Analogous.

But this Intimation ought not to hinder me to make a Reflection, that not only is pertinent to this place, but which I desire may have Retrospect upon a great part of the whole precedent Discourse. And it is This, that, though we could not Intelligibly explicate all the particular Axioms about *Nature*, and the *Phænomena* of Inanimate Bodies, that are thought, but not by me granted, to favour them by Mechanical Principles; it would not follow, that we must therefore yield up the whole Cause to the *Naturists*. For we have already shewn, and may do so yet further ere long, that the Suppo-
sition

sition of such a Being, as they call *Nature*, is far from enabling Her Partizans to give intelligible Accounts of these and other *Phænomena* of the Universe. And though our Doctrine should be granted to be, as well as that generally receiv'd about *Nature*, insufficient to give good Accounts of Things Corporeal: Yet I shall have this Advantage in this Case, that a less degree of Probability may serve, in Arguments employ'd but to justify a Doubt, than is requir'd in Those that are to demonstrate an Assertion.

'Tis true, that the *Naturists* tell us, that the *Nature* they assert is the *Principle* of all Motions and Operations in Bodies; which infers, that in explicating Them, we must have recourse to Her. But before we acquiesce in, or confidently employ, this Principle, it were very fit we knew *what* it is. This Question I have discours'd of in the Section: But having there intimated a Reference to another Place, the Importance,

tance, as well as Difficulty of the Subject, invites me to resume in this Place the Consideration of It; and both vary and add to what I formerly noted, that I may as well inculcate as clear my Thoughts about It. I demand then of Those, that assert such a *Nature* as is vulgarly describ'd, whether it be a Substance or an Accident? If it be the later, it should be declar'd, *what* kind of *Accident* it is; *how* a Solitary *Accident* can have Right to all those Attributes, and can produce those numerous, manifold, and wonderful Effects, that they ascribe to *Nature*; and *why* a complex of such *Accidents*, as are the Mechanical affections of Matter, (as Figure, Bulk, Motion, &c.) may not altogether, as probably as that *Accident* they call *Nature*, be conceived to have been Instituted by the perfectly Wise Author of the Universe, to produce those Changes among Bodies, which are (at least for the most part,) intelligibly referable to Them? And if Things be
not

not brought to pass by their Intervention, 'twere very fit, as well as desirable, that we should be Inform'd, by what other Particular and Intelligible Means *Nature* can effect them better, than they may be by that Complex.

But if it be said, as by Most it is, that the Principle, call'd *Nature*, is a Substance, I shall next demand, Whether it be a Corporeal, or an Immaterial One? If it be said to be an Immaterial Substance, I shall further ask, Whether it be a Created One, or not? If it be not, then we have God under another Name, and our Dispute is at an End, by the removal of its Object or Subject, which is said by the Schools to be God's Vicegerent, not God Himself. But if *Nature* be affirm'd (as She is, at least by all Christian Philosophers,) to be a Created Being, I then demand, Whether or no She be endowed with *understanding*, so as to know what she does, and for what Ends, and by what Laws She ought to Act? If the Answer

swer be *Negative*, the Supposition of *Nature* will be of very little Use to afford an intelligible Account of Things ; an unintelligent *Nature* being liable to the Objections, that will a little below be met with against the usefulness of *Nature*, in case She be suppos'd a Corporeal Being. And though it should be said, that *Nature* is endowed with Understanding, and performs such Functions as divers of the Antients ascribe to the Soul of the World ; besides, that this *Hypothesis* is near of kin to Heathenism, I do not think, that they who shall with many *Grecian*, and other Philosophers, who preceded Christianity, suppose a kind of Soul of the Universe, will find this Principle sufficient to explicate the *Phænomena* of It. For if we may compare the Macrocosm and Microcosm in This, as well as many are wont to do in other Things ; we may conceive, that, though *Nature* be admitted to be indowed with Reason, yet a multitude of *Phænomena* may be

be Mechanically produc'd, without Her immediate Intervention ; as we see that in Man, though the Rational Soul has so narrow a Province to take care of, as the Human Body, and is suppos'd to be intimately united to all the Parts of It ; *yet*, abundance of things are done in the Body by the Mechanism of it, without being produc'd by that Soul. Of this we may alledge, as an Instance, that, in Sleep, the Circulation of the Blood, the regular Beating of the Heart, Digestion, Nutrition, Respiration, &c. are perform'd without the immediate Agency, or so much as the actual Knowledge, of the Mind. And, when a Man is *awake*, many things are done in his Body, not only without the Direction, but against the Bent of his Mind ; as often happens in Cramps and other Convulsions, Coughing, Yawnings, &c. Nay, *though* some Brutes, as particularly Apes, have the Structure of many Parts of their Bodies very like that

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of the Analogous Ones of Human Bodies : Yet, that admirable Work of the Formation and Organization of the *Fætus*, or little Animal, in the Womb, is granted by Philosophers to be made by the Soul of the Brute (that is therefore said to be the Architect of his own Mansion,) which yet is neither an Incorporeal, nor a Rational Substance. And, even in a Human *Fætus*, if we will admit the general Opinion of Philosophers, Physicians, Divines and Lawyers, I may be allowed to observe, that the Human Body, as exquisite an Engine as 'tis justly esteem'd, is form'd without the Intervention of the rational Soul, which is not infus'd into the Body, 'till This hath obtain'd an Organization, that fits it to receive such a Guest ; which is commonly reputed to happen about the end of the Sixth Week, or before that of the Seventh. And this Consideration leads me a little further, and prompts me to ask, How much, by the Supposition or
Know-

Knowledge of the Mind, (at the newly mention'd time,) we are enabled to explicate the Manner, How the foremention'd Functions of an *Embryo* are perform'd, when at the end of six or seven Week the Rational Soul supervenes and comes to be united to this living Engine?

And, if it be urg'd, that *Nature* being the Principle of Motion in Bodies, their various *Motions*, at least, which amount to a considerable Part of their *Phænomena*, must be explain'd by having recourse to Her: I answer, that 'tis very difficult to conceive, how a Created Substance, that is Immaterial, can by a Physical Power or Action move a Body; The Agent having no impenetrable Part, wherewith to impell the Corporeal *Mobile*. I know, that God, who is an immaterial Spirit, ought to be acknowledg'd the Primary Cause of Motion in Matter, because (as we may justly with *Monsieur Des Cartes* infer,) Motion not belonging to Corporeal Substance, as such; This

must owe That to an Incorporeal One. But then, I consider, that there is that infinite Distance between the Incomprehensible Creator, and the least imperfect Order of his Creatures, that we ought to be very Cautious, how we make Parallels between Him and Them, and draw Inferences from His Power & manner of Acting to Theirs. Since He, for Instance, can immediately act upon Human Souls, as having Created Them, but they are not able so to act upon one another. And I think it the more difficult to conceive and admit, that, if *Nature* be an Incorporeal Substance, She should be the greater Mover of the Mundane Matter, because we see, that, in a Human Body, the Rational Soul, (which the School-Philosophers assert to be an Immaterial Spirit,) tho' vitally united to it, can only determin the Motion of *some* of the Parts, but not give Motion to *any*, or so much as Regulate it in *most*. And, if *Nature* be said to move Bodies

dies in another than a Physical Way, I doubt, whether the Supposition of such a Principle will be of much Use to Physiologers in explicating *Phænomena*; since I shall scarce think him an Inquisitive or a Judicious Doctor, who should imagine, that he explains, that it gives an intelligible and particular Account of the astonishing Symptoms of those strange Diseases, that divers very Learned and Sober Physicians impute to Witchcraft, when he says, that those strange Distortions and convulsive Motions, for Instance, and other Prodigious Effects, were produc'd by a wicked immaterial Spirit, call'd a Devil. But having to this purpose said more in another Paper, which you may command the Sight of, I shall not trouble you with it here.

The past Discourse opposes their Opinion, who assert *Nature* to be an Immaterial Creature. But because 'tis thought, that a greater Number of Philosophers, at least

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among the Moderns, take Her to be Corporeal, I shall now address my Discourse to their *Hypothesis*. And *though* I might object, that, if *Nature* be a Body, it may be demanded, How She can produce, in Men, Rational Souls, that are Immaterial Beings, and not capable to be produc'd by any Subtiliation or other Change of Matter whatsoever? Yet, waving this Objection, I shall *first* demand, Whether Those, I reason with, believe *Nature*, though Corporeal, to act Knowingly, *i. e.* with Consciousness of what She does, and for pre-designed Ends; or else to be blindly and necessarily moved and directed by a Superior Agent, indow'd with (what She wants,) an excellent Understanding; and *then* I shall represent a few things, applicable some to *one* or the *other* of the two Answers, that may be made, and some to *both*.

And *first*, the *Cartesians* would ask, How, if *Nature* be a Corporeal Substance, we can conceive Her capable

ble of Thinking ; and, which is more, of being a most Wise and Provident Director of all the Motions that are made in the Corporeal World ?

Secondly, A Philosophizer may justly ask, How a Corporeal Being can so pervade, and, as it were, com-penetrates the Universe, as to be intimately present with all its Minute Parts, whereof yet 'tis said to be the Principle of Motion ?

Thirdly, He may also demand, Whence *Nature*, being a Material Substance, comes itself to have Motion, whereof 'tis said to be the Principle ? Since Motion does not belong to Matter in itself, and a Body is as truly a Body when it rests, as when it moves. And, if it be answer'd, that the First Cause, that is, God, did at first put it into Motion ; I reply, that the same Cause may, at least as probably, be suppos'd to have put the *unquestion'd Mundane Matter* into Motion, without the Intervention of another Corporeal Being, in whose Conception,

(i. e. as 'tis Matter,) Motion is not involv'd.

Fourthly, It may likewise be ask'd, How the Laws of Motion come to be observ'd or maintain'd by a Corporeal Being ? which, as merely such, is *either* incapable of understanding them, or of acting with respect to them, *or* at least is not necessarily endow'd with any knowledge of them, or power to conform to them, & to make all the Parts of the *unquestion'd Mundane Matter* do so too.

Fifthly, And I do not see, how the taking in such an unintelligent & undesigning Principle will free our Understandings from great Difficulties, when we come to explicate the *Phænomena* of Bodies. For, as is elsewhere noted, if *Nature* be a Bodily Creature, and acts necessarily, and (if I may so speak,) fatally, I see no Cause to look upon It but as a kind of Engine ; and the Difficulty may be as *great*, to conceive how all the several Parts of this supposed Engine, call'd *Nature*, are themselves

selves fram'd and mov'd by the
 Great Author of Things, and how
 they act upon one another, as well
 as upon the *undoubted* Mundane Bo-
 dies ; as 'tis to conceive how, in the
World itself, which is manifestly an
 admirably contriv'd *Automaton*, the
Phænomena may, by the same Au-
 thor, (who was able to endow Bo-
 dies themselves with Active Pow-
 ers, as well as he could, on other
 scores, make them Causes,) be
 produc'd by Vertue, and in conse-
 quence of the Primitive Constructi-
 on and Motions that He gave it (and
 still maintains in it,) without the
 Intervention of such a thing, as they
 call *Nature*. For This, as well
 as the *World*, being a Corporeal
 Creature, we cannot conceive, that
 either of them act otherwise than
 Mechanically. And it seems very
 suitable to the Divine Wisdom, that
 is so excellently display'd in the Fa-
 brick and Conduct of the Universe,
 to imploy in the *World*, already
 fram'd and compleated, the fewest
 and

and most simple Means, by which the *Phænomena*, design'd to be exhibited in the World, could be produc'd. Nor need we be much mov'd by hearing some *Naturists* say, that *Nature*, though not an Incorporeal Being, is of an Order Superior to mere Matter ; as divers of the School-men teach the Things, they call Material Forms to be. For, who can clearly conceive an Order or Kind of Beings, that shall be Real Substances, and yet neither Corporeal nor Immaterial ? Nor do I see, how the Supposition of this Unintelligible, or at least Unintelligent Being, though we should grant it to have a kind of Life or Soul, will much assist us to explicate the *Phænomena* ; as if a Man be acquainted with the Construction of Mills, he he may as well conceive, how Corn is ground by a Mill, driven by the Wind or by a Stream of Water, which are Brute and Senseless Beings, as he can by knowing, that 'tis kept at Work by a Horse, who, though

though an Animated Being, acts in our Case but as a Part of an Engine that is determin'd to go round, and who does neither intend to grind the Corn, nor know that he grinds It.

And in this Place (though perhaps not the very fittest,) I may Question, With what Congruity to their Master's Doctrine, the School-Philosophers teach, that *Nature* is the Principle of Motion in all the Bodies, they call *Natural*. For, not to urge, that those great Masses of Sublunary Matter, to which they give the Name of *Elements*, and the Mixt Bodies, that consist of them, are, by divers learned Men, said to be mov'd to or from the Centre of the Earth, by distinct Internal Principles, which they call *Gravity* in the Earth and Water, and *Levity* in the Fire and Air; and that there is ascrib'd also to every compounded Body, that Quality of the Two, which belongs to the Element that predominates in It. Not to urge
this,

this, I say, consider, that the Cœlestial Part of the World does so far exceed the Sub-Cœlestial in Vastness, that there is scarce any Comparison between them ; and yet the Generality of the *Peripateticks*, after *Aristotle*, tell us, that the Cœlestial Globes of Light, and the vast Orbs they suppose them to be fix'd in, are mov'd from West to East by *Intelligences*, that is, Rational and Separate Beings , without whose Conduct they presume, that the Motions of the Heavens could not be so Regular and Durable, as we see they are. So that, in that Part of the Universe, which is incomparably vaster than the Sublunary is, Intelligences being the Causes of Motion, there is no Recourse to be had to *Nature*, as the true and internal Principle of It.

And here it may not, perhaps, be improper to declare somewhat more fully a Point already touch'd upon, namely, that, if to know what is the general Efficient Cause
of

of Motion, can much contribute to the Explication of particular *Phænomena*; the *Hypothesis* of those *Naturalists* I now reason with, will have no considerable Advantage, if any at all of Ours; which derives them from the Primitive Impulse given by God to Matter, and from the Mechanical Affections of the greater and lesser Portions of It. For 'tis all one to Him, that would *declare by what particular Motion*, as Swift, Slow, Uniform, Accelerated, Direct, Circular, Parabolical, &c. this or that *Phænomenon* is produc'd; to know, whether the Motions of the Parts of Matter were Originally impress'd on them by *Nature*, or immediately by God; unless it be, that He, being of infinitely Perfect Knowledge, may be, more probably than a Creature, suppos'd to have at first produc'd in Matter Motions best accommodated to the *Phænomena*, that were to be exhibited in the World. Nor do I see sufficient Cause to grant, that *Nature* Her-
self

self (whatever She be,) produces
 any Motion *de Novo*, but only, that
 She transfers and regulates That,
 which was communicated to Matter
 at the beginning of Things : (As
 we formerly noted, that in the Hu-
 man Body, the Rational Soul or
 Mind has no Power to make new
 Motions, but only to direct those
 of the Spirits and of the grosser Or-
 gans and Instruments of voluntary
 Motion.) For, besides that many
 of the Modern *Naturalists* approve
 of the *Cartesian* Opinion, That the
 same Quantity of Motion is always
 preserv'd in the whole Mass of
 of the Mundane Matter, that was
 communicated to it at first, though
 it be perpetually transferring it from
 one Part to another : Besides this, I
 say, I consider, that, if *Nature* pro-
 duces in these & those Bodies Moti-
 on, that were never before in Beings ;
 (unless much Motion be annihilated,
 which is a thing as yet unprov'd,)
 the Quantity of Motion in the Uni-
 verse must have for some Thousands
 of

of Years perpetually increas'd, and must continue to do so ; which is a Concession, that would much disorder the whole Theory of Local Motion, and much perplex Philosophers, instead of assisting Them, in explicating the *Phænomena* of Bodies.

And as for the Effects of Local Motion in the Parts of the Universal Matter, which Effects make a great Part of the *Phænomena* of the World: After what I have formerly declar'd, you will not wonder to hear me confess, that, to me, the Supposition of *Nature*, whether Men will have Her an Immaterial or Corporeal Substance, and either without Knowledge or else indowed with Understanding, doth not seem absolutely Necessary, nor perhaps very Useful, to make us comprehend, *how* they are produc'd. The Bodies of Animals, are divers of them little less curiously fram'd than Mens, and most of them more exquisitely, than, for ought we know, the great Inanimate

nimate Mass of the Corporeal World is : And yet, in the Judgment of no mean *Naturalists*, some of the Mechanical Philosophers, that deny Cogitation, and even Sense properly so call'd, to Beasts, do, at least as Intelligibly and Plausibly, as those that ascribe to them Souls indow'd with such Faculties as make them scarce more than gradually different from Human Ones, explicate the *Phænomena* that are observ'd in them. And I know not, whether I may not on this Occasion add, that the *Peripateticks* themselves, especially the Moderns, teach some things, whence One may argue, that the Necessity of recurring to *Nature* does not reach to so many things by far, as is by them suppos'd. For the Efformation (or Framing) of the Bodies of Plants and Animals, which are by great odds the finest pieces of Workmanship to be met with among Bodies, is ascrib'd not immediately to *Nature*, but to the Soul itself, which they will have to be the

the Author of the Organization of the Body, and therefore call it the *Architect of its own Mansion*; which, they say, that it frames by an Innate Power and Skill, that *some* call Plastick, and to which *others* give other Names. And unto the same Soul, operating by Her several Functions, they attribute the Concoction of Aliments, the Expulsion of Excrements, the Production of Milk, Semen, &c. the Appetitive, Loco-motive, and I know not how many other Faculties, ascrib'd to Living Bodies. And, even in many Inanimate Ones, the noblest Properties and Operations are, by the same School-Philosophers, attributed to what they call their Substantial Forms; since from These they derive the wonderful Properties of the Load-stone, the attractive Faculty of Amber and other Electricks, and the Medical Vertues of Gems and other Mineral Bodies, whether Consistent or Fluid.

But not to insist on this Argument, because 'tis but *ad Hominem*, (as they speak,) if we consider the Thing itself, by a free Examen of the pretended Explanations, that the Vulgar Philosophers are wont, by recurring to *Nature*, to give of the *Phænomena* of the Universe; we shall not easily look on those Accounts, as meriting the Name of Explications. For to explicate a *Phænomenon*, 'tis not enough to ascribe it to one general Efficient, but we must intelligibly shew the particular *manner*, how that general Cause produces the propos'd Effect. He must be a very dull Enquirer, who, demanding an Account of the *Phænomena* of a Watch, shall rest satisfied with being told, that 'tis an *Engine made by a Watch-Maker*; though nothing be thereby declar'd of the Structure and Co-aptation of the Spring, Wheels, Ballance, and other Parts of the Engine; and the *manner*, how they act on one another, so as to cooperate to make the Needle point out

out the true Hour of the Day. And (to improve to my present purpose an Example formerly touch'd upon,) as he that knows the Structure and other Mechanical Affections of a Watch, will be able by Them to explicate the *Phænomena* of It, without supposing, that it has a Soul or Life to be the internal Principle of its Motions or Operations; so he, that does not understand the Mechanism of a Watch, will never be enabled to give a rational Account of the Operations of It, by supposing, as those of *Chineſs* did, when the Jeſuits first brought Watches thither, that a Watch is an *European* Animal, or Living Body, and indow'd with a Soul. This Compariſon ſeems not ill to befit the Occaſion of propounding It; but to ſecond It by another, that is more purely Phyſical; when a Perſon, unacquainted with the Mathematicks, admires to ſee, That the Sun riſes and ſets in Winter in ſome Parts of the Horizon, and in Summer in Others, diſtant enough

from them ; *that* the Day, in the former Season, is by great odds shorter than in the Later, and sometimes (as some days before the Middle of *March* and of *Sept.*) the Days are equal to the Night ; *that* the Moon is sometimes seen in Conjunction with the Sun, and sometimes in Opposition to Him ; and, between those two States, is every Day variously illuminated ; and, *that* sometimes one of those Planets, and sometimes another, suffers an Eclipse ; this Person, I say, will be much assisted to understand , how these things are brought to pass, if he be taught the clear Mathematical Elements of Astronomy. But, if he be of a Temper to reject these Explications, as too defective, 'tis not like, that it will satisfy him, to tell him after *Aristotle* and the School-Men, That the Orbs of the Sun and Moon, and other Cœlestial Spheres, are mov'd by Angels or Intelligences ; since to refer him to such general and undetermin'd Causes, will little, or
not

not at all, assist him to understand, *how* the recited *Phænomena* are produc'd.

If it be here objected, That these Examples are drawn from Factitious, not from merely Physical, Bodies ; I shall return this brief Answer, and desire that it be apply'd not only to the Two freshly mention'd Examples, but to All of the like Kind, that may be met with in this whole Treatise, (near the Beginning of which, had I remember'd it, something to the same purpose should have had Place.) I say then in short, that divers of the Instances we are speaking of are intended but for Illustrations ; and that others may be useful Instances, if they should be no more than Analogous Ones : Since Examples, drawn from Artificial Bodies and Things, may have both the Advantage of being more clearly conceiv'd by ordinary Understandings, and That of being less obnoxious to be Question'd in that Particular, in which

the Comparifon or Correspondence confifts. And I the lefs fcruple to imploy fuch Examples, becaufe *Aristotle* himfelf, and fome of his more learned Followers, make Ufe of divers Comparifons, drawn from the Figures and other Accidents of Artificial Things, to give an Account of Phyfical Subjects, and even of the Generation, Corruption and Forms of Natural Bodies.

This Advertifement premis'd, I perfue the Difcourfe it interrupted, by adding, That thus we fee That confirm'd, which was formerly obferv'd, namely, that though Mechanical Principles could not be *fatisfactorily* imploy'd for explaining the *Phænomena* of our World; we muft not therefore neceffarily recur to, and acquiefce in, that Principle, that Men call *Nature*, fince neither will That intelligibly explain Them: But in that Cafe, we fhould ingenioufly confefs, That we are yet at a lofs, *how* they are perform'd; and that this Ignorance proceeds, rather from

from the Natural Imperfection of our Understandings, than from our not preferring *Nature* (in the Vulgar Notion of It,) to the Mechanical Principles, in the Explication of the *Phænomena* of the Universe. For whereas *Monsieur Des Cartes*, and other acute Men, confidently teach, that there are scarce any of these *Phænomena*, that have been truly and intelligibly deduc'd from the Principles peculiar to the *Aristotelians* and *School-Philosophers*; it will scarce be deny'd by any that is acquainted with Physico-Mathematical Disciplines, such as Opticks, Astronomy, Hydrostaticks, and Mechanicks, more strictly so call'd, but that very many Effects (whereof Some have been handled in this present Tract,) are clearly explicable by Mechanical Principles; which, for that Reason, *Aristotle* himself often imployes in his *Quæstiones Mechanicæ* and elsewhere. So that, if because the Corpuscularian Principles, cannot be *satisfactorily* made

Use of to account for all that happens among Things Corporeal, we must refuse to acquiesce in them: It is but just, that, since a Recourse to what is call'd *Nature* is yet more dark and insufficient, at least, we must reject as well the Later as the Former *Hypothesis*, and endeavour to find some Other preferable to Both.

And now, if it be demanded, what Benefit may redound to a Reader from the Explications given in the foregoing Seventh Section? and in general, from the Troublesome, as well as Free, *Enquiry*, whereof they make a considerable Part? I shall Answer, That I am not quite out of Hope, that the Things hitherto discours'd may do some Services both to *Natural Philosophy* and to *Religion*.

And as to the *first* of these; this Tract may be of Use to the cultivators of that Science, by dissuading them from employing often, and without great need, in their Philosophical Discourses and Writings, a
Term,

Term, (I mean *Nature*,) which, by reason of its great Ambiguity, and the little or no Care, which Those that use It are wont to take, to distinguish its different Acceptions, occasions *both* a great deal of Darkness and Confusedness in what Men say and write about Things Corporeal ; *and* a multitude of Controversies, wherein really Men do but wrangle about *Words*, whilst they think they dispute of *Things* ; and perhaps would not differ at all, if they had the Skill or Luck to express themselves clearly. Besides which Service, the past Discourse may do this Other , to wean Many from the fond Conceit they cherish, that they understand or explicate a Corporeal Subject or a *Phænomenon* , when they ascribe it to *Nature*. For to do That, One needs not be a Philosopher , since a Country Swain may easily do the same Thing.

On this Occasion, I must not forbear to take notice, that the unskilful Use of Terms of far less Extent
and

and Importance, and also less Ambiguous, than the word *Nature* is, has been, and still is, no small Impediment to the Progress of Sound Philosophy. For not only the greatest Part both of Physicians (though otherwise learned Men,) and of Chymists ; but the Generality of Physiologists too, have thought, that they have done their Part, though not on all Occasions yet on very Many, when they have referr'd an Effect or a *Phenomenon* to some such Things as those, that are presum'd to be *Real Qualities* ; or are by *some* styl'd *Natural Powers* ; or are by *others*, by a more comprehensive and more usual Name, (which therefore here chiefly imploy,) call'd *Faculties* ; for each of which they are wont to form a Name, fit for Their purpose : Though they do not intelligibly declare, *what this Faculty is*, and in what *manner* the Operations they ascribe to It, are perform'd by It. Thus the attractive Faculty ascrib'd to a Man, that is enabled by
Nature's

Nature's (*presum'd*) abhorrence of a *Vacuum*, to suck up Drink through a Straw or Pipe, has been for many Ages acquiesced in, as the true Cause of the Ascension of that Liquor in Suction; of which nevertheless the Modern Philosophers, that have slighted Explications deriv'd merely from Faculties, have assign'd (as has been already declar'd,) Intelligible, and even Mechanical Causes. The Power that a Load-stone has with one Pole to attract (as they speak,) the Northern Point of the Mariner's Needle, and with the Other to drive it away, is look'd upon as one of the Noblest and most proper *Faculties* of that admirable Stone. And yet I elsewhere shew, how in a very small, indeed, but true and natural Magnet, I have, by a bare, and sometimes invisible, Change of Texture, given that Extream of the Magnet, that before drew the Southern Point of the Needle, the Power to draw the Northern, and to the opposite Extream,

tream, the Power to drive it away : So much does even this wonderful *attractive Faculty*, as 'tis call'd, depend upon the Mechanical Structure of the Mineral, and its Relation to other Bodies, among which 'tis plac'd, especially the Globe of the Earth, and its Magnetical *Effluvia*.

But because in another Paper, I purposely discourse of what *Naturalists* call *Faculties*, I shall here content my self to note in general, that the Term *Faculty* may, indeed, be allowed of, if It be applied as a compendious Form of Speech, but not as denoting a real and distinct Agent ; since in reality the Power or Faculty of a Thing is (at least) oftentimes but the Matter of It, made Operative by *some* of its Mechanical Modifications ; [I say, *some*, because the Complex of *all* makes up its *Particular Nature*.] And with how little Scruple soever, Men commonly speak of *Faculties*, as supposing Them to be distinct and active
Princi-

Principles ; yet this Condition does not necessarily belong to them. For sometimes, if not frequently , the Effect, of what is reputed a Natural Power or Faculty, is produc'd by the Texture, Figure, and, in a word, Mechanical Disposition of the Agent ; whereby it determines the Action of a remoter Agent to the produc'd Effect. Thus in a Clock, *to* make the Ballance vibrate, *to* point at the Hour, *to* make, at set times, the Hammer strike upon the Bell, are but different Effects of the Weight or Spring, that sets and keeps the Engine in Motion. And so a Key may either acquire or lose its Power of opening a Door (which, perhaps, some School-Men would call its *aperitive Faculty*,) by a Change, not made in itself, but in the Locks it is apply'd to, or in the Motion of the Hand that manages It. And least it should be objected, that these Instances are taken wholly from Artificial Bodies, I shall add, that, when a clear Piece of Native

Native Chryſtal has obtain'd, as it often does, a good Prismatical Shape, and is, in a due Poſition, expos'd to the Sun-beams ; its Figuration, by enabling it to refract and reflect thoſe Beams after a certain Manner, gives it a Coloriſick Faculty, whereby it is enabled to exhibit that wonderful and pleaſing variety of Colours, that emulate, if not ſurpaſs, thoſe of the Rain-bow. And ſo in a Concave Metalline Looking-glaſs, though there ſeem to be many diſtinct Faculties, ſuch as that of Reflecting, Inverting, Magnifying divers Objects, and Melting, Burning, &c. ſeveral Bodies ; yet all theſe Powers are but the genuine Conſequences of the Figure, Capacity and Smoothneſs, which are Mechanical Affections of the Matter of the *Speculum*. And, indeed, if I judge aright, (though what I am going to ſay will ſeem a Paradox,) yet many *Qualities of very many Bodies are but laſting Diſpoſitions to be thus or thus wrought upon by the Action of External*

nal Agents, and also (perchance) to modify that Action; as we see, that the Power of making an Echo, that is observ'd in divers hollow Places, is nothing but the Mechanical Disposition, their Figure and Resistance gives them to reflect a Sound. And, to resume the lately mention'd Instance of a Key, we may add, that, by bare Position, either End of it, especially if the Key be long, may be made to acquire or lose a *Transient* Magnetick Faculty from the *Effluvia* of that great Magnet, the *Earth*; and that also the same Key may, in a few Moments, acquire a *durable* Magnetism, by a Mechanical Change receiv'd from the Load-stone, as is known to Those, that are any thing vers'd in the Philosophy of that wonderful Mineral.

And to me it seems likely, that one main Reason, why learned Men have ascrib'd such inherent and active Powers, as they call *Faculties*, to so many Bodies, is, because that,
not

not being conversant enough with Natural and Artificial Things, they did not duly perpend, how great a Difference there may be between a Body consider'd absolutely, or by itself, and the same Body consider'd in such Circumstances, as it may be found in. For in some Cases a Physical Body may have strange Things justly ascrib'd to It, though not as 'tis such a Body consider'd simply, or unassociated with other Bodies ; but as 'tis plac'd among congruous Ones, and makes the Principal or most Operative Part of a compound Body, or of the Complex of Bodies it is joyn'd with, and which are of such determinate Structures, as are convenient for the *Phænomena*, to be exhibited. This may be Analogically seen in what happens to a Spring. For if, being bent, 'tis held in Ones Hand, or crouded into a Box, 'tis but a Simple thing, that does only, by its Expansive Endeavour, strive to remove the Bodies that keep it compress'd. But in a
curious

curious Watch, it may, by virtue of the Structure of that Engine, become the Principle of I know not how many differing, and perhaps contrary, Motions, among the Parts of It; and of many notable *Phænomena* and Effects exhibited or produc'd thereby. This Reflection may, perhaps, be improv'd, if I here add, that, in many Bodies, a Fluid Substance, determin'd to convenient Motions, may be equivalent to an Internal Spring; especially if it be assisted by friendly External Agents. This may be illustrated by considering, that if One that plays skilfully on a Flute, blow out of his Mouth into the open Air, he will but turn it into a vapid Aereal Stream: But if this Wind duly pass into the Instrument, and be modify'd there by the Musician's Fingers and Skill, the simple Stream of Air may be form'd into very various and melodious Tunes. Thus Gunpowder artificially temper'd, tho', if it be fir'd in the open Air, it will give only a rude and sudden Flash, that

Cc presently

presently vanishes ; yet, if it be skillfully dispos'd of in Rockets and other well-contriv'd Instruments, and then kindled, it will exhibit a great and pleasing variety of Shining Bodies and *Phænomena*, that are justly admir'd in the best sort of Artificial Fire-works. A Physical Instance also, in favour of our Analogical or Vicarious Springs (if I may so call them,) is afforded me by the Bulbs of Onions, and the Roots of Aloes, commonly call'd *Semper-vive*, and some other Vegetables, which in the Spring being expos'd to the Air, the Juices and Spirits, contain'd in them, will be so agitated by the Warmth of that Season, and so modify'd by the particular Structure of the more firm Parts, that, though neither Earth nor Rain co-operate, they will shoot forth green Stalks or Leaves for many Weeks together, as if they were planted in a good Soil ; (though the Matter of these green Productions be furnish'd by the radical Parts themselves, as may be argued both from

from the manifest Diminution of the Bulb in Bigness, and the great and gradual Decrement in Weight, that I observ'd in making Experiments of this Kind. And so also the Air, which is an External Fluid, concurring with the Juices and Spirits of divers Insects and other cold Animals, may both be put into Motion, and have that Motion so determin'd by their Organization, as to recover in the Spring or Summer, as it were, a new Life, after they have lain moveless and like dead Things, all the Winter; as we see in Flies, that, in a hot Air, quickly recover Motion and Sense, after having lost Both, for perhaps many Months. And the like Change may be far more suddenly observ'd in Them, in the warmer Seasons of the Year, when the Air is drawn from Them by the Pneumatick Pump, and afterwards permitted to enliven Them again. And to give another Instance, that may possibly please better, (because, as 'tis purely Physical, so 'tis

Simple and very Conspicuous,) tho' that which the Sun-beams are wont primarily to produce be but Light and, perhaps, Heat; yet falling in a due Manner upon a rorid Cloud, they form there the Figure of a vast Bow, and, being variously reflected and, refracted, adorn it with the several Colours, Men admire in the *Rain-Bow*.

But I must not farther prosecute an Observation, that I mention'd but occasionally, as an Instance whereby to shew, that the advancement of solid Philosophy may be much hinder'd by Mens Custom of assigning, as true causes of Physical Effects, Imaginary Things or perhaps Arbitrary Names; among which none seems to have had a more malevolent Influence upon Physiology than the Term *Nature*, none having been so frequently and confidently us'd, or imploy'd to so many differing Purposes. And therefore, *though* I would not totally forbid the Use of the word *Nature*, nor
of

of Expressions of Kin to It, in *Popular* Discourses or even in some *Philosophical* Ones, where Accurateness is not requir'd or Ambiguity is prevented by the Context ; nor (to dispatch) whereit may be imploy'd as a compendious *form of speech*, without danger to Truth, or Prejudice to Sound Philosophy, (in which Cases I myself forbear not the Use of It ;) yet, I hope, our *Free Enquiry* may (somewhat at least,) conduce to the more skilful Indagation, and happy Discovery, of Physical Truths, if it can perswade Men to make Use less frequently, and with more Circumspection, of so ambiguous, and so often abus'd, a Term as *Nature* ; and cease to presume, that a Man has well perform'd the part of a true Physiologer, till he have circumstantially or particularly deduc'd the *Phænomēon* he considers, by Intelligible Ways, from Intelligible Principles. Which he will be constantly put in Mind of doing, or discover that he

hath not done it ; if, by forbearing general and ambiguous Terms and Words, he endeavours to explain Things by Expressions, that are clear to all attentive Readers, furnish'd with an ordinary measure of Understanding and Reason. And this perspicuous Way of Philosophizing should be not a little recommended to ingenious Men, by the valuable Discoveries, which Those that have imploy'd it, in their Researches and Explications of difficult Things, have in this Inquisitive Age happily made, not only about the various *Phænomena*, commonly referr'd to the *Fuga Vacui*; but in the Hydrostaticks, Opticks, Anatomy, Botanicks, and divers other Parts of real Learning, that I cannot now stay to enumerate. And thus much it may possibly be sufficient to have said, about the Service our Doctrine may do Natural Philosophy.

As for Religion, if what I have formerly said in favour of it be
duly

duly consider'd and apply'd , the past Discourse will not appear unfriendly, nor perhaps useleſs, to It. And therefore, if I do here abridge what I have there ſaid, and add to it ſome Conſiderations, that were fit to be reſerv'd for this Place ; I hope the Doctrin, we have propos'd, may appear fit to do it a threefold Service.

I. And in the Firſt Place, Our Doctrin may keep Many, that were wont, or are inclin'd, to have an exceſſive Veneration for what they call *Nature*, from running, or being ſeduc'd, into thoſe Extravagant and Sacrilegious Errors, that have been upon plauſible Pretences imbrac'd not only by many of the old Heathen Philoſophers but, by divers Modern Profeſſors of Chriſtianity, who have of late reviv'd, under new Names and Drefſes, the impious Errors of the Gentiles. This I venture to ſay, becauſe many of the Heathen Writers, as hath been ſhewn in the Fourth Section, ackonwledg'd indeed

a God (as these also own they do,) but meant such a God, as they often too little discriminated from Matter, and even from the

(a) Thus the Stoicks, in *Lactantius*, describe the *World* thus, *Mundus est qui constat ex Cælo & Terra atque ex illorum Naturis; sive, Qui constat ex Diis & Hominibus, iisque Rebus quæ Horum gratia condite sunt.*

And of *Chrysippus*, one of the Patriarchs of that Sect, the same *†* Historian in the same Book says, *Purissimum dixit ac liquidissimum Æthera, quem etiam primum asserunt Stoici esse Deum, sensibiliter veluti*

(a) *World*; and as is very differing from the true One, ador'd by Christians and Jews: For Ours is a God, *first*, infinitely Perfect; and then *secondly*, by consequence, both Incorporeal and too Excellent to be so united to Matter, as to animate it like the Heathens *Mundane* Soul; or to become to any Body a

† *Diog. Lactantius* l. 7. in *Vita Zenon.*

Soul properly so call'd; and *thirdly*, Uncapable of being divided, & having either Human Souls or other Beings, as

as it were, torn or carv'd out, or otherwise separated from him, so as to be truly Parts or Portions of his own Substance.

infusum esse, per ea quæ sunt in Aere, per cunctas Animantes & Arbores, per Terram autem ipsam secundum Halitum. To

which agrees not only that noted Passage of *Virgil*, *Principio Cælum*, &c. —

But another, which I somewhat wonder Learned Men should read with no more Reflexion: Since he there gives the Sky the very Title of the High God:

Tum Pater Omnipotens fœcundis imbribus Æther, &c.

(b) Whereas, the Idolaters and Infidels I speak of, conceiv'd, under the Name of God, a Being, about which they dogmatically entertained Conceptions, which, tho' different from one ano-

* In Vita Zenonis.

(b) The Error here rejected, was the Opinion of many of the Heathen Philosophers, and particularly of the Stoical Sect; of whose Author, * *Laertius* says, *De Divina Substantia Zeno ait* *Mun-*

Mundum totum ther, are much more
atque Cælum. so from the Truth.

And several

Ethnick Philosophers, even after the
 Light of the Gospel began to shine in
 the World, adopted the Argument of
 the Elder Stoicks, who inferr'd the World
 to be Animated and Rational from the
Nature of the Human Soul, which they
 thought a Portion of the Intelligent Part
 of the World, that some of them con-

founded with the Deity. For

De Vitis the Stoicks (in *Laertius*) affirm,
Phil. 1.7. *Mundum esse Animale & Ratio-*

nale & Animatum (ἐμψύχον) & Intelli-
gibile. And 'tis added, *Mundum anima-*
tum esse, inde manifestum est, quod Anima
nostra inde veluti avulsa sit.

Epist. 92. Thus *Seneca*, *Quid est autem*
cur non existimes, in eo divini
aliquid existere, quæ Dei pars
est? So *Plutarch*, speaking
Quæst. Plut. of the Soul, *Non opus Solum*

Dei, sed & pars est; neque ab
ipso, sed ex ipso nata est. And
Dissert. 1. *Epictetus*, *Anima ita alligata*
cap. 14. *& conjuncta Deo sunt, ut parti-*
cule ejus sint.

For *first*, Most of Them thought
 Their God to be purely Corporeal,
 as,

as, besides what *Diogenes Laertius* and Others relate, I remember *Origen* doth in several Places affirm.

If you will believe

(c) *Eusebius*, the Ancient *Ægyptian* The- (c) *Præpar. lib. 3. cap. 4*

ologers not only affirm'd the Sun, Moon and Stars to be Gods, but deny'd Incorporeal Substances, or Invisible *Nature's*, to have fram'd the World, but only the Sun, that is discoverable to our Eyes. And this Corporiety of God seems manifestly to be the Opinion of Mr. *Hobbs* and his genuine Disciples, to divers of whose Principles and Dogmas it is as congruous, as 'tis repugnant to Religion. But *secondly*, There are Others, that allow'd a Soul of the world, which was a Rational and Provident Being, together with the Corporeal Part of the Universe, especially Heaven, (which, I remember, *Aristotle* himself styles a

(d) *Divine Body*, (or, (d) *De Cælo l. 2. c. 3.* as some render his Expressions, the *Body of God* :) But

withal,

withal, They held, that this Being did properly Inform this great Mass of the Universe, and so was, indeed, a Mundane Soul. And though some of our late Infidels (formerly pointed at in this Treatise,) pretend to be great Discoverers of new Light in this Affair, yet, as far as I am inform'd of their Doctrine, it has much Affinity with, and is little or not at all better than That which I formerly noted out of *Lactantius* to have been asserted by the Stoicks, and the Doctrine which is express'd by *Maximus* (a Pagan) to *St. Austin*. *Equidem Unicum esse Deum summum atque magnificum, quis tam demens, tam mente captus, ut neget esse certissimum? Hujus nos virtutes per Mundanum opus diffusas, multis vocabulis invocamus, quoniam Nomen ejus Cuncti proprium ignoremus.* Or by that Famous and Learned Roman, *Varro*, who is cited by *St. Austin*, to have said, *Deum se arbitrari Animam Mundi, & hunc ipsum Mundum*

*De Civit Dei lib. 7.
cap. 6.*

dum esse Deum : Sed sicut Hominem Sapientem, cum sit ex Animo & Corpore, tamen ab animo dicimus Sapientem ; ita Mundum Deum dici ab Animo, cum sit ex Animo & Corpore.

The Doctrine, by us propos'd, may ('tis hop'd,) much conduce to justifie some Remarkable Proceedings of Divine Providence, against those Cavillers, that boldly censure It, upon the account of some Things, that they judge to be *Physical Irregularities*, (for *Moral* Ones concern not this Discourse,) such as Monsters, Earth-quakes, Floods, Eruptions of Volcanos, Famines, &c. For, according to our Doctrine, —

I. God is a most Free Agent, and Created the World, not out of necessity, but voluntarily, having fram'd It, as he pleas'd and thought fit, at the beginning of Things, when there was no Substance but Himself, and consequently no Creature, to which He could be oblig'd, or by which he could be limited.

II. God

2. God having an Understanding infinitely Superior to that of Man, in Extent, Clearness, and other Excellencies, He may rationally be suppos'd to have fram'd so Great and Admirable an *Automaton* as the *World*, and the subordinate Engines compriz'd in it for several Ends and Purposes, some of them relating chiefly to His Corporeal, and others to His Rational Creatures; of which Ends, he hath vouchsafed to make Some discoverable by our dim Reason, but Others are probably not to be penetrated by it, but lye conceal'd in the deep Abyss of His Unfathomable Wisdom.

3. It seems not Incongruous to conceive, that this most Excellent and Glorious Being thought fit to order Things so, that both His *Works* and *Actions* might bear some Signatures, and as it were Badges of His Attributes, and especially to stamp upon His Corporeal Works some Tokens or Impresses, discernable by Human Intellects, of His Divine
Wisdom;

Wisdom; an Attribute that may advantageously disclose Itself to us Men, by producing a vast Multitude of Things, from as *few*, and as *simple*, *Principles*, and in as *Uniform a Way*, as, with Congruity to His other Attributes, is possible.

4. According to this Supposition, it seems, that it became the Divine Author of the *Universe* to give It such a Structure, and such Powers, and to establish among its Parts such general and constant Laws, as best suited with His purposes in Creating the World; and, to give these Catholick Laws, and particular Parts or Bodies, such Subordinations to one another, and such References to the Original Fabrick of the *Grand System of the World*, that, on all particular occasions, the Welfare of inferior or private Portions of It, should be only so far provided for, as their Welfare is consistent with the general Laws settled by God in the *Universe*, and with Such of those Ends, that he propos'd to himself in framing It, as are
more

more Considerable, than the Welfare of those particular Creatures.

Upon these Grounds, if we set aside the Consideration of Miracles, as Things supernatural, and of those Instances, wherein the Providence of the great Rector of the Universe, and Human Affairs, is pleas'd peculiarly to interpose; it may be rationally said, *That* God having an Infinite Understanding, to which all Things are at once in a manner Present, did, by vertue of it, clearly discern, what would happen, in consequence of the Laws by Him establish'd, in all the possible Combinations of Them, and in all the Junctures of Circumstances, wherein the Creatures concern'd in Them may be found. And, *that* having, when all these things were in His Prospect, settled among His Corporeal Works, general and standing Laws of Motion suited to His most Wise Ends, it seems very congruous to His Wisdom, to prefer (unless in the newly excepted Cases) Catholick Laws, and higher Ends, before

before subordinate Ones, and Uniformity in His Conduct before making changes in It according to every sort of particular Emergencies: And consequently, not to recede from the general Laws He at first most Wisely establish'd, to comply with the Appetites or the Needs of particular Creatures, or to prevent some *seeming Irregularities* (such as Earthquakes, Floods, Famins, &c.) incommodious to Them, which are no other than such as He *foresaw would happen* (as the Eclipses of the Sun and Moon from time to time, the falling of Showers upon the Sea and Sandy Desarts, and the like must do, by vertue of the Original Disposition of Things,) and *thought fit to ordain, or to permit*, as not unsuitable to some or other of those Wise Ends, which He may have in His All-pervading View, who either as the Maker and Upholder of the Universe, or as the Sovereign Rector of His Rational Creatures, may have Ends, whether Physical, Moral, or Political;

(if I may be allowed so to distinguish and name Them,) divers of which, for ought we can tell, or should presume, are known only to Himself, whence we may argue, that several *Phænomena*, which seem to us Anomalous, may be very Congruous or Conducive to those secret Ends, and therefore are unfit to be censur'd by us, dim-sighted Mortals.

And indeed, the admirable Wisdom and Skill, that, in some conspicuous Instances, the Divine Opificer has display'd in the fitting of Things for such Ends and Uses, for which (among other purposes) He may rationally be suppos'd to have design'd Them, may justly persuade us, that His Skill would not appear Inferiour in reference to the rest also of His Corporeal Works, if we could as well in These, as in Those, discern their particular final Causes. As if we suppose an excellent Letter about several Subjects, and to different Purposes, whereof some Parts were written in plain Characters, others
in

in Cyphers, besides a third sort of Clauses, wherein both Kinds of Writing were variously mix'd, to be heedfully perus'd by a very intelligent Person, if he finds that those Passages, that he *can understand*, are excellently suited to the scopes that appear to be intended in them, it is Rational as well as Equitable in Him to conclude, *that* the Passages or Clauses of the third sort, if any of them seem to be insignificant, or even to make an Incongruous Sense, do it but because of the illegible Words; and that both these Passages, and Those written altogether in Cyphers, would be found no less worthy of the excellent † Writer, than the plainest Parts of the Epistle, if the particular purposes, they were design'd for, were as clearly discernible by the Reader. And perhaps you will allow me to add, that *by this way* of ordering Things so, that, in *some of God's Works*, the Ends or Uses may be manifest, and the ex-

D d 2 quisite

† See the Discourse of Final Causes.

quisite fitness of the Means may be conspicuous ; [as the Eye is manifestly made for seeing, and the Parts it consists of admirably fitted to make it an excellent Organ of Vision] and in *others*, the ends design'd seem to be beyond our reach: *By this way*, (I say) of managing Things, the most Wise Author of them does both gratifie our Understandings, and make us sensible of the Imperfection of Them.

If the Representation now made of Providence serve (as I hope it may,) to resolve some scruples about it ; I know you will not think it useless to Religion. And though I should miss of my aim in it, yet since I do not dogmatize in what I propose about it, but freely submit my thoughts to better Judgments ; I hope my well meant Endeavours will be, as well as the unsuccessful ones of abler Pens have been, excus'd by the scarce superable difficulty of the Subject. However, what I have propos'd about Providence, being written, rather to do a service to
The-

Theology, than as necessary to justify a dissatisfaction with the Receiv'd Notion of *Nature*, that was grounded mainly upon Philosophical Objections ; I hope our *Free Enquiry* may, though this *Second* Use of it should be quite laid aside, be thought not unserviceable to Religion, since the *First* Use of it, (above deliver'd) does not depend on my Notions about Providence, no more than the *Third*, which my Prolixity about the former makes it fit I should in few words dispatch.

III. The last then, but not the least, service, I hope our Doctrine may do Religion, is, that it may induce Men to pay their Admiration, their Praises, and their Thanks, directly to God Himself ; who is the *True* and *Only Creator* of the Sun, Moon, Earth, and those other Creatures that Men are wont to call the *Works of Nature*. And in this way of expressing their *Veneration* of the True God, (who, in the Holy Scripture styles Himself a *Jealous* God,

God, Exod. xx. 5.) and their *gratitude* to Him, they are warranted by the Examples of the ancient People of God, the *Israelites*, and not only by the Inspir'd Persons of the Old Testament, but by the Promulgators of the New Testament, and even by the Cœlestial Spirits; who, in the last Book of It, are introduc'd, Praising and Thanking God *himself* for His Mundane Works, without taking any notice of His pretended Vice-gerent, *Nature*.

Rev. iv. 2.

THE

T H E
CONCLUSION.

AND now, dear *Eleutherius*, you have the whole Bundle of those Papers that I found and tack'd together, (for they are not all that I have written) touching my *Free Enquiry* into the Receiv'd Notion of *Nature*: At the Close of which Essay, I must crave leave to represent two or three things about It.

I. Since this Treatise pretends to be but an *Enquiry*, I hope that any Discourses or Expressions that you may have found Dogmatically deliver'd, about *Questions of great moment or difficulty*, will be interpreted with congruity to the Title and avow'd Scope of this Treatise; and that so favourable a Reader, as *Eleutherius*, will consider, that 'twas very

Dd 4 difficult

difficult in the heat of Discourse, never to forget the Reserves, that the Title might suggest, especially since, on divers occasions, I could not have spoken, with those Reserves, without much enervating my Discourse, and being, by Restrictions and other cautious Expressions, tedious or troublesome to you. But this, as I lately intimated, is to be understood of *Things of great moment or difficulty*. For otherwise, there are divers Notions, Suppositions, and Explanations, in the Vulgarly Receiv'd Doctrine of *Nature*, and Her *Phænomena*; which I take to be either so precarious, or so unintelligible, or so incongruous, or so insufficient, that I scruple not to own, that I am dissatisfied with them, and reject them.

2. *Though*, upon a transient view of these Papers, I find that several Parcels, that came first into my hands, having been laid and fasten'd together, (to keep them from being lost, as others had already been) before

fore the others were lighted on, some of them will not be met with in Places that are not the most proper for them; yet Haste and Sicknefs made me rather venture on your good Nature, for the Pardon of a venial Fault, than put myself to the trouble of altering the Order of these Papers, and substituting new Transitions and Connections, in the room of those, with which I formerly made up the *Chasms* and Incoherency of the Tract, you now receive. And if the Notions and Reasonings be themselves solid, they will not need the Assistance of an exact Method to obtain the Assent of so discerning a Reader, as they are presented to: Upon the score of whose Bignity, 'tis hop'd, that the former Advertisement may likewise pass for an Excuse, if the same things, for substance, be found more than once in a Tract written at very distant Times, and in differing Circumstances. For, *besides* that such seeming Repetitions will not (if I be not mistaken)

staken) frequently occur, and will, for the most part, be found, by being variously express'd, to elucidate or strengthen the Thought or Argument, they belong to: And *besides*, that the Novelty and Difficulty of some Points may have made it needful, not only to display, but to inculcate them; *besides* these things, (I say) 'tis very possible that the *same Notion* may serve to explicate or prove *several Truths*; and therefore may, without *Impertinency*, be made use of in *more than one Part* of our Treatise. And if our *Enquiry* shall be thought worthy to be Transcrib'd, and presented to you a second time, after I shall have review'd it, and heard Objections against it, and consider'd the Things, that either you, or I myself, may find fault with in it; 'tis very possible, that (if God grant me Life and Leisure,) this Tract, which, in its present Dress, I desire you would look on but as an *Apparatus* (towards a more full and orderly Treatise,) may appear before
 you

you in a less unaccurate Method:
And that my *Second Thoughts* may
prove more *Correct*, more *Mature*,
or *better Back'd* and *fortifi'd*, than my
First.

3. The Subject of my Enquiry
being of great *Extent*, as well as *Con-
sequence*, it oblig'd me to consider,
and treat of many Things, (as Phi-
losophical, Medical, Theological, &c.)
and, among them, of divers that are
not at all of easie Speculation. And
I found it the more difficult to han-
dle them well, because the Attempt
I have ventur'd upon being new, and
to be prosecuted by Discourse, many
of them opposite to the general Sen-
timents of Mankind, I was not to ex-
pect much Assistance from any thing,
but Truth and Reason. And there-
fore, as I cannot presume not to need
your Indulgence, so I cannot despair
of obtaining it, if in this my first
Essay, upon a variety of difficult
Points, I have not always hit the
Mark, and as happily found the
Truth as sincerely sought it. But if
you

you shall (which 'tis very probable you will) find that I have fallen into some Errors, 'twill be but one Trouble for you, to make me *discern* them, and *forsake* them, (especially any, wherein Religion may be concern'd) which I have, by way of Prævision, made it the more easie for myself to do ; because (if my Style have not wrong'd my Intentions,) I have written this Discourse, rather like a doubting Seeker of Truth, than a Man confident that he has found It.

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ERRATA.

Pag. 27. l. 17. r. *Angel*, p. 47. dele *To which I now proceed*; p. 131. l. 10. r. *Causality*, p. 134. l. 15. & 16. r. *God and a Providence is afforded by the Consideration of the Visible, &c.* p. 273. l. 16. r. *World*.

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