

**New observations on the natural history of this world of matter, and this world of life: in two parts. Being a philosophical discourse, grounded upon the Mosaick system of the Creation, and the Flood. To which are added some thoughts concerning paradise, the conflagration of the world, and a treatise of meteorology: with occasional remarks upon some late theories, conferences, and essays / By Tho. Robinson.**

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*Isaac NEWTON*  
OBSERVATIONS  
ON THE

Natural History  
OF THIS  
World of MATTER,  
AND THIS  
World of LIFE.

In Two Parts.

Being a Philosophical Discourse, ground-  
ed upon the Mosaick System of the  
Creation, and the Flood.

To which are added

Some Thoughts concerning Paradise, the  
Conflagration of the World, and a Treatise of  
Meteorology: With occasional Remarks upon  
some late Theories, Conferences, and Essays.

By *THO. ROBINSON* Rector of  
*OUSBY in CUMBERLAND.*

L O N D O N :

Printed, for *John Newton* at the Three Pigeons over  
against the *Inner-Temple-Gate* in *Fleet-street*, 1696.







To the Reverend  
**Mr. William Nicholson**  
Arch-Deacon of *CARLISLE*.

REVEREND SIR,

**I** Have read over the Books  
you were pleased to lend me,  
(viz.) Dr. Burnet's Theory  
of the Earth, and Dr. Woodward's  
Essay toward a Natural History of it:  
Both which entertain'd me with a great  
many new and very notable Hypotheses,  
managed with a great deal of Art, Ingenuity  
and Learning; but in my Opinion very ill  
grounded; many of their Notions being  
inconsistent with common Sense and Experience,  
with Scripture and Reason;



## *The Dedication.*

especially the Mosaick Account of the Creation, Paradise, and the Universal Deluge ; and in some Particulars, Dr. *Woodward* seems inconsistent with himself.

These following Chapters, ( which I make bold to present to your Hand , and to give you the Trouble of perusing ) will shew you wherein I cannot concur with these great Virtuoso's, and why I endeavour to establish a quite different Notion of things ; and do ground it upon such Philosophical *Theses*, as *Moses*, that great Philosopher, has laid down as so many *Postulata* in his short, but most comprehensive System of the Creation ; the whole being a short and compendious Description of this World of Matter, and this World of Life wherein we live.

SIR,



### *The Dedication.*

SIR; I am so far from being big with a fond Conceit of any of these Notions, that I dare not trust them in any Hands but yours; for I am unwilling that these Papers (without your Approbation and Encouragement,) should go further abroad than your Study, lest some ill-natur'd and peevish Critick should take occasion to expose the Ignorance and Disingenuity of their Author.

I know (Sir) that the Experience you have lately gain'd by searching into those occult Regions of Matter, being now added to your former Speculations about it; has made you the most capable of determining all Differences, and solving the most difficult *Phænomena* of this Kind. If you will be pleas'd therefore to correct with your Pen the Mistakes you meet

A 3 with



## *The Dedication.*

with in any of these Notions, and  
let me have your honest and im-  
partial Opinion of them, you will  
further oblige,

*Sir,*

*Your most affectionate*

*and humble Servant,*

THO. ROBINSON.

---

*To*



T O T H E  
Gentlemen Miners.

GENTLEMEN,

**I**F his Observation be true, That  
no Man can lose by the World;  
but what he loseth in Purse, he gains  
in Experience: You will have no  
Reason to complain, if sometimes your  
subterranean Projects miscarry upon  
your Hand: Since that Loss may easi-  
ly be Repaired by your experimental  
Knowledge, of those occult Regi-  
ons of Matter; concerning which,  
the most profound Philosopher can give  
no Account, but by way of Hypothesis  
and Conjecture.

Solomon, that great Master of ex-  
perimental Knowledge, tells us that



## The Dedication.

Wisdom is better than Rubies; and all the things that may be desired are not to be compared to it. And tho' that by Wisdom he may mean that Divine Philosophy which the New Testament calls Religion; yet certainly there is nothing contributes more towards making one morally or physically wise, than Experience, as he intimates in the following Verse, where he brings in Wisdom thus speaking: Prov. 8. 11. I Wisdom dwell with Prudence, and find out the Knowledge of witty Inventions. I confess that the Theorick Part of Philosophy (being the first-born,) is more noble; and therefore deservedly sits Regent in the Superior Faculties of the Soul: Attended with sublime Notions and Speculations; and sometimes Figments and Chimæra's are also her Maids of Honour.

And altho' the practick or experimental



## The Dedication.

*mental Part, sits below in humble Garb,  
attended only with mechanick Arti-  
ficers, and manual Operators: Yet  
she oftentimes Entertains the World  
with more of Certainty, and Demonstra-  
tion than the former.*

*Gentlemen, I shall not complement  
you into a good Opinion of these Noti-  
ons which I am willing should abide  
the Test of an impartial Judgment;  
only I think it may be convenient to  
let you know that they are the product of  
20 Years Experience and Observation;  
for so long I have been concerned in  
the Inspection of under-ground Works  
of several Kinds.*

*Besides the Place of my Habitation  
being under Crosfell, ( one of the  
highest Mountains in England ) whose  
lofty Top gives a large Prospect both of  
the East and West Seas; I have from  
thence observed, not only the different  
Classes of Matter, the Eruption of  
Rapid*



## The Dedication.

*Rapid Springs; but also the Rising and Falling as well as the Rarefaction and Condensation of Vapours.*

Gentlemen, If the Publication of this short Treatise (which I presume to present to your Hand, as the most proper Patrons of subterranean Philosophy) put you to the Charge of an easie purchase, you will certainly have it much cheaper than the Author, who shall always remain,

GENTLEMEN,

*Quibys, April the 16.  
(1696.)*

Your most humble Servant

and Well-Wisher,

THO. ROBINSON.

The



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T H E

# PREFACE.

**I**F the learned Authors of the new Theories and Essays had but taken the Pains to have consider'd better of those great Advantages of Learning and Education which *Moses* (the greatest Philosopher that ever was in the World, and the first Describer of its Creation) had beyond any of those learned Philosophers of later date, who have writ upon the same Subject; they would have entertain'd a greater Veneration and Esteem for his short, but most comprehensive System; than for the larger Volumes of those common Philosophers and Historians



## *The Preface.*

ans, whose Writings are only the Product of their own natural Reason; though set off with the greatest Artifice of Words, and Advantages of human Learning.

The first Progress which this great Philosopher made in human Learning and Wisdom was in *Pharaoh's* Court, where he had his Education, under the Tuition of his own Daughter, who having no Child of her own, design'd to adopt him her Son, and make him Heir apparent to that Crown: To which End he was by her Care instructed in all the Learning, Wisdom, and Philosophy of the *Egyptians*: And no doubt but some of the most learned amongst the Hierophanthæ, who were the most skilled in the Knowledge of mystical as well as natural Philosophy, were his Tutors.

He



## *The Preface.*

He being thus qualified with the best Learning *Egypt* could then afford, the second Improvement he made was in the Family of his Kinsman *Jethro*, who being as well a Priest as Prince of *Midian*, did not only discipline him in all the Rules of Policy, Conduct, and Government ; by which he was fitted and prepar'd for being Captain General of that mighty Host of the *Hebrews*, which God design'd to deliver from the *Egyptian* Yoke, and under his Conduct to settle in *Canaan* ; but also he was instructed by him in the Religion of his Ancestors, the Patriarchal Traditions concerning the Creation of the World, the Beginnings of things, and the Genealogies of Men, which being best known to *Adam*, who coming immediately out of God's



## *The Preface.*

God's Hand, did undoubtedly deliver it to his Son *Seth*, *Seth* to *Enos*, and so from Father to Son, to *Abraham*, from whom *Jethro* descended by a second Marriage.

During his Time of Residence in *Midian*, which was forty Years, and most of that Time being spent in Contemplation: Its generally believed he wrote this System of the Creation, with the rest of his Book called *Genesis*, by the Assistance and Direction of his Father-in-Law, who could not be ignorant of the Patriarchal Traditions; himself being descended from a Patriarch of special Note.

After these Gradations and Improvements in all Kinds of humane Learning, Wisdom and Philosophy, God took him into his own Service, and was pleased by



## *The Preface.*

a sort of Personal Communication to impart to him as well the manner how all things began to exist, as how the Manners of Mankind were to be exercised; so that he may be reasonably supposed to found the Authority of his Writings, as well as of his Government over God's People, upon Divine Revelation.

In this most excellent System, Philosophy, Divinity and Mystery, seem to be so closely interwoven that it wou'd be a Matter of great Difficulty (if not Impossibility) for any, unless such as are well skill'd in the Cabalistical Traditions and Mythology, to unravel the Contexture and distinguish its parts. And some of the most learned Rabbies are of opinion that God directed *Moses*, and the rest of the holy Pen-Men, frequently to make  
use



## *The Preface.*

use of Metaphors, Allegories, and other Schematicall Forms, which must needs be attended with some Darknes and Obscurity (these being as it were a Veil drawn over the Face of Divine Truth) and this might occasion *Solomon* to joyn the *Words of the Wise*, and their *dark Sayings* together.

And this was not only the Practice of the sacred Writers; but of the learned Heathens, especially their Priests and Philosophers; who undoubtedly did imitate *Moses* herein: but for different Ends and Purposes; for it did highly concern the Pagan Priests to hide and conceal their Mysteries from the Light; which like bastard Eagles would not endure the Tryal of it.

But the holy Spirit might direct the holy Pen-men to observe  
their



## *The Preface.*

their Style for Reasons of greater and more weighty Moment.

For the Divine Wisdom might see it fit in the Infancy of the World, to discover his Will and Mind in some things very suitable to the Capacities of the Men of that Age : And to reserve other things of great moment veil'd under Allegories, and mystical Expressions until the Minds of Men were more opened and enlarged ; for discovering of those brighter Beams of Divine Truth.

Yet that the Glories that were after to appear might not be wholly clouded ; he order'd it so, that such a thin Veil shou'd be drawn over the Matter, as shou'd not more set off the Beauty, than stir Men up to a diligent Search after those Divine Truths.



## *The Preface.*

If then a modest Attempt be made to ground a Philosophical Discourse upon some of these veiled Mysteries, with Submission to Men of greater Learning, and better skill'd in mystical Philosophy: I presume that it will not be judg'd an Effect either of Pride or Vain-glory.

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Preliminary



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## Preliminary Postulata.

**I** Know that it's much out of Fashion to beg Principles in this Philosophizing Age ; yet considering that this Schematical Account which Moses has given of the Creation is as well Philosophical and Mystical, as Historical and ad hominem, I presume that these following Postulata, being grounded upon such reason, as cannot be denied, will easily be granted me ; as first--

That this Natural World was created in a Natural Way, by the Agency of second Causes ; God Almighty concurring with them by his Direction and Approbation in these Words ( He saw that it was good. )



## Preliminary Postulata.

2. That the work of the Creation cou'd not, in a natural way, be compleated in so short a time as six days; for as it cannot be easily imagined that all the Solid Strata and Beds of Iron cou'd be digested into such good order, as we find them in; and receive their several Degrees of Consolidation in that time: Neither can it be Suppos'd that all these different natures in the Vegetative and Animal Sphere of life shou'd grow up to such a degree of Perfection, that Adam cou'd eat Ripe fruit in Paradise of six days Production: And that all the Beasts of later birth cou'd in that time get Strength to appear before him.

3. It may then be taken for a granted Principle, that by the six days work is meant the six distinct Productions; and by the Evening, and the Morning, is meant the Principles of Activity and Passivity, which were the Instrumental Causes of these Productions.

That



## Preliminary Postulata.

*That Paradise in a literal sense may signify a local place or Garden of Pleasure, in a Philosophical sense all those Rational and Sensual Pleasures our Natures are capable of in this Material World : In a Mystical sense it signifies Heaven, or those Intellectual Pleasures our Natures shall be capable of when they are Spiritualiz'd and Exalted.* 4.

*That Adam and Eve in a literal sense signify the first Individual Persons that were of that Species. In a Philosophical Sense, they signify a Generation of Men, and Women ; in a Mystical sense, they signify Reason and Sense, or the Superior, and Inferior Faculties of the Soul.* 5.

*That by the Serpent in a literal Sense is signified a subtle insinuating Brute, whose speckled Skin ( being beautified with all the Variety of Natural Paint ) made it a fit Object to work upon the visive Faculty ; in a* 6.



## Preliminary Postulata.

Philosophical Sense, it may signifie natural Concupiscence : And, in a mystical Sense, it may signifie the Devil.

7. By the Tree of Life, in a literal Sense, may be signified an individual Tree producing Fruit, and preserving Life. By the Tree of Knowledg in a literal Sense, may be understood a Tree bearing Fruit of a poisonous Quality, and destructive of Life ; in a Philosophical Sense they may signifie the whole Species of Vegetables, both of a wholesome and poisonous Nature ; in a mystical Sense they may denote eternal Life and eternal Death.

8. Adam's giving of Names to the Beasts signifies the Exercise of his natural Reason, by distinguishing of their Natures.

9. Lastly, by Eve's eating of the forbidden Fruit, may be understood the Desire of natural Concupiscence ; to gratifie her Senses with their beloved Objects.

Ad-



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ADVERTISEMENT  
WITH

*Additional Remarks.*

SINCE the writing of the following Discourse, a new *Theory of the Earth* hath been publish'd by a thoughtful young Divine, who agrees in some Notions with me; this therefore is to assure the Reader, that my Manuscript laid all the last Winter in *London*, and was printed off before I had a Sight of the aforesaid Book, which several of my Friends can testifie (if there should be occasion) thro' whose Hands these Papers have passed.

Another thing ought to be taken notice of, and that is my referring several Hypotheses and Observations to a late *Writer* (a Fault which Mr. *Whiston* hath committed up and down his Book) who it seems hath taken them from others; which I accidentally discover'd by falling upon the *Monthly Miscellany Letters*, Vol. 1. Numb. 22. Pag. 561, 566. Vol. 2. Numb. 2. Pag. 49. to 57. As also the *Philosophical Transactions of the Royal Society*. Numb.



*Additional Remarks.*

219. from p. 181. to 201. of which 'tis but just to give some Instances; for a tender regard ought to be had for the Original Inventors of things, who ought not to be robb'd of the Fruits of their Labours and Studies by Pyratrical Rovers, who set up for *stupendous* and *miraculous Discoverers*. Turn to this *Essay*, Pag. 33. The Origine of Mountains from the Disruptions and Changes of the *Strata* of the Earth was *Steno's* Opinion. See his *Prodrom to a Dissertation concerning the Changes of the Earth*.

Pag. 40. 75, 76, 77. The same *Steno*, in his *Prod.* places about the central Fire of the Earth, a huge Sphere or Abyſs of Waters; which, according to him, supplies the Earth with Springs, the Air with Vapours, and was sufficient for the general Deluge, when by the Force of the subterraneous Fires, it was thrust and forced up, whereby the Globe was broken to pieces, and dissolv'd in the vast Fluid.

Pag. 61. 62. The perpendicular and horizontal Fissures of the Earth, dividing the *Strata* or Beds of Sediments, are with great Care and Accuracy delineated and described by Dr. *Steno* in his *Prodrom*,



### Additional Remarks.

*Prodrom*, and many other *Phenomena* relating to the History of the Earth, are explain'd at the End of his *Anatom. canis carchar. in his specim. myolog.*

Pag, 76, 86, 88. The resetting or subsiding of Bodies, as well terrestrial as marine (dissolv'd or mix'd with the Waters of the Deluge) according to the Laws of specifick Gravity in their several Strata or Beds of Stone, Sand, Clay, Marle, Slate, Lime, Chalk, &c. was publish'd above 26 Years ago, by *Nicholas Steno*, and *Agostino Scilla*; if the aforementioned Accounts in the *monthly Miscellan. Letters*, and the *Philosophical Transactions* are to be rely'd upon; the Books themselves being not to be come at in a remote Province. This *Stenonian Hypothesis* of the Formation of the \* pre-

\* Note, that *Steno* proves the

Earth to have been twice fluid, twice plain and dry, twice scabrous and craggy; the first was at the original Chaos, the second at the Flood; This (says he) is manifest from some Beds of the higher Hills, containing no Heterogeneous Bodies, because form'd before there were any Animals or Plants, or other mix'd Solids; and so preserv'd in their simple antediluvian State by the Height of their Situation, which might secure them against the Load of many adventitious or factitious Beds, falling for the most part on the Vallies and low Places, where they make up all the compound Strata, which incrust the present Earth, and separate it from the primitive one, whose Beds are more simple, not stuff'd up with such different Bodies as make up the postdiluvian Strata, or Sediments. This agrees with what *Mr. Whiston* delivers in many Places of his *New Theory*. To which we may add that the simple antediluvian Beds on the high Mountains, destitute of Heterogeneous Solids, may be laid open by the washings away of the incumbent Diluvian Sediments or compound Beds, by the Torrents of Rains, which carry down those Crusts and Bodies along with them.



### *Additional Remarks.*

sent Earth out of the several Beds or Sediments of Matter mix'd with, and sinking down from the Waters of the general Flood according to the Affinity and Weight of Parts is much oppos'd by a late Author of two Essays from Oxford, who cannot believe the Deluge to have been universal, nor the whole Earth planted with Animals from *Noah's Ark*, whose Arguments I do not approve of, being inconsistent with true Philosophy, and Divinity: Neither is Dr. *Nichol's* second Creation of Animals after the Flood to be allow'd of, being contrary to the Design of *Noah's Ark*, and to the whole Mosaick Narration.

As to my Opinion concerning the Origine of fossil Shells, of form'd Stones, and subterraneous Plants; *Scilla* himself, tho he with *Steno* has taken great Pains to 'prove them to be the Exuviae or Spoils of Animals and Vegetables (from the Similitudes of their Parts in every particular) and to be the Remains of the Deluge subsided and lodg'd in several Beds, Layers, or Sediments; yet I find by Dr. *Lister*, that *Scilla* own'd some sorts of them to be of another Original, and the learned Dr. himself



*Additional Remarks.*

himself proves beyond 'all contradiction, that real perfect Shells are frequently found in the Bladder, Kidneys, Imposthumes, and other Cells of Animal Bodies; and if so, why need we force them into the midst of Quarries and Rocks by dissolving the whole Frame of Nature for their Sakes?

If true Shells can be form'd within Stones of the Bladder, and in many other Parts of the Bodies of Creatures; then by the same Argument a Million may be form'd in the Bowels of the greater World, every ways resembling those of the Sea, in *Striae, Lamellae, Fasciae, Tendons, Threds, &c.* so that they might perswade *Steno, Dr. Hook, Bocccone, Scilla, Columna,* and Mr. Ray, that they were really the very same, owing their Original to the Flood, or Chaos, or Earthquakes.

My Hypothesis concerning the Generations of several Animals is much confirm'd by the learned and experienced *Father Buonani* in his late *Observations circa viventia in non viventibus reperta*; who maintains equivocal Generation from many clear and undoubted Proofs.

For,



*Additional Remarks.*

For, Pag. 151. to Pag. 166. compare *Huetius* and *Bochart de Paradiso*.

Pag. 189, 191. Some great Natural Philosophers will have the *Ignes Fatui* to be flying Glowworms, or some other shining Insects.

Pag. 205. See more of the Figures and Phenomena of Snow and Hail in *Barthol. de Nive*, *Hook's Micrography*, *Boyle of Cold*, *Marten's Greenland Voyage*, *Lewenhoeck's Letters*.

As for *Mr. Whiston's New Theory*, I am afraid it will be found altogether inconsistent with the *Mosaick History*, being adapted only to the formation of our little Globe, without taking in the Heavens (which *Moses* is particular in) and depending too much upon mechanical & necessary Laws (as several other late *Theorys* and *Hypotheses* do) whereby the Flood and Conflagration might be brought to pass without any Relation to the Fall of Man or Sin. For *Comets* and Eruptions of boiling *Abysses* may frequently destroy our Globe, by such Chains of Natural Causes; *Comets* by the Laws of Trajection may dash and drown us with their Tails, and the central Fire may drive up the vast *Abyss* upon us, whether we

fin



*Additional Remarks.*

sin or no ; these *Phenomena* may befall the Moon and all the Planets, without any respect to Inhabitants, and may happen frequently by such Concourses and Links of Mechanism, and by the ordinary Laws of Motion. Therefore we ought to be cautious of making such Grand *Revolutions* to rowl upon Machines, as well as on the other hand of coining new Miracles and second Creations without any Warrant from Scripture ; of the first I am afraid the *ingenious Mr. Whiston* is too guilty ; and of the latter the learned *Dr. Nichols*. But considering we are in a Country of Liberty, and in an Age of Thought and Observation, I can easily pardon the Freedom they are pleas'd to take in their Studies and Enquiries.

Having lately met with an accurate Discourse of *Bernardini Ramazzini*, printed 4 Years ago in *Quarto*, concerning the subterraneous Waters, the several Layers or Beds of Earth upon deep diggings, the fossil Shells, Bones, Vegetables, Pavements, &c. as also upon Inundations, and Deluges, with their Effects, I thought fit here to acknowledg the many Obligations we owe to that  
*inquisitive*



*Additional Remarks.*

*inquisitive Physician* for his various Observations on the Changes of the Earth about the Territory of *Modena*, which are equally commendable with those of *Columna* upon *Apulia*; *Dr. Hooke*, *Mr. Ray*, *Dr. Plot*, and *Dr. Lister* upon *England*; *Steno* upon *Tuscany*; *Scilla* and *Boccone* upon *Sicily* and *Malta*; to whose Discoveries little hath been added as yet, notwithstanding the high and mighty Pretences of a late *Author*; who, in an *Essay toward a Natural History of the Earth*, *Pag. 37.* throws Dirt upon those very *Gentlemen*, from whose Writings he hath made bold to borrow the best Part of the Observations in his Work: 'Tis also remarkable, how, *Pag. 249, 252, 255, 256, 257, 259.* he falls foul upon a very famous and reverend *Divine* for taking the same *Philosophick Liberty*, which he himself assumes in many Places of his *Essay*. As for his darling Notion (though none of his own) of *Specifick Gravity*, 'tis notoriously false in Fact and Nature, for the *Strata*, *Layers*, or *Beds* of *Sediments* (out of which *Steno*, *Scilla*, *Grandius*, *Ramazzini*, and others, will have the Earth made up) do not lie according to their different *Weights*, or according



*Additional Remarks.*

according to the Statick Laws of descent of Solids in Fluids; for the Strata of Marble, and other Stone, of Lead, and other Metals, lye often near the top or Superficies, having many lighter Strata under them; and if all the Strata thro the whole Globe could possibly be viewed and examined, I am confident the respective Order of specifick Gravity would not hold in any two together; and who can fancy, that the Parts of Ferns, Mosses, and other Plants, of Shells, Teeth, and other Bones, should equiponderate with those of Metallick Fossils; nay, oftentimes subside below them; and whoever views the Dimensions, Weight, Figure, and Place of those vast Natural Columns, call'd the *Devil's Causy in Ireland*, will be soon convinced of the Weakness of this *Hypothesis*. Their Origine therefore must be accounted for some other way than what *Columna*, *Steno*, *Scilla*, *Boeccone*, *Grandius*, and others copying after them, have deliver'd concerning the Deluge and Inundations, Strata, Crusts, or Sediments according to the Laws of Specifick Gravity; neither are the many Phenomena relating to their Situation, expli-



*Additional Remarks.*

explicable by any *Theories of the Earth* as yet publish'd ; I know not what Dr. *Hooke* may do when he comes to print his Lectures upon this Subject, which the *Virtuosi* expect, and very earnestly crave of him : Much also may be perform'd by the Learned Mr. *Edward Lhwyd*, Keeper of the *Oxford Museum*, who hath been very diligent and accurate in his Observations on these Bodies, and whose Candor and Modesty, joyned with his exquisite Judgment, render him capable of such an Undertaking.

As to the Origine of subterraneous Plants, either digg'd out of Earthen Beds, or lodged within Stony Substances, or else impress'd upon them, which *Steno* in his *Prodroms* ( translated by Mr. *Oldenburgh* ) Pag. 93, 94, 95. will needs derive the same way with those of Shells, Teeth, Bones, and other Parts of Animals, buried in the like Strata or Sediments of the Deluge ; Mr. *Lhwyd* of *Oxford* has rais'd many invincible Objections against this *Stenonian Hypothesis* in the last Edition of *Camden's Britannia*, Pag. 692, 693. and Mr. *Ray* in his second Preface to the *Synopsis of British Plants*, argues



*Additional Remarks.*

argues very Philosophically against this Opinion, reviv'd of late with great Assurance, and in a positive manner; but Mr. *Whiston* hath done very wisely in taking no notice of the many insuperable Difficulties which have been urg'd against the bringing in of these Bodies, and the forming our present Crusts and Layers of Earth, out of a general Deluge. He hath saved himself much Sweat and Pains in having Recourse only to two or three late Books, and in consulting Copies instead of Originals, which would have given more Strength and Beauty to his Work, and would have look't more masterly; however the Gentleman hath perform'd very well in the main, and hath shewn a profound and clear Knowledge in Physical Science, though not in the History of Learning, nor in that of Nature. His Conjectures are admirable, but his Quotations and References are not commendable, being injurious to those eminent Philosophers who were the first Inventors, and yet passed over in Silence, as though there had been no such Writers; many of their Observations being attributed by the *Author of the New The-*



### *Additional Remarks.*

ry to one of his own Acquaintance, who may do as much for him another time; but I would not willingly accuse Mr. *Whiston* of any ungenerous dealing, having discover'd a noble Genius in the Formation of his System; and therefore I conclude with respect to him, and with Charity to all Mankind.

The



## The Contents of the first Part.

**C**Hap. 1. *The Philosophical meaning of these Words ( In the beginning God created the Heavens and the Earth, ) and what may be concluded from them.*

Chap. 2. *Of God the supream and efficient Cause ; and why Moses proves not the Being of a God expressly by way of Argument ; but implicitly by describing of the several Degrees of Perfection, and the Subordinations of Life.*

Chap. 3. *Of the Creation of second Causes, and the manner of their Production, and ways of working.*

Chap. 4. *Of Light and Darknes, the common Principles of mix'd Bodies, what they were in Mass ; and how their Division made the first Production.*

Chap. 5. *Of Light the formal Cause of all mix'd Productions ; what it was whilst in Mass.*

Chap. 6. *Of Darknes, the material Cause of all mix'd Productions ; what it was in Mass, how it was reduc'd into Form :*



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- Chap. 9. *Of the Primeval or Antediluvian Figure of the Earth.*
- Chap. 10. *Of the constituent Parts of the Earth ; and first of the volatile Part of it, or the central Fire, its natural Uses.*
- Chap. 11. *Of the fixt Part of the Earth : and first of the Inequality of its Surface ; their Natural Causes and Uses.*
- Chap. 12. *Of Mountains, their original Cause, consistences, and natural Uses ; being the first dry Land that appear'd.*
- Chap. 13. *Of Mountain Heaths, &c.*
- Chap. 14. *Of the Plains and Valleys, &c.*
- Chap. 15. *Of the Channel of the Sea, &c.*
- Chap. 16. *Of the fluid Part of this teraqueous Globe ; and first of the Sea, &c.*
- Chap. 17. *Of those preternatural Accidents that disturb and interrupt the Course of*
- of



## The Contents.

of Nature in this Material World, &c.  
Chap. 18. Of the central Damps: Their Causes, Natures, and dreadful Effects upon this Globe.

Chap. 19. Of terrene Damps, and their dreadful Effects upon this Globe, &c.

Chap. 20. Of Noah's Flood, its Causes, the Season of the Year when it happen'd, the Effects and Alterations it made upon the Earth.

Chap. 21. Of the season of the Year when the Deluge happen'd.

Chap. 22. Of the Alterations which Noah's Flood made in, and upon the Earth.

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## The Contents of the second Part.

CHap. 1. Of the Plastick Spirit in Matter, and its natural Products.

Chap. 2. Of the grand Cover of the Earth, the sympathetical Union of the plastick and vivifick Spirit; and the Production of Vegetables, the first and lowest Degree of Life.

Chap. 3. Of reducing the confus'd Mass of Light or the ethereal Flame into a Body,



## The Contents.

dy, which made the Sun; of reducing those lighter Fogs and waterish Mists into a Body, which made the Moon; how by clearing of the superlunary Firmament, or the Planetary Spheres, the Stars appear'd, and what the Sun, Moon, and Stars contribute towards the Production of sensitive or locomotive Animals, and why the Creation of these second Causes made the fourth Production.

Chap. 4. Of the Production of the second Degree of Life, and first of oviparous Animals, as Fish and waterish Insects.

Chap. 5. Of the second Genus of oviparous Animals, viz. the Aerial: And first of Fly-Insects, secondly of Serpents, thirdly of Birds, and why Moses makes the waterish and aerial Animals congenial.

Chap. 6. Of the terrene, or viviparous Animals.

Chap. 7. Of the Creation of Man, the sixth Production.

The Conclusion: Wherein is shewn the meaning and significancy of these Words. And God saw every thing that he had made, and behold it was very good.



## The Contents.

**A** Discourse concerning the Terrestrial Paradise, shewing how Adam was introduced into it : The Time he continued in it, and how he and Eve employed that Time.

A Discourse concerning the Conflagration of this material World; the Local Hell; its outmost Boundaries, or Abraham's Gulph.

A short Treatise of Meteorology, with some Observations concerning the Changes and Alterations of the Weather.

Chap. 1. Of Vapours and Exhalations, &c.

Chap. 2. Of the efficient Causes of all Meteors, and first of Heat.

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Chap. 8. Of vaporous Meteors, and first of Dews and Hoar Frosts.

Chap. 9. Of Rain, Hail, and Snow.

Chap. 10. Of Hail and Snow, with Observations.

Chap. 11. Of Frost and Thaw.

Chap.



## The Contents.

Chap. 12. *Of the Sphere of Rarefaction.*

Chap. 13. *Of Wind, Helms, and Arches*

Chap. 14. *Prognostications of the Change  
and Alteration of Weather, from the  
setting and rising of the Sun.*

*The Author living at a great Distance from the  
Press, desires the Reader to pardon these fol-  
lowing Mistakes.*

**P**Age 5. line 13. read further, p. 25. l. 6. r. Philosophi-  
cally, p. 27. l. 9. r. Anteperistatikal, p. 30. l. 10. r.  
Nutritius, p. 44. l. 25. r. Fluidity, p. 67. l. 1. r. Nature,  
p. 91. l. 4. r. Sublunary, p. 121. l. 24. r. Litorales, p. 132.  
l. 25. r. Assimilation, p. 139. l. 10. r. learned, p. 155. l.  
28. r. Zodiack.



Explained.

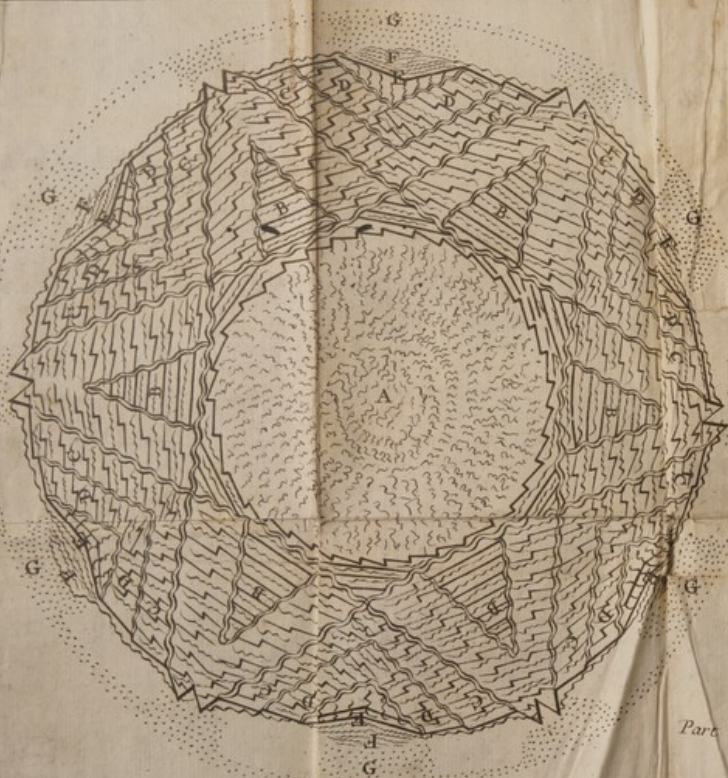
Artificial heat through the  
surface.

Water with their Acids  
techniques to the sea  
and Depressions

greater Veins, Dis-  
tinctly described the  
whole Mass of the



*A Scheme wherein the Several Phaenomena of this Terraqueous Globe are Explained.*



- A The Central Fire disseminating a vital heat, through the whole Cortex or Shell of the Globe.
- B The Mountains from the Centre to the Surface.
- C Heaths.
- D Plains.
- E The Channel of the Sea.  
The flat Strata or Beds of Matter, with their Accivities to the Mountains and Declivities to the Seas together with their Elevations and Depressions, thus described —  
The winding and turnings of the greater Veins, Dividing the several Classes of Matter described thus —  
~~~~~ through which the whole Mass of subterranean Water Circulates.  
Their Lesser Fibres, or Ramifications, filling all the flat Strata with feeders of Water, which breaking out upon the Surface of the Earth cause Springs &c. described thus. —
- F The Seas with the Rivers flowing into them from the Tops of the Mountains swelling them into a Gibbosity, and causing in them a continual Fermentation.
- G Vapors Arising from the Seas, which being Attracted by the Coldness of the Mountains, fixeth there, Forming an Atmosphere round the whole Globe.



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# PART. I.

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## CHAP: I.

*The Philosophical meaning of these Words [In the beginning God created the Heavens and the Earth,] and what may be concluded from them.*

**M**OSES in his Philosophical Description of the Creation, lays it down as a granted Principle or a grand *Thesis*, that the Heavens and the Earth, with all their Parts, Furniture and variety of Natures contained in them, were created [*de novo*] and that God the Supream Being Un-created, and Independent, Almighty in Power, and Infinite in Wisdom and all Perfections, was the efficient cause: That the time

B                      when



when the World was Created, was in the beginning of Time ; or when Time first began to have a Being ; for before the World was Created there was duration, or *Stabilis Aeternitas* [ as the Schoolmen express it ] but Time being an equal mensuration of Motion, it and Motion began together.

From this grand *Thesis* we may conclude, First against *Aristotle*, who endeavour'd by many Arguments to prove that the World, as it now stands in Matter and Form, was Eternal ; which Hypothesis advanceth the World into an equality with God ; makes it its own efficient Cause, Uncreated and Independent.

In the Second place this *Mosaick Thesis* concludes against *Plato* and his Followers ; who, tho' he did positively assert, that God made the World ; yet he did conceive that the Matter on which it did consist was Eternal and Pre-existent : By which Hypothesis he concludes God to be an impotent cause, not able to create the World without Matter and Stuff to work upon.

These mistaken Principles in Philosophy were occasion'd from the Observation of the regular course of Nature ; not considering that there might be



be other causes which might produce effects in an other way than cou'd ever come within the compass of their narrow observation; for how Spiritual Causes produce their effects, its impossible for us whilst we continue in this dark state of Matter; wherein we have but a very short and narrow prospect to understand.

In the Third place it concludes against *Democritus* and his Followers, who did not only conceit that Matter was Eternal and Pre-existent; but that the World had no efficient cause, but what was from Chance, or the casual motion of Matter; which consisting of infinite numbers of Atoms or little Corpuscles of different Figures, Natures and Qualities, which rainged about in a vast and infinite space; until at the last by Divisions, Separations and Mixtures occasioned by their contrary and mixt Qualities, and the innate Power of Sympathy and Antipathy, they at last settled into the Form and Figure of this World, which it can no more alter or vary from, than the active Fire be taught to change its Nature, and descend and Gravation to ascend and fly upward.

3.



No doubt but this Hypothesis was grounded upon an experimental Observation of the several Kinds of Matter of different Natures, which being mixt together in a Glafs, or any transparent Vessel, will separate and divide themselves *proprio motu*; tho never so jumbled and mix'd together.

I shall not in this place shew you the absurdity of this Hypothesis; but rather chuse in the following Chapters to give some account what Feats, Matter and Motion will produce by vertue of their contrary Qualities, and the power of Sympathy and Antipathy; and how far God Almighty might make use of these towards the forming the material part of this World.

4. We may hence farther conclude, that although neither the World as it stands, nor the Matter on which it consists did pre-exist; yet it was an immediate consequent of Eternity, and the natural product of the Divine Essence, and Attributes (*viz.*) Power, Wisdom, and Goodness, according to that Model and Idea pre-conceiv'd in the Divine Understanding:

For it cannot be imagin'd that the Divine Essence wou'd for some time sit still,



still, and wrap up it's self in sloth and idleness ; but did always display its self in a vigorous activity.

Besides the natural tendency of Infinite Power, is Action ; of Infinite Wisdom is Counsel ; of Infinite Goodness is Beneficence : We cannot therefore but conclude from these Natural Arguments, that God would from all Eternity follow the inclinations of his own Divine Perfections.

From this grand *Thesis* we may yet futher conclude, that this Universal Fabrick of the World was not created at one stroke, by an imperious *Fiat* ; for tho this might have been consistent with Infinite Power ; yet it would not have been agreeable with Infinite Wisdom, which consists in Deliberation, Counsel and Contrivance.

*Moses* therefore tells us that God first created the Heavens, and then the Earth : Like as some mighty Monarch designing to build a spacious and most glorious Palace, first forms the Model of it in his mind ; and having prepar'd his Materials, sets on work his Under-agents, who first of all lay the Foundations, and compleat his own Royal Apartments, then the Apartments of



his chief Ministers of State, after that Chambers for his Domesticks, and last of all Lodgings for his out Servants; and the Work being finish'd, according to the Model which he gave his Architects to work by, he gives it his Approbation. In like manner, the Great and Almighty Monarch of the Universe may be supposed, first to have laid the Foundations of those Super-Cœlestial Regions of unaccessable Light, the Royal Chambers of his own most Glorious Presence; where he sits in great Majesty attended with an innumerable retinue of the most Noble Angels his Courtiers: After these he creates the highest of the Cœlestial Spheres, in which he placed Thousands of Royal Mansions, where the Arch-Angels and Brighter Cherubins, the chief Ministers of State in that Cœlestial Kingdom keep their residence: And these are the Morning Stars which *Job* tells us [by way of *Synecdoche*] that met together, and the Sons of God that did shout for joy. After these God created the inner or lower Spheres, in which he placed innumerable numbers of bright, lucid and Ætherial Globes; wherein the inferior Angels and Domestick



mestick Officers do inhabit, and these the Scripture stiles *Ministring Spirits*.

And these differ in Office, Power and Light, as they are placed in Spheres nearer, or at a distance from the Regions of Light: For as one Star differeth from another Star in Glory, Light, Purity and Magnitude; So do their Heavenly Inhabitants: And so shall it be in the Resurrection from the Dead; for as Men improve here in Vertue, Goodness and the Divine Life and Light, so shall they be placed nearer, or at a distance from God, the Fountain of Life and Light.

After the finishing of these Inner Courts of this Royal Palace, last of all God created this Material Globe or Outer Court; and made it the Center of the Universe: And it's built of the Rubbidge, Dross and Sediment of the whole Creation, and inhabited with the meanest of Creatures, and lowest degree of Life and Perfection, which may most properly be called God's out Servants; over which he has placed Man Deputy Lord Governour.

This Material Globe, tho it appears in its own dimensions to be of great Magnitude to us (who bear not so



much proportion to it, as a Mole-hill does to the greatest Mountain) yet being compared to the whole Universe [ if the computation of the best Philosophers be true ] it will scarce bear proportion to the Ninety six thousand part of it.

It cannot therefore be imagined that the Wise Creator [who never made any thing in vain, but to the best ends and wisest Purposes] should be so fond of a piece of dull stupid Matter, as to create all those innumerable numbers of Bright, Lucid, Ætherial Globes (the least of which exceeding this Mole-hill in Magnitude by several Diameters) for no other end or purpose than distinguishing of Days, Months, Seasons and Years; and for casting a dark glimmering light to us poor Mortals.

As God Almighty finished any part of the Creation, he gave it a motion, and this motion it performs naturally and insensibly, without labour or difficulty; as our Blood circulates through our Veins and our Vital Spirits glide in the Nerves through the whole Body.

The Almighty having now finished the Creation which made up but one Royal Palace, containing in it innumerable



merable Mansions, fit for the Subjects of so great a Monarch to live in: He sits at the Helm of this Floating Universe, and Steers all its motions with a steddy and unerring hand.

And it can be no more labour to God to govern and actuate this World; who as an Universal Soul is diffus'd in it, and is vitally present in every part of it, than for a Man's rational Soul by Will and Cogitation, to move a Finger or a Toe, or any other part of his Body; tho at the greatest distance from its Seat.

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C H A P.



## C H A P. II.

*Of God the Supream and Efficient Cause; and why Moses proves not the being of a God expressly by way of Argument; but implicitly by describing of the several degrees of Perfection, and the Subordinations of Life.*

**W**HEN Moses writ this excellent System of the Creation, Polytheism and Idolatry had prevailed over the generality of Mankind, and *Abraham's* Posterity were become Worshipers of *Egyptian* Gods, as appears by their making of a *Molten Calf at Horeb*.

Yet notwithstanding this multitude of Inferior Deities which the World had set up for Divine Worship; the generality of Mankind did universally believe, that there was one Supreme God, who was the efficient Cause and Almighty Creator of this World, consisting of the Heavens and the Earth: and that this God was the Father and Governour of all the rest.

The



The *Philosopher* might therefore justly conclude it superfluous to prove by strength of Argument a Tenet, or rather an Article of Faith; to which the common Suffrage of Mankind did so universally consent and agree: And if it be suppos'd that *Moses* writ this System of the Creation, with the rest of his Book, which gives an account of the Patriarchal Genealogies, on purpose for the benefit and instruction of the *Israelites*; who in all probability could not but be ignorant of the Traditions and Religion of their Ancestors: [the *ipse dixit*] of so great a Philosopher; a Man so eminent for these mighty and unparallel'd Miracles and Wonders, which th' Almighty wrought by his Hand upon *Egypt* before their eyes; were sufficient to convince them, not only of a bare credibility; but of the Truth and Certainty of this Divine *Thesis*, that there was a God, and that he created the Heavens and the Earth.

But as God did not limit and confine his Favours wholly to *Abraham's* Posterity; but extends them to the Universal Body of Mankind: So notwithstanding that *Moses* writ these Books for the instruction of that People  
in



in the first place, he undoubtedly design'd them for the information of others living in a State of Ignorance:

And therefore although he does not expressly by way of Argument prove the Being of a God, and that he was the Supreme Cause of the World's Creation [*Atheism* being not then heard of in the World] yet he does it implicitly by describing of those several Degrees and Subordinations of Life in the World; and by shewing how every inferior Rank of Creatures is subservient to its Superior; and how every inferior Species is concatenated and link'd to its Superior by intermediates, all which is so visible and obvious in the Frame of the World, that an easie Philosopher without any great difficulty, or hard Study may ascend *Gradatim*, first from those common Minerals of Salt, Sulphur and Mercury, to the several degrees and kinds of Oars and Metals; from these to the fertile Soil: from it to the several degrees of Life and Perfection in Vegetables, as Grass, Herbs, Plants, Shrubs, Trees, &c. and from these to the *Zoophyta* or Plant-Animals, which concatenates the highest degree of Vegetation to the lowest degree



degree of Sensation ; from the several degrees of Sensation in Brutal Animals, to Man which is an intermediate Animal, that links and couples Heaven and Earth together ; from Man to the several degrees of Light, Life and Perfection in the Angelick Nature ; and from the Intellectual Nature, to God the Fountain of Light, Life and Perfection ; who, as an Universal Soul, actuates the whole World, by giving of the several degrees of Life and Perfection to all the Creatures in the Animal World, as they are plac'd in Orbs or Spheres nearer or at a greater distance from his Divine Essence.

Thus in God all Creatures Live, Move, and have their Beings, and by these gradations we may either ascend up to Heaven, where God Almighty resides in Infinite Glory and Perfection, or from thence descend to the hidden and dark Regions of Matter.

CHAP.



## C H A P. III.

*Of the Creation of Second Causes,  
and the manner of their Production;  
and ways of Working.*

**T**HE grand reason why *Plato* and *Aristotle*, and the rest of the Natural Philosophers did assume it as a granted Principle, that Nothing was made out of Nothing; and that every thing produced, had necessarily some pre-existent Matter out of which it was so formed; was [as I have already hinted] because they cou'd not observe in the ordinary course of Nature any thing produced *de novo*; therefore they concluded it impossible that any such Production cou'd ever be, or happen in Nature:

But from particular Experiments or Observations to establish a general Conclusion; especially concerning the impossibility of any thing's Existence, is no regular and warrantable way of argumentation; for there may be Agents of another Sort, and Powers which can produce Effects in another way, than cou'd  
ever



ever come within the compass of our ob-  
 servation ; for we see, and cannot but  
 make it an observation, that one sensi-  
 tive Animal by the power of Sensation  
 can do more, and produce greater ef-  
 fects, than all the Vegetables can pro-  
 duce by the power and strength of Ve-  
 getation. And one Man by the Power of  
 his Natural Reason can produce more  
 noble Effects, than all the Brute Animals  
 by the Strength of Sensation ; so one An-  
 gel by the Power and Vigour of his Spi-  
 ritual and Intellectual Natures, can pro-  
 duce effects more great and wonderful,  
 than all the Men in the World can by the  
 power of Reason, tho' never so exalted  
 and sublimated ; for we read in 2 *Kings*  
 19. Chap. and 15. Verse that an An-  
 gel in one night went out and smote in  
 the Camp of th' *Assyrians* one Hundred  
 and fourscore and five thousand ; but  
 how or by what means this Angelick,  
 power was exercised it is not within the  
 compass of shallow Reason to conceive:  
 Yet we may reasonably conclude from  
 it, that if an Angel, by the Power of  
 his Intellectual Nature, can do more  
 than all the Men in the World ; so  
 God Almighty by his Divine Essence  
 can produce greater and far more won-  
 derful



derful effects than the whole Angelick Nature; even such as is impossible either for us, or them to understand.

But *Moses* having, to his great improvements in Natural Philosophy, the Advantages of the Patriarchal Traditions, and a Divine Revelation; and being best acquainted with God Almighty's Power in producing Effects; doth not only positively assert, that God was the Maker and Builder of this World; but that he Created it and the Matter on which it doth consist, out of Nothing, and that by uttering of that Almighty Word [*fiat*] not audibly, for then there was no sensible Auditor in Being; but mentally, that is, by an Act of Volition; *sic volo sic jubeo* being only a Prerogative of Almighty Power.

The Second Causes which this Almighty Power Created out of Nothing, and which he made use of as instrumental in all Productions of a mixt Constitution, may be considered either as they are Essential or Accidental.

The Essential Causes were Light and Darknes; the External and Accidental Causes were Motion, Time, and Place; without which all Natural Productions are Physically impossible. God



God having created these Second Causes by another Imperious Word, set them on working; and he gave them also a Rule or Model to work by, which is most commonly called the Course of Nature; and when these new Agents had produced any effect, he view'd it, and gave it his Divine approbation, in these Words; *God saw that it was good* (i. e.) that it was agreeable with that Rule and Model he had given them to work by; which words, tho' they be spoken *ad Hominem*, yet undoubtedly *Moses* intended by them to instruct and inform Mankind, that the World was not made by Chance, or the casual Motion of blind Atoms, as some since have Atheistically asserted; but by Wisdom, Council and Deliberation.

And this establish'd Course of Nature, or these Laws and Rules which the Divine Wisdom gave to the Second Causes to work by, he never interrupts or varies from; but upon great and extraordinary occasions, when he is pleas'd to give some Demonstrations of his Almighty Power and Universal Providence by which he governs the World at his Will and Pleasure; then



he can either divert the Natural Causes from their usual course, or by them produce Supernatural Effects; as the destruction of *Sodom* and *Gomorrhah* by extraordinary Thunder and Lightning; the Destruction of all living Creatures upon the face of the Earth by an Universal Deluge; or he can stop them in their Natural Course, as when he caus'd the Sea to divide and stand still, and the Sun to move backwards.

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C H A P. IV.

*Of Light and Darknes, the common Principles of mix'd Bodies, what they were in Mass; and how their division made the first production.*

**A**LL the Natural Philosophers wanting the assistance of a Divine Revelation, did agree in this; that there cou'd be no Production of a mixt Constitution, without a Sympathetical Union of an active and passive Principle; but what these Principles of Activity and Passivity were, they could not easily determine. These



These our great Philosopher expresseth by the Names of Light and Darknes; which when they came immediately out of Gods hand, were bound up and hamper'd in one confus'd Mass; which might fitly be compar'd to a dark and palpable Mist, like the *Ægyptian* Darknes which was to be felt, in which vast Fog or Mist were bound up, and smother'd those bright, lucid and active Particles of pure and Volatile Æther, as we see Light inclos'd within the walls of a dark Lanthorn; or the active Particles of Fire when smother'd in Ashes, or imprison'd within the dark body of Matter.

Thus Darknes was upon the face of this thick Mist or Fog of Matter, until God by another Almighty *Fiat* created Motion; which being infus'd into the stagnating Mist of Matter, the whole Mass of it was put into a fermentation and motion; and whilst the contrary Qualities were acting their Antipathies one upon another, these nimble and active Particles of lucid Æther [being the most Volatile] broke through this dark Mass of Matter, and uniting themselves, caus'd a bright shining Light, which *Moses* calls



Day : and this division of Light from Darkness, occasion'd by the putting of the whole Mass of Matter into a Fermentation and Motion, made the first Production.

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C H A P. V.

*Of Light, the formal Cause of all mixt Productions, what it was whilst in Mass.*

**B**Y Light is to be understood that vast Ætherial flame, which whilst it was in Mass diffus'd its bright shining Rays, not only through the Material Regions, but the Planetary and Cœlestial Spheres: This Ætherial flame was the *Anima Mundi*, the Vehicle of Life, wherein was contain'd the Seminal and Specifick Forms of all sublunary Creatures, [Man only excepted] and then danc'd about the Passive Matter, like Atoms in the Morning Sun Beams; until its Prolifick Slime, by vertue of its Plastick Power was modifi'd and prepar'd for receiving of Life.

And



And this seems to be the sense and Philosophical meaning of *Moses* in the Second Chapter of *Genesis*, Verse the Fifth; God made every Plant of the Field before it was in the Earth, and every Herb of the Field before it grew; meaning only their Seminal and Specifick Forms which were contain'd in a Vehicle of Light, before they were united to their Material Vehicles.

Thus Light according to the *Mosaick* Principles of Natural Philosophy, became the Formal Cause or the Male Parent of all mixt Productions.



## C H A P. VI.

*Of Darkness, the material cause of all mixt Productions; what it was in Mass, how it was reduc'd into Form: Of the Power of Matter and Motion: Of Sympathy and Antipathy.*

**B**Y Darkness, the other Principle, or Material cause of generation, is not meant a bare privation of Light; but that vast Mist, or Dark Fog of Matter consisting of infinite Numbers of Particles or little Corpuscles of different Figures, and contrary Qualities, which by reason of a Principle of motion infus'd into it, run a Reel in a dark confusion until these contrary Qualities of Heat and Cold, Siccity and Humidity, Gravitation and Levity, falling out among 'em selves begun to act their Antipathies upon one another; which causing them to separate and divide, those of the same kindred and affinity, by the Power of a Secret and Innate Sympathy drew together and united. And



And first of all, these Particles of Matter, which were of a hot and volatile Nature, being most active and vigorous, plac'd themselves in the Centre or Middle, as we observe 'em always to do in Stacks of Hay, Corn or other compositions of mixt Matters, wherein there is a strife or contest between those contrary Qualities of Heat and Cold, Siccity and Humidity.

And these hot and fiery Particles having by their natural tendency taken possession of the Centre, began immediately to act their Antipathy upon those Particles of Matter that were of a cold and waterish substance; forcing them to fly to the Circumference, and to range about in thick Fogs and waterish Mists; filling up not only that vast Expansion between the superficies of the Earth and the Moons *Vortex*; but all the Planetary Spheres.

During which contest between Heat and Cold, Fire and Water, the intermediate Matter of a mixt Nature, neither simply hot nor cold; but participating of both Natures (*viz.*) such as were of an Unctious, Pinguid, Bituminous and Terrene Quality, settled themselves in a middle Sphere.



And every Class of Matter of the same Kind and Species, the better to secure it self from intermixing with the Matter of a different Nature, did inclose it self with great Dykes or Partitions, consisting of Excrementitious, confus'd and undigested Matter; and the natural Position of these being Rake-wise from the surface towards the Centre, they most properly may be esteem'd the greater joynts of the Earth.

And as these divide the several Kinds of Matter, so they preserve the several Feeders and Mineral Waters from intermixing, as will be more largely shewn; when we shall have occasion to Discourse of Dykes, Rakes, Veins, Strings, Riders, &c.

The confus'd Mass of mixt Matter being thus reduc'd to several Classes and a regular Form; every Class leading to some proper Mine or Mineral, which is the finer and better digested part of that Class; as Coal, Rudle, Iron and the several Kinds of Ore; and these all lay in lax and fluid Strata or Beds, like the loose Leaves in an unpress'd Volume or Book, or like the weak joynts in a newly conceiv'd Embrio,



Embrio, enclos'd in a Bag of Water  
in the Womb of its pregnant Mo-  
ther.

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C H A P. VII.

*Of the Spirit of God moving upon  
the face of the Waters, what is  
Philosophically meant by it: Of  
the first division of the Waters,  
and the clearing of the sublunary  
Firmament.*

**T**HE whole Mass of Terrene  
Matter being thus far reduc'd  
into Form and Order; [not according  
to the Laws of Gravity, the heaviest  
subsiding first in order and falling low-  
est, as Dr. Woodward conceives, which  
mistake in Observation will be made  
apparent in its proper place] [but by  
motion of consent, suitability of Na-  
tures, and an agreeable juxta-position  
of Parts.]

*The Spirit of God moved upon the face  
of the Waters, which Words, if we con-  
sider*



sider 'em under a Philosophical Notion, may be understood of the Ætherial Flame, which moving upon those waterish Fogs and Mists, rarifi'd the more subtile and tenuious Parts or Fumes of it into a brisk gale of cold condensing Wind; which did not only clear up the Sublunary Firmament by dividing of those Fogs into Sublunary and Superlunary Waters; but by condensing the Sublunary Fogs and Mists into a vast body of Water, it cover'd and surrounded the whole body of Terrene Matter; and as the Waters sank down towards the Centre, they press'd together the several *Strata* or Layers of Stones, Mines, Minerals and other Subterrene Earths, as we press together the leaves of a large Volume; and in our sinking and digging into the Body of the Earth, we find them lying upon Flats with a Dibb and Rise, the Rise towards the tops of Mountains, and the Dibb towards the main Ocean; as the Waters left them and forc'd them up, when they drew down into their proper Channel.

The whole Mass of Terrene Matter being thus Compact and Cemented together by the pressures of the circum-ambient



ambient Waters, as we press Brick and Tyle in their several Moulds ; the Central Fire did by its heat bake and consolidate those Stones, Metals, Mines and Minerals that were of a fiery nature, as well as those of an unctuous and pinguid quality, into their several degrees of Consolidation and Induration ; whilst the Anteperistical Cold, together with those petrifying juices of Salt and Nitre which then did abound in all the lax and undigested *Strata*, did petrify those *Strata* of a Terrene Nature into their several degrees of Induration and Lapidification.

By these Natural Gradations the Earth became fixt upon its Center, and the Waters a fluid body moving and circulating about it ; and they both made one Terraqueous Globe of a Spherical and Mathematical Rotundity ; all the Lines from the Superficies to the Centre being of an equal length.

Thus the space between the surface of the Waters and the Moon's *Vortex* was clear'd of all those Fogs and Mists which ranged about in it : And being fill'd with their Air, *Moses* calls it the Firmament of Heaven, which made the second Production (*viz.*) of space,



space, wherein the Under-agents or second Causes had room to work, and produce effects of a higher and more noble Nature and Quality.

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### C H A P. VIII.

*The division of the lower Waters into Subterranean, Superterranean, and Nubiferous; and by what Gradations the dry Land appeared.*

**T**H O' this great Embrio was ready for birth and to breath in fresh Air; yet it could not be deliver'd from this great Bag of Water, wherein it was enclos'd, by any innate Power it had in it self, without a Supernatural assistance: The Almighty was pleas'd therefore to play the Midwife, and to deliver it by breaking of this great body of Water; and by dividing of the sweet from those of a Saline and Brakish Nature.

For as soon as the intermediate Matter which made the Shell of the Earth, was reduc'd into Form and Order; and the



the several *Strata* or Layers of Stones, Metals, Minerals, and Subterrene Earths with their cross-cutting and dividing Dykes, Rakes, Ryders, Veins and Strings or Side-branches had receiv'd from the heat of the Central fire and the petrefying Juices of Salt and Nitre, their several degrees of Incrustation, Induration and Lapidifaction; the thirsty Matter gradually suckt in the thin sweet Water, until all its Veins, Dykes, Cavities and Pores were fill'd and saturated with it.

The Salt Water being the Sedement of the whole Mass, and likewise being too thick to penetrate and pass through the strait Pores and Strainers of the solid and condensed Matter, did gradually draw down to its Channel: And all the Veins and Pores of the Earth being now Saturated with sweet Water; the Subterranean Lympheducts, or underground Water-works began first to bubble up and play from the tops of the highest Mountains; from whence the Rivers took their first rise, and began to form their courses to the Sea; and by their rapidity and weight continually pressing in upon her from all sides, swell'd her up into a Gibbosity, and forc'd



forc'd her into a constant flux and reflux, which reciprocation of Motion causing in her a boyling Fermentation, the sweet Water does disentangle it self from the Salt; and being lighter, riseth up in Fumes and Vapours, which fly abroad until they be condens'd into Clouds, which falling down in showers of sweet Water upon the Earth becomes the *Succus Nutritivus* of the fleshy part of it; giving not only a vital nourishment to the several Kinds of Animals living on the outer Coat or Skin of it; but repairing the Subterranean Waters by preserving them from wasting.

The Waters being now divided into Superterranean, Subterranean and Nubiferous, the dry Land appear'd, and was gradually prepar'd for being an habitable World.

CHAP.



## C H A P. IX.

*Of the Primeval or Antidiluvian  
Figure of the Earth.*

**D**R. Burnet, in his Theory of the Earth, conceits and endeavours to perswade the World, that the Primeval Earth was Spherically or Mathematically round, without Seas, Mountains or any inequalities upon its Surface.

Dr. Burnet's inconsistencies.

Which Hypothesis (or rather ingenious Conceit) seems in the first place to be inconsistent with the Original State of this Material Globe; which, being design'd for a place of Habitation for several Kinds of Animals of a mixt and compounded Constitution, whose vital flame is nourish'd and maintain'd by a continual respiration of a soft and vaporous Air; which must not only be frequently fann'd with the brisk gales and blasts of a cleansing Wind, but also moistned and sweetned with showers frequently falling through it: All which have their Original cause from the constant flux and reflux of the Sea,

The Cause of this Globes Atmosphere.



and those inequalities upon the surface of the Earth: Without which there would neither have been an Atmosphere, Wind, Rain, or Air; but the Superficies of the Earth would have been [by the Sun's Beams continually beating upon it] Baked and Incrusted into the hardness of Brick and Tyle.

This Hypothesis seems also inconsistent with the different Natures of those Animals with which the Almighty Creator has been pleas'd to stock it; some of which being only produc'd in a Warm and Fertile Soil, others only in a Cold and Sterile: So some Animals delight only to breath a warm and soft Air, others a more bleak and piercing: Thus Strawberries and Gilliflowers will not thrive upon the tops of cold and barren Mountains; nor Mountain Vegetables in the most fertile Soil, or best prepar'd warm Beds: This will be made more clear and evident when we shall give account of the natural uses of the Flux and Reflex of the Sea, and those inequalities and irregularities of the Earth's Surface.

Once more to suppose the Earth to have been of an even and Spherical Superficies



perficie seems inconsistent with the different Kinds and Natures of that Matter of which it consists; some of which being hard, others soft, some fix'd others fluid, it can't be imagin'd that all this variety of Matter would settle in a Figure Spherically and Mathematically round.

From these Arguments we may without being guilty of any great presumption, conclude against Dr. Burnet's Hypothesis, that as the Antediluvian Earth consisted of the same Matter with this present Earth, and produc'd the same Species of Animals, of the same natures and qualities, it was of the same Figure that now we find it in, a Terraqueous Globe of a Physical Rotundity, with Seas, Mountains, &c.

And that these Irregularities and Inequalities of this Terrestrial Globe did not Date their Original from that Disruption which was occasion'd by the Deluge as Dr. Woodward positively asserts, Part 2d page 80. is evident from part 6. Page 246. where he undertakes to prove that the Face of the Earth before the Deluge was not smooth, even and uniform; but unequal, and distinguish'd with Mountains,

Dr. Woodward's contradiction of himself.



tains, Valleys; as also with Seas, Lakes  
and Rivers.

# CHAP. X.

*Of the constituent parts of the Earth:*

*And first of the Volatile part of it,  
or the Central Fire; its natural  
Uses.*

**T**HE Constituent parts of this Ter-  
raqueous Globe are reducible  
to three different Classes of Matter,  
(viz.) Volatile, Fix'd and Fluid; and  
these bear equal proportion one to an-  
other, and in the Structure of the  
Earth do occupy the same proportion  
of place.

The Volatile Matter, consisting of  
sublimated Sulphur, Nitre and Bitu-  
men keeps possession of the Central  
part; and as all Matter of the same kind  
and affinity, which having an appetite  
to Union, naturally affects a round and  
globular Figure, so the Central Fire  
may be suppos'd to be of the same  
Form.

That



That Figure wherein the Excentral Fire appears, is only accidental, occasion'd by the compressures of the circumambient Air.

That vast subterranean Vault, where in this volatile Globe of Central Fire is contain'd [which the Miners call the Belly of the Earth] may be suppos'd to be either of a round or circular; or of an æquilateral, multangular Figure; occasion'd by the solid Strata of Stones spreading and vaulting themselves about it.

The natural Uses of this Central Fire seem to be Analogous to that vital Flame which is seated in the Heart or Center of all Animals; for as that by its Vital heat enlivens the whole Body; so this Central Fire by that vital warmth it disseminates through the whole mass of Matter, enlivens it; and gives as well to the several Strata of Stones, Metals, Minerals and other subterranean Earths, their degrees of Consolidation; as to the several kinds of Ores, their different degrees of Purity and Perfection.

As the Vital Flame does not only cause the Ebullition and Pulsile Faculty in the Exterior parts of the Body; but

Use.

2. Use.



also the Circulation of the whole Mass of Blood through all the greater and lesser Veins of it ; so the Central Fire is as well the cause of the Ebullition of Springs, *Thermæ* and Mineral *Feeders* which break out upon the tops of Mountains and the exterior parts of the Earth ; as of the constant Circulation of the whole Mass of Subterranean Water through those Dykes, Rakes and Fissures, which from the Mountains do divide and spread themselves through the whole Body of the Earth, and are the greater and lesser Veins of it.

3. Use.

Again, as the Vital Flame gives the tincture and colour to the Blood, Flesh and all the Heterogeneous parts of the Body ; so the Central Fire, by the different degrees of concoction and boyling up of Matter, gave to the several kinds of it their different Tinctures and Colours ; this might be illustrated by several Analogous Experiments and Observations, as in the boiling of Quinces and other Fruits ; so likewise in Baking of Bread, &c.

4. Use.

The Central Fire, by running a perpetual Round within the Boundaries of its own Infernal Vault, carries the Shell of the Earth about with it,



it, and is the cause of its Diurnal Motion.

Lastly, It is the Earth's *Æquilibrium* 5. Use.  
that keeps it fix'd upon its Center.

## CH A P. XI.

*Of the fixt part of the Earth: And first of the Inequalities of its Surface; their Natural Causes and Uses.*

**T**HE fixt part of this Terraqueous Globe which we call the Earth, may be describ'd either as to its Exterior parts, or Interior consistences of it.

The Exterior parts consist of Mountains, Heaths, Dales, Plains, Valleys, with the Channel of the Sea.

The Interior consistences of it are the Strata or Beds of Stones, Metals, Mines, Minerals and Subterranean Earths, all lying upon Flats with a Dibb and Rise.

Or they are Dikes, Rakes, Riders, Veins and Strings either cross-cutting



and dividing the several kinds of  
Stones, Metals, Mines, Minerals, &c.  
of a different kind; or cross-cutting  
and dividing those of the same Species;  
as all Metallick Rakes, &c.

*Of the Inequalities of the Earths  
Surface.*

1. Use.

**T**Hese Irregularities and Inequalities upon the Superficies of the Earth, are occasion'd by the Elevations and Depressions of the solid Strata; and these are caus'd either by the greater Dikes, which divide one Species of Stones, &c. from those of a different kind; and these greater Dikes make Channels and Water-courses for the greater Rivers, which following their windings and turnings till they empty themselves into the Sea, cause all those pleasant Dales, which at last, when the Mountains wear out, dilate themselves into spacious Plains and Valleys.

2. Use.

The lesser Dikes and Joynts which divide the Stones, &c. of the same kind, by throwing them up and down, cause



cause all those lesser Hills, which as well delight the Eye with a grateful variety of Objects, as refrigerate and cherish the whole Body with a more cool, clear and wholesome Air.

The cause  
of Hills.

There is not any thing in this Natural World, that contributes more towards the making of it Habitable, than these inequalities upon its Surface.

For, First they occasion all these different Kinds and Natures of Soil, which produce the several Species of Vegetables suitable to the several Natures of those Animals that feed upon them: The Earth's Surface being God's Storehouse, wherein is provided Food and Nourishment agreeable to the Nature of every Animal, and every living Creature by a Natural Instinct knows its proper Food and Nourishment, and when and where to find it.

I.  
The Cause  
of different  
Soils and  
Natures of  
Vegetables.

They occasion all those different qualities of the Air, as Warm, Cold, Thick, Thin, Moist and Dry; for as God has provided Food suitable to the several Natures to feed on, so He has provided Air suitable to their Natures to Breathe in.

2.  
The differ-  
ent Quali-  
ties of the  
Air.



3. The occasion of Springs, &c.

Those Inequalities upon the Earth occasion all those Springs, Mineral Feeders and Medicinal Waters, which break out in Rapid Streams from the Tops of Mountains, and the Skirts of lesser Hills; so that as God has provided convenient Food for every Animal to feed upon, and agreeable Air to breath in; He has likewise [by causing of Springs to break forth and bubble up at the Foot almost of every Hill] provided convenient Water for every Animal to quench its Thirst with.

2. The Cause of the different Natures of Vegetables.

Whereas if the Earth had been of an Even and Spherical Superficies, cover'd with one solid Strata, or incrusted Cover of Earth; I doubt we should have been forc'd to have Digg'd as deep as Dr. Burnet and Dr. Woodward's Abyss, before we shou'd have met with Water sufficient to have quench'd our Thirst; and its also doubtful that when we had found it, it wou'd not have been Sweet and Wholsome.

4. Of the breaking out of Mines, &c.

These Inequalities also cause the several Strata of Stones, Mines and Ores, &c. [having a Natural Rise] to break forth at Day, so that the Ingenious and Industrious Miner may meet with,



with, not only Stone for Building of Houses, Coals for his Fires; but the several Kinds of Ore to enrich his Coffers with.

These Inequalities also produce all those Pleasant and most Profitable Copises and Thickets of all Kinds of Trees, which delight most to grow where the solid Beds of Stone are weak and broken and lye near day, and where they may easily thrust their Roots into their broken Joints and suck in the Mineral Spirits, &c.

5.  
Of the pro-  
duction of  
Trees, &c.

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## C H A P. XII.

*Of Mountains, their Original Cause, Consistences and Natural Uses; being the first Dry Land that appeared.*

**T**HE Mountains are the Ebullition of Matter, occasion'd by the Central Fire when it was in its full Strength and Vigour.

The Cause  
of Moun-  
tains.

They



## 1. Use.

Their Con-  
sistences.

They consist of such Strata of Stones, Metals, Raggs, Chivers, Cills, &c. as are of a Hot quality; and these are like so many Hot-beds wherein the several kinds of Ore receiv'd their Conceptions, as well as their different degrees of Concoction and Perfection; as hereafter will be more fully shewn.

## 2. Use.

Their Na-  
tural Uses.

The Mountains consisting of such Matter as is of a Hot Quality, and being bound with strong Cills, which having a quicker Rise than those upon the Plains, do lift up their Heads above the rest of the Earth; and became not only the great Pillars and Supporters of the whole Fabrick; but the first Sea-Banks that broke the Circulation of the Waters, and were the first dry Land that appear'd.

## 3. Use.

The Tops of the Mountains reaching as high as the cold Regions of the Air; and having but the advantage of a single Reflection of the Sun's Globuli, have always a Cold and Condensing Air upon them, and striking a Level with the Gibbosity of the Sea, do by the Sympathy between Cold and Cold attract the Vapours to them, which either fall down in Showers of Rain, being Condens'd by the rising of the Ground

Cold



Cold; or are rarifi'd into Wind by the falling of the Sphere of Rarefaction, which term will be hereafter explain'd when we describe the Nature of Winds.

All the greatest Dikes and Divisions of the Earth [as I have already observ'd] do contract themselves and meet in the Mountains, as the Veins do in the Necks of Animals; and these being the greater Veins of the Earth, by dividing into lesser Veins and Branches, maintain and preserve a constant Communication or Circulation of Water through the whole Body. 4. Use.

And this is the only Reason why the Heads of all the greatest Rivers in the World have their Rise from the Tops or Sides of the highest Mountains; which by following of the Windings and Turnings of these greater Dikes or Veins, and by receiving into them the lesser Dike-Feeders, are increas'd from small Rivulets into large and Navigable Rivers, which at the last empty themselves into the Main Ocean.

The Declivity of the Mountains gives Rapidity of Motion to the Rivers, which does not only preserve their Sweetness for the benefit of Men and Beasts; but also 5. Use.



also by pressing upon the Sea from all sides, swells her up into a Gibbosity, and is the only cause of her Flux and Reflux, which the following Chapters will give account of.

6. Use.

As the Declivity of the Mountains gives Rapidity of Motion to the Rivers; so it gives Motion to the Winds and Air: For as the Condensation of Vapours causeth an Inundation in the Waters; so the Rarefaction of the Vapours and Exhalations causeth an Inundation and Overflowing in the Air: And those Lateral blasts of Wind that come so strong upon us, are only Waves of the Air; and the roaring Noise we oftentimes hear upon the Mountains, is only the breaking forth of the Winds upon the still Body of the Air, and there putting of it into a rapid Motion, which is increas'd by the Descent of the Mountains; for Air and Water are the same in *Specie*, differing only in degrees of Thinness and Fluidity,

7. Use.

As the Mountains are the great Pillars and Supporters of the Earth, their Foundations all meeting in the Center, and Forming that Vast Subterranean Vault, which keeps the Central Fire from breaking forth; so they are the great-

est



est Ornament of its Superficies ; giving not only a most pleasant Prospect over the Plains and Valleys, but terminating the Visive Faculty with a grateful variety of Objects.

The Mountains have their Natural Position either in Ridges or Clusters ; those we see in Clusters intermixt with great Dales, Gills and Valleys, were [at the first settling of Matter] all of an even Superficies ; but their Joynts and divisions consisting of Raff, Ragg, Chiver and such confus'd Matter, without strong Cills or Strata of Stones to bind them together, were by great Storms and Tempests of Rain, &c. but especially by Noah's Flood, broken and driven down into the Valleys ; and from thence into the next adjacent Sea.

And this is the Reason why some Mountains have a Perpendicular Rise, why their Ribs and Sides lye Naked and Frightful, threatening to fall upon us ; and these great Dikes and Joynts are either fill'd with Ponds of Water, which afford great plenty of Fish ; or they are become pleasant Valleys Gills and Dales ; having a Fruitful Soil and the warmest Sun, by reason of

The position of Mountains.

The Cause of the Rise of Mountains.

The Cause of Gills, Dales and Vallies.



of its Beams being Reflected from all  
sides of the Mountains.

# CHAP. XIII.

## Of Mountain Heaths, &c.

The Ingre-  
dients of  
Coal.

The Cause  
of Gills,  
Dales and  
Valleys.

Lesser  
Mountains.

**T**HE Mountain Heaths lye upon  
the Skirts of Mountains towards  
the Sea, their Consistences and several  
Strata are rather of a Pinguid, Bitumi-  
ous and Nitrous, than of a Hot and  
Sulphureous Quality; and they general-  
ly lead to Mines of Coals, which are  
the Pneumatick parts of such Strata of  
Stones and Metals as are their upper Co-  
vers; the principal and more Pneuma-  
tical Ingredients whereof are Bitumen,  
Sulphur and Nitre; Bitumen gives the  
Flame, Nitre blows it up, and Sulphur  
gives the Heat.

Their cross-cutting and dividing  
Dikes consist of tough Clay and a mix-  
ture of confus'd Matter: These Moun-  
tain Heaths were the second dry Land  
that appear'd; for as the Sea did gra-  
dually draw down into its Channel;  
its unruly Waves drove up these lesser

Hills



Hills we see upon the Skirts of the Mountains, and forc'd their Strata of Stones, Metals, &c. to have a Rise towards them, thereby making a Channel so Spacious as might contain so Vast a Body of Water, and keep its Proud Waves within their proper Limits.

The Cause  
of the Chan-  
nel of the  
Sea.

Their Stones, Metals, &c. had their degrees of Incrustation and Lapidification from the Central Fire.

C H A P. XV.

C H A P. XIV.

*Of the Plains and Valleys, &c.*

THE last dry Land that appear'd, was the Plains and Valleys, which by the Depression of their Strata sank down into the Channel of the Sea; the Consistences of these are rather of a Terrene and Nitrous, than a Pinguid Quality.

They afford us the best Free Stone as White, Grey, Red and Yellow; these Tinctures and Colours they receiv'd from those different degrees of Concoction they had from the Central Fire; and the degrees of Lapidification



faction and Induration they receiv'd from the Anteperistical Cold, and Petrefying Juices: Their Strata have an easie Dيب towards the Sea, sometimes not a Yard at fifty; for as the Waters divided, their Strength abated, and the Flat Strata laid more level.

## CHAP. XV.

### *Of the Channel of the Sea, &c.*

**A**S the Valleys sink down gradually into the Channel of the Sea; so the Channel is only a spacious Valley as far depress'd before the Surface of the Earth, as the Mountains and mountainous Heaths are advanc'd above it.

Its Consistences are of a Terrene, Nitrous, Mercurial and Saline Quality, which is the reason the Sea-sand will by a violent Heat run into a Glassy Substance. And why the most precious Pearls are found in that part.

CHAP.



## C H A P. XVI.

*Of the fluid Part of this Terraqueous Globe ; and First of the Sea, &c.*

**T**HE Sea is that Vast Body of Salt Water contain'd in its proper Channel: Its the Sediment of the whole Mass of Water, and therefore is Thicker and Heavier than either the Subterranean or Aerial Waters; which is the reason why it can neither penetrate the straight Pores of Solid Matter, and so intermix with its sweet Feeders; nor be elevated in Vapours by the Sun's Influence and fall down in Brackish Showers, which would be destructive as well of Plants and Herbs as Men and Beasts.

The Nature and Quality of the Sea.

The Seas are in a continual Flux and Reflux: The cause of which is the Rapidity and Weight of the Rivers continually pressing in upon it from all sides; and the Sea-waters being not only Thicker, but of a different Nature from the Thin and Sweet River-water, and having a Natural Appetite to Union, will not easily suffer the

E R I



The Cause  
of the Seas  
Gibbosity.

Rivers to Incorporate with them, which is the true reason why the Rivers swells her up on both sides of the Shoar, until the weight of the Salt-water over-balancing the weight of the Sweet-waters causeth the Sea to break in the middle, and by the greater weight and strength of her Waves forceth the Invaders to retreat and fall back until the Salt-water has lost its weight and Strength; and this is the cause of its Flux.

The Cause  
of its Flux.

The Salt-water having thus lost its weight and strength, the Rivers redouble their Force, and by the Rapidity of their Motion and weight of their Waves forceth the Salt-waters to a gradual and orderly Retreat, and to swell up into such a height of Gibbosity that its weight again over-balanceth the weight and strength of the Rivers; and this is the cause of its Reflex.

The Cause  
of its Re-  
flux.

Thus the Flux and Reflex of the Sea is occasion'd by the continual strife between the Fresh-water and the Salt; and the Spring-tides and Dead-tides are occasion'd by the gradual Increase and Decrease of the Reciprocation of their Motion; as we observ'd in the Spring or Balance of a Clock in giving her back Stroaks at every Tenth. This

The Cause  
of Spring-  
Tides and  
Dead-  
Tides.



This continual Strife between the Fresh-water and the Salt causeth a constant Heat and Fermentation in the Sea; and this Boiling Fermentation causeth the Sweet River-water to fly up in Mists and Vapours, which causeth an Atmosphere to be round the whole Terraqueous Globe; and when these Mists and Vapours are condensed into Clouds they fall down in Showers of sweet Rain upon the Surface of the Earth.

The Cause of the Seas Fermentation. The effects and Uses of the Seas Fermentation.

Thus tho' the Sea affords no Sweet-water, yet it is the only Medium which preserves and maintains a constant communication and circulation between the Subterranean and Aerial Waters.

The Saline Quality of the Sea is occasion'd by her being boiled up into a Sediment by the Central Fire; as well as those Rocks of Mineral Salt that abound in her Channel.

The Cause of the Saltiness of the Sea.

This Saltish Quality of the Sea does not only preserve that vast Body of Water from Corrupting; but by causing her Water to be thicker and heavier than those in the Fresh Rivers, it makes them more able to bear Burthens of much greater weight, and fitter to maintain a Correspondence and Com-

Its Uses.



munication of Trade between Land and Land, tho' at the greatest distance.

The proportion which the Subterranean Water bears to the Sea.

Tho' the Sea and Main Ocean seems to contain a vast quantity of Water; yet it being compar'd to the Subterranean Waters which circulate through the Veins of that great Body, and are contain'd in the Strata and Pores of dens'd Matter; it will scarce bear the same proportion to them that One does to Seventy-two; for if the Computation of those Learned Men be true who give Account that the Sea and Main Ocean cover but one half of the Globe, and that the Channel of the Sea is but one *German* Mile Deep [the Shallows being compar'd to the Deeps] then it would necessarily follow that if the Earth were Mathematically Round, it would cover the whole Globe only half a *German* Mile, which bears but Proportion to the Circumference of the Earth, as Half a Mile does to Twenty one thousand six hundred Miles. Again, the Diameter of Twenty-one thousand six hundred Miles being Seven thousand two hundred, of which if we allow a Semidiameter to the Center or Belly of the Earth there will remain Three thousand six hundred Miles for the Shell or Body



Body of it, to which Three thousand six hundred the Fluid part or Superterranean Water can bear no less Proportion than One to an Hundred; which Computations being granted (and indeed they cannot reasonably be deny'd) in the whole Body of the Earth, there will be found Thirty-six German Miles of Fluid Matter, which bears proportion to the Seventy-two Superterranean Seas or Oceans.

To strengthen this Hypothesis we may further add that in sinking of Pits, the deeper we sink, we raise the more Water; and that Stone or Mine of Coal which at Three Fathom Deep runs six Tubs of Water in one Hour, containing Thirty Gallons a-piece, at Six Fathom it will double the Number; and so on till the Water be Invincible; as in Hogsheads full of Water the highest Tap runs slowly, because there is little weight of Water upon it; but the middle or lowest Tap will run double and treble the Quantity in the same time, there being double and treble the weight of Water upon it.

Again, If we do further add that besides the Water that circulates in the Veins of the Earth, there is so much



of Water Intermix'd and Incorporated with the Fixt and Solid Matter, that if Stone, Metal, or Coal [when its Digg'd out of its Living Strata or Beds] be immediately expos'd to the Sun or Fire, it will in a short time want of Weight above an Hundredth part, the Fluid part being Exhal'd.

Of the  
greater  
Veins of  
the Earth,  
&c.

The greater Dikes or Veins in the Earth, are Principally Four: The First divides and changes the Mountain-Strata from the Mountain-Heaths: The Second divides those several Strata of Stone &c. of which the Mountain-Heaths Consist, from those of the Plains and Valleys: The Third divides those Beds and Layers of Matter on which the Plains and Valleys consist, from the Channel of the Sea: The Fourth Runs under the Channel of the Sea, whose Side-Branches causeth all those Submarine Quick-Sands which are the warm Beds wherein the Sea-fish scatter their Eggs for the Propagation of their several Kinds: As this, so all the rest of the greater Dikes and Veins have their Side-Branches filling all the Strata of Stones, Metals, Minerals and Subterranean Earths with Water; so that where-ever we sink into the Body of  
the



the Earth, as soon as we prick [with our Digging Instruments those Kells of Clay &c. which divide the several Strata] we presently raise their Feeders.

And if any [who being prompt'd either to gratifie his Natural Curiosity, or gain some considerable Advantage to himself] would raise a new River upon dry Ground, let him go to the Foot of some Hill or Rising Ground and begin a Level-Drift, which by cross-cutting of the several Strata of that Rising Earth, he will Tap and set at Liberty all the Feeders; and if he drive on till he shall cross-cut with the Drift one Branch of those greater Dikes, he will Raise a considerable River, which may turn to his great Advantage.

To raise  
new Rivers  
upon dry  
Ground.



## C H A P. XVII.

*Of those Preternatural Accidents  
that Disturb and Interrupt the  
Course of Nature in this Material  
World &c.*

**H**AVING in the former Chapters given an Account of the Originals, Causes, Consistences and Natural Uses of the several Parts of this Natural Globe, as well Fix'd as Fluid : It will not be improper to subjoin an Account of such Preternatural Accidents as sometimes have disturb'd, and may for the future interrupt the regular Course of Nature; and at the last so far destroy the Frame and Fabrick of this Material Part of it, as to render it incapable of being an Habitable World.

And these are Earthquakes, Hurricanes, Vulcano's, violent Eruptions of the Subterranean Waters, as at *Noah's Flood*; Stagnations of the Subterranean Air, causing the Springs and Mineral Feeders to sink down into the Interior Parts of the Earth; Interrup-  
tion



tion of the Circulation of Vapours, and Rains upon the Earth (as in the days of *Elisha* the Prophet); violent and Preternatural Thunders, such as destroy'd *Sodom* and *Gomorrhah*. These and the like, are the Accidental Distempers that have happen'd in the Body of the Earth, and they seem Analogous to those Fevers, Agues, Convulsions, &c. which interrupt the Healthful Constitutions of our own Bodies, and are sometimes destructive of 'em: And as all the Diseases and Distempers our Bodies are subject to, have their Original from Accidental Heats or Colds, which either Sublimates and Exalts our Animal Spirits into a Feverish degree of Volatility; or by Cold and Aguish Damps depresseth them into a degree of Stagnation.

So all those Accidental and Preternatural Disturbances that happen in the Course of Nature, have their original Cause, from the several Kinds and Natures of Damps, which are,

Either { *Central,*  
           *Subterrene, or*  
           *Aerial;*

And



And are of Quality

Either

{ Hot,  
Cold,  
Sweet, or  
Foul.

# CHAP. XVIII.

*Of the Central Damps: Their Causes, Natures, and Dreadful Effects upon this Globe.*

A Subterranean  
contest between Fire  
and Water.

THE Subterranean Vault being filled with a confus'd Mass of undigested Matter, Consisting of Sublimat'd Sulphur, Bitumen and Nitre, whenever it happens that there ariseth a War between these angry Volatile, and their Fluid Neighbours (*viz.*) the Subterranean Water and Air, which Circulates through those greater Veins that environ this large Vault; and do not only Feed and Nourish that Infernal Smother, but keep and confine it within its own Boundaries, that it break



break not forth in violent Eruptions upon the fixt Body of the Earth,

As soon as this Intestine War commenceth, these Active Volatiles of Sublimated Sulphur, Bitumen and Nitre, collect and aggregate into great Bodies.

And when these discharge in the Central part of the Vault, the Nitre which is the principal Cause of the grand Effort or *Flatus*, dilates and expands its self on all sides, upwards and downwards Indifferently: And this violent Effort or *Flatus* causeth an universal Concussion of the whole Globe.

1.

A Concussion of the whole Globe.

When the Damp gathers towards the Circumference of the Vault, and there dischargeth it self, the grand *Flatus* hath its Tendency upwards; and sometimes causeth a Concussion of one half of the Globe, without any Eruption of Fire.

2.

A Concussion of half the Globe.

When the Damp Fires upon some Class of the Superincumbent Strata, it either splits them, making Cracks and Chasms in the Exterior parts of the Earth for some Miles in length, which at the instant of the Shock openeth, and in the Interval between the Shocks closeth again: [Of this Kind was that Crack

3.

A Local Earthquake.



Crack or Chasm which open'd and swallow'd up the Tents of *Korah*, *Dathan* and *Abiram*; and no doubt, but the Shock struck a Terror into the whole Camp]

New  
Mountains  
and Ponds.

Or if the grand *Flatus* be very Strong and Vehement, it either elevates the whole Class above the Superficies of the Earth, forming a new Mountain; or else it sinks down into the Vault, and the vacant place is immediately fill'd with Water [not from *Dr. Woodward's* Abyss] but from the Veins of the Earth which break into it.

4.

Of Hurri-  
cains and  
their Ef-  
fects.

When the Damp fires near or upon some of the great Joints or Cliffs of the Earth, the *Flatus* pursues all the Windings and Turnings of these Joints and Cliffs until it break forth in Dreadful Hurricanes; either under the Sea, occasioning most Horrible Disorders and Perturbations, raising its Surface into Prodigious Waves, Tossing and Rowling them about in most strange Whirlpools, Overturning and Swallowing up Ships in an instant: And upon the dry Land Overturning Cities, Towns, Blowing up Mountains, &c.

Tho'



Tho' these Effects of the Subterranean Nitre when Rarified and Dilated by the Central Flame be very Dreadful; yet if these Fissures and Spiracles through which they get a Vent and break out upon the Earth had been Perpendicular [as Dr. Woodward Conceits] they wou'd have Destroy'd the whole Surface of it.

For then every one of these lesser Damps or Squibs which daily take Fire in the Subterranean Vault, wou'd have broken out upon us.

And the greater Damps being Fired wou'd have Blown up not only the Inhabitants of the Earth; but their Houses with its Superficies into the Air; for the deeper the Fissure or Spiracle is, if it be Perpendicular in a streight Line, the more Strength and Impetuosity it gives to the *Flatus*, as we observe in Guns and Fuzes.

Again, The very Sulphurous Exhalations which wou'd have ascended through these Perpendicular Fissures without interruption, wou'd [with their Noisome Smell] have Suffocated and Stifled those Animals that Live by Respiration, and wou'd have afforded Matter for continual Thunder in the Air.

I. not

2.

It



Dr. Wood-  
wards no-  
tion of per-  
pendicular  
Fissures is  
a mistake  
in observa-  
tion.

It was then most agreeable with the State of this Habitable Globe that these Fissures or Joints of the Earth shou'd have their Position from the Surface to the Center in crooked Lines with various windings and turnings, openings and closings; not only for securing us from those dangerous Effects of the Central and Terrene Damps; but also for the better and more commodious Communication of the Subterranean Waters through the Flat Strata of Matter.

And Lastly, That the Subterranean Waters by following of the windings and turnings of these greater Fissures might have a longer Journey to the Sea, and thereby supply the Inhabitants of the Earth with sweet Waters at a more Commodious and Convenient Distance.

These *Phenomena* of Central Damps, and that they are the only cause of all those Universal Earth-quakes that have happen'd in this Natural World, being wholly new, and the World not yet acquainted with them, may at first sight seem only the Products of Fancy, or meer Conjecture; yet if Seriously and Impartially enquir'd into, will be found



found Grounded upon such Reason, as cannot without a prejudic'd Opinion be easily deny'd.

For it cannot be imagin'd by any who have made it their business to understand the Structure of the Earth, those several Classes of Solid and Dense Matter on which it consists, the windings and turnings of those Dikes and Partitions which divide them and are the Subterranean Water Courses, that there shou'd be Magazines of Subterranean Gunpowder lodg'd in Infernal Cavities round the whole Globe, and that there shou'd be Trains laid from one Collection to another, and that all these Trains shou'd take Fire through all the Subterranean Rivers in one instant of Time. Neither can it reasonably be suppos'd that there shou'd be a Concussion of the whole or half, or any considerable part of the Globe, by one Subterranean *Flatus* ; but what is from the Central Vault.

Again, The Consistences of the greatest part of the Earth being rather of a Cold, Terrene and Mercurial, than of a Bituminous Nitrous and Sulphureous Quality, it cannot be suppos'd that those parts of the Earth which afford

no



no quantities of this Natural Gunpowder shou'd suffer a Concussion or Earthquake, but from these Central Damps.

Besides those Miners who have sunk deepest into these Occult Regions, do from their own Experience assure us, that there are no Grotto's or Cavities above an Hundred Fathoms deep, unless in those Mountainous Countries where the Consistences are of a Sulphurous and Nitrous Quality, affording plenty of Natural Gun-powder, which being Fir'd cause all those *Vulcano's* we Read of in History.

C H A P.



## C H A P. XIX.

*Of Terrene Damps, and their Dreadful Effects upon this Globe &c.*

**T**Errene Damps have their Original either from Heat or Cold, and are either Fiery or Waterish: Those which have their Original from Fire, are of the same Nature with those Central Damps we have given Account of.

As all Local Earth-quakes do more frequently happen in the Mountainous Countries, than in the Plains and Valleys; because all the greater Dikes, Joints and Veins of the Earth contract and meet there: And the *Flatus* which is the occasion of the Shock makes its way by what passage soever it can get Vent.

But these Mountainous Countries especially, which yield great store of Sulphur, Bitumen, and chiefly Nitre [these Minerals affording the greatest plenty of Natural Gun-powder] are most injur'd by those dreadful Shocks, because those Mountains whose Natu-



Of Burn-  
ing Moun-  
tains.

ral Consistences are of so Hot and Fiery a Quality are commonly very Cavernous; and their greater Joints and Fissures, as well as strong Strata having by frequent Concussions and Earthquakes lost their Natural Feeders, are become the most proper Receptacles for those Fiery Stores to be lodg'd in until either the Central Fire, or their own Natural Heat being contracted into a Point, Discharge first the lowest Damp, and the rest by Trains like so many Subalterns discharge in Course, and sometimes for several Months together, till the Subterranean Gun-powder be all spent.

Vulcano's.

And these Burning Mountains such as *Ætna*, *Vesuvius*, *Hecla*, and others, are only so many Spiracles or *Vulcano's* serving for the discharge of these Subterranean Damps, which disgorgeth Flames of Fire, and Stones of great Weight and Substance, Showers of Sand and Rivers of melted Minerals; and yet these Mountains by those *Vulcano's* lose nothing of their Height or Magnitude, all these Eruptions being Recruited out of the great Magazine of Natural Gun-powder contain'd in the Infernal Vault.

Be-



Besides these Damps of a Fiery Nature contain'd in the Interior parts of the Earth, there are others which sometimes happens in the Exterior parts of it; such as those Fiery Damps in Col-  
 leries are only the Perspirations of Sul-  
 phur and Nitre out of the Cole, Wall  
 or Mine, Collected into a Body; and  
 these either take Fire at a Candle, or  
 like so many dry Exhalations receiv'd  
 into the Body of a Cloud, and dis-  
 charge like Thunder shakes the Earth  
 about the Collery, kills the Miners, and  
 have other Dreadful Effects.

TO BE  
 SEEN

Her damps  
 in Colle-  
 ries.

Their Ef-  
 fects.

To these we may add those Preter-  
 natural Ebullitions and Eruptions of  
 Subterranean Waters, which Moses  
 calls the *Breaking up of the Fountains of*  
*the great Deep*. And these whenever  
 they happen upon the Earth [as at No-  
 ah's Flood] are occasion'd by an Uni-  
 versal Fermentation and Dilatation of  
 the Central Fire, which gaining ground  
 upon their Fluid Neighbours, force  
 them into a most Rapid Motion  
 through all the Subterranean Veins,  
 and consequently causeth those violent  
 Eruptions of Water in all the Springs,  
 Rivers, Joints and Fissures of the  
 Earth.

Violent  
 Eruptions  
 of Water.

TO BE  
 SEEN



Of water  
Damps.

Sometimes the Circulation of the Subterranean Waters stagnates and sinks down into the Interior parts of the Earth; the Springs and Rivers dry up, as in the days of *Elisha*: And this is occasion'd by the stifling and damping of the Central Heat, the Circumbient Waters prevailing upon it.

Sometimes the Circumbient Air which Circulates in the Exterior parts of the Earth, especially the Caverns, Joints and Concavities of Rocky Stones and other Metals [and is the only cause of the Eruption and Motion of Springs, Rivers, &c.] Damps and Stagnates, which forceth the Springs and Eruptions of Waters to stand back, and fill those Caverns and Joints, from whence they flow until the weight of the Waters break the Damp, or rather Damm of Stagnated Air; and then follows Eruptions and Overflowings of Springs, Rivers, &c.

An Air  
Damp.

This kind of Damps I have met with sometimes in Colleries, where the Water made way for it self in such Joints and open Closers, as it met with in the under Cills; especially Lime-stone, which is of all Stone the most Jointy and Open.

And



And when the Air in these open Joints and Cavities was damp't, the Waters stood back in the Working, and forc'd the Miners out of the Pit, until the weight broke the Damp, and then the Waters Drain'd.

This Damp most frequently happens in the Summer Months, when the Ambient Air is Thick with Hot and Fiery Exhalations, and the Effluvia of sweet Blossoms, especially of Peas and Beans. And this the Miners call the sweet Damp.

A sweet  
Damp.

This Stagnation and Damping of the Subterranean Air is [in all probability] the cause of the Annual Over-flowing of the River *Nilus*, the Horary Over-flowing of the Spring at *Gigleswick* in *Yorkshire*, the Drumming in the Well at *Bantry*, &c.

And these being by Men of Learning reckon'd among the *Magnalia Nature*, we shall enquire more particularly into the Causes of them: And first of the Over-flowing of *Nilus*.

*Nilus* is one of the Noblest Rivers in the World, and is famous not only for the long Course it takes through *Ethiopia* and *Egypt*, which is suppos'd to be Three thousand Miles before it empty's it self into the Mediterranean

The over-  
flowing of  
*Nilus*.



Sea; but also for its Over-flowing and Fertilizing that Low and Level Country, supplying in it the want of Rain.

'Tis believ'd by Men of great Learning that this Yearly Over-flowing of that Country is occasion'd by the great quantities of Snow dissolv'd upon the Mountains, from whence it takes its Rise; and these [as Geographers give Account] are that vast Ridge of Mountains, which for their Height bear the Name of *Montes Luna*, as if their lofty Tops wash'd their Heads in the Moon's Waterish Vortex.

Others are of Opinion that the Yearly Over-flowing of that River is caus'd by those great Rains which fall every Spring in the higher *Ethiopia*: But if either the Dissolution of Snow, or Inundations caus'd by the falling of those Spring-Rains, were the true Reason, &c. they wou'd also cause the other Rivers in those Countries to Over-flow their Banks at the same time; which is so far from being Observable, that when *Nilus* Over-flows, the other Rivers are at a very low Ebb.

The Cause then of this Yearly Over-flowing of *Nilus*, which begins about the 17th of June and continues until the



the 6th of *October*, seems to be a Subterranean Damp, which Yearly Stag-nates the Circulation of Air in these vast Rocks and open Strata, from whence those Rapid Springs and Feed-ers flow, which are the Heads of that Famous River.

The Subterranean Air being Dampt, the Springs and Mineral Feeders are forc'd to stand back and fill all those vast Concavities and Hollows for several Miles upon the Side-rise, and some Miles upon the Top-rise of those Rocks and Metals; until the weight of so vast a quantity of Water [which may be compar'd to a lesser Sea] breaks the Damp or Damm of Stagnated Air, and then the River begins to Over-flow, and continues until the Waters be spent, and the Damp gathers again.

Its observ'd that when the River *Ni-lus* begins to Over-flow its Banks, that great Plagues break out in *Cairo*, which seems to be occasion'd by those gross Vapours and Mineral Exhalations that arise from so vast a quantity of Stagnated Water, which [whilst by its Motion, its Purging of it self and recovering of its Sweetness] fly about, corrupt the Air, and cause Infections.



The over-  
flowing of  
the *Gigles-*  
*wick*  
Spring.

This Subterranean Damp is likewise the cause of the Horary Over-flowing of the Spring at *Gigleswick* in *Yorkshire*; for this Spring being the feeder of a Limestone Rock near Thirty Yards Perpendicular in Height, which breaks out at the Foot of it; so often as the Circulation of the Air in the Rock is dampt, the Spring runs very slowly, and when the weight of the Water has broken the Damp, it Over-flows, and this Flux and Reflux is once in every Hour.

I observ'd my self, that before the Waters began to Flow there was a knocking in the Rock, and this was caused by the pressing of the Water upon the Damp before it broke.

The drum-  
ming Well  
at *Bautry*.

The same is the cause of that Drumming in the Well at *Bautry*, which the Inhabitants of the Town told me never happen'd but against the change of Government: This Well is observ'd to be for the most part Dry, which is occasion'd by the feeders standing back; the drumming noise is occasion'd by the Waters pressing upon the Damp, and the Hollows of the Well; for as soon as the Damp is broken, the Well fills with Water and the Drumming is over.

This



This occasions the Report of Underground Spirits, which Miners call Mineral Spirits; and they observe that these Spirits give notice by Knocking or Groaning before the Mineral Vein be discover'd : I have observ'd my self that in a new Collierie, when the Workmen were near the Coal (and only the Kell which kept the feeder of it unbroken] there wou'd have been a sort of Knocking, Sighing or Groaning heard in the Vein, which was only occasion'd by the weight of the Water lying in the Coal, and pressing forward for more room and liberty ; for as soon as the Coal was prick'd, the Water rose in the Pit, the Knocking was over and the Mineral Spirit Conjur'd.

Of this kind also is that Damp which the Miners sometimes meet with in their sinking of deep Pits and new Works ; where a Cloud of Breath or Sweat perspiring from the Bodies of the Workmen, will stifle the Circulation of the Air, and not suffer the Candles to Burn. This Damp will steal the Breath insensibly from the Workmen and stifle 'em.

There is yet another kind of Damp the Miners complain of, which they call the  
foul



foul or stinking Damp; and this is caused by the breaking out of corrupted Air from old cruſted Works. This, if not prevented, will Kill and Stifle the Workmen.

The Aerial Damps will be treated upon in Meteotologie.

Having given an Account of the Causes, Natures and Effects of Damps, and ſuch Preter-natural Accidents as have and may diſturb and interrupt the regular Courſe of Nature; we cannot but make an Enquiry into the Causes of Noah's Flood, the Season of the Year when it happen'd, and the Alterations and Devaſtations it made upon the Earth,



## CHAP. XX.

*Of Noah's Flood, its Causes, the Season of the Year when it happen'd, the Effects and Alterations it made upon the Earth.*

**I**F these two Learn'd Men (*viz.*) Dr. Burnet and Dr. Woodward had understood better the Structure of the Terraqueous Globe, the Natural Consistences of it, the Causes, Natures and Effects of Damps, and that those Subterranean Waters which Circulate through the Veins of the Earth bears proportion to Seventy two Oceans, they wou'd have discover'd such a quantity of Water as wou'd have caus'd an Universal Deluge without the Conceit of a Central or Subterranean Abyss.

Which Hypothesis [tho' manag'd with the greatest Artifice of Invention and Oratory] when seriously enquir'd into, will be found to have very little of Truth in the bottom of it; for it seems not only inconsistent with the Original Settlement of Matter, as we have



have observ'd already ; but also with Dr. Woodward's Hypothesis concerning the re-settling of the fluid Matter dissolv'd by the Deluge which he positively asserts to have been according to the Rules of Specifick Gravity ; the heaviest subsiding the lowest.

1. This Hypothesis if taken for granted, we must necessarily conclude from it, that all those kinds of ponderous Ore, and heaviest Rocks of Iron, Stone, Marble, &c. would have sunk down into the Central Vault and fill'd it up.
2. That the rest of the Fix'd Matter being by some degree lighter would have spread their Solid Strata uppermost :
3. And that the Fluid Waters being by several degrees lighter than the Fix'd Matter, would have cover'd the whole Terrene Globe, and consequently wou'd have caus'd an Universal and perpetual Deluge upon the Earth.

But suppose it possible to improve the strength of Imagination to such a height, as to fancy that there was Originally, and is still, a vast Abyss of Hot Water contain'd in the Center of the Earth ; it cannot be so easily apprehended by what Power or Means this vast substance of Water shou'd be put



put into so high a degree of Fermentation and Commotion, as to cause an Universal Disruption and Dissolution of the Earth, as Dr. Woodward conceits; for although that Fire placed under a Pot fill'd with Water, will by emitting of its fiery Globuli, and mingling them with the Water, cause so violent an Ebullition and Commotion in it, as to raise the Cover and overturn it; yet it cannot be suppos'd that either that uniform and constant Fire or Heat, disseminated through the Body of the Earth; or the external Heat of the Sun's warm Influence can produce any such Effects; because Fire and Nitre do Naturally exert their power upwards and sideways, but never downward, but when it is so pent up that it can get no other Vent: And when even Gun-powder is forc'd to make its Effort upon the Waters, the strength of its *Flatul*s does little Execution, being presently stiff'd. We shall therefore suspend further Enquiry about this matter, until Dr. Woodward's larger Volume be made publick, and endeavour to find out some other Causes by which that Universal Deluge which happen'd in Noah's time might be effected in an other way, and ground-



grounded upon fair probabilities of Reason and Certainty.

1.

First then, no doubt but God Almighty was the Principal Cause, the Sins of Mankind the provoking Cause, and the Subterranean Superterranean and Nubiferous Waters were the immediate Instruments of it.

But how all these divided Waters shou'd be re-united and gather'd into such a Body as was sufficient to cover all the Tops of the Mountains Fifteen Cubits high, as *Moses* gives Account, is the only matter of difficulty to be encounter'd.

In Order to which, I shall not Entertain you with a long Story of the Opinions of Learn'd Men about it, nor undertake to shew you upon what improbable Grounds and inconsistencies the Theorist and Dr. *Woodward* have establish'd their Hypothesis of it; but having discover'd a Vast and Portentous Body of Water Circulating in the Veins of the Earth, bearing Proportion [as I have observ'd] to Seventy-two Oceans, and several Oceans of Water more floating in the Clouds and rarified into thin Air [that it might be a fit Medium for Respiration, &c.] my Adventure

ture



ture, shall be first to shew how, and by what Cause, the Subterranean VVater was rais'd above Ground, and the thin Air was condens'd into VVater; how both join'd with the Sea, and caus'd the Deluge.

And then Secondly, I shall give Account how the Waters again divided; how all things return'd to their Natural Course; and by what Gradations the dry Land appear'd: And more than this is not necessary to make and establish a clear Hypothesis of the Universal Deluge.

First then, we may conclude, from Arguments of the greatest probability imaginable, that the collection and reuniting of such a quantity of Water as was sufficient to Drown the World, was caus'd by an Universal Damp that happen'd at that time in the whole Course of Nature.

For, First, all the Central Fire by a Preternatural Fermentation and Dilatation of those angry Volatiles on which it consists, gain'd ground upon its Fluid Neighbours, those Subterranean Waters which circulate in the Body of the Earth, and forcing them into a most rapid Ebullition and Commotion, caus'd most violent

1.

2.

1.



violent Eruptions in all the Veins, Joints, Fissures and *Hyatus's* as well under the Channel of the Sea, as in all the parts of the Earth's Surface.

The meaning of these words, the Fountains of the great Deep were broken up.

The Cause of the Aerial Damp and its Effects.

What is meant by the opening of the Windows of Heaven.

These violent Eruptions of the Submarine and Subterranean Waters, which *Moses* calls the *breaking up of the Fountains of the great Deep*, swell'd up the Sea into such a height of Gibbosity that it forc'd the Rivers to stand back, and rise as high as their Fountain Heads, which covering all the dry Land, excepting the Tops of the highest Mountains; the Aerial Damp caus'd by the Moon's waterish *Vertex* pressing down the *Vortex* or Atmosphere of this Terrestrial Globe, did not only interrupt the Communication of the Subterranean and Aerial Waters, by causing the raising and circulation of Vapours to cease; but also by condensing the moist Air into waterish Clouds, which falling down in continual Spouts for Forty Days and Nights together [the Air being without Motion, consequently neither able to break nor support them] the Tops of the highest Mountains were cover'd Fifteen Cubits, as *Moses* gives Account, *Gen. 7. 15.* and these portentous Rains which fell in Spouts



Spouts, *Moses* expresseth by the opening of the Windows of Heaven, Gen. 7. 11.

Thus the divided Waters being reunited as they were in the Creation, and the circulation of Vapours broken by the stagnation and damping of the Aerial Regions, the whole Surface of the Earth was cover'd, untill God caus'd a Wind to pass over the Earth, which breaking the Aerial Damp, the Rain ceased, the Subterranean Waters sunk down into their Veins, recover'd the Ground which the Central Fire had gain'd from them: The Rivers forc'd the Sea to retreat back to her own Channel, and returning to her regular Flux and Reflux, the Vapours arose and repair'd the Air again with Clouds and Moisture, and all things return'd to their Natural Course. It cannot be imagin'd how the Heart of *Noah* and his Family was reviv'd when the Sun began to shew its Face again, and the Rain-Bow appear'd in a broken Cloud.

The meaning of the Wind which God caused to pass over the Earth, and its effects.

For *Noah* being undoubtedly as well a Natural Philosopher as a Priest in his Family, the appearance of a Rain-Bow [which after a long Storm is an infallible sign of Fair-weather] cou'd not

What the Rain-bows appearing in the Clouds did signifie.

G

but



but encourage him with hopes that the Damp was broken and the Storm over.

God therefore made a Covenant with Noah and his Posterity that there shou'd never be an Universal Deluge upon the Earth, Gen. 9. 23. and to establish this Covenant with him, he made the Rain-Bow [being a Waterish Meteor, and after a Storm a sign of Fair-weather] a most proper and significant Sign and Seal of that Covenant [viz.] a Sign commemorative of the past Deluge, and a Seal confirmative that there shou'd never be any more Flood to destroy the Earth. And no more than this seems to be meant by the appearance of the Rain-Bow in the Cloud.

and Moisture, and all things return to their Natural Course. It cannot be imagin'd how the Heart of Noah and his Family was reviv'd when the Sun began to shew its Face again, and the Rain-Bow appear'd in a broken Cloud. For Noah being undoubtedly as well as his Family, the appearance of a Rain-Bow in the Clouds did signify the sign of Fair-weather.]

CHAP.



## C H A P. XXI.

*Of the Season of the Year when the Deluge happen'd.*

**D**R. Woodward declares his Opinion, A Refutation of Dr. Woodward's Hypothesis, &c. that the Deluge commenc'd in the Spring Season in the Month we call *May*; but upon what Reason he grounds this Conceit I cannot easily apprehend.

For the Fruits of the Earth being then but Growing; and the former Autumn Seeds being destroy'd by the by-past Winter, Nature wou'd have been forc'd to a Spontaneous Production of the several kinds of Vegetables as had lost their Seeds. And when the several Species of Animals which were preserv'd from the Flood, had liberty to go abroad and seek Food, they wou'd not easily have found it in *November* and *December*, which Months according to his Hypothesis were the Season when the Waters abated, and the Beasts order'd to leave the Ark, and seek their own Food where they cou'd find it.



The time  
when the  
Deluge  
commen-  
ced.

It seems then most probable that the Universal Deluge commenc'd in that Month we call *August*, when the Seeds of all Vegetables were full Ripe, and ready to Sow themselves in the Fertile Soil, that when the Deluge was over, and the dry Land had for some time appear'd, and had receiv'd Heat and Incrustation from the warm Influence of an approaching Sun: These Seeds being mingl'd with a warm and waterish Soil, might be ready to Spring up and supply the Animals with pleasant Food.

We likewise observe that when the Dove was sent forth out of the Ark the Second time, she brought with her a Leaf pluck'd from an Olive-Tree: When she was sent forth a Third time, she return'd no more, having found Food upon the Earth, which cou'd be no other than Corn floating upon the Surface of the waterish Earth.

Again, *Moses* gives us an Account that in the First Month, which probably answers our *January*, the Waters were dry'd up from the Face of the Earth; and upon the 27th Day of the Second Month, which seems to be our *February* or *March*, God order'd all  
the



the Beasts in the Ark, to be turn'd out to Grass, and shift for themselves.

Again, we find daily not only great Trees of several Kinds [as Oak, Birch, &c.] rooted up by the Roots, and lying upon Heaps Bury'd and Entomb'd in great Mosses where they never had grown; but had been brought thither by that general Devastation made by the Deluge: But Hazel-Nuts, whose Kernels are as fresh as if they had now been growing upon the Trees. These Nuts having been scatter'd there by the Deluge, and having layn there bury'd and embalm'd in those Bituminous Mosses to this Day; and in all probability might have been continu'd as long as the Earth. From these Observations, we may reasonably infer, that the Flood commenc'd when the Seeds of all Vegetables were Ripe for the propagation of their Kinds.

We may yet farther add, that all Damps as well Subterranean as Aerial, most frequently happen in the Autumn Season.



## C H A P. XXII.

*Of the Alterations which Noah's Flood made in, and upon the Earth.*

I cannot agree with Dr. Woodward's Hypothesis, wherein he asserts that during the time of the Deluge, whilst the Water was out upon, and cover'd the Terrestrial Globe, all the Stone and Marble with the Metals and Mineral Concretions, &c. of the Antediluvian Earth, were totally Dissolv'd; and their constituent Corpuscles all disjoin'd, their cohesion perfectly ceasing, &c.

Dr. Woodward's Hypothesis concerning the effects of the Deluge Refuted.

This Hypothesis seem inconsistent with Sense and Experience, as well as Natural Reason and Scripture [especially the *Mosaick Account* of the Deluge.] For First,

- I. Experience tells us, that there is no such Dissolving power or quality either in the Subterranean or Aerial Waters as to effect such a Dissolution as he describes, and these were the

im-



immediate Instruments of the Deluge.

It cannot reasonably be suppos'd 2.  
[without a Miracle] that all the Solid consistences of the Earth shou'd be dissolv'd into a Fluid substance; and again resettle and receive their several degrees of consolidation in so short a time as the Flood continued upon the Earth.

If the Earth suffer'd by the Deluge 3.  
a Total and Universal Dissolution, then all those form'd Stones and Shells which the Dr. conceives to be Marine Bodies born forth of the Sea, by the Universal Deluge, and left behind at Land when the Waters return'd, wou'd have lost their Forms and Shapes, these being not only found upon the Surface of the Earth; but in the Interior parts of it, incorporated with several solid Strata of Stone, as well upon the Mountains as Plains.

If not only the solid Fossils; but 4.  
also Sand, Earth, Animate Bodies, parts of Animals, Bones and Teeth, Shells, Vegetables and parts of Vegetables,



made one common and confus'd Mass, dissolv'd into a Fluid substance: Then the whole Species of Vegetables, Root and Branch, Stock and Seed, wou'd have been lost, and Nature forc'd to a Spontaneous Production, as at the Creation.

5. The Re-settling of the confus'd fluid Mass, according to the Rules of Specific Gravity, the heaviest subsiding lowest, is a grand mistake in Observation; and by the same Rule, the Earth wou'd have been cover'd with a Perpetual as well as Universal Deluge, as we have already observ'd.

6. As this Hypothesis is inconsistent with Sense, Reason and Experience, so is it with the Account Moses gives of the Universal Deluge; for he tells us that there were Mountains during the prevalency of the Waters, and that the Flood cover'd the Tops of them Fifteen Cubits. He tells us likewise, that the first dry Land that appear'd, was the Tops of the Mountains, and that the Ark rested upon the Mountains of Ararat. If this Account be true, as undoubtedly it is, the alterati-

ons



ons which the Deluge made were only in the Surface and Exterior parts of the Earth: And those places of Scripture which speak of destroying the Earth, are to be understood, only the outward Coat or Superficies, and not the Mineral part of it. And neither was the Surface of the Earth altogether destroy'd, as appears by the Dove's bringing of an Olive Leaf in her Mouth pluck'd off; and by all Living Creatures in the Ark, being turn'd to Grass and to shift for themselves in the Seventh Month after the Deluge commenc'd, which might be in the beginning of our *March*.

The Alterations, which the Deluge made upon the Earth, being only in the Exterior part of it, I shall take notice of such as are most Remarkable and Obvious. As First,

The uppermost Strata upon the Tops of Mountains, were broken up and tumbl'd down to the Skirts of them, and these we find lying upon their Inland sides in great confusion, with false and counter Dibs and Rises, like those Flags and Boards of Ice, thrown out of the Water upon the breach of a Storm.

1.

The Alterations which the Deluge made upon the Earth.

The



2. The Joints of the Mountains consisting of Rag Raff and Chiver, and not being bound together with strong Cills of Stone, were broken, as we have observ'd already.

3. The Courses and Channels of Rivers were enlarg'd, which caus'd all these pleasant Gills and Dales with their Rapid River running through the midst of them.

4. The whirling about of the Water, caus'd all those Hills or lesser Mountains, whose consistences are only Sand, Gravel, or broken Strata of Stone &c.

5. The Deluge rooted up all the greater Trees, some of which we find bury'd and embalm'd in great Mosses, as well upon the Mountains as in the Valleys.

6. The Surface of the Plains and Valleys was fertiliz'd by the Deluge, by its leaving a prolifick Slime and feculent Mud upon it.

7. These Alterations were not caus'd by the rising, but the decreasing Waters



ters; for whilst the Waters were arising, the Aerial as well as the Subterranean Damp continu'd, and the Subluniary Course of Nature was Stagnated; but as soon as God caus'd a Wind to pass over the Earth, the Damp broke, and the Waters were put into a Most violent Perturbation and Commotion; which was the only cause of all those Alterations and Devastations.

The time when these alterations were made.

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The End of the First part.

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O F



ers; for whilst the Waters were a-  
 rising, the Aerial as well as the Subter-  
 ranean Damp continu'd, and the Sub-  
 terranean Courts of Nature was stann-  
 ing; but as soon as God caus'd a Wind  
 to pass over the Earth, the Damp  
 broke, and the Waters were put into  
 a Most violent Perturbation and Com-  
 motion; which was the only cause of  
 all those Alterations and Devastati-  
 ons.

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The End of the First part.

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OF THE  
**ORIGINALS,**  
Degrees and Propagations

O F  
**L I F E.**

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P A R T. II.

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OF THE  
ORIGINS  
Degrees and Propagations

OF  
LIFE

---

PART II.

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The two explained

1. The highest degree  
of perfection in the 200  
gilt is the least degree  
of perfection in the 1000  
2. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200  
3. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200  
4. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200  
5. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200  
6. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200  
7. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200  
8. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200  
9. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200  
10. The highest degree of  
perfection in the 1000 is  
the least degree of the  
highest in the 200



*A Scheme wherein the several degrees & Concatenations of Life are explained*

*Animalia =  
Intermedia.*

Zoo-  
phita

Infects

Apes

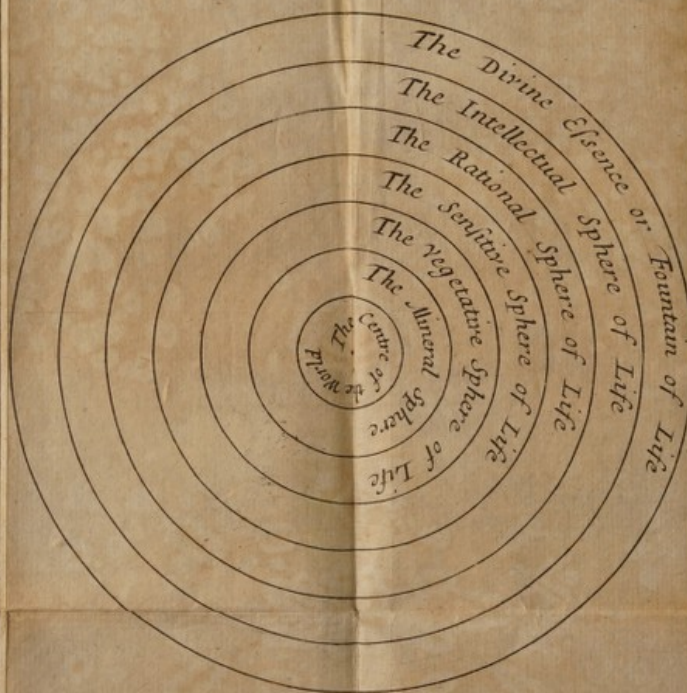
Idiots

Heroes

Genii  
boni

A  
Angels

God



*As the highest degree of Vegetation, in the Zoo-phita makes a near Approach to the lowest degree of Sensation, in the Insects. So The highest degree of Sensation in Apes &c. makes a near Approach to the lowest degree of Rationality in Idiots &c. As the Highest degree of Rationality in the Hero<sup>s</sup>. and Spiritualizd Rationals makes a near Approach to the Boni Genii or lowest order of Angels. So the highest degree of Intellectuality in the Angelick Nature, makes a near Approach to the Divine Essence.*



## PART II.

## CHAP. I.

*Of the Plastick Spirit in Matter, and  
its natural Products.*

**T**HE Plastick and Vivifick Powers being the first Principles of Life in this Natural World, which forms the first Lines, and kindles the first Sparks of the vital Flame:

It will be necessary in order to our present Design, [which is to give a short Account of the Originals, Degrees and Propagations of Life in this Natural World] to describe the Natural Operations and Products of these two first Principles, and to shew how they act Severally, as well as in Consort.

The



The Plastick Spirit in this World of Matter, is a Subtle Saline Volatile, which [whilst Matter was in a Fluid Substance] diffus'd it self through all the Lax *Strata* and consistences of it.

And as that Acid and Saline Humour in the Stomachs of Animals, together with the Vital Flame, by several degrees of Concoction and Depuration, separates the more Pure and Spirituous parts of the Nourishment from the Crasser and more Excrementitious parts of it, or as that Acid and Saline Rennet separates and coagulates the more Pure, Spirituous and Oyly parts of the Milk from the Waterish and more Terrene; so this Subtle and Acid Volatile, together with that Subterranean Flame [which disseminates its warm and enlivening Influence, not only through all the greater Veins Branches and Ramifications of the Earth, but also pervades the smallest Pores of the Densest Matter] did separate, collect and coagulate the more Simple, Pure and Homogeneous parts of Matter, from the Crasser parts of it.

And as the Mass of Fluid and waterish Matter, receiv'd its degrees of Consolidation, these purer and Pneumatical Coagulations were concreted in  
those



those Solid as well as Laxer *Strata* where-  
in we find them,

And the Magnitude and Figure of  
these concreted Coagulations, corre-  
sponds with those Moulds of Craffer  
Matter from whence they were Extra-  
cted, and wherein they are enclos'd  
and compress'd. These we find lodg'd  
either in the

Exterior }  
or } Parts of the Earth,  
Interior }

Those concreted Coagulations which  
we meet with in the Outer Coat, or  
grand Cover of the Earth, are of an  
irregular Figure; and they are lodg'd  
in that part in disorder and confusi-  
on.

And these are either the common Pe-  
bles, which are of a

Terrene }  
Saline } Quality:  
or }  
Pinguid }

Or,

They are common Flints, *Pyrite* and  
H Marcha-



**Marchasites of a Pneumatical and Fie-  
ry Quality:**

Or,  
They are Agates, Onyxes, Jaspers,  
Cornelians, &c. Of a Mercurial and  
Waterish Quality, which are more or  
less Transparent.

This Outer Coat or Surface of the  
Earth consisting of Sand, Gravel, Clay,  
Bituminous Peat-Earth, and other  
kinds of Matter of an Heterogeneous  
Nature, affords the greatest variety of  
these Homogeneous Concretions.

And these are all of the same Na-  
ture and Quality with that Courser and  
Crasser Matter from which they were  
Extracted and Coagulated.

Those more Simple and Homogene-  
ous Concretions which we meet with  
lodged in the Interior Strata of Solid  
Matter, which are of an Irregular Fi-  
gure, are Either of a

*Liquifiable* }  
or } Quality.  
*Calcinable* }

Those that are not of a Liquifiable  
Nature, are those which the Miners call  
the **Kernels of Stones.**

For



For as the Spirit of Nature [at the first settling of Matter] reduc'd all the Constituent parts of the Earth to several Classes; and every Class of Matter leading to some Mine or Mineral; so every Bed or Layer of Stone or Metal has its proper Kernels, by which the Ingenious Miner may be directed what Mine or Mineral they lead to; whether to Coal, Rudle, Iron, Stone, Lead or other Metallick Ores; and these coagulated Concretions, are commonly lodg'd in the middle of such solid *Strata*.

Those Homogeneous and more Pneumatical Concretions of an irregular Figure, which are of a Liquifiable Quality, are the several Kinds of Metallick Ores, and these are lodg'd in those Rakes, Veins, Riders, and Strings which cross-cut and divide those Solid *Strata* of a Hot Quality, and the highest degree of Concoction.

The Male Parent of all these is Sulphur, which being either White or Yellow gives the Tincture or Colour, to all Metals.

The Female Parent is Quick-silver, which is the cause of their Liquifaction, Flexibility, and Ductility.



All Solid Bodies consist of two several Natures, Tangible and Pneumatical; the Pneumatical Substance, is the Native Spirit of the Body, which distinguisheth the several Kinds of them: I define therefore all Metallick Ores to be the more Simple Homogeneous Corpuscles of such Stones and Cills as are of a Hot Quality, and the highest degree of Concoction, coagulated and concreted in those Rakes, Veins, &c. which cross-cut and dividethose Cills.

The more Homogeneous that Metals are, the less of Dross they have in them: The more of this Native Spirit they have in the Tangible parts, they are the more Liquifiable, Flexible and Ductile; for the cause of Liquifaction is the Detention of the Spirits which play within the Body and open it; so that the greater plenty of Spirits any Tangible Matter has in it, it's the more Flexible, and therefore when the Tangible parts are Jejune of Spirits, or easily Emit them, they are Fragile, and will not easily Liquifie.

When the Tangible parts of Matter are Ductile or Tensile, it's occasion'd by the Appetite which the Native Spirits have to Union, and Aversness to Discontinue.

*Secondly,*



*Secondly,* That the Metallick Ores are the Homogeneous and Pneumatical Corpuscles of Stones and Cills of a Hot Quality, and the like, coagulated and concreted by the Plastick Spirit of Matter, is evident from the Experience of Mineralists, who find the greatest plenty of Ore, in the Veins of such Cills as are of the highest degree of Induration and Concoction; for where the Cills are weak and soft, and have not receiv'd a right degree of Heat and Temper, their Veins are only fill'd with Sparr, Soyl, Clay or Vein-stone, like unripe Nuts whose soft and weak Shells are only fill'd with a Milky Pabulum, having little of Kernel in them.

Again, in the Third place, that Ores are the Pæumatical Corpuscles of Sulphur and Quick-silver coagulated and concreted into Clods and Nodes, and lodg'd in the Veins, will be apparent to those who will take the pains to observe, that the more Rich any Vein is of Ore, the less Spangled with Sulphur, and Quick-silver are those Cills and Metals they cross-cut and divide; and so on the contrary, the more spangl'd the Stones are, the less Ore in the Vein.



And the Reason why those Metallick Spangles are collected, coagulated and concreted in those Rakes and Veins, is because they lay most open and ready to receive them; and this is the reason too, why we meet with float Ore lying in flat Beds in those upper Cills which lye open:

These being Ebullitions or Overflowings of Vein Ore.

Gen. 4.  
Verse 22.

Part the  
4th. Page  
188.

As that Hypothesis of the Theorist wherein he conceits, that there was no Metallick Ores or Minerals in the Antediluvian Earth, contradicts the Account which *Moses* gives of *Tubal-Cain*, who was, as he tells us, an Instructor of every Artificer in Brass and Iron: This *Tubal-Cain* living before the Deluge. So *Dr. Woodward's* Hypothesis, that the Metallick and Mineral Matter, which is now found in the Perpendicular Intervals of the *Strata*, was all of it Originally, and at the time of the Deluge lodg'd in the Bodies of the *Strata*, being interspers'd or scatter'd in single Corpuscles in the Sand or other Matter, whereof the *Strata* mainly consisted; seems inconsistent with Reason and his own Notions of Specifick Gravity. For,

First,



First, It cannot be easily imagin'd by what Art or Chymistry the Metallick or Mineral Matter, which interspers'd and scatter'd in single Corpuscles in the *Strata* of Solid Stone, [especially the Corpuscles being smaller than those of the smallest Sand] cou'd be separated and made fit for use.

Again, if the Masses of Fluid Matter, after the Deluge was over, did resettle according to the Rules of Specifick Gravity, the heaviest subsiding the lowest [as the Dr. asserts] why did not these small Grains of ponderous Ore subside the lowest, being heavier than the Corpuscles of those *Strata* wherein they were lodg'd?

And to assert that they were born up by the Waters of the Abyss rising up towards the Surface [as the Dr. supposeth] is as inconsistent with Gravitation and Levity, as for Feathers to sink and Lead to swim.

These Hypotheses being inconsistent both with Scripture and Reason; we shall take it for granted, that all these coagulated Concretions of Metallick Ores, were by the Plastick Spirit in Matter lodg'd in the Veins of the several *Strata*, lying most open, and being



most ready to receive them : And that the State of the Antediluvian Earth did not differ as to its Constituent parts from this Postdiluvian Earth.

Having given an Account of the Originals, Natures, and Causes of such concreted Coagulations, as are of an Irregular Figure ; I proceed to Describe the Natures and Causes of those of a more Regular Form.

And these are the Kernels or Cat-heads which we meet with in Coal Metals or Stone Metals, which being either of a Saline or Pinguid Quality, and consisting of the smallest Grit, gave way to the Plastick Spirit to Form them into more Regular Shapes and Figures ; and these are either Globular, Oval, Triangular, Quadrangular, &c. as the Matter coagulated had a Natural Tendency to such a Form or Figure ; and they lie in these Beds of Metals, either in Layers, or in disorder and confusion

Besides these Irregular and Regular Concretions ; there are others of a more Uniform Shape and Figure ; and these may most properly bear the name of Form'd Stones.

They



They are found lodg'd either in Beds of Pinguid and Luxuriant Soil, or in such Beds of Stone, Chalk, Sand, Gravel and Earths as are of a Saline Quality.

Those we meet with lodg'd in Beds of Pinguid and Luxuriant Soil, have the forms and shapes of Worms, Serpents, Snails and other Terrene Insects, which perhaps cou'd never come within the compass of our Observation.

Those we meet with in the Solid *Strata* of Stones, Chalk, Sand, Gravel and Earth of a Saline Quality, have the Forms of Cockles, Mussels, Oysters, and other Marine Insects, which probably Mankind has never yet been acquainted with; and notwithstanding that these Shells have the Forms of those Marine Insects they represent, yet they never were the spoils of Marine Bodies; But form'd in those Stones and Earths, where we find them lodg'd: And it seems most probable that they receiv'd these Forms and Shapes at the Creation of this Material Globe, when Matter was in a Fluid and Waterish Mass; and when there was a commixture of Light and Darkness, of the Plastick and Vivifick Powers; for then the Vivifick

*Fabius Columna, Dr. Hook, Steno, Scylla, Boccone, Ray, and many others.*



sick Spirit of Nature disseminated the Specifick Forms of those Animals of the lowest degree of Life in those waterish Funds and Promptuaries of Matter in which they were Form'd, and increas'd into that Shape and Figure we now find them in.

And if God Almighty had not [by dividing the Light from Darkness, the Vivifick from the Plastick Power, and by Consolidating the Exterior Strata of Matter] *Cursed the Earth*, these Terrene and Marine Insects which we find petrefi'd and entomb'd in Marble, Limestone and Chalk, or bury'd in Beds of Sand, Gravel or Earth, might have increas'd to higher degrees of Perfection, as well as those Subterranean Toads, Frogs, Asks and Clocks, which we meet with in the Cavities and joints of such Stones as have lost their Natural Feeders.

But of these the following Chapters will give a more full Account.

CHAP.



## C H A P. II.

*Of the Grand Cover of the Earth;  
the Sympathetical Union of the  
Plastick and Vivifick Spirit; and  
the Production of Vegetables, the  
first and lowest Degree of Life.*

**T**HE Outer Cover of the more Solid parts of the Earth, which we call the Surface and Fertile Soil, being [as we have observ'd] the Universal Fund or Promptuary, or the Common Matrix, wherein was disseminated the Specifick Forms of the lowest Degree of Life and Vegetation, whilst others of a higher Degree Danc'd about it, like Atoms in a Morning Sun's Beam.

It will be necessary in the first place to give a fuller Description of the Natures and Qualities of it, and to shew by what Degrees of Heat and Vital Incubations it was Modified and prepar'd to answer that Imperious Word, *Let the Earth bring forth.*

When the Waters were divided and the Sea drawn down to its proper Chan-



Channel, they left behind them a Feculent Mud and Sedement, which being like to a universal Quag, of a Lax and Waterish Substance, consisting of the several Kinds of Matter of an Heterogeneous Nature, and saturated with great plenty of Mineral Spirits of all Qualities :

These Mineral Spirits, by a Natural Motion and Tendency rising up to the Surface, as we observe Cream riseth up to the top of Milk, or as Oyl floateth above Water ; the warm Influence of the Ætherial Flame moving upon it, Thickned these Mineral Spirits into a Liquid Gelly, or a Pinguid and Unctious Slime.

And this we call the naked Skin of the Earth or Fertile Soil.

This Skin or Fertile Soil, before it got any Coat or Cover upon it, was not only Tinctur'd and Colour'd with all those waterish Colours of Green, Red, Yellow, &c. but also was spotted and speckl'd with great variety of other Colours, occasion'd by a commixture of these Mineral Spirits.

And these gave not only the Tinctures and Colours to the common and waterish Herbs, as Grass, Plants and  
Flowers



Flowers, but gave also the different Complexions to Birds, Beasts and Men.

And as the several Colours and Complexions were occasion'd by the mixture and temperament of the Mineral Spirits, so were their different Natures and qualities; for a cunning Chymist will Extract out of Herbs and Plants the several Kinds of Mineral Spirits, as well as out of the Mineral it self.

The Virgin Matter being thus Modified and prepar'd by the warm Influence and Enlivening Vegetations of the Ætherial Flame, and its naked Skin Adorn'd and Beautifi'd with her great variety of Natural Paints: Those Seminal Forms or Plastick Souls which were disseminated in her warm and moist Womb, and Sympathetically united to their belov'd Matter, began to exert their Plastick Powers, and put forth spungy Strings and Roots; not only to fasten them to the Earth, but to suck in such Juices as were most proper for their Food and Nourishment, which by their Seminal Vertues being digested into the Substance of a Plant, Herb or Tree, of such an Order, Figure and Temperament, it became



came an Individual of that numerous Species of Vegetables; which began first to peep out of the Earth, as Corn out of the Furrows; and afterwards gradually increas'd to the highest Degree of Perfection and Maturity its Nature was capable of.

Thus the naked Skin of the Earth was cover'd with a Coat or Green Liv-very, Beautifi'd and Adorn'd with Flowers of several kinds of Colours; and as the Passive Matter increas'd in Degrees of Heat and Modification, it produc'd Vegetables of higher Degrees of Life and Perfection, as all kinds of Trees, from the lowest Shrub to the tallest Cedar or most robust Oak.

That these Productions were not brought forth all at once; but gradually as the Passive Matter receiv'd higher Degrees of Heat and Modification, is apparent from our observing of those Annual Productions which every Season bringeth forth.

For there are some Vegetables of a Cold and Waterish Quality, whose Natural Spirits are more Fine, Light and Active, which require only a smaller Degree of Heat to raise them, and these are the Productions of those Early Months



Months, *January*, *February* and *March*: And these come to their Perfection and Maturity before *April* and *May*, which present us with an other Crop and order of Vegetables: and for this same reason, *June*, *July* and *August* go further, and presents us still with different shows of Plants, Herbs and Flowers: And thus as the Sun increaseth in Heat, and the passive Matter in degrees of Modification, we are presented with higher and more noble Productions.

The Seminal Forms of Vegetables, being now united to their material Vehicles, and being grown up to their several Degrees of Perfection and Maturity, they retain'd Seed in themselves, and did Propagate their several Kinds by scattering of their ripe Seed upon the Fertile Soil, which like the warm and moist Womb of a fruitful Mother, dissolves them first into a Liquid Jelly, and then divides their parts into their several uses.

That the Seminal Forms of Vegetables were Originally disseminated in the Earth as in an Universal Fund or Promptuary, will be yet further evident by those Ocular Observations which  
has



has been frequently made of Productions without Seed; for take some quantity of Earth digg'd several Fathoms under Ground, and expose it to the Sun and Rain, and it will Spontaneously without any Seed bring forth common Grass and several Herbs and Plants.

Again, we observe that particular Soils will produce, without Propagation by Seed, Herbs and Plants peculiar to that kind of Soil and Earth, as Pavements do Naturally produce Knot-Grass, &c.

If it be object'd, that the smaller Seeds are diffeminated over all by the Winds, and the greater Seeds scatter'd by Birds that feed upon them.

I answer that its commonly observ'd, when Earth is brought out of the *Indies* or other Remote Countries for Ballast to Ships, and cast forth upon some Ground in *Italy* or other Countries at a great distance, it will put forth Foreign Herbs to us unknown: And it cannot be imagin'd that the Winds shou'd blow the Seeds of these Plants from the *Indies*, or that the Birds shou'd cross the Seas and scatter them at so great a distance.

To



To these I might farther add those try'd Experiments of Transmutation, Transmigration, and Degeneration of Herbs and Plants.

Having describ'd the Original of Vegetables the first and lowest Degree of Life, and shewn that tho' the manner of their Propagation be now by Seed; yet when Seed is wanting, the Fertile Soil will bring forth common Grass and other Plants in the Natural way by a Spontaneous Generation: Thus the Evening and the Morning, or the Sympathetical union of the Active Form and Passive Matter produc'd the first and lowest Degree of Life, which made the Third Production.

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CHAP.



## C H A P. III.

*Of reducing the Confus'd Mass of Light or the Ætherial Flame into a Body, which made the Sun; of reducing those higher Fogs and waterish Mists into a Body, which made the Moon; how by clearing of the Superlunary Firmament or the Planetary Spheres, the Stars appear'd: And what the Sun, Moon and Stars contribute towards the Production of Sensitive or Locomotive Animals, and why the Creation of these Second Causes made the Fourth Production.*

**T**HO' the Earth was now Gay and Trim with a new Green Liv-  
 ry of Grass, Adorn'd with Painted  
 Flowers, and pleasant Copices or  
 Thickets of Young Trees; the Pas-  
 sive Matter was yet too Cold and Wa-  
 terish to draw down out of the Se-  
 cond Degree of Life any of the Sensi-  
 tive



tive Forms to Actuate and Inform it. The Almighty Power did therefore contract this dilated Ætherial Flame of Light into a Body, which *Moses* calls the Sun, that those Enlivening Heats and Vital Incubations which flow from it, might be more Strong and Vigorous, and Penetrate deeper into the Cold Matter.

And God plac'd this Coelestial Fire at such a convenient distance from the Earth, that it might neither be too much scorch'd by being too near it; nor frozen, by being at too great a distance from it; but that it might receive such a temperate Heat from it, as to excite its Seminal Vertues, and draw up its Juices into them, and thereby Ripen its Natural Fruits.

God gave to the Earth also a Diurnal Motion, that by a just and regular turning about upon its own Centre, it might have the benefit of Day and Night every Four and twenty Hours, so that no part of the Earth might be too much heated by the Sun's presence upon it, or too long benighted by his absence from it; because as one side is Warm'd and Cherish'd by its Rays, it withdraws and turns to it its other side; and so



by this just and regular turning about of the Earth, and an equal distribution of Day and Night, the active Animals get leave to rest, the over-heated Air to cool, and the gasping Earth to recover its fainting Vertues, which a continu'd Day wou'd soon Exhaust and Extinguish.

God gave also the Sun an Annual Motion, and has directed it into such a commodious Course, that it sheds forth its Enlivening Light, Heat and Influence over all the parts of the Earth, and by turns, gives all Countries their Yearly Seasons.

And this gradual Increase and Decrease of Heat, answers all the Ends of Nature, both in the Vegetive and Animal World much better than the constant Temperature and Equality of Heat, which the Theorist supposeth to have been in the Antediluvian Earth.

After the Creation of the Sun, God reduc'd all those vast Fogs and watrish Mists that rang'd about in the Planetary Spheres into a Body, which *Moses* calls the Moon, and he design'd it [as a Reverend and Learn'd Divine of our own has observ'd] to be for a Vicarious Light to the Sun, to supply  
his



his absence, and perform his Office in the lower World.

He plac'd the Moon in the lowest of the Cœlestial Spheres, at such a convenient distance from the Earth, that the warm Influence of the Sun being reflected from it, might carry down with it some of its Cœlestial Moisture. He gave also to the Moon so commodious a Motion, which it performs in every 28 or 29 Days, that when the Sun is Southward it moves Northward, and when the Sun moves Northward it's Motion is Southward, by which Motion the Cold and Darkness of the long Winter Nights are moderated, and these remote Regions under the Poles comforted with the Sun's Influence at Second-hand, when they want it at the First.

Thus by reducing of those waterish Fogs into the Body of the Moon, the upper Firmament or the Planetary Spheres were clear'd, and the Planets, with the rest of the Stars Created in the Morning of the World, began to appear; and to send down their Ætherial and Invisible Influences upon this Globe, which were obstructed and interrupted by the Interposition of these waterish Mists.



And the Creation of the Sun and Moon and the Clearing of the Planetary Spheres God made use of as instrumental, or necessary Second Causes toward the Production of the Second Degree of Life, and therefore these made the Fourth Production.

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CHAP. IV.  
*Of the Production of the Second Degree of Life, and first of Oviparous Animals, as Fish and waterish Insects.*

HAVING already observ'd, that whilst the Earth was a Fluid and Waterish Mass, and there was a commixture of Light and Darkness, the Plastick and Vivifick Spirits; the Specifick Forms of Vegetation, and the lowest Forms of Animals were disseminated in the Exterior *Strata* of this waterish Mass; and if God had not Curs'd the Earth, by dividing Light from Darkness, the Material and Formal Principles of Life, the Luxuriant Mat-



Matter wou'd have teem'd forth such numbers of Animal Productions, that the Surface of the Earth and Waters wou'd not have maintain'd them.

This Hypothesis is grounded not only upon the form'd Stones we meet with lodg'd in the Interior *Strata* of the Earth [which having the shapes and representations of Terrene and Marine Insects] cou'd proceed from no other Original than a Plastick Spirit ; but also upon those Subterranean Animals, as Toads, Frogs, Asks and Clocks, which we sometimes meet with inclos'd in the Cavities and Hollows of Stone, as well as in their dry Joints. I have found a large Toad six Yards under Ground, inclos'd in the very middle of a hard Stone, where the Joint that led to it was so straight, that it wou'd not receive the thinnest Knife ; so likewise great numbers of Asks, Clocks and Beetles in the dry Joints of Stones, which cou'd have no other generation, but what was from a Plastick Spirit modifying a Subterranean Vapour collected into that Cavity or dry Joint, the Vivifick Flame kindl'd a Spark of Life in them, which [by sucking in such Subterranean Vapours, as abounded in the Joints of these dry



Stones, which had lost their Natural Feeders] were increas'd to that bulk we found them in ; no doubt but the *Stamina Vita* of these Subterrene Animals are preserv'd by continual Sleeping, and the Air they breath is purely Subterranean, like Embrios in the Womb, which live by the Respiration of their Mothers: And it may seem very probable that these under-ground Animals have liv'd in these Joints and Cavities ever since the Deluge, and perhaps long before ; for as nothing preserves the Vital Flame more than Sleep ; so nothing wastes and spends it more than Action.

To these I might add the Production of Eels, Worms, Marine and Waterish Insects, as the *Urtica Marina*, &c. which being *Zoophyta* or Plant Animals, and not Locomotive, cou'd have no other Production, than what was meerly *Æquivocal* or *Spontaneous*, and from Matter modifi'd and prepar'd for receiving of the Vital Spark.

Besides these Invisible Productions, I shall add one more, visible and apparent.

Take a strong Horse-hair, and put it into the Water warm'd by the Influence  
of



of the Sun [especially in *May* or *June*] and within some few Hours it will take Life, move at both Ends, and in a short time, its probable that it might become one of those several kinds of Eels we meet with in the Waters.

Notwithstanding that all these Productions had their first Original from such Matter as was most proper and capable to be modified by the Plastick Spirit of Nature; yet being produc'd, they sometimes propagate their several Kinds by univocal Generation, these Marine Insects which are not Locomotive, being only excepted.

From these Præliminary Instances, and a great many more Ocular Observations which might easily be produc'd, I conclude, that as the several Forms of Vegetables, were disseminated in the upper Covers of the Earth; so were the Specifick Forms of several kinds of Fish [as well those which the Naturalists call *Pelagiæ*, as those they call *Liturales*] disseminated in the Waters, or Submarine and fresh-water Quicksands; and as the Water receiv'd higher Degrees of Modification, they produc'd Fish of a higher Degree of Life, in obedience to that Command laid upon them, *Let the Waters bring forth abundantly.* The



The Second Causes which concurr'd in the Production of these Waterish Animals, were,

*First*, the Coelestial Influences.

*Secondly*, The Water which being Modified by the Plastick Spirit and the Coelestial Influences, became waterish Vehicles, or Bodies for their Specifick Forms to act in.

*Thirdly*, The Submarine and Waterish Quick-sands in which their Eggs were Generated.

*Fourthly*, The Subterranean Heat, which abounding most in these Submarine Quick-sands or waterish Nests, did Hatch these Eggs into Life.

*Fifthly*, An Innate Power in the Plastick Form, which discriminated their Kinds.

The Original Production of all kinds of Fish, being from their Invisibe and Vital Forms disseminated in Waterish Quick-sands, as soon as they came to Perfection and Maturity, they retain'd Seed in themselves, by which they Propagated their own Kinds. The time of their Propagation is with us about *September*; for then being grown strong and lusty with their Summers Feeding, and the Influence of the Moon and the

rest



rest of the Ætherial Bodies, being then more strong and powerful upon the Waters. Again, about that time the Subterranean Heat rises towards the Surface of the Earth, and breaks out in Springs and Quick sands, which is the reason, why about that time the Fresh-water Fish draw up to the Spring-heads, and the Sea Fish to the Submarine Quick-sands, wherein they scatter their Eggs.

The manner how they Propagate, is, first by Digging up the Sand where they intend to make their Nests, and then [not by Copulation or Penetration of parts, but playing Cheek for Chole, and by Sympathetical Touches] the Female whones her Eggs, and the Male his Spawn, which mixing together falls down into these prepar'd Nests which they cover up with Sand, thereby securing it from the Winter Floods.

After this they return to their Winter Holds, leaving their Eggs to be Hatch'd by the Subterranean Heat, which continues in the Springs and Quick-sands until the *April* following; and then the Young Frie, being Hatch'd creep out of their warm Nests and Swim down the Waters in numerous Swarms or Shoals.

After



After the Production of all the Subordinate Kinds of Fish, God last of all Created great Whales, by which words *Moses* intimates to us, that all the rest of the waterish Animals were produc'd by the ordinary Concurrence of Second Causes; but God to shew his Great Power in the Deep Waters as well as upon the Dry Land, did seem to give a Preternatural Assistance to the Production of an Animal of so great a Body; which in the Atlantick Ocean, when they appear to Mariners upon the Waters, appear like little Islands or Mountains; and these are the Leviathans that God made to take their Pastime in the Deep: He made them Lords also over all the Fish, which He gave to them for Meat.

For as every Superior Rank or Species of Terrene Animals Feed upon their Inferior, and Man upon all; so every Superior Species of Fish live upon their Inferior, and so the Whale, being Lord over all the rest, lives upon its Underlings.



## C H A P. V.

*Of the Second Genus of Oviparous Animals, (viz.) the Aerial: And First, of Fly Insects, Secondly, of Serpents, Thirdly, of Birds, and why Moses makes the Waterish and Aerial Animals Congenial.*

**A**S it seems preposterous to Create any Species of Animals, before Meat suitable to their Natures to Live upon was provided for them; so it seems most probable and agreeable with the Ends of Nature, that Grass, Plants, Herbs, and the whole Set of Vegetables shou'd be the first Spring and Summers Product. That the Replenishing of the Waters with all Kinds of Fish, the Production of the following Winter; and that the next Spring shou'd begin with the Production of Aerial Animals; these Living and Feeding upon the first Products of the Earth and Waters.

Again,



Again, since the several Degrees of Modification of Matter, and the Animal Life increaseth, as the Enlivening Influence of the Sun grows Hotter and more Powerful; it necessarily follows, that the several Kinds of Flying Insects, [being the lowest Degree of Life under this Genus] shou'd be the first Product; for as soon as the Fertile Soil had receiv'd a degree of Heat from the approaching Sun, the Earth began to revive, the Young Plants began to peep out of their Winter Beds, and the tender Leaves of Trees began to break their Autumn Buds.

The East Wind blowing then Dry, by it's soft and easie Blasts did Condense the Morning and Evening Dews into viscous and clammy Strings, which like Cobwebs hang upon every Thorn and spread themselves upon the Young Grass, till the Sun advancing towards the Meridian, sent down a warm Reflection upon the Earth, and caus'd all these fine and tender Threads to draw together, and fashion themselves into little Nests, in which by a higher Degree of Heat were form'd little Eggs; which by another Degree of Heat took Life, and did Fly about in the open Air,



Air, some Feeding upon Dewes, others upon Leaves ; others upon Corruption in the Air ; others were Blood-suckers.

Besides these Generated of Dewes, there are Infinite numbers of other Kinds of Insects which are Generated of Slime and Corruption ; and these are either Daily or Weekly Productions, some of which Transmute from one Species to another, as those Insects which we call Caterpillars the first Summer, the next Summer will become Butterflies : So Cod-bates in *April* and *June* will Transmute into those kind of Flies we call Clegs, which are Blood-suckers.

To shew particularly the Kinds, Natures and Numbers of all these Transmutable Insects, wou'd be a Task Invincible. Thus were the several Kinds of Flying Insects produc'd, having their Colours, Natures and Qualities from Flowers, Plants, Herbs, Trees, or corrupted Water and Slime, and their Shapes and Figures from their Plastick Forms, these being the lowest Degree of Life, a small Degree of Heat produc'd 'em.

Of



*Of the Production of Serpents.*

**A**fter the Production of these Flying Insects, the *East* Wind still blowing Warm and Dry, those standing Puddles of Stagnated and Corrupted Water being drain'd, and leaving behind a Poisonous Slime, on which by the Sun's Influence were form'd poisonous Eggs; which by higher Degrees of Heat were Hatch'd into Life, and by sucking in and feeding upon such Poisonous Matter as they cou'd meet with suitable to their Natures, they got strength, Feet and Wings, and became Serpents of several Kinds, some Creepers, as Adders and Snakes, some with Feet, as the Asp and Viper, some with Horns, as the Cerafles; some with Wings, as the Basilisk and Dragon, and the like.

Altho that these have all of them Head, Heart, Blood, Nerves, Senses and other parts agreeable with the most perfect Animals; and tho' that some of them be the most Subtile amongst the Irrationals; yet by reason of their disparity with Quadrupedes, they are accounted



counted amongst the imperfect Animals  
and of a lower Degree of Life.

*Of the several Kinds of Birds.*

**A**fter this the Cold and Waterish  
Earth, being drain'd and warm'd  
by the increasing Influence of the Sun,  
the Mountains, Heaths, Dales, Valleys,  
Water-fands and the Sea-shore, were  
Cover'd with a Luxuriant, Plastick and  
Prolifick Slime, which drew down  
[ by way of Sympathy ] out of the  
warm Regions of the Air, the Speci-  
fick Forms of Birds or Aerial Animals,  
which being united to this Luxuriant  
and Plastick Slime, there were Form'd  
innumerable numbers of Eggs upon the  
Mountains, Heaths, Valleys, and all  
parts of the Earths Surface; and no  
sooner were these Eggs Form'd, but  
the warm Influence of the Sun, sat on  
Brood upon them until they were  
Hatch'd into little Chickens.

Those Hatch'd upon the Sea-shore  
became Sea-Birds, those by the sides of  
Rivers, feeding upon Fresh-water Fish,  
and those Hatch'd by the sides of Lakes  
and Ponds, became Amphibious Birds,

K

feed-



feeding both upon Fish and Herbs, as Geese, Swans, Ducks, &c. Those Hatch'd upon Mountains and Heaths feeding upon Mountain Vegetables, Heath Birds; those upon the Plains and Valleys became Domesticks, feeding both upon Grass and Corn; and those in the Woods, Singing Birds and Birds of Prey, as the Eagle, and the rest of those Tyrants of the Air.

After this manner were the Aerial Animals produc'd, and the reason why *Moses* makes the Aerial and Waterish Animals Congenial, is,

*First*, The parity of their Production, being both from Eggs.

*Secondly*, The Affinity of that Matter on which they were produc'd, the Air and Water being Transmutable Elements.

*Thirdly*, From the likeness of their Actions and Qualities, the one Kind having Fins by which they Swim in the Water, the other having Wings by which they Fly or Swim in the Air.

As these were the Productions of the first Spring Months (*viz.*) *January*, *February* and *March*; so in these Months they do always Propagate their Kinds by laying of Eggs, every Species according



according to its Kind ; some on Mountains, others in Valleys ; some by Water-sides, others in the Woods, &c. the warm Wing of the Dam, now supplying the Want of a warm Sun-beam.

For as the Wing Hatcheth them out of their Shells, so it strengthens and nourishes them by Vital Incubations, till their Pinions be able to bear them up to seek their own Food : Thus the Wing is both the Midwife that brings them out, and the Nurse that brings them up.

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## C H A P. VI.

### *Of the Terrene, or Viviparous Animals.*

**A**FTER the Production of these Animals of a lower Degree of Life, and Perfection, and the Sun was avanc'd higher in his Annual Motion, which Darting down his warm Beams upon the Earth in a more direct Line, they did penetrate deeper into the Cold Matter ; and by drawing forth its Fertile Spirits towards the Skin or Surface



of it, they set the Plastick power on working, and modifying the Passive Matter into more noble Forms; which by their Sympathetical Charms drew down the Specifick Forms of the most perfect Animals within the Second Sphere of Life.

For in every little Pit or Hollow of the Earth, which being fill'd with Luxuriant and Prolifick Slime was kindl'd by the Vivifick Vertue of the Seminal Form, a little bubble of Life, which the Plastick power began to shape into the Form or Figure of an Animal.

And thus was the numerous Brood of Quadrupedes, [being Animals of the most perfect Kind] first Conceiv'd in the warm and moist womb of Modified Matter, nourish'd by sucking in the Luxuriant and Prolifick Slime; which by their Vital Heat they digested and distributed into the several Parts and Members of their Bodies increasing of them by an equal assimilation of Parts; and as soon as these young Embrio's had got strength, they Crawl'd out of their warm Nests of Matter, and began to suck in those Honey Dewes, and lick up that sweet Manna which

laid



laid upon the Grass and Herbs, and this supply'd to them the want of Maternal Milk and Nourishment.

For during the time of these Productions, God neither suffer'd it to Rain upon the Earth, nor the Winds to blow, lest this Infant Brood of Young Animals shou'd have been destroy'd, before the Birds got Wing, or the Beasts Foot and strength to defend themselves against a Storm; but there went up only a Mist from the Earth, which wa- Gen. 2: 6. ter'd the whole Face of the Ground. And this Mist was only a warm and moist Smother, which arose from the Earth, as we observe it to rise from the Furrows in the Spring Months occasion'd by the Morning Sun Beams, and these Clouds which did Swim in the Air, only serv'd for Umbrells and Parasols to screen those Infant Animals from being scorch'd by the Heat of the Sun, and from drying up their Food and Nourishment.

The Earth being now Stock'd with the several Kinds of Animals, contain'd under the Sensitive Genus, they did Propagate their Kinds by Univocal Generation. For which end Nature and Providence hath form'd several



Vessels or Slime-Pits in every Female, for preserving something Analogous to that Original Slime, which was then the Passive Principle of Generation, and likewise in every Male such Vessels as are most fit and commodious for preserving a Beam or Spark of the Ætherial Flame [which being the material Vehicle, wherein the Specifick Form is preserv'd] kindles the first bubble of Life in the Passive Matter.

And we observe that as soon as Age and Maturity hath fill'd these Seminal Vessels with this Prolifick Slime, and digest'd it into a right Degree of Heat and Temperature, the Females of every Kind or Species of Animals, begin to Prune, Dress and Trim themselves, by which modest way of Courtship, the Male is drawn and Charm'd to within their Sympathetical Spheres: Thus the Evening and the Morning, or the Sympathetical Union of the Active Form and Passive Matter, made the Fifth Production.



## C H A P. VII.

*Of the Creation of Man, the Sixth Production.*

**T**HE Earth being now cover'd with the great variety of Species, contain'd under the Genus of Vegetation, the Waters replenish'd with all Kinds of Fish, the Mountains, Plains and Valleys Stock'd with Herds and Flocks of all Kinds of Cattle: God did once more Modifie the Passive Matter into a more noble and excellent Form, not only capacitated to receive the lower Degrees of the Animal Life; but also fitted with Organs to entertain an Intellectual Soul, which *Moses* tells us God Breath'd into it: It being impossible for Matter, tho' never so curiously Modifi'd by the Plastick Spirit of Nature and the joint Concurrence of the Cœlestial Influences to draw down by the power of any Material Sympathy a Soul out of the Immaterial and Intellectual Spheres of Life to Animate and Enform it.



And this Noble Creature God call'd  
*Man*, being made not only after his  
 own Image, Spiritual and Immortal;  
 but also after his Similitude (*viz.*) En-  
 dow'd with all the Affections and Com-  
 municable Attributes of the Divine  
 Nature, by which he became capable  
 not only of disclosing the Secret Myste-  
 ries of Nature, and of diving into its  
 Deep Philosophy; but also of Know-  
 ing and Adoring his Creator; by which  
 Perogatives of his Birth, and Noble Ex-  
 traction, he became Qualifi'd for be-  
 ing his Creator's Vicegerent upon  
 Earth.

THE



# The Conclusion.

*Wherein is shewn the meaning and significancy of these Words.* And God saw every thing that he had made, and behold it was very good.

**T**HAT God, who is Infinite in Goodness and all Perfections, cannot be the Author or Producer of any thing, but what is Good and Perfect in its Kind, hath been always assum'd as a granted Principle, not only by the best of Divines, but even the generality of *Pagan* Philosophers: Yet *Moses*, notwithstanding this, foreseeing that this excellent Frame of the World, which was design'd on purpose to bring all reasonable Creatures to the Knowledge and Veneration of their Creator, wou'd be perverted to contrary Ends and Effects; and that the Production of all the Creatures might be ascrib'd wholly to Second Causes, or to no Cause at all; but to Chance,



Chance and to the casual Motion of Matter, for the prevention of which, he here brings in the Almighty *more Humano* taking an exact View and Survey of the whole Creation, both as to its Structure and Furniture, and giving it his Divine Approbation in these words, *and he saw every thing that he had made, and behold it was very good.*

The Goodness of the Creatures do Principally consist in these Four Particulars.

1. In their Correspondency and Agreement with those Patterns and Ideas preconceiv'd in the Divine Understanding.
2. In their Fitness and Suitableness for those misplaid Ends and Purposes for which they were Created.
3. In their being Good and Perfect in their several Kinds.
4. In the Regular keeping and observing those Rules given them at their Creation.

*First.*

That this Infinite variety of Orders, Shapes and Figures, by which the several Species of Creatures are Characteriz'd and Distinguish'd, are not the Effects of blind Chance or Casual Motion, but the Products of Infinite Power,



er, Wisdom and Counsel, will be clear and evident, if we carefully observe, that not only their Numbers, Shapes and Figures; but also their whole Contextures and Contemperation of parts, with their Natures and Qualities, have all of them a manifest relation to those several Uses and Operations they perform; and this is so fairly Illustrated and Prov'd by the Ingenious and Learned Mr. Ray, in his Treatise concerning the Wisdom and Providence of God in the Creation of the World; that a further enlargement upon this Argument, wou'd be wholly superfluous.

That all Creatures are Good and Perfect in their Kind, will appear, if we consider that it was most agreeable with the Divine Wisdom, that the whole Scheme and System of Nature, shou'd consist in different Degrees of Perfection and Subordination of Life: And that every Inferior Species shou'd be Concatenated to its Superior by Animals of an Intermediate Nature, *Secondly*

And yet notwithstanding this difference amongst the Creatures in Degrees of Life and Perfection, we cannot but observe, that every Creature even of the lowest Degree of Life is Good and Per-



Perfect in its Kind (*viz*) without any blemish, defect or flaw; for the meanest Insect, is as perfect an Animal, as the Elephant and Whale, and God's Wisdom and Power is as well to be Admir'd in the Paint upon the Butterflie's Wing, as in the Glorious Body of the Sun.

Again, there is nothing more agreeable with the Divine Wisdom, than that there shou'd be in so great a variety of Creatures, Degrees of Subordination and Perfection, will yet further appear if we consider,

*First.* That these Creatures of a lower Degree of Perfection do by comparison illustrate and commend those of a higher Degree.

*Secondly* That those Regular Subserviencies and Harmonies might make up a Vital Cement whereby the whole Frame and Structure shou'd be United.

*Thirdly.* It was necessary that there shou'd be variety of Natures, and different Degrees of Life, that the Wisdom of the Creator might be the more Display'd, Acknowledg'd and Celebrated, and that his Infinite and Universal Goodness might be more Visible in the supplying and providing for the Wants of  
so



so vast a number of Creatures of so different Natures.

Lastly, That Man being plac'd at so great a distance from the Beatifick Vision [which whilst he continues in this Compounded State, wou'd either have Dazl'd or Confounded his Sight, or Affright'd and Ravish'd his Soul out of his Body] it pleas'd therefore the Divine Wisdom to Create all this great variety of Creatures that he might behold his Creator at Second-hand, when his Bodily Eyes cou'd not bear the sight of Him at the first.

And *Secondly*, That he might exercise and improve his Rational Faculties, and entertain his Heaven-born Soul with Natural as well as Divine Speculations, which in some measure Compensates for the want of a clearer sight of the Divine Vision. *Secondly*

Again, altho' it must be granted that in those different Degrees of Perfection all are not alike Amiable, Lovely and Beneficial to Man; yet those that are the less Beautiful and Lovely sets off the Beauty of the rest, as Shadows set off the more lively Colours.

*Thirdly*, That the goodness of the Creature, does consist in its fitness for those *Thirdly.*



those Ends and Purposes for which it was Created will appear, if we consider that it cannot be easily imagin'd, that God who is Infinite in Wisdom and Goodness, shou'd Create any thing in Vain; but to good Ends, and the best of Purposes.

We therefore in the Nature of Things can discover Infinite agreeableness of this to that, and of one thing to another. And though we cannot thoroughly penetrate and discover the Relation Use and End, of every Thing in Nature, by reason of our Incapacity, occasion'd by the Darkness of that State we live in; yet we have reason from what we can discover, to conclude, That every thing was Created for good Ends and particular Uses:

For, first of all, we do observe that every Inferior Creature was subservient to its Superior: And all the Creatures subservient to Man; altho our Ignorance in this Dark and Degenerate State, has made us incapable of Understanding their Natures and Uses.

*Secondly* Secondly, We observe that every Element is fitt'd for its Animal, and every Animal for its proper Element.

We



We observe that every Object is fitted for its Sense, and every Sense to its proper Object. *Thirdly.*

We observe that Food and Nourishment is provided in Nature's Storehouse for every Animal, and every Animal for its proper Food and Nourishment. *Fourthly*

These being trite and common Topics, I refer the Reader to those Authors who have made it their Business to enlarge upon them: I shall proceed therefore to shew how in the last place, the goodness of the Creatures consist in observing and keeping of those Laws given them at their Creation.

When the Almighty had Created the World, and Stock'd it with several Ranks and Degrees of Creatures, He gave them Laws to keep, and Rules to walk by: And these we call the regular Course of Nature, from which they never vary unless at their Creator's Command. *Fourthly*

These Laws which all the Creatures are govern'd by, are,

1. *A Divine Impression; Or,*
2. *Natural Instinct,*
3. *External Senses.*
4. *The Laws and Rules of Natural Reason.*

*The*



The Laws  
of Divine  
Impressi-  
on.

1. The Inanimate Creatures, are govern'd by a Divine Impression; for if we look up to Heaven, we observe how the Sun, Moon and all the Æthetial Globes do perform their Natural Motions, from which they have not vary'd higher or lower, faster or slower, since their first Creation; and how they shed forth their Cœlestial Influences on all things here below.

2. If we look downward, we may observe, how this Terraqueous Globe consisting of dull and stupid Matter, turns about its own Centre, and Naturally, Constantly and Regularly performs its Diurnal Motion, its cold sides thereby receiving the warm Influence of the Cœlestial Bodies.

3. We may observe, that those weak and groveling Plants (*viz.*) the Hop, Vine and Ivy, are by Nature furnish'd with Tendrils or pliant Strings, and how by a Natural kind of Instinct they seek about for Supporters, and having found them, they Clasp about them; for all the Plants of this Kind, as if they were sensible of their being Adjective, are always in busie quest for their Substantive.

4. We



*Fourthly*, We may observe how the  
 Insects, those Animals of the lowest De-  
 gree of Life, propagate and preserve  
 their Kind by Natural Instinct, which  
 in them supplies the want of higher De-  
 grees of Sense; for with what curiosity  
 do the Bees make their waxen Cells, lay  
 in their Winter Provision, and how obe-  
 dient they are to their Master Bees or  
 Governors? With what wonderful  
 Art does the Spider Spin his Web out  
 of his own Bowels? With what care  
 and industry does the little Ant first  
 make her Store-house in some dry Hill,  
 then seeks about for Winter provisions,  
 and that the Corn and Seed she gathers  
 may not grow nor sprout in her Store-  
 house, she Eats off that end where the  
 Seminal Form is lodg'd.

The Laws  
 of natural  
 Instinct.

*Fifthly*, We may observe how all those  
 Winter Sleepers, who when their Sum-  
 mers Provisions are spent, and by their  
 Natural Instinct they foresee the Win-  
 ter's Frost approaching, do withdraw  
 into some warm Winter-quarters, where  
 they Live by Sleeping, till the approach-  
 ing Sun invite them out into the Fields.

*Sixthly*, we may observe with what  
 wonderful Art and Curiosity the smal-  
 lest Birds build their Nests of several

L forms



forms suitable to their Weakness or Strength; how when their Nests are Bait, they lay their Eggs, Hatch them with their Wings, and then Feed them till they get strength to Fly abroad, and seek their own Meat; we may further observe, that all those Creatures that are govern'd by the Laws of Natural Instinct, never varies in their Operations; but walk in the same Roads and pursue the same Methods.

7. *Seventhly*, We may observe how those Animals that are Govern'd both by Sense and Instinct do Propagate their Kinds, and how they are all provided with Natural Armour for self-preservation: We may also observe amongst those Animals of a higher Degree of Sense such instances of Love and Hatred, as are seldom practis'd by the most Passionate Lovers, or the most Malicious Haters.

The Laws  
of external  
Sense.

I have known and heard of Dogs and other Creatures, that have pin'd away and Dy'd for want of their Masters: And others also that have born such an implacable Antipathy against some particular Persons, as was never to be reconcil'd.

*Eighth.*



*Eighthly*, and Lastly, I might instance in those excellent Laws of Prudence and Reason, as well as those of the Divine Life, which God imprinted upon the Nature of Man, before they were obliterated and defaced by Sense.

8.

Thus all the Creatures, Man only excepted, continue still under the government of those Laws given them at their first Creation.

This may seem sufficient to Convince the most professed Atheist, who is not resolv'd to offer violence to his Natural Sense as well as Reason, That there is a God, and that the World with all its Furniture, was the Product of the Divine Power, Wisdom and Counsel.

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The End of the Second Part.

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8. *Page 137 and 138. I might in  
stance in those excellent  
denies and Reason as well as those of  
the Divine Life, which God inspired  
upon the Nature of Man before he  
was of the flesh and bound by Sin.  
Thus all the Creatures, in an outward  
order, continue till under the  
vermin of those Laws given them  
their first Creation.  
This may seem consistent to Conscience  
the most perfect of Affairs, who stand  
resolved to offer violence to his Name  
and sense as well as Reason. That there  
is a God, and that the World was  
created, was the Product of the  
Divine Power, Wisdom and Counsel.*

The End of the Second Part



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DISCOURSE  
A  
DISCOURSE

Concerning the  
*Terrestrial Paradise,*

Shewing how

*ADAM* was Introduced in-  
to it: The time he continu-  
ed in it; and how He and  
*EVE* Employed that Time.

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# DISCOURSE

Concerning the

*Terrestrial Paradise*

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A  
DISCOURSE

Concerning the  
*Terrestrial Paradise,*  
Shewing how

A D A M

Was Introduced into it.

Several Men of great Learning, as well Ancient as Modern, have made most Industrious Enquiries, after the place and situation of this Terrestrial Paradise; of which *Moses* has given us so particular a Description in his Second Chapter of *Genesis*.

And their Opinions about it, being as different and wide, as *East* and *West*, Heaven and Earth: We shall therefore



only undertake, to present the Reader with some Conclusions, drawn, as well from the fairest Arguments of probability, as from the *Mosaick* Account of the place,

1. And first we Conclude from the Literal Sense of the Text, that there was such a place upon Earth, as a Local Paradise; and that this place, did as far exceed the rest of the Earth, in Fertility of Soil, and all the Products of Nature, as Gardens of the best Cultivation, exceed the common Fields.

2. We Collect from the Literal Sense, that this Terrestrial Paradise, in respect of *Judea* or *Midian* [where we suppose *Moses* Writ this System of the Creation] was *Eastward*.

3. That in respect of the Surface of the Earth, its particular Situation was misplaced in a Middle between the Tops of the highest Mountains, and the lower Plains and Valleys.

4. That in respect of the Heavens, its Situation was under the *Æquinoctial* Line.

These two last Hypothesis's having no authority from the Sacred Scripture, we shall endeavour to ground them; not only upon the bare Account which

*Tra-*



*Tranellus* has given of the Fertility of those *Æquinoctial* Regions, but also upon such Natural Arguments as cannot [without offering violence to Reason if self] be easily deny'd.

For notwithstanding, that several of the Ancient Writers, were of Opinion that those Countries, under the Torrid Zone, were Uninhabitable, by reason of the Sun's darting down its fiery *Globuli* upon them in down-right Lines: And because they wanted those plentiful and pleasant Showers of Rain, which Fertiliz'd the rest of the Habitable World; yet the Experience of later Travellers hath discover'd to us, first that the want of Rain is repair'd by those great and rich Dews, which the Morning-cold Condenseth, and which lying upon the Ground until Ten a Clock, the Sun's Influence upon it, having then exhal'd the more Nitrous and Airy part of it; the Sphere of Rarefaction [which in those Regions falls low, and is always open] Rarifies it into such cool Gales, and Breezes of Wind [which always Blowing from Ten a Clock in the Morning until Three in the Afternoon] so cools and abates the extremity



mity of the Heat ; that no Inconvenience or Distemperature is found there.

2. Again, the Nights [as Sir *Walter Raleigh* has Observ'd in his Travels] are so Cool, Fresh and Equal, by reason of the intire Interposition of the Earth, that there is not to be found in any part of the Habitable World a better, more wholesome, or equal Temper of Air.

And although there be some Tracts, which lye under the Perpendicular Mountains where the Air Stagnates, the fresh Gales and Briezes of Wind over-blowing them, and some other places Sandy, Barren and less Inhabited, yet the greatest part of those Regions [especially the Dales, which lying above the Plains and lower Valleys, have always their Air Brush'd and Sweetn'd with these fresh Briezes of Wind; and are plentifully water'd, with Rapid Rivolets arising from the Tops and Sides of their Neighbouring Mountains.

And these as well as the Plains and Valleys, are Beautify'd with abundance of stately Cedars, and other Trees, casting a pleasant Shade, and delightful Fragrancy.

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They are enrich'd too with all sorts of most delicate Fruit-trees, always Green, and bearing the choicest Fruit in their highest Degree of Perfection. Their Boughs and Branches are never uncloath'd and left naked; for their Sap never creeps under Ground fearing the Winter Frosts.

To these Accounts which we have from Travellers of the greatest Truth and Fidelity; we further add, That as all the flat Strata or Layers of Stones, Metals, and Subterranean Earths, have a Natural Rise toward this middle Girdle of the Earth, and a gradual Declivity towards the two Poles (which all Mineralists, who understand the Structure of the Earth, and the position of the solid Strata willingly agree to) we may thence most reasonably Collect, that these Æquinoctial Regions were the first dry Land that appear'd after the Waters began to divide and decrease.

We yet further subjoin, that as this middle Girdle upon the Earth, lies parallel to that middle Circle in the Heavens [we call the Sodiack] through which the Sun performs its Annual Course, we Collect that it, with the

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adjoining Regions, received the first and largest Influence of the Sun's Enlivening Vegetation, and consequently were Stored with the first Products of Nature; as well Animals, as Vegetables. So that in all probability, there might be Ripe Fruit in Paradise, before those other Regions towards the Tropicks and Poles were drain'd from the Waters, or receiv'd the Sun's Vegetation according to their Natural Seasons.

5. Again, as these Æquinoctial Regions produced all Kinds of Vegetables and Animals in the highest Degree of Perfection their Natures were Capable of: So they did, and do to this Day afford us not only the greatest plenty of the most Precious Stones, but also the most Valuable and Useful Metals, as Gold, Silver, Brass, Iron, &c. and this is not only evident from the *Mosaic* Account of the Rivers of Paradise; but the Experience of those Merchants, who being tempted by their Value, Trade thither.

6. Once more, as it is most probable, that these Æquinoctial Regions were the first dry Land, that they receiv'd the first Enlivening Vegetation of the Sun, and were honour'd with



with the first products of Nature; so it is most agreeable with Reason, that all the Regions upon Earth are more or less Paradisaical, as their Situations are nearer or at a distance from this middle Zone, and that from Paradise they were first Stock'd with the several Products of Nature, and the several Genera of Animals; which began to Propagate their Kinds there, until the Earth was Replenish'd. Altho' its most probable, that they did degenerate from their Original Perfection as their Propagations were at a distance from Paradise.

As from these Arguments we Collect and Conclude, that the Terrestrial Paradise was in respect of the Heavens Situated under the *Æquinoctial* Line; so in the last place, we Conclude that its particular Situation was in a middle between the Tops of the highest Mountains and the lowest Valleys. And we ground this Hypothesis upon the Account which *Moses* gives of the Course and Motion of that River which water'd Paradise; for this River undoubtedly had its Rise from the Top or side of some of the *Eastern* Mountains, and took its Course first in one Rapid Stream,



Stream, through the midst of that most pleasant Dale, and then by dividing it self into Four lesser Streams, they became the Heads of Four of the greatest and most noble Rivers in the World, which sliding down through the lower Dales, Plains and Valleys, of a great part of *Asia* and *Africa*; at last empty'd themselves into the Main Ocean at great distances.

1. The hight of its Situation gave it a most wholesome, delightful and cherishing Air, together with the most advantageous and grateful Prospect over the rest of the Rising and Growing World.

2. This Paradisaical Dale, had all the advantages of a Natural Situation. For first of all, it must be necessarily suppos'd, that it had its Situation under the Skirts of the highest Mountain in those *Eastern* Countries, which defended it from the Cold Blasts of the *Northern* Wind, from whose lofty Top did flow that Rapid Mineral Feeder which took its Course through the midst of it.

It may be supposed also, that it was encompassed with lesser Hills on all sides excepting the *South-east*, which  
let



let into it the warm Enlivening Beams of the Rising Sun, and which was the only passage that gives liberty of Entrance into it.

That these Hills were Beautify'd and Adorn'd with all Kinds of Trees, which might gratifie the Senses with their fresh and beautiful Colours, always Green, and casting a most pleasant Shade and delightfulsome Fragrancy; in which the Active and Chearful Birds Sung their Morning and Evening Anthems.

3.

That these Hills encompassed a large and spacious Plain, wherein did Spring up and Grow to Perfection all the Species of Herbs, Plants and Flowers that are to be found in the large Volume of Natures Inventory.

4.

In the middle of which Nature had Planted a most Curious Grove or Orchard, wherein did Grow all Kinds of Fruit-Trees bearing the choicest of all Fruit, that might either gratifie the Eye or please the Palate.

The most remarkable Trees in this most pleasant Garden, were the Tree of Life and the Tree of Knowledge, which [being taken in a Literal and Natural Sense] had their Names from the

the



the Nature and Quality of the Fruit they Bore.

The former (*viz.*) the Tree of Life Bore a wholesome Fruit, preserving both the growing Sensitive and Rational Life; and that so long as a Body compounded of Matter, consisting of contrary Qualities could last.

The other (*viz.*) the Tree of Knowledge, Bore an unwholesome Fruit of a Poysonous Nature, which destroying the Excellent Frame and Temperament of the Body, made it subject to Diseases and Pains, and last of all to Death and Mortality.

As the former gave us the Experience of Health, Life and Vigour, which Men are seldom sensible of, whilst that happy State continues. So the Fruit of the other gave us the Knowledge and sad Experience of an Unhealthy and Sickly Constitution of Body, and Lastly of Death and Mortality; hence it had its Name of the Tree of Knowledge from the dear bought Experience of its Fruit.

This I confess is but a rude Draught of the Terrestrial Paradise; yet I presume to offer it as a probable Hypothesis, and I doubt not, [but with Men of bet-



better Judgment] it may pass for such, and serve to Illustrate their Notions of a more elevated and exalted Nature,

Having given a short and Compendious Description of the Terrestrial Paradise according to the Literal and Natural Notion of it, we shall proceed to give a probable Account how *Adam* was introduc'd into it, how long He might continue in it, and how He and his Consort *Eve* employ'd that time.

*Adam* the Royal Patriarch of Mankind, being Form'd as to his Body and Organical part of the same Matter with the rest of the Terrene Animals, and having a Rational and Intellectual Soul Infus'd into him; as soon as his weak Members got Strength to Walk abroad from the place of his Nativity, and to take a View of those large Dominions his Bountiful Creator design'd to put under his Government; The first place he had in Prospect was this Terrestrial Paradise, toward which his Curiosity led him; but not finding an Entrance into it, God sent an Angel to be his Guide, and to Introduce him into its Possession, as an earnest of all the Felicities of this World, and an Emblematical

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tical



tical Assurance of the Glories of the  
Coelestial Paradise.

And no sooner had this Royal Patri-  
arch enter'd this Pleasant and Delight-  
ful Garden, but all the Birds and Beasts  
in Paradise [being surpriz'd at the  
sight of a Creature of a Shape and  
Form quite different from any of them,  
and of so Divine and Majestick a Coun-  
tenance,] came towards his Presence  
to gaze and wonder at him. And a  
Panick Fear having seiz'd them, they  
became all his Vassals.

I will not undertake to determine the  
time that *Adam* might spend in Walk-  
ing round the Woods and Plains of Pa-  
radise, whilst he took a View of all the  
Creatures, distinguish'd their Tribes,  
and gave Names and Offices to them,  
according to their several Natures and  
Qualities. I presume that it can hardly  
be imagin'd that one Day could be suffi-  
cient for so great a Task.

As *Adam's* Ambition was to exercise  
and improve his Rational Faculties, by  
Enquiring into the Natures and Quali-  
ties of the Sensitive Animals; no doubt  
but *Eve* [being no less desirous to im-  
prove her Wisdom and Knowledge,  
than her Master *Adam*] did spend that  
time



time during his absence, not only in gratifying her External Senses, with the fragrant Smell of the fair Flowers of Paradise, and Tasting its sweet Fruit; but in making Enquiries into the Natures and Kinds of Fruits and Simples, in distinguishing their several Sorts, and giving Names to them according to their Natures.

And certainly it was not her Ambition to be like God in so Divine a Perfection as Wisdom and Knowledge, made her Forfeit not only the fair Fields and pleasant Walks of Paradise, but Life and Immortality; but her taking a course and method to that End, contrary to the express Command of her Creator.

And although it be most probable that a Natural Serpent, having a speckled Skin, Beautify'd and Adorn'd with all the variety of Natural Paint, in the most fresh and lively Colours, was her Officious Favorite, and presented to her Royal Hand this Beautiful and Lovely Fruit;

Yet doubtless it was her own Natural Serpent, or Concupiscence, did frame and suggest to her a Discourse to this effect.



Hath not our Bountiful Creator made this World, with all this great variety of Creatures in it, on purpose for the Entertainment of your External Senses with the satisfaction of Enjoying their beloved Objects, as well as the Internal Faculties of the Rational Soul with the Entertainments of Wisdom and Philosophy ? If you Taste not then this Lovely Fruit, you evacuate God's Design in Creating of it:

Again, If God did not design that you should Eat of this Fruit, He would not have made it so Beautiful and Desirable ; it's Inconsistent with the Natural Goodness of your Creator, to lead you into the Fire and oblige you not to Burn, to Inflamm your Affection with a strong Desire, and not to gratifie it.

Further, You cannot but observe that God has made all Poysonous and hurtful Creatures of a less comely, if not of a frightful Aspect, and you have a strong Antipathy against them ; but this Charming Complexion tempts you to taste of it. To which the Considerative or Rational Faculty reply'd,

Our Bountiful Creator has given us liberty to eat of all the Trees in the Garden, but this is forbidden upon pain of Death.

This



This is a grand mistake of the Divine Intention, saith Concupiscence, which was by your Eating of this Fruit to Improve your Knowledge, and therefore he gave it the Name of the Tree of Knowledge. For as you have discover'd the Natural differences amongst the Sensitive Animals, and have given Names to them, your Creator certainly expects that you should understand the Natures and differences amongst Fruits and Vegetables; otherwise you will never be compleatly Skill'd in your Natural Philosophy.

This proud thought of being Wise, and a Natural Philosopher, so tickl'd *Adam*, or Reason, that he condescended that his Bride *Eve*, or Concupiscence, shou'd take a Taste to Cure her longing.

And she finding it a Fruit as well grateful to the Taste as pleasant to the Eye, perswades *Adam* to a further condescension, until a second Consideration made him feel the miserable Effects of it, as well in his Conscience as in the Constitution of his Body; which his Reason being asham'd of, he fled from the Presence of God, who usually, as it's believ'd by some learn'd Authors,



came down in the Evening to Discourse  
with the young Philosopher, who  
finding himself Naked, or at a loss for  
Arguments to defend his Guilt and  
Shame, endeavour'd to cover it with  
the thin Figg-leaves of Excuses.



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A  
DISCOURSE

Concerning the  
CONFLAGRATION  
OF THIS  
Material World;

THE  
Local Hell:

ITS  
OUTMOST BOUNDARIES,  
OR

*Abrahams Gulph.*

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DISCOURSE

Concerning the

CONFLUENCE

OF THIS

Miscellaneous World;

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Local Bell;

ITS

CONFLUENCE

OF

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A  
DISCOURSE

Concerning the  
CONFLAGRATION  
OF THIS

Material World.

**H**Aving in the former part of the History of Matter, given an Account of such Preternatural Accidents as have disturbed, and sometimes in all Ages Interrupted the Regular Course of Nature; And having demonstrated that these Preternatural disturbances, were occasion'd by that Natural Strife, that happens between the contrary Qualities of Heat and Cold, Fire and Water :

And



And having also shewn how Water, by uniting her forces in the Time of *Noah*, chang'd this Terraqueous Globe for some time into a Waterish Planet, by effecting an universal Deluge which covered the Tops of the highest Mountains Fifteen Cubits;

And how the Central Fire has frequently threatned, not only by Universal Concussions, and Earthquakes, to unhinge its Foundations, but also by Extraordinary and most Violent Eruptions of Fire and Vulcano's to break the Structure and Temperament of it, and turn it into a Globe of Fire, or Fiery Planet;

Now as a great many Learned Men in all Ages, have been inquisitive into the Natural Causes of this Universal Deluge, and the Difficulty they met with, being to find Water sufficient to effect it, without a Miracle;

So a great many Learned undertakers, have been no less Industrious to find Fire sufficient to dry up the Seas and Rivers, and then to Effect an Universal Conflagration of this Material World:

These two Difficulties [in my Opinion] might have been easily removed,



mov'd, if they had understood better the Structure of the Earth, and the Nature and Quality of that Matter which makes up the Constituent parts of it.

It will be necessary therefore, in order to our Establishing a Well-grounded Hypothesis concerning the Universal Conflagration in a Natural way, to Resume what we have formerly Observed concerning Matter in General; which we have divided into Three Classes [*viz.*] Volatile, Fixt, and Fluid; and to shew that these Three different Class's of Matter, bear equal Proportions one to an other, and in the Structure of the Earth occupie the same proportion of Place.

The Volatile Class [which we call the Central Fire consisting of Æthereal, Nitrous, Sulphurous, and Bituminous Particles] bears proportion to one Third part of the Diameter; And this Class makes the Earths Equilibrium; and by running a perpetual Round within the Circle of its own Infernal Vault, Carries about with it this Crust or Shell of fixt and fluid Matter whereupon we live, once in every Twentyfour hours, and this we call the Diurnal Motion of the Earth.

The



The fixt and fluid Matter being intermixt, like the Flesh, Blood, and Bones, or Heterogeneous parts of a Compounded Body, bears proportion to the other Two parts of the Diameter.

The fixt Class of Matter Consists of Parts, Combustible, Calcinable, Liquifiable, and Inflammable.

The fluid Class consists of Water ; which is either Subterranean, or Superterranean.

The Subterranean Water, either circulates through the larger Veins of the Earth, or pervades the Strait Pores of the Densest Matter.

That which Circulates through the Larger Veins, does not only [by being Transmuted into Air] feed and nourish the Central Flame, but also hampers it and keeps it within the Limits and Boundaries of its own Infernal Kingdom.

That which pervades the Strait Pores of Dense Matter, does as well feed and nourish the Pneumatical and Native Spirits of that Matter, as shackles them, by keeping of them within their little Cells, which otherwise would break out, and set on fire the more Combustible part of it.

The



The Superterraneous Waters do by maintaining a constant Communication between the Subterranean and Aereal Waters, and by the falling of Plentiful Showers of Rain upon the Earths Surface, preserve it from being either over-crufted, or fet on Fire by the External Heat of the Suns Influence upon it.

By these Divisions and Computations it is apparent, that one Third part of this Globe is Volatile, another Third part Combustible and Inflammable, and only a Third part Fluid. Which Third part preserves the Harmony and Conspiracy of its Parts, which makes the Cement and Temperament of the whole Body, and if this should once be broken, and the Volatile and Fluid suffered to act their Antipathies upon each other, the whole Frame and Structure would presently be dissolved, and all things shufled into their Original Chaos and Confusion.

Now as in all Compounded Bodies, which have any degree of Life or Vital Cement in them, the Vital Flame is fed and nourished by the Radical Moisture; which, as it wafts and consumes,



fumes, the Exterior Parts of the Body become Dry, Withered, and more Combustible; and at the last the whole Body is thrown into a Feverish Burning, which continues until the Vital Flame be Extinguish'd, and the Native Spirits fly out: So in this great Body of the Earth, the Central Fire, which is the Vital Flame of it, by continual feeding upon the Fluid Matter, does gradually waft and consume it.

And this is not only observable in our Sinking of Pits, where we generally meet with the upper Strata or Beds of Stone and Cole drained from their Waterish Feeders, their Native Spirits Exhal'd; but also several Ancient Springs sunk down in their Veins; Large Rivers decreas'd in their Water Courses; and the Seas in several Countries to have lost Ground, as in *Ægypt* and *Holland*, which undoubtedly [in former Ages] have been in the possession of the Main Ocean. From these general Desiccations of the Fluid part of the Globe we conclude that [according to the Natural Course of things in this World] the Volatile Matter, as the Central Fire, will



will in process of time so far gain ground upon the Fluid part of it, as to break out upon the Combustible and Inflammable part, and by setting them first on fire, the whole Globe will be turn'd into a fiery Planet; from whose Scorching and fiery Atmosphere, the Fluid Matter shall be forc'd to fly and range about in thick Fogs and Waterish Mists, until they fix and settle in a Waterish Vortex, dividing the Cœlestial Regions from the Smoaky and Flaming Atmosphere of this Burning Globe; and its most probable that by that vast Gulph which Father *Abraham* told *Dives* was placed between Heaven and Hell, is only meant these Fogs and Waterish Mists, which shall divide the outmost Boundaries of them; through which the Damned Souls may probaly see, hear, and have some Interlocution with those in the Cœlestial Regions; tho' all this shall only inflame and aggravate their Torments, when they shall see *Abraham*, *Isaac* and *Jacob*, in the Kingdom of Heaven, and themselves shut out, by this unpassable Gulph.

Having already made it apparent, that when the confus'd Chaos of Mat-

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ter settled into the Form of this Habitable Globe, the Volatile part of it by a Natural tendency of Motion, settled in the Central parts ;

And that the Central Vault, wherein this Volatile and Fiery Matter is contain'd, bears Proportion to a Third part of the whole, seems to be most probable, as well from Scripture as Natural Reason ;

For the Scripture represents Hell as a *Lake of Fire*, Mat. 9. 43. Rev. 20. 10, 15. And this Lake of Fire or Local Hell is commonly called *Infernus*, which signifies a place *Infra nos*, i. e. below the *Cortex* or Outer coat of the Fix'd Matter whereon we Live ; its also call'd *Tartarus*, which signifies the Pit of Hell, or that Infernal Dungeon fill'd with Fire and Brimstone, that Burns and Scorcheth, but casts no Light ;

And that this Infernal Lake of Fire was in the Central part of the Earth, was not only the Opinion of the *Roman* Church, which has undertaken to give the Dimensions of it ; but agrees with the Opinions of most of the Ancient Fathers and Doctors of Christianity ;

It



It is also agreeable with the Opinions of our own Doctors, who assert, that at the Day of Judgment, when the Sentence against the Wicked shall be pronounced in these Words, *Depart from me ye Cursed into everlasting Fire*, the Central Fire shall break out, and cause an Universal Conflagration of this Material World; for then the Central Hell shall be enlarged, and the Aerial Regions which are now the Devils Territories shall be fill'd with Smoak and Fire, and the Damned confin'd to that everlasting Smother, where the Worm shall never die, and the Fire shall never be quenched; by which words its more than probable that this Terraqueous Globe shall be changed into a Fiery Planet, that the Aerial Heavens shall become a Flaming Atmosphere, and that this shall be the Eternal State of this World.

He that would desire further Satisfaction in this particular, may consult Dr. *Hackwel* and Mr. *Ray's* Discourses concerning the Conflagration of this World; my intention being only to shew, that it is most probable that there is a Central Vault of large Dimensions, filled with Volatile Matter, con-

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sisting



It is also agreeable with the Opinions  
 sitting of Nitre, Bitumen, and Sulphur;  
 and that it is as probable that this  
 may break out, and set the Earth on  
 Fire, as its possible for a Man to Die of  
 a Burning Fever.

the Central Fire shall break out,  
 and cause an Universal Conflagration  
 of this Material World; for then the  
 Central Hell shall be enlarged, and the  
 Aerial Regions which are now the  
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 tin'd to that everlasting Smother,  
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 CHAP. Heavens shall become a flaming  
 Atmosphere, and that this shall be the  
 Eternal State of this World.

The that world shall be farther satis-  
 faction in this particular, may consult  
 Dr. Huxley and Mr. Boyle's Discoveries  
 concerning the Conflagration of this  
 World; my intention being only to  
 show, that it is not probable that  
 there is a Central Vault of large Dimen-  
 sions, fill'd with Volatile Matter, con-  
 sitting



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A Short  
**TREATISE**  
O F  
**Meteozology,**

With some  
Observations concerning the  
Changes and Alterations of  
the Weather.

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A Short  
TREATISE

OF

Meteorology.

With some

Observations concerning the  
Changes and Alterations of  
the Weather.



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A Short  
**TREATISE**  
O F  
**Meteorology,**

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C H A P. I.

*Of Vapours, and Exhalations, &c.*

**V** Apours and Exhalations are the Perspirations of this Ter-  
raqueous Globe, and are caus'd  
as well by the Internal Heat  
and Fermentation of it, as the Exter-  
nal Influence of the Sun, which by  
opening of its Pores, sucketh them out,  
and raiseth them up into the Regions of  
the Air.

These Vapours and Exhalations are  
the Material Cause of the several Kinds



of Meteors that are generated within the Compass of the Atmosphere; which extends as high as the fiery *Globuli* of the Sun make their Rebound from the solid Surface of the Earth, and Fluid Superficies of the Waters, and no higher.

The higher the Sun ascends in the Meridian, it strikes down these fiery *Globuli* with greater force upon the Earth and Waters; and consequently they rise higher, and elevate the Vapours with them. So that the Atmosphere is higher or lower in several parts of the Earth, as the Sun riseth higher or lower in the Meridian, and its Beams are darted down in a more direct or oblique Line.

And as the lowness of our Northern Atmosphere, causeth the Sterility and Barrenness of the Northern Mountains; so the height of the Southern Atmosphere, causeth those Mountains in the Æquinoctial and Southern Regions to be more Fertile and Productive.



## C H A P. II.

*Of the Efficient Causes of all Meteors; and first of Heat.*

**B**Y Heat is not to be understood the Element of Fire, which *Aristotle* and his Followers conceited to be under the Concave of the Moon, [there being no such Element there] but by Heat is meant that Internal Heat and Fermentation which is in the Body of the Earth, and that Natural Fire which is originally and essentially in the Body of the Sun, the Vehicle of External Heat, which Streams out from every part of that Fiery Globe, giving Heat, Light, and enlivening Vegetations to the whole Material World, being within the Compass of its Fiery and Luminous Atmosphere.

These Streams of Heat and Light [which is only the shadow of Heat] being Darted through the Regions of the Air in Strait Lines, and single Rayes, are not perceivably Hot or Cold, no more than the Light of a Candle without the Sphere of its Heat; but being



doubled by multiplyed Reflections, and Reboundings from the solid Surface of the Earth, does increase its Heat, as the Reflections are multiplyed and rebounded; which makes it hotter against a Wall, than upon the plane Ground, and in the Vallies, than upon the Mountains.

We must therefore distinguish between those single Rayes of Heat, which dart through the Air in instants, which are neither perceivably hot nor cold, and the Heat upon the Superficies of the Earth, which being contracted by an Artificial Glass, is Real Fire.

The Essential Qualities of Heat are Calefaction, Elevation, Rarefaction, Liquefaction, and Consolidation, as it meets with Matter Predisposed to receive its Effects.



## C H A P. III.

*Of Cold, the other efficient Cause of  
Meteors.*

**B**Y Cold is not meant a bare privation of Heat, as former Philosophers did conceit; but a real Body, of a Subtile Sublimated and Homogeneous Nature, and of a cold and frigid Quality. Its proper place of Existence is between this Earths Atmosphere, and the Atmosphere of the Moon, which is our next Neighbouring Globe; and by the rising and falling of this main Body of Cold, are caused the several Changes and Alterations of the Weather with us.

The Cause of its Rising and Falling, is the pressures of these two Atmospheres between which it is plac'd: When the waterish Atmosphere of the Moon presseth it down, it causeth Storms and Tempests here upon this Globe; And when it Rises, it causes the same in the Moon.

The Rising and Falling of this Main Body of Cold, is sometimes also occasion'd



sion'd by its Dilating and Contracting of it self.

Now as the Suns Beams are hotter in their Reflections upon the Earth, than in the Sun it self, so these Cold Rays which are darted from this Main Body of Cold, being increas'd and multiply'd by Reflection from the Mountains and Rivers, are much colder than the Main Body of Cold in its own Sphere. These Reflected *Globuli* of Cold may be term'd the Lower or Ground-cold; because in Summer it penetrates the Earth, and in Winter it seldom rises higher than the Tops of the highest Mountains, unless when it joins with the Main Body, and then it causeth great Storms of Frost and Snow, &c.

This Lower or Ground-cold, is commonly the Rear-guard and Van-guard of the Sun, always going before and following it; and its most perceivable in the Evening and Morning Twilights; especially, by Birds and Aerial Animals, whose Bodies do so sympathize with the Air, that they can more quickly perceive the Change of Weather (especially the rising of a Storm of Rain or Snow) than any of the Terrene Animals; and this they commonly discover

by



by their Flying high or low, or Flocking together; or sometimes by different Notes or Voices. This occasion'd the Ancient Augurs to conceit them Prophets, &c.

The Essential Qualities and Effects of Cold in general, are Frigefaction, Congelation, and sometimes Petrefaction; and when the lower Cold is Contracted, either by Art, or *Proprio motu*, it Starves and Freezes, as the Fire Burns and Scorcheth.

This lower Cold contracts and dilates it self, as it meets with Opposition from the contrary Quality of Heat and Fire.

The Effects of the lower Cold when it enters the Earth.

By Antiperistasis it Fires Damps in Collieries, Mines, burning Mountains, and Vulcano's.

When it lyes upon the Earth, it causeth Dews and hoar Frosts, it sucks out Damps and corrupted Air out of Under-ground Works, &c.



## C H A P. IV.

*Of the Air, or Medium wherein all  
Meteors are Generated.*

**T**HE Air is a Vast Medium or  
Expansion, fill'd with Rarify'd  
Vapours and Exhalations; which like  
Water would Stagnate, unless by a Daily  
addition of Rarify'd Vapours or Wind,  
it were put into a Flux and Reflux, as  
the Sea is by the addition of Rivers con-  
tinually flowing into it from all sides.

When the Air is Calm, then are the  
Meteors Generated; when by the Wind  
the Air is put into a violent Flux and  
Reflux, they are Broken and Dispa-  
pear.

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CHAP.



## C H A P. V.

*Of Fiery Meteors, &c.*

**T**HE Lower Cold which follows the Sun in the Evening Twilight, continues its Operation for some Hours after its Beams are out of sight, and no longer ; [the middle of the Night being for the most part a Calm as well in Winter as Summer] during which time of its Operation, it causeth all those Fiery Meteors which the former Philosophers gave several Names to, as falling Stars, Rods, Beams, *Ignes Fatui* or *Will with Wisp*, &c. according as they differ'd in Matter, Magnitude, and manner of Appearance ; some Consisting of a hot and dry Exhalation, others of an Exhalation mix'd with a Viscous and Unctious Matter, a Third of a simple and unmix'd Exhalation : All these are Generated in the Lower Regions of the Air, the Matter of them being drawn up out of the Earth, Waters, and Bituminous Boggs and Mosses, by the Sun's Influence upon them, especially in the Spring Months. For then the Subterra-



Subterranean Heat draws out to communicate with its Main Body; for as at this time all Animals renew their Hair, clear their Blood from gross Humours, so doth this great Animal the Earth purge her self of gross Humours, by Mushrooms, and other Pinguid Evaporations; for then the Subterranean Heat drawing out to communicate with the External Heat, brings forth of the Earth these Mineral Spirits and Pinguid Perspirations, in so plentiful a measure, [which being taken up into the Air are Condens'd into Clouds, and fall down again upon the Earth in such Fertilizing Showers] that the Psalmist tells us the Clouds at this Season drop down Fatness. These Hot and Fiery Exhalations which are flying about, scatter'd and dispers'd in the Lower Region of the Air, being seiz'd on by the Evening Cold, are forc'd in Defence of themselves to unite their Forces, and being united do Fire upon their Grand Enemy (*viz.*) Cold.

Some Fire in a Round Figure like a Fireball, which the Meteorologists call a Falling Star; some in a long Train, either Strait or Crooked, and these they call'd by the name of Rods or Beams;

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others being simple and unmix'd Exhalations, flash out in Lightning, like Gun-powder upon a Table; others being mix'd with a Viscous and Unctious kind of Matter Fire near the Earth, are mov'd by the Motion of the Air, or an easie and soft Wind, or are drawn down in pursuit of their Enemy Cold, to Waters, Mosses, Boggs, and Heaths, still Burning like a Candle in a Lanthorn, till their Unctious Matter be Exhaust'd, and then they leave a Liquid Jelly upon the Earth.

This Meteor they call *Will with Wisp*, or *Ignis Fatuus*, or Fool's Fire, because Ignorant People conceiting it to be a Spirit, keep their Eyes upon it, until they lose their way, and then are apt to give a dreadful Account of a Spirit they met with, which misled them.

If any of these Fiery Exhalations escape the Evening Cold, the Morning Cold about break of Day, before it be drawn down to the Waters, Fires them, by causing them to pursue the same Method of Self-defence they took in the Evening.



## C H A P. VI.

*Of Comets, &c.*

**A**Mongst the Fiery Meteors, all the former Philosophers reckon'd Comets to be the most Remarkable : And they gave such Dismal Accounts of the Dreadful Effects of them, that their very Appearance put the World under a great Consternation. But in my Opinion, the World [according to the Old Proverb] was more affraid than hurt by them.

For that Comets are Fiery Meteors, and have such dreadful Effects following their Appearance, is a Mistake in Meteorology so palpable, that it needs no Confutation :

That which we call a Comet, being no more than a Star of a Fiery and Luminous Body, in Conjunction with an other Star of an Opake and Waterish Substance, or a Vast Cœlestial Cloud, which by receiving into its Body the Bright Rays of the Luminous Star, becomes Translucent, and appears to us in the Form and Figure of a Luminous

or



or Fiery Globe; and by emitting Beams or Streams of Light, it appears to be a Fiery and Burning Meteor, which by the Meteorologists is call'd a Comet.

If this Conjunction and Interposition be Centrical, it sends forth its Beams of Light on every Side; and this we call a Bearded Comet.

If the Interposition be not Centrical, but the Luminous Star be higher or lower, or on one side, it sends forth a Beam or Stream of Light upward or downward, or to one side; and this Beam or Stream of Light, is call'd the Tail of the Comet.

The Appearance of this Comet continues until their different Motions have separated them.

A demonstration of this you may have several Evenings, when a black waterish Cloud interposeth between us and the Body of the Sun; if the Interposition be Centrical, the Sun's Beams stream out every way; if the Sun be higher, it sends forth its Beams of Light downward; if lower, upward, or to one side, according to the Interposition of the Cloud.

Against this Hypothesis, it may be Objected, that there is no such thing in



Nature as an Opake Waterish Cœlesti-  
al Body.

To which I answer, That the Moon is an Opake Globe of a Waterish Substance; and if its Natural Course and Motion was not within the compass of the Suns Atmosphere, it would be to us invisible: So there may be [for any thing that we know] Thousands of Opake Globes, within the Vast Expansion of the Cœlestial Spheres, which are never visible to us, but when they fall into Conjunction, or Opposition, with a Luminous Star: And when these Opake Globes are of a Round and Waterish Substance, they appear to us in the Form of Comets.

Again, it is most probable that all these New Stars, which have appear'd for some time, and then disappear'd, [which Astronomers have given such Remarkable Accounts of,] are only Opake Globes, made visible for some time, by their being in Conjunction or Opposition to a Luminous Star, and when their different Motions have separated them the Opake Star hath disappear'd.



## C H A P. VII.

*Of Thunder, its Causes and Effects.*

**O**F all Fiery Meteors, there are none so dreadful as Thunder, which being an Aerial Fire Damp, the Nature and Notion of it will be best illustrated by comparing it to an Aerial Battle between these Two powerful and irreconcilable Enemies, Fire and Water.

The Army of Fire consists of Hot and Fiery Exhalations, raised out of the Earth and Bituminous Bogs by the Influence and Heat of the Sun; especially out of the *South-east*, full *East*, and *North-east* Parts of this Globe: Those vast and spacious Continents affording most of those hot and fiery Soldiers.

The General that Commands in Chief, and which leads them forth into the Field, is a Sulphurous and *East* Wind.

The Army of Water consists of cold and moist Vapours, raised out of the *Southern* and *Western* Ocean.



Their General that leads them forth to Battle, is a cold moist *West* Wind: For its to be observ'd, that for some time before the Thunder begins, and whilst it continues, the Blasts of Wind always blow from contrary Points, and the Clouds gather and march up in the full Face of the Wind, which always Blows from an *East* Quarter.

These Two Armies being Form'd into two Wings, and two Main Bodies; First Fire, being the more Active and Volatile, sends forth a Detachment of fiery Chariots, from the *South-east* Wing; which being met with by another Detachment of Vaporous Clouds from the *South-west* Wing, the Battle begins: And those hot and fiery Exhalations that we see riding in Chariots of Fiery Clouds, like Pillars of Translucent Smoke, being inclos'd and surrounded with this Vaporous Cloud, are forc'd to unite all their Forces together, that, *Vis Unita* being *Fortior*, they may the better be able to defend themselves, and destroy the Enemy.

No sooner then the Forces on both Sides are united, but the Fiery Exhalations discharge upon the Waterish Cloud, in Fire and Lightning.

The



The Thundring Noise we hear is occasion'd by the Opposition they met with, and the Breach of the Cloud; which falls down in great and dreadful Showers of Rain upon the Earth; the Drops of Water being greater or less as the Breach of the Cloud is at a higher or lower distance from the Earth.

After the Thundering Battel is thus begun, the other Wings engage, and we hear the Thundering Sound of the Battel both *South-east* and *North-west*. The Battel by this time growing very hot, the Main Bodies engage; and then nothing is to be heard but a Thundering Noise, with continual Flashes of Lightning, and dreadful Showers of Rain, falling down from the broken Clouds.

And sometimes random Shots flie about, kill both Men and Beasts, fire and throw down Houses, split great Trees and Rocks, and tear the very Earth.

For it is no more impossible for the more Earthy Part of an Exhalation to be on a sudden Petrefied into Stone [which we call the Thunder-bolt] in the Body of a Cloud; than that Laxe Matter should be Petrefied into a Stone



in the Body of the Earth ; the Antip-  
 ristical Cause being the same in both.

These two Irreconcilable Enemies  
 still keep the Field, until one of them  
 be utterly destroy'd.

If the fiery Exhalations keep the  
 Field, the *East* Wind blows still hot  
 and sulphurous.

If the Vapours get the Victory, the  
*West* Wind blows cold and moist, the  
 Sky is clear, the Air is cold, the Bat-  
 tel is over, and the Earth Buries the  
 Dead and gets the Spoil. If any should  
 think this Account of Thunder to be ra-  
 ther Figment and Romance, than true  
 Natural Philosophy, I advise him  
 [when ever he sees the Thunder Packs  
 rising White and Translucent in a *South-*  
*east* Point, when he feels the Air hot  
 and Sulphurous, with some contrary  
 Blasts of Wind coming whistling from  
 the *West*] that he make haste on to the  
 Top of *Crossfelt*, or some other high  
 Mountain, that gives a Prospect to both  
*East* and *West*, and he may be inform'd  
 both as to the truth and manner of this  
 Aerial Battle.



## C H A P. VIII.

Of Vaporous Meteors; and first of  
Dews, and Hoar Frosts.

**D**EWS are Vapours Condens'd upon the Surface of the Earth, by the Evening and Morning Cold, these being the times of the Dews falling.

I have observ'd that sometimes about Mid-afternoon, the under-ground Cold being impatient of a long Summers Days Confinement, has broke out, and condens'd the Vapours into a Dew, which by the first Reflection of the Sun was taken up into the Air, and a viscus Matter left upon the Grass, like Cobwebs or fine Threds, which we call *Tela Beate Mariæ*; and these Vapours being condens'd into a Cloud, will fall down again in a Shower of Rain about Sun-setting.

But the usual time when the Evening Dews fall, is immediately after the Sun is Set; for then the Lower Cold lyeth upon the Ground, and as the Sun goes down it riseth.



The Morning Dews begin to fall about break of Day: For about that time the Waters being colder than the Mountains, draw down the Lower Cold from the Mountains to them.

And in bringing the Vapours along with it, sits Regent upon the Waters, in thick Foggs and waterish Mists, until the Influence of the Sun, by warming of the Waters, either scattereth and disperseth the Vapours, or forceth them to rise up to the Mountains, or the cool Regions of the Air, leaving only Dews upon the Ground behind them.

These Dews, when the Cold is contracted and freezing, become Hoar Frosts; for a dilated Cold causeth Dews, and a contracted Cold Frosts.

In the Spring Months, when the Subterranean Heat draws out from its Winter Quarters to join with the external Heat of the Atmosphere, it brings out of the Earth with it some of the finer Mineral Spirits; and the Sun-beams being then Powerful and Attractive, do suck up these Mineral Spirits, with the sweet Effluvia and Perspirations of Herbs and Flowers; which the Evening and Morning Cold condenseth into Honeydews, or Manna. In these Months, the



the Sun's Beams are so strong and vigorous, that they will draw up Frogspawn; which being receiv'd into the Body of a warm Cloud, will presently be Form'd into little Frogs, which will fall down upon the Earth in these Fertilizing! Spring Showers: Sometimes they will suck up Blood, which will fall down in Showers of Rain, especially after Bloody Battels fought at great distances: So Corn, &c. will fall down in Rain. But these are *Magnalia Naturæ*.

Of Rain.

Rain is either general or particular, higher or lower.

Observations concerning Rain.

When the Evening Dew falls, the Sun draws it up again, the Evening Cold condensed it into a Cloud, and it falls down in a Shower of Rain in the Evening. When



## C H A P. IX.

*Of Rain, Hail, and Snow.*

**R**Ain, Hail, and Snow, are the same as to their Matter. The difference among them is only Accidental; Hail being only Drops of Rain frozen in their falling down from a broken Cloud, by a contract'd Body of the Lower Cold; Snow being Vapours frozen before they be Condens'd into a Cloud.

*Of Rain.*

Rain is either general or particular, higher or lower.

*Observations concerning Rain.*

- I. When the Evening Dew falls before Sun-set, and the Sun draws it up again, the Evening Cold condenseth it into a Cloud, and it falls down in a Shower of Rain in the Evening Twilight.

When



When the Evening Cold condenseth not the Vapours into Dews, but draws them up to the Tops of the Mountains, and thence into the Cold Regions of the Air, they fall down in Rain about break of Day.

2.

When the Morning Cold condenseth not the Dews, but draws up the Vapours to the Tops of the Mountains, and thence into the Cold Regions of the Air, they fall down in Rain about Ten a Clock or sooner, and so continues a general Rain for some Hours together, the Evening and Morning Vapours being join'd.

When the Air is Calm, and the Waters colder than the Mountains, the Vapours draw down to the Waters, and there they lie in a thick Fogg or Mist, until the Sun by warming of the Waters, causeth them to rise about Nine or Ten a Clock: if the Morning Cold dilate it self, it raiseth the Vapours to the middle of the Mountains, where they continue in a thick Fogg, the Mountain Tops being clear, until the Vapours be all spent in a mizling kind of Rain.

4.

When the Morning Cold divides it self into many little contracted Bodies, these

5.



these lesser Bodies of contracted Cold condense the Vapours, and they fall down in particular Showers, some not Mountain height; so that one may sometimes go through a Shower of Rain [if he please] which will fall upon the Skirts of the Mountains, when at the same time 'tis clear both above and below the Shower. Thus a Man may be above the Clouds and the Rain.

6. When the Morning Cold draws the Mists and the Foggs from the Waters, *gradatim* [or in Sops, as we call it] to the Tops of the Mountains, and they Trall there too and fro, sometimes rising, and then falling again, the Dispute being between the Water-cold and the Mountain cold, whether should get the Prize,

If at the last these Tralling Mists or Vapours be lifted up into the Cold Regions of the Air, and be there Condens'd by some of those lesser Bodies of Cold which are flying about, they fall down in particular Showers within an Hour or less after they be taken up; so quick is the return of Vapours into Showers of Rain.



## C H A P. X.

*Of Hail and Snow.*

## O B S E R V A T I O N S.

**W**HEN these lesser Bodies of contracted Cold, are so placed one above another, having distances of warm Air betwixt them, [ as oftentimes it happens in very hot Weather, for the greater the Heat is, the more narrowly do these lesser Bodies of Cold contract themselves ] if any of the higher Bodies of Cold condense the Vapours into a Cloud, and it break, and fall down in drops of Rain through a Body of more contracted Cold, it freezeth these drops of Rain into Hail-Stones.

I have observ'd a Shower of Rain upon the Mountains, the same a Shower of Hail upon the Skirts of the Mountains, the same dissolved again into a Shower of Rain in the Vallies. I have observ'd also a Shower of Hail at one end of the Town, the same a Shower of Rain at the other end;  
the



the contracted Body of Cold that caused the Hail, being not a Quarter of a Mile in Circumference.

### *Of Snow.*

When the Lower Cold riseth, and the Upper Cold falleth, and so straitens the Sphere of Rarefaction that the Wind blows thin, as out of a contracted Mouth, the Vapours are frozen in Snow before they be condensed into a Cloud, and the shower of Snow only at first covers the Tops of the Mountains ; but as soon as the Lower Cold riseth Mountain height, and joyns with the Upper Cold, the Snow falls down into the Vallies and covers the Earth.

### OBSERVATIONS.

- I.** When the Wind has blown for some time S. E. or full S. or S. W. we must expect a great and general Rain ; for these Winds blowing from such Regions where the Atmosphere rises high, bring over with them the greatest Quantity of Vapours ; which our Mountainous Country



Country condenseth into Clouds, which fall down in great and general Rains.

And this is the reason why those Countries where most of the Vapours rise, have the least of Rain; which want is supplied by great Dews, which the Evening and Morning Cold condenseth upon the Ground.

For where the Atmosphere riseth high, the Lower and Higher Cold never meet, which is the cause of their want of Rain.

When the Wind blows N. or N. E. or full E. we have seldom Rain, but great Flights of Snow. For the Atmosphere in those Parts being very low [especially in Winter] and the Mouth of the Sphere of Rarefaction very strait, the Wind that blows from these Quarters is so very thin and freezing, that those few Vapours which are brought from those places for the most part fall down in Snow.

2.

CHAP.



## C H A P. XI.

*Of Frost, and Thaw, &c.*

**F**rost and Thaw are the Effects of quite different Causes; the one being occasion'd by the Influence of Heat, the other of Cold; and these two contrary Qualities do not give ground one to another without great struggle and contest.

The first beginning of Freezing is at the Waters, and this we call a Water Frost; its the Effect or Operation of the Morning Cold; which drawing down to the Waters in the Morning Twilight, and carrying the Vapours along with it, leaves a Waterish Hoar Frost upon the Ground behind it.

These Vapours lie upon the Waters until Nine a Clock; for by that time the Influence of Heat having warm'd the Waters, forceth them to remove their Quarters, first to the cold Tops of the Mountains, and thence to the cooler Regions of the Air, from whence they fall down in Showers of Rain about

Twelve



Twelve a Clock, this Frost only gains the Waters, Vallies, and Plains.

The Second Morning, the Cold doubles its Force, and Glaceates the Waters, congeals the Earth, and riseth to the middle of the Mountains; [their Tops still continuing in the possession of Heat] This degree of Cold is overpowered by the Influence of Heat about Two a Clock, and falls down in Rain in the Evening Twilight.

The Third Morning, the Cold trebles its force, and gains the Tops of the Mountains. And the Influence of Heat commonly recovers this lost Ground a little before the Sun set; and in the Morning Twilight it falls down in a shower of Snow, covering only the Tops of the Highest Mountains.

The Upper and Lower Cold being now united, the Frost keeps its possession of the Earth and Waters sometimes for a Month or more together; and in some Countries [lying at a distance from the Sea] the whole Winter Quarter; the Wind all the time blowing Cold and Thin, the Mouth of the Sphere of Rarefaction being straitened by the joyning of the Higher and Lower Cold.

P

During



During the Time that the Earth and Waters continue in the possession of Frost and Snow, the Subterranean Heat breaks out of the Springs and Mineral Feeders, and joyning with the Heat of the Sun Regeles the Spring-heads, and part of the Rivers, gaining them intirely into its possession: But the general Frost continues until the Vapours rising from the Southern or Western Ocean, recover the Wind into some of the Solar Quarters; which opening the Sphere of Rarefaction, the Wind blows warm and moist. For as the same Breath from an open Mouth warms ones Fingers, so from a contracted Mouth it will cool his Porridge.

The general Frost in the Northern Countries near the Pole, and in Countries at a distance from the Sea, seldom Regeles, until the Subterranean Heat break forth, and joya with the Heat of the approaching Sun, and then the Frost and Snow is dissolved in a very short time; and the Spring comes on much sooner than in those Countries where the Regelation is more gradual.

Thus



Thus as a constant Intercourse of Day and Night gives the Active Animals liberty, by Rest and Sleep, to recover their wasted Strength and Spirits; so an Annual return of Frost and Snow, recovers and repairs the Strength and Spirits of the Earth, which had been spent in the preceeding Summers Productions. For in this Natural World all things are repair'd by corrupting, preserv'd by perishing, and reviv'd by dying.

As the Operation of Cold did gradually gain ground upon the Influence of Heat; so by the same methods and degrees Heat recovers its lost ground, the Fresh or Thaw beginning first at the Waters, and from thence riseth up to the Plains and Vallies; and last of all the Tops of the Mountains [which are for sometime kept in the possession of Frost and Cold, after the lower parts of the Earth be regeled] are gained.



## C H A P. XII.

*Of the Sphere of Rarefaction.*

**T**HE Sphere of Rarefaction is a Sphere of Heat, wherein the Suns Reflections meet, and unite themselves in their own defence against the Upper and Lower Cold.

And being placed in a middle between them, it riseth or falleth, openeth or closeth as it prevails upon them, or as they open or close, rise or fall. This Sphere of Heat, by Rarefying of Vapours and Exhalations, causeth Wind.

That Heat is the cause of Wind, is apparent from the Experience of such People, who, to cause Wind, usually set Chaff, Seeds, or Straw on Fire. And when Houses or Towns are accidentally thus set on Fire, the Heat of the Flame, by Rarefying of the Vapours and Exhalations round about, will raise the Wind to so great a height, as will make it a matter of great difficulty to quench the Flame.



## C H A P. XIII.

*Of Wind, Helms, and Arches.*

**W**Ind is the Nitrous part of Vapour and Exhalation, Rarified and Dilated by the Sphere of Rarefaction.

The Winds are either higher or lower, as the Sphere of Rarefaction riseth or falleth; they are thicker or thinner, as it openeth or closeth; they are Moist, Hot, or Dry, as they have more or less of Vapour or Exhalation in them.

The *Pabulum* of Winds, is commonly called a Helm, from the Greek Word *ἀλῶς*, *ex ἄω*, which signifies *Spira*, to Breath; and they are

Either { *Visible*  
or  
*Invisible.*

The Visible Helms, are

Either { *Opake,*  
*Mixt,* or  
*Translucent.*



These Wind Helms fix upon the coldest parts of the Globe, as the Gibbosity of the Sea, the Tops of the highest Mountains, Mountain - Heaths, Waters, and Rivers.

The Matter on which these Helms consist, is a Vaporous Mist, which as it endeavours to rise up, is pressed down by the Sphere of Rarefaction; and by Rarifying the Nitrous part of it [which is always uppermost] into Wind, the still Body of the Air is put into a violent Flux, every Blast of Wind being only a Wave of Air; the Rapidity of its Motions is occasion'd by the Declivity of the Mountains.

Wherever the Grand Helm fixeth, from that Quarter the Wind blows, untill the stock of Vapours be spent: For Instance,

If the Grand Helm fix upon the Mountains of *Germany*, the Second Helm fixeth upon the Gibbosity of the *Eastern Seas*; [by the Gibbosity of the Sea, I understand that middle Ridge where the Flux and Reflux breaketh;] the Third Helm fixeth upon *Crossfelt*, and that Ridge of Mountains; the Fourth Helm fixeth upon *Skidday*, and that Ridge of Mountains; and so forward



ward, until the Grand *Pabulum* be spent, and then the Wind ceaseth, and the Air is Calm.

That distance between Helm and Helm we call an Arch; over which [as the Vapours rise] the Wind blows them from Helm to Helm, one feeding and repairing another, until the Grand Stock be spent. And so on the contrary, if the Grand Helm fix upon the Mountains in *Ireland*, the Wind blows *West*, forming Helms and Arches till that Stock be spent.

The Grand Helm is always Opake, consisting of all Vapour. The first Wind is Wet and Rainy, the Arch over-Clouded; for as the Nitrous part of the Vapour riseth, and is Rarify'd into Wind, it driveth before it the Rain, as the Salt-petre [being fir'd] drives before it Hail-shot.

The Second Helm is Mix'd, being part Exhalation, and part Vapour; the upper part of the Helm being Exhalation, is Translucent; this Wind is Showry, and the Arch Cloudy.

The Third Helm is Translucent, being all Exhalation, the Wind Dry, the Air Clear.

The Invisible Helms are all Exhalation,



tion, and they seldom rise as high as the Tops of Mountains, but fix upon Waters, Rivers, the Tops and Sides of Hills, and high Buildings; these Winds are the lowest that Blow; one may go through them, and find a Calm upon the Tops of Mountains. This is a common Observation made by those who Live under the Mountains. The *Pabulum* of these Winds being soon spent, they change often.

*Observations concerning Winds,  
Helms, and Arches.*

- I. When the Vapours and Exhalations rise from the Waters to the Skirts of the Mountains, and there Roll and Trail to and fro, the Sphere of Rarefaction is full; and these Vapours and Exhalations being Rarefy'd into Wind, it blows till the Stock be spent: These are Spring Winds, and Summer Winds; they continue only from Ten a Clock till Three in the Afternoon, and are sometimes carried about with the Sun: they seldom rise as high as the Tops of the Mountains.

When



When the Vapours rise to the  
Tops of the Mountains, and fix there  
in a Black and Opake Ledge, expect  
a Rainy Wind. 2.

When they are Opake at the bot-  
tom, and White at the Top, expect a  
Showery Rain. 3.

When the Helm is White and Trans-  
lucent, expect a dry Wind. 4.

When the Helms are even Ballanc'd  
with Vapours and Exhalations, the  
Wind will Blow sometimes from both  
Helms, and sometimes a third Blast  
of Wind will come from a middle  
Point or Quarter; and sometimes  
also a Blast of Wind will come whirl-  
ing down from above our Heads with  
great violence. 5.

When the whole Horizon is Helm'd  
about, expect contrary Blasts, Whirl-  
winds, or Hurricanes. 6.

When the Helms rise and close up  
the Arch with black Clouds, expect  
great Rains. 7.

Where



8. Where the Clouds begin to open and Brighten Mountain height, the Wind will blow from that Quarter; for there a new Helm is fix'd, and the Sphere of Rarefaction is faln a working.

9. In large Continents at great distance from the Sea, where there are not many Mountains, wherever the Wind-Helm fixeth, and the *Pabulum* is gathered, the Wind will blow from that Point or Helm for some Months together; These we call Trade Winds.

CHAP.



## C H A P. IV.

*Prognostications of the change and alteration of Weather, from the Setting and Rising of the Sun.*

*Prognostications of Rain, from the Setting of the Sun.*

**W**Hen the Sun Setteth in a black waterish Cloud, the Vapours are condens'd by the Evening Cold, and the Morning Cold raiseth them up into the Cold Regions of the Air, where they Swim until Nine or Ten a Clock next Morning, and then their own weight causeth them to sink and break into Rain.

When the Sun goes down wading, or forcing, [as they call it] the Vapours are drawing down with the Evening Cold, and the next Morning Cold condenseth them into Clouds, which the next Day fall down in Showers of Rain about Twelve a Clock.

When



3. When the Sun Sets broad and glimmering, it Sets in thin Vapours, which the next Day will fall down in a misting Rain.

*Signs of fair Weather.*

1. When the Sun Sets clear, and appears little and fiery, the Vapours are all spent, and you may expect a fair and hot Day to follow.

2. When the Sun Sets through thin Clouds, sharp edged like Swords, these are little Wind-Helms, and you must expect a fair and windy Day to follow.

3. When after the Sun is Set, its Beams strike the Air with a Crimson-red, you may expect that the next Day will be Fair and Windy.

*Signs of Rain from the Rising Sun.*

1. If before the Sun appears, its Rising Beams strike the Air with a Crimson-  
Red



Red, expect Wind and Rain about Ten a Clock; for the Air is full of Vapours and Exhalations.

When the Sun Rifeth broad and glimmering, and is presently receiv'd into a black Cloud, the Morning Cold riseth, and takes up with it the Vapours, which fall down in great Rains.

When the Sun Rifeth clear, and several little black Clouds are ready to receive it, expect a Showery Day.

*Signs of a fair Day, from the Rising Sun.*

If the Sun Rise little and fiery, and the Vapours draw down to the Waters, leaving a Dew upon the Ground, these Vapours about Ten a Clock are Rarify'd into Wind, which continues blowing only till Three in the Afternoon, and Prognosticate a fair Season.

If the Sun Rise in thick Clouds, and appear not till until Ten a Clock, expect a clear Afternoon.

If



2. If the Sun appear not till Twelve a Clock, expect not only a clear Afternoon, but a dry Season; for the Morning Cold riseth not.

3. The Rising of the Morning Cold, and its lifting up the Vapours with it, is the cause of all the Rain we have.

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**FINIS**

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BOOKS Printed for *John*  
*Newton*, at the Three Pigeons  
over against the *Inner-Temple-*  
*Gate* in *Fleet-Street*.

A Charge given at the General Quarter  
Sessions of the Peace for the County  
of *Surrey*, holden at *Darking*, on *Tuesday*  
the Fifth day of *April* 1692, and in the  
Fourth Year of Their Majesties Reign. By  
the Honourable *Hugh Hare*, Esq; One of  
Their Majesties Justices of the Peace for  
that County. The Second Edition Cor-  
rected.

An Historical Relation of the Conspira-  
cy of *John Lewis* Count *Deffieschi* against  
the City of *Genoua* in the Year 1547.  
Written in *Italian*, by *Augustin Mascardi*,  
Gentleman of the Bed Chamber to Pope  
*Urban* the Eighth. Done into English by  
the Honourable *Hugh Hare*, Esq;

An Account of the Isle of *Jersey*, the  
Greatest of the Islands that are now, the  
only remainder of the English Dominions  
in *France*, with a New and Accurate Mapp  
of the said Island. By *Ph. Falle*, M. A.  
Rector of *St. Saviour*, in the said Island,  
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Mr.



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Mr. *Falle's* Sermon before the English Garrison in *Fersey*, April the 10th 1692.

—— One Sermon at *Whitehall*, Decemb. the 30th, 1694.

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A Discourse of Natural and Reveal'd Religion in several Essays, By *Mr. T. Nourse*.

The Anatomy of the Earth, Dedicated to all Miners, By *Tho. Robinson* Rector of *Outby* in *Cumberland*.

The History of the Campagne in *Flanders* for the Years 1692, 1693, 1694, and 1695. All Written by *Edward d'Auerigne* M. A. Rector of *St. Brelade* in the Isle of *Fersey*, and Chaplain to His Majesties Regiment of Scots Guards.





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