A philosophical essay: declaring the probable causes, whence stones are produced in the greater world ... Being a prodromus to a medicinal tract concerning the causes, and cure of the stone in the kidneys, and bladders of men / Written by Dr. Thomas Sherley, Physitian in Ordinary to His Majesty.

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A Philosophical ESSAY:

DECLARING

The probable **Causes**, whence **Stones** are produced in the Greater World.

From which occasion is taken to search into the **Origin** of all **Bodies**, discovering them to proceed from *Water*, and *Seeds*.

Being a *Prodromus* to a Medicinal Tract concerning the *Causes*, and *Cure* of the **Stone** in the **Kidneys**, and **Bladders** of **Men**.

WRITTEN

By Dr. *Thomas Sherley*, Physitian in Ordinary to His MAJESTY.

LONDON,

Printed for *William Cademan*, at the Pope's Head, in the Lower Walk of the *New-Exchange*. 1672.

George Peters Rickman

6 of 5 Month 1815

To the Illuſtrious,

GEORGE,

Duke, Marquis, and Earl of *Buckingham*; Earl of *Coventry*, Viſcount *Villiers*, Baron *Whaddon* of *Whaddon*, Lord Roſſ of *Hamlock*, *Belvoir*, and *Trusbut*, &c. Maſter of the Horſe, Knight of the moſt Noble Order of the Garter, Chancellor of the Univerſity of *Cambridge*, and one of His Majeſties moſt Honourable Privy Council.

May it pleaſe your Grace,

THIS not the ſublime condition in which you are, nor the

eminent, and great Honours with which you deservedly shine, (as a bright Star, of the first Magnitude, in our little World,) that hath induced me to address this ensuing Discourse to you; but the great and excellent knowledge of Natural Beings your Grace hath acquired by a constant, and curious Anatomizing of all sort of Concrets in your Laboratory; a way certainly the most likely to give you a faithful and solid account of the Na-

ture

ture of things, by discovering to you the real principles of which they are constituted. This it is, which made me conclude, I should have done a great injustice, had I put this Tract under any other Protection than yours. And indeed, at whose feet can a Subject of this Nature be so fitly plac'd as at your Grace's, you being so great an Experimental Philosopher?

But lest I prove tedious, I will conclude this Epistle, with assuring

you, that not only this Book, but the Author of it, are both Dedicated to your Graces Service, by him that in all Humility ſubſcribes himſelf,

My Lord,

Your Graces

moſt Obedient, and

Faithful Servant,

THO. SHERLEY.

TO THE READER.

READER,

Custome, which hath the power to make, and establish Laws, hath obliged me to comply in this particular of writing to thee. Otherwise I was resolved to suffer this ensuing Discourse to appear naked, and without an Advocate, [as Philosophical Subjects ought to do:] that so the minds of the studious, being free from prepossession, might be the better able to judge of the truth of the Matter in hand, and of the validity of the Arguments I produce to evince it.

This, I say, I would have done, could I have been assur'd, that this Book should have fallen under the censure of none but

Philosophical, and knowing Men, to whom I should have thought my self happy to have submitted my labours in this kind. To which sort of inquisitive, and industrious Men, I pretend not to have done any further service in these Lucubrations; then by having laid together those Arguments, and Experiments, which did readily occurr to my mind; and which I thought might conduce to prove the Matter in hand, a Subject fit to be seriously look'd into; and though I seem in some places to be determinate, yet I declare [once for all] I have not the vanity to think I have put such a Ne plus ultra *to the inquiries into this Subject, that no further discoveries are to be made; nothing less. For though the Subject be rough, and hard, yet it is far from being unfruitful. And if by my endeavours I shall prove Instrumental, [by giving of hints, &c.] to put other industrious Philosophers, who are fitted with better parts, and more time, to digg deeper in these Quarries, I shall think it glory sufficient, to have been thus far serviceable to the Common-wealth of Learning: and if by the endeavours of such Worthy Men, I shall find my self confirm'd in my Opinion, I shall rely upon it with the greater security. But if by their inquiries, other, and truer causes shall*

appear;

appear; I shall not scruple to acknowledge, that I will willingly become a Proselyte to Truth, though at the same time it is discover'd it convince me of having been erroneous in my Opinion.

But at present, thinking I defend a verity, I shall not easily recede from my Opinion, without my Judgment be convinc'd, by the same means I make use of, to Proselyte others: that is, both by reason, and Experiments. And likewise let me add this, that I shall expect the same Candid, and civil dealing from such who intend to confute me, which I have shew'd to those whose Opinions I reject. For otherwise I shall conclude a railing Adversary fitter for my slight, than reply; I knowing a better use of my time, then to spend it so unfruitfully.

As I court not applause, which is a vanity unbefitting a Philosopher; So, having [as I suppose] appear'd in a good Cause, that is, the defence of a Philosophical truth, [viz. that the Matter of Stones, and all other Bodies, is Water, and their Efficient Seed] I shall not fear Censure, though I must be exposed to that of any Man, which shall take the pains to peruse my Book; I am not ignorant of the Proverb, So many Men, so many Minds: *Nor of that other,*

other, Habent sua fata Libelli: *And therefore cannot expect that impossibility of pleasing every body; but that I may be as useful as I can to those Readers, which though they may have large Souls, have yet been little Conversant with things of this Nature; I say, that I may be as Instructive as I can, and that my meaning may not be mistaken, I shall therefore inform them of these things following.*

First, that there are many Men, of great Natural parts, which yet want the advantage of understanding the Greek, *and* Latine *Tongues; for whose sakes, I have [that I might be the more useful] Translated into the* English, *all those quotations which I make use of, from Authors which have writ in those Learned Languages; and that [for the most part] Verbatim, [though sometimes I only deliver their Sence.] And to satisfie the scrupulous, yet Learned sort of Readers, of my integrity, I have almost constantly given them the very words, and in the same Language they are delivered by those I quote; together with the Book, and for the most part, Page, where the*

Ori-

Original words may be found, [marked in the Margin.]

Secondly, If it ſhall be objected, that I am very frequent in quotations, [a thing much out of faſhion;] and that therefore it may be ſuppoſed, I have ſaid little but what will be found expreſſed by others; I ſhall acknowledge I have wilfully done ſo, becauſe I had a deſire to get my ſelf ſtrongly Seconded in my Opinion by the determinations of Learned Men; [And of the Teſtimony of ſuch only have I made uſe.] For I verily believe, that if an Angel himſelf ſhould avouch any thing ſingly, and as his own Opinion, he would not be believed by ſome Men. But however the Reader will have theſe Advantages by it. Firſt, thoſe things are here contracted, and brought under their proper heads, which are diſperſed in many Voluminous Authors; which will ſave him time in ſearching many Books. Secondly, He may find the Pith, and Subſtance of what others have written in their Languages, delivered in his own. And thirdly, here are, beſides, many Experiments, and Obſervations of my own, very conducible [I ſuppoſe,] to clear,

and

and explicate those Philosophical Principles I have undertook to defend in this Discourse.

Thirdly, If any Man shall be so much a Momus, *as to repine at the just commendations I often give to* Van Helmont, *and Mr.* Boyl; *I must needs say, that I think his ill Nature proceeds from his want of throughly knowing these Authors: for if he had taken the pains to search the depth of these two, as I have done, I doubt not but he would acknowledge, I have fall'n short of giving them their deserved praise, [they having merited so much from all inquisitive, and Learned Men.]*

Lastly, I think it necessary to tell thee, how I would have to be understood those two words of Seed, *and* Water, *the Principles upon which I have built this Discourse.*

First then, by Seed *I understand a fine, subtile Substance, [imperciptible by our gross Organs of Sensation;] in which God hath impressed a Character of that thing he will have it produce from the Matter it is to work upon: which it*

doth

doth perform by putting the parts of Matter into such a peculiar motion as is requisite to produce the intended Effect. And this we may illustrate thus.

A Woman with Child, by a strong desire, forms in her Spirits an Idea *of some Fruit she longs for; and by the powerfull motion of that* Idea *working on the Child, she forms a real Effigies of the said Fruit upon that Member of the Child which corresponds to that of her own Body she touched with her hand; which, as Experience teacheth us, will Vegetate, grow Ripe, and Wither, according to the several mutations the Fruit it resembles undergoes. And we are told by* Esdras, *that God, before he made the World, did consider the things he intended to make; and then produced them. By which Expression, I think may well be understood, the Creation of all those Spiritual, and Seminal Beings, containing in them, not only an* Idea *of the thing to be made; but also a power to move the Matter after a peculiar manner, by which means it reduceth it to a form like it self. And as a Painter doth first conceive in his mind a Spirituall* Idea *of the Picture he intend-*

eth

eth to draw; and afterwards by peculiar Motions of his hand, which are guided by the said Idea, *he produceth a perfect Picture Corresponding with that in his mind: So likewise, by putting Matter into peculiar Motions, the Seminal* Idea *makes it self visible.*

By Water, *the Material Principle of all Concrets, I understand, a fluid Body, consisting of very minute parts, and variously figur'd* Atoms, *or* Corpuscules, *the Mass of it being full of pores, and therefore subject to be contracted into less room: and upon the same account it doth easily, and readily submit to those motions it is put into by Seminal Beings: from which moving of Matter all the visible, and Tangible Bodies of the World, have their result. And therefore I have, all along this ensuing Discourse, took care to explicate the* διότι *of the Origin of Bodies, by the* Mechanical Principles: *That is, by the Motion, Shape, Size, Scituation, and Connexion of the parts of Matter.*

But though this be a way commonly used, in explicating things, by the Philosophers of our Age; yet most of them leave out the first principle of Natural Motion; viz. *the Seminal principle, which I have taken in, to compleate my Hypothesis.*

And

To the Reader.

And now having said thus much, I shall say this further, [and let it not be counted a vanity] that I think, and hope, I have in some considerable measure made out the truth of those principles I have assumed to defend.

It hath cost me some pains to Collect, and draw into proper Sections, the Body of this Discourse: which I have also strengthned by the Authority of the best Philosophers, and Learnedst of Men, both Ancient, and Modern. All which I here present thee with; heartily wishing all ingenious Men may see the usefulness of, and receive as much satisfaction in this Doctrine; as I do, who am a Friend to all that industriously search after the Truth, and Nature of Things.

THO. SHERLEY.

From my House, in *Newton-street*, over against *New South-hampton* Building, in *High Holborn*. *Jan.* 27*th*. 1672.

The Reader is desired to Correct as he Reads, these Errors of the Press, as likewise any other he shall find.

ERRATA.

PAge 12. in the Margin, *leg. Consensus*. p. 13. lin. 2. read Concurrere. page 15. lin. *ult. leg.* δεκτικὸν. p. 33. *dele* these words [or intire.] p. 34. lin. 5. *leg. à priori. ib.* lin. 8. *leg.* Springy. p. 35. lin. 11. *dele* whilst, and they. p. 16. *dele* [. p. 38. in the Margin, *leg. Elementis*. p. 40. lin. 23. *leg.* fæces. p. 103. lin. 25. *leg.* seminal. p. 126. lin. 26. *leg.* apposition. p. 124. lin. 24. *leg.* ἀλιθεύειν. p. 110. lin. 28. *leg.* those. p. 137. lin. 1. *leg.* least. p. 129. lin. 1. *leg.* Ætherei. p. 114. lin. 1. *leg.* [ἰλν.] p. 119. lin. 9. *leg.* ὄντον.

THE FIRST ESSAY:

Being a Discourse intended to demonstrate, that not only Stones, but all other Bodies, owe their Original to Seeds, and Water.

Section the First.

Tho: Brandt

1 HAving, in complyance with the importunate desires, or rather commands, of many of my Worthy, and ingenious Friends, obliged my self to acquaint the World with my thoughts concerning the most probable cause of

the Stone, both in the Kidneyes, and Bladder of Men; and having begun a Tract upon that Subject; I fore-saw a necessity, [before I suffer'd that discourse to appear in publick] to inquire into the Causes, and Nature of Petrifaction [in the greater World] in general: and I was encouraged the more to do so, by a Passage I met with in the Works of that Noble Philosopher, Mr. *Boyl*, whose words are these. *Since we know very little a* Priori, *the observation of many effects manifesting, that Nature doth actually produce them so, and so, suggests to us several wayes of explicating the same* Phænomenon, *some of which we should, perhaps, never have else dreamed of; which ought to be esteemed no small advantage to the Physitian:* And again; *He that hath not had the curiosity to inquire out, and consider the several wayes whereby Stones may be generated out of the Body, not only must be unable, satisfactorily to explicate, how they come to be produced in the Kidneys, and Bladder; but will perhaps, scarce keep himself from embracing such errors, (because Authoriz'd by the suffrage of eminent Physitians) as the knowledge I am recommending,*

Boyl, Usefull. of experiment. Philosophy. p. 31.

ing, would easily protect him from.

2 Let us then, in the first place, examine, how Nature produceth Stones without the Body of Man (that is, in the greater World;) after which we will see, if the causes of generating Stones in the Bodies of Animals, be not the same; or at least, bear some Analogy, or resemblance thereunto. Which that we may the better be enabled to do, I shall relate some choice Histories of Petrifications, taken out of approved Authors; and then examine the causes by which they were performed.

3 *Gabriel Falopius* mentioneth a River, called *Else*, which receives into it self the Torrent of the River *Sena*; into which, Wood, Herbs, or any other thing being cast, it converts it into stone. History 1. *Falopius de Metal. & fassilibus.*

4 *Albertus Magnus* relates, that in the *Danish* Sea, near *Lubeck*, in his time, there was found an Arm of a Tree, with a Nest, and Young Birds in it, the Wood, Nest, and Birds being all converted into Stone. 2.

5 *Domitius Brusonius* tells us (not upon hear-say, but upon his own knowledge) that the branches of Trees, with their Leaves, being cast into the River of *Sylar*, do turn into stone. 3.

4. *Marbodius* acquaints us, that there is a Fountain in *Gothia* [or *Guthland*] that changeth whatsoever is put into it into stone; and that the Emperour *Frederick* being incredulous of the thing, did send his Glove thither, sealed with his Ring; & that that part of the Glove, with the seal, which was immersed in the Water, was in a few dayes converted into stone; the other part remaining Leather.

De Lapid. ex Alberto. Lib. 1. Mineral. Cap. 7.

5. *Johannes Kentmannus*, concerning *Fossils*, writes, that Arms of Trees, with the Leaves, Bark, Wood; also Gloves, and divers other things, being cast into a certain Fish-pond, near the Castle of *Schellenberge*, in *Misnia*, are turned into stone.

De fossilibus.

6. *Bartholomæus à Clivola* affirms, there is a Lake betwixt *Cæsarea*, and *Tuana*, two Cities of *Capadocia*, into which part of a Reed, or Stick being put, it by degrees is changed into stone, that part which is out of the Water remaining what it was before.

In Lib. de Batneis.

7. *Anselmus Boethius* declareth, that in *England*, near the River *Dee*, by *West-Chester*, there is a great Cave, into which whatsoever water flows, is turned into stone.

Lib. 2. de Lapid. & Gem. Cap. 300.

8. *Thomas Moresinus* relates, that in *Moravia*

Moravia there is a dark Water, in which there doth not at all appear any viſcous matter; which water, nevertheleſs, coagulates into ſtone.

11 *Johannes Petrus Faber* giveth us a wonderful account of a Spring in the Suburbs of *Claremont*, in the County of *Avernia*. *It flows* [ſayes he] *out of a Rock, and in its very coming forth it produces Rocks, and white ſtones; and the Inhabitants of this City, when they would make a Bridge to go over any of the ſmall Rivulets, which are made by this Fountain, that ſo they may viſit their Fields and Gardens, do thus: They cauſe the Water of this Fountain to glide over certain planks, made Arch-like, and within twenty four hours they have a ſolid ſtone Bridge; by the help of which they can paſs dry-foot over the Rivers. The Water of this Fountain is viſibly changed into ſtone, yet nevertheleſs it alwayes flows as other Springs do: This water is exceeding clear, nor doth it differ in colour, or clearneſs, from other Springs; Beaſts will drink of it if they be not hinder'd; but if they do, it coagulates in their ſtomacks into ſtone, from whence Death follows, by reaſon of a Collick cauſed from thence, which* History 9. *In Lib. Hydrogr. Spagyr. Cap.* 14.

kills with cruel torments all the Beasts that have drunk this water. Wherefore the Inhabitants take care to drive their Cattel far enough from this Fountain; for it is as a present poyson to all sorts of living Creatures that drink of it. When it is taken from the Spring, it is quickly turned into stone; the truth of which the Inhabitants do make manifest [to all that doubt thereof] by many experiments; they fill a glass with this Water, and presently it is converted into stone, which retaineth the shape of the glass: so likewise if Earthen Vessels be filled with this water, it is suddenly congealed into stone, which keeps the form and figure of the Vessel that contained it. This wonder of Nature [sayes he] *every body admires, but I believe hardly any body will be found, that shall be able to render the Natural reason of this thing.* Thus far he.

10. *In vita Peireskii. Lib.* 1.

Gassendus tells us, that *Peireskius* [according to his usual custom in the Summer] going into a stream of the River *Rhosne*, to wash himself; he observed once the ground to be hard under his feet, and uneven, [which had at all times before been soft, and smooth] being full of knobs, and Balls, about the bigness, and

and likeneſs of Eggs boyled hard, and the ſhells pilled off; which he looking upon as ſomewhat ſtrange, took ſome of them up, and carried them home; but a few dayes after he was ſurprized with a greater Admiration: for, going again into the ſame place of the River, he found thoſe ſoft, and yielding lumps, he had left there, turned into perfect pebble ſtones; and alſo viewing thoſe he had laid up at home, he found them likewiſe turned into true Pebbles.

13 *Helmont* likewiſe affirms, that [contrary to the Proverb, *Gutta Cavat Lapidem*, A drop by often falling doth hollow a ſtone] there is a Spring in the Monaſtery of *Zonia*, near *Bruſſels*, that breeds ſtones ſo faſt, that the Monks are daily forced to break them off with Crooks and Hatchets. 11. *De Lithiaſi. Cap.* 1.

14 And I my ſelf have ſeen a Spring near *Wrixham*, in *North-wales*, that in a ſhort ſpace of time would convert Sticks, Straws, Leaves, Leather, or any other ſubject, put into it, into ſtone. And of this Nature are divers other Springs to be found, both in *Ireland*, and *England*. 12.

15 Our Induſtrious Countrey-man, *Gerard*, aſſureth us, he knew ſeveral Springs 13.

Hiſtory of Plants. *Lib.* 3. *p.* 1586. of this Nature, both in *England*, and *Wales*: As in *Bedford-ſhire*, in *Warwick-ſhire*, near *Newnam Regis*; and another near *Knaſborrow*, in *York-ſhire*; he likewiſe tells us, he knew divers pieces of Ground, into which a ſtake being ſtruck, that part in the ground would be changed into ſtone, the other part remaining Wood.

14. *In apend. Synt* 1*g. Arcan. Chym. Cap.* 32. *Libavius* relates, That a certain Hen ſitting on her Eggs, being ſtruck with a Gorgonick Spirit, was transformed into ſtone, with her Eggs likewiſe.

15. *In Præfat. Lib. de ſignat. Rerum.* *Crollius* relates, that in a certain place of *Moravia* there is a ſtupendious Den, in which are to be found divers, and admirable ſportive works of Nature: for the drops diſtilling from the upper part of the Cave, into the hollow of it, do there form many intricate Labyrinths in the Mountain, and do preſently [of their own accord] convert into ſtone, by the help [as he thinks] of the Spirit of Salt; and in their falling from on high, they form various Figures, and Statues of ſtone.

16. *Ariſtotle* ſayes, that in the Metalline Grots of *Lydia*, about the City *Pergamos*, certain Workmen, in the time of War, having fled into them to hide themſelves,

themſelves, and the mouth of the Cave being ſtopp'd, they periſhed there; but afterwards being found, not only their Bones, but their Veins, with the humours contained in them, were found to be turned into ſtone.

19 *Aventinus* alſo writes thus: In the Year 1348. by an Earthquake, more than fifty Country men, with their Milch Cows, and Calves, being killed and ſtifled by an Earthy ſaline Spirit [as he ſuppoſeth] they were reduced into ſaline Statues, [ſuch as *Lots* Wife:] And this happened amongſt the *Carini* [a People of *Germany*;] which ſimilitudes or Images of Men, and Beaſts, were ſeen both by him, and the Chancellor of *Auſtria*. 17. *In Hiſtor. Bavar. Lib. 7. id eſt. in Anal. Bavar.*

20 To the like purpoſe, *Helmont* tells us of a whole Army, conſiſting of Men, Women, Camels, Horſes, Doggs, with their Armour, Weapons, and Waggons, which were all tranſmuted into ſtone, and remain ſo to this day, [a horrible ſpectacle;] And this, ſaith he, happened in the Year 1320. betwixt *Ruſſia* and *Tartary*, in the Latitude of 64. degrees, not far from a Fen of *Kataya*, a Village, or Horde, of the *Biſcardians*; which he very rationally 18. *De Lithiaſi Cap. 1.*

con-

concludes to have happened from a strong hory petrifying breath or Ferment, making an eruption through some clefts of the Earth, the Land being stony underneath; and the Winds having been silent for many dayes.

He that desireth more Examples of this kind, let him consult Gorgius Wernerus, *de Ungaricis.* Godfrid. Smoll. *in lib. Princip. Philosoph. Et Medic. antiquitatis. Cap.* 10. F. Leander Albertus *in descript. Italiæ.* Andreas Laurentius, *lib.* 2. *de strumis. Cap.* 2. Georgius Agricola, *lib.* 7. *de Natura fossil. Cap.* 22. Johannes Wigandus, *in libello de Succino*: Lobelius, *in fine Observat.* Cælius, *&c.* But I suppose what I have here related sufficient; and therefore I think it now time to inquire into the Causes of Petrification, and the Efficients of these Transmutations. 211

SECT.

Section the Second.

THe Doctrine of the four Elements
22 [with their qualities, concurring, as is ſuppos'd, to the production of Bodies, which was introduced by the Authority of *Ariſtotle*, and hath ſince prevailed with moſt Men even to this Age of ours,] hath been the cauſe, why we have hitherto received but an unſatisfactory account, not only of the Origine of all concretes, but more particularly concerning ſtones; and that not only in Relation to the Material Cauſe, but alſo to the Efficient, of Petrifications in general.

23 For, they ſeem to think it ſufficient, to have crudely told us, that Stones [and all other Minerals, and Metals] are made of Earth, with a ſlight mixture of the other three Elements, as the Material; and by the aſſiſtance of Heat, Cold, Moiſture, and Drineſs, as the External, and efficient Cauſe. For perceiving the weight of Minerals, and Stones, to exceed the weight of water, they therefore aſſign the matter of Minerals,

and

and Stones, to be chiefly Earth; and without any further Controverſie, or ſearch after the matter, they are content to believe, and would have us do ſo too, that all ſorts of ſtones are nothing but Earth, from which the other three Elements are forced by heat; by which means it becomes baked into a ſtone. And this they [viz. the *Ariſtotelians*] think they prove by alleadging the Example of Potters Earth, which being burnt gains a ſtone-like hardneſs. And becauſe neither Stones nor Earth do commonly melt in the fire, they therefore conclude ſtones are made of Earth. But there being no ſuch heat in the Superficies of the Globe, much leſs in the bottom of the Water [where commonly ſtones are bred,] I muſt confeſs I can receive but little ſatisfaction from this account.

And I find the Learned *Sennertus* is as unſatisfied with this Doctrine as my ſelf: for he will by no means allow the Elements, or their qualities, to be the Primary Efficients of Stonification. His words are theſe; *Licèt vulgò multi é qualitatibus primis Calculorum Concretionum & Coagulationum cauſas deducere conantur; tamen fruſtra laborant. Nam neque exſiccatio, nec calor, nec frigus, hîc locum habere poſſunt,* 24

Sennertus, *in Lib. conſenſ. Chymic. Cum Gaeniſt. Cap. 2.*

possunt, ut primariæ causæ, [nam, ut causam sine qua non, concurre posse, non negamus; dum scilicet aquam, quæ concretioni obstat, absumit;] neque à quoquam hactenus commonstrari potuit, quomodo calor nudus talem Concrescendi dispositionem generare, & succum Lapidescentem producere possit. Imo fit hoc etiam, ubi omnis Calor abest, & in frigidis etiam membraneisque locis, item & in Infantibus, ubi nullus concedatur Caloris excessus, sed manifesta potius cruditatis indicia deprehendantur, in vesica generantur Calculi; & quomodo, quæso, in fontibus frigidis, in quibus ligna immersa in lapides transformantur, succus lapidescens à Calore producitur? Deinde, frigus quod attinet, non semper in loco frigido, vel minus calido, Calculi concrescunt, cùm & in capite, & in pulmonibus, circa basin Arteriæ magnæ, in Cordis arteriis, imo in Corde reperti sint: Uti Legimus in Observation. Cornel. Gemmæ, *lib.* 1. *Cosmocritic. Cap.* 6. Anton. Beniven. *de abdit. Morb. & Sanat. Caus. Cap.* 24. Fernel. 5. *Patholog. Cap.* 12. Hollerii, 1. *de Morb. internis, in schol. Cap.* 29. & 50. *Et in balneis etiam Calidissimis Trophos ac stirias saxeas concrescere, ubi frigus nullo modo admitti potest, experientia compertum*

compertum habetur : in *English* ; thus ;

" Though it hath been much endea-
" vour'd by many, to deduce the causes of
" the concretion, & coagulation of stones,
" from the first, or primary qualities, yet
" hath their labour been in vain : for nei-
" ther can drought, heat, or cold, be here
" allowed as a primary cause, [but we do
" not deny, that they may concur as a
" cause, *sinè qua non*, so that it may, for
" Example, waste the water, which hin-
" ders concretion ;] neither could it hi-
" therto be demonstrated by any body,
" how heat of it self could be able to ge-
" nerate such a disposition of compaction;
" and that it could produce a Lapidescent
" juice : Nay, this is performed where all
" heat is wanting, and that in cold and
" Membranous places ; as also in Infants,
" who are not allow'd to have any excess
" of heat, but are rather found to have
" manifest crudity, the stone is genera-
" ted in the Bladder : and how, I pray, is
" the stonifying juice produced in cold
" Fountains, into which wood being cast
" is changed into stone ? Then, as to cold,
" stones do grow in the Head, in the
" lungs, about the basis of the great artery,
" in the Arteries of the Heart ; nay, they

" are

"are in the Heart it ſelf. Alſo there grows "in hot Baths, as experience ſheweth, "ſandy ſtones, & ſtony Iſicles, where cold "can by no means be admitted. Thus far he: by which you ſee he is clearly of opinion, that neither heat, nor cold can be the primary, or chief cauſe of Petrification; contrary to the Axiom which *Ariſtotle* layes down, to this effect;

26 *Of thoſe bodies which adhere together, and are hard, they are wont to be thus affected; ſome by the fervour of heat, ſome by cold; that drying up the moyſture, this preſſing it forth.* *In Meteorologicor. Lib. 4. Cap. 8.*

27 Let us then inquire what the Chymical Philoſopher's opinion is in this point: (and the rather becauſe it is conſtantly affirmed by moſt of them, that the Art of Pyrotechny is the only true means of informing the mind with Truth, and acquainting it with realities; and we ſhall find, that they hold Salt to be the principle of ſolidity, and the genuine cauſe of coagulation, in all bodies; [as alſo of ſtonification:] For, ſay they, if you conſult experience, all thoſe things that are compact, or ſolid, do contain Salt; and where there is no Salt, there can be no hardneſs. And for this reaſon they eſteem Salt to be the πρῶτον δεκτικὸν of Soli-

Solidity: which they that deny [say they] are obliged to shew some other cause; from which Salts have that aptitude to coagulate themselves, and become solid bodies.

For, it is manifest, that the Salts of 288
Vegetables, as Crystals of Tartar, &c. also Nitre, Allom, Vitriol, Salt Gemm, [and divers other of this Nature] do coagulate themselves, not only into hard, but even brittle bodies, in the bosome of the water; and to this end they alleadge, that if the Salt be washed from ashes, no heat of fire will make them hard; but if the Salt be left in them, [and they be mixt with a little water] the fire will not only quickly make them become hard; but if they be strongly press'd with it, turn them into Glass.

Kircherus *in Mund. Subter.*

The Learned *Kircherus* is also of the 29
same opinion with the Chymists, [*viz.* that Salt is the cause of stonifying] and giveth us this experiment to confirm it. *Si saxum* [inquit] *quodcunq; in tenuissimum pollinem resolveris, & aqua perfectè commixtum, per Manicam Hippocratis Colaveris, illa nil prorsus saxeum, sed præter arenaceum solummodo sedimentum nil relinquet; si verò Nitrum, vel Tartarum, aqua perfectè commixtum addideris,*

illa,

illa quæcunq; tetigerint intra ſubjectam concham poſita, ſive frondes, ſimiliaque, poſt exiguum temporis curriculum aeri expoſita, vel in ſaxum ejuſdem generis converſum ſi non totum, ſaltem cortice Saxeo veſtient. "*If* [ſaith he] *you reduce any* "*ſort of ſtone into a moſt ſubtile powder,* "*and mixing it throughly with water, you* "*ſtrain it through* Hippocrates's *bagg,* "*therewill nothing of it remain thatis ſtony;* "*nor will it leave any thing of it behind,* "*but a certain ſandy ſediment; but if you* "*ſhall add to this, Nitre, or Tartar, per-* "*fectly diſſolved in water, whatſoever* "*body they ſhall touch, being placed in* "*the ſame Diſh, whether it be the twiggs* "*of a Vine, or the like, after a little* "*while being expoſed to the Air, it will* "*be turned into ſtone; or at leaſt it will* "*be covered with a ſtony Cruſt.* And though this opinion be held by *Crollius, Hartman, Quercetanus, Severinus*, and *Sennertus*, [who are but Neoterick, or late Writers] yet is it no new opinion, but hath been aſſerted by the venerable Ancients, as long agoe as the time of *Hermes Treſmegiſtus*, [who is ſaid to have lived in the Age of *Joſhua*] who in his *Smaragdine* Tables [as they are called] hath left us theſe words. *Salis*

est, ut corporibus in Mundum prodituris, soliditatem coagulando præstet; Sal enim corpus est, Mercurius Spiritus, Sulphur anima, that is; "*'Tis from Salt that Bodies* "*are produced in the World; it causeth Co-* "*agulation, and Solidity: for Salt is the* "*Body, Mercury the Spirit, and Sulphur* "*the Soul.*

This Doctrine, though much more rational than the former, and seeming to be confirmed by experiment, and to be verified by the account our senses give us of it, cannot yet gain my full assent to it, so far as to allow Salt to be the Primary, either Matter, or Efficient of Solidity in bodies, or the cause from whence stones are produced. For it is observable, that Salts are reducible into Liquors, [and do seem to lose their solidity] either by being mixed with water, or exposed to the Air, in which many of them run *per deliquium.* But, to let this pass; what Salt can be supposed to be communicated to Quick-silver, when it is coagulated by the fumes of melted Lead, by which it becomes so solid, that it may be cast into Moulds, and Images formed of it; and when cold, is not only hard, but somewhat brittle, like *Regulus* of *Antimony*? What access of

Salt

Salt can be fancied is added to the white of an Egg, [from whence the whole Chick is formed] which is a Liquor so near water, that by beating it with a whisk it is reduced into so fluid a substance, that it will easily mix with water, and is hardly distinguishable from it? And yet this white of the Egg, by the assistance of a gentle heat, to stir up its seminal Principle, and enable it to turn, and new shuffle the parts of that liquid substance, [by the means of which motion divers of its parts are broken into shapes and sizes fit to adhere one to another] is all of it turned into solid bodies, some of them very tough, as the Membranes, and Nerves; and some of them hard and brittle, as the Beak, Bones, Claws, &c. [of the Chick;] and all this without any new addition of salt.

'Tis likewise remarkable, that very credible witnesses assure us, that Corral [though it grow in salt water, at the bottom of the Sea] is yet, whilst it remains there, soft, like other Plants; [and juicy also:] neither will the example of *Kircherus*, alleadged above, avail much; since it is commonly known, that the powder of Plaster of *Paris*, or burnt Alabaster, if it be mixed with

Gassendus, Lib. 4. *Anno Dom.* 1624. Mr. *Boyl.* Essay of Fermness.

water, without any ſort of ſalt, will coagulate into an entire ſtony lump, or Maſs.

I do not deny but that ſalt may very much conduce towards the coagulation of ſome bodies, as we ſee in the curdling of Milk with Runnet, Spirit of ſalt, Oyl of Vitriol, juice of Limmons, and the like; but then this happens but to ſome bodies, and is cauſed from the ſhape and motion of its ſmall parts, which entring the pores of ſome bodies that are naturally fitted to be wrought upon by it, it fills up many of the cavities of ſuch bodies; and alſo affixing it ſelf to the particles of them, it cauſeth them, not only to ſtick to it ſelf, but alſo adhere cloſely one to another.

I ſay, ſalts do this to ſome bodies [not to all,] for to ſome other bodies, inſtead of being an Inſtrument, either to cauſe, or confirm their ſolidity, it by diſſociating the parts, of which they conſiſt, and putting them into motion, doth reduce them into the appearance of Liquor; as we ſee in the action of corroſive ſaline ſpirits, both upon Metals, and ſtones.

Now, for that Argument, that ſalts do ſhoot even in the water into hard, and brittle

brittle Cryſtals, if I ſhould ſay they do ſo upon the account of a ſeminal Principle, I ſhould not, perhaps, be thought to have much miſtaken the cauſe, by thoſe that have well conſider'd the curious and regular Figures [yet conſtantly diſtinct from each other,] which their Cryſtals ſhoot into: which certainly cannot proceed from chance; for they do as conſtantly keep their own figure [as for Example, that of Nitre alwayes appears in a Sexangular form, that of Seaſalt in a Cubical:] As Wheat produceth Wheat, and the ſeed of a Man, a Man.

35 Philoſophers hold, there are two ſorts of Agents; one they ſtile αἴτιον, that is, the principal cauſe, or Agent; from which immediately, and primarily, the Action depends, and by whoſe power the thing is made; and this [as we ſhall prove in its due place] is an Architectonick ſtonifying Spirit, or Petrifick ſeed. The other cauſe they call συναίτιον, or the Adjuvant, or aſſiſting cauſe, [of which ſort there are many] by which the principal Agent may be furthered in its acting upon matter; of which laſt ſort of cauſes [of the ſolidity in Bodies, *viz.* the Helping, or Aſſiſtant] we

will not deny but that ſalt may be one, as being ſuch a prævious diſpoſition of the parts of Matter, as renders them more apt to be wrought upon by the firſt kind of Agent, *viz.* the Seed. So that in ſome ſence we may [for the reaſons above alleadg'd] allow the Chymiſt to think ſalt is [though *Nec prima materia, nec efficiens.* Yet] *Proxima materia, &* συναίτιον *Soliditatis.* "*The Proximate* "*matter, and Adjuvant cauſe of Solidity.*

But ſince not only ſalt, but the whole *Tria prima*, or Three firſt Principles of the Chymiſts, as alſo the *Quaternary*, or four Elements of the Peripateticks, are juſtly enough denyed to be the firſt Elements, or conſtitutive Principles of all Bodies, [they themſelves being further reſolvable into more ſimple parts, as we ſhall prove by and by,] I ſay, ſince it is ſo, I muſt be excuſed, if denying my ſuffrage to both their Doctrines, [in that large ſence they propoſe it in:] I offer to render other cauſes, by which not only ſolidity, but Petrification alſo may be introduced into Matter.

Section

Section the Third.

37 THe Doctrine I am now about to affirm, is no Novel conceit; but so Ancient, that we shall find that it was held, [and by them transmitted to Posterity] not only by *Plato*, *Timæus Locrus*, *Parmenides*, *Pythagoras*, *&c.* Philosophers of the Academick, and Italick Sect; but also by *Orpheus*, *Thales* the *Milesian*, and also by *Mochos*, and *Sanchoniathon*, the great, and Ancient *Phœnitian* Philosophers; nay, by that Divinely illuminated Man, *Moses*.

38 I urge this point of the Antiquity of the Doctrine I am now going to affirm, because I know it is the custom of some Men, to disgust any Philosophical truth, that cannot shew it self to be as ancient as *Aristotle*'s time; but to please such, let them consider, that the *Hypothesis* we intend to make use of in this ensuing Discourse, beareth an equal Date with the World, and was at first deliver'd to Man by the *Ancient of Dayes* himself.

This Doctrine then [which hath of late

late years been revived, and assumed by the Noble *Helmont*, and other great wits,] I now am come to lay down, and explain; and in the next place shall endeavour to prove, and confirm it; first, by reason, then by experiment, and lastly, by Authority.

The *Hypothesis* is this; *viz.* That stones, and all other sublunary bodies, are made of water, condensed by the power of seeds, which with the assistance of their fermentive Odours, perform these Transmutations upon Matter.

That is, that the matter of all Bodies is originally meer water; which by the power of proper seeds is coagulated, condensed, and brought into various forms, and that these seeds of things do work upon the particles of water, and alter both their texture, and figure; as also, that this action ceaseth not, till the seed hath formed it self a Body, exactly corresponding with the proper Idea, or Picture contained in it. And that the true seeds of all things are invisible Beings, [though not incorporeal;] this I affirm, and shall endeavour to prove.

But to make this the better to be understood, I shall præmise some generals,

and

and then descend to particular proofs of what I assert.

43 First then, nothing is produced by chance, or accident. And therefore in every Generation, or Production, there must necessarily be presuppos'd some kind of seed which hath a power, or faculty, to alter the Matter, and dispose it to such a Being, and Form, as God and Nature have design'd to produce.

44 Secondly, all seeds (in some degree) are endow'd with Life, and a power of acting: for nothing that is not Vital can promote it self to perfection. And if Bodies are distinguishable from their internal Efficients, and are specificated by them, then must they be allowed to contain a seed.

45 These positions will not [perhaps] be denyed to Animals, nor Vegetables; because their supposed seed is visible. For the seed [or rather, sperm] of perfect Animals, is an efflorescence of the best parts of the blood [elaborated in the Testicles] and impregnated with Spirits from all parts of the Body; in which resideth the *vis Plastica*, or *Efficient*; [and this indeed is the real seed, or geniture, though it be invisible] which containeth in it self the Image, or Type of

of the thing to be made; which it performs by a Fermental *Odor*, or *Aura*, and by breathing upon those proper juices it finds in a Female Womb; it first coagulates them, and then by degrees explicates it self, working this Female Matter into a Body exactly corresponding with its own pre-conceived Figure: the grosse body of the Male-seed all this while being but a vehicle, to convey with safety this subtile fermentative breath to its proper place of action; which being done, the body of the sperm is ejected from the Womb, as useless to Generation.

That this is so, hath been proved by 46
the industrious and curious dissection of divers sorts of Beasts, made at several seasons after their Conceptions; and continued till the formation of the *fœtus*; and yet no *Vestigiæ*, or foot-steps of the Male-sperm could be found in the womb. This is asserted by that incomparable Man, Dr. *Harvy*; to whom I refer him that desireth further satisfaction in this point.

Dr. Harvy. de generat. ex Ovo.

The sperm of Man, if but for a mo- 47
ment it be exposed to the touch of the external Air, becomes dead, and unprolifick; and that by reason of the subtilty

of

of the ſpermatick ferment, [it being very apt to deſert the body of the ſeed.] This is a truth ſo generally known, that the Virtue of that Lady is juſtly ſuſpected by all rational Men, who pretended to have Conceived with Child, by attracting the ſeed of a Man which floated in a Bath, wherein ſhe Bathed her ſelf.

48 As to Vegetables; They alſo take their beginnings, are propagated, and do fructifie, from the like inviſible cauſe; *viz.* a fermentative Odor, [or Aura] which alſo contains the *Idea* of the Plant to be produced.

The body of the Seed, or Grain [which is the Casket that contains this inviſible Workman] being committed to the Earth [its proper Womb] is ſoftened by the Nitroſulphurous juice of the ſoyl; that the *Vis Plaſtica* [which is the Efficient of the Plant] may, being looſened from its body, be at Liberty to act. Which being done, the body of the ſeed, or Grain, is deſtroyed; according to the ſacred Writ: [*Except Seed, committed to the ground, dye, it produceth no fruit*:] But the Architectonick Spirit being now at Liberty, ferments, by its Odor, the Liquors it finds in the Earth, converting them

them into a juice, fit to work the Plant out of it, which it by degrees performs. [This Liquor in the Earth, is by *Paracelsus*, and *Helmont*, by a Barbarous name, call'd *Leffas Terræ*; and is the proximate matter of all Vegetables.] For proof of what I seem to have with some boldness asserted in this place; Let any sort of Grain be put for a small time in an Oven, [or any analogous heat,] that the external warmth may suscitate and excite this ferment of the Seed to take wing, and desert its body; This Grain, though entire to sight, if it be committed to the Earth, shall never by any Art be brought to produce its like.

As Vegetables, and Animals have their 49
Original from an invisible Seminal Spirit, or breath; so also have Minerals, Metals, and Stones.

To this purpose Dr. *Jordan* tells us, 50
There is a Seminal Spirit of all Minerals in the Bowels of the Earth, which meeting with convenient Matter, [what that is, we shall shew in its place] *and Adjuvant Causes, is not idle, but doth proceed to produce Minerals, according to the Nature of it, and the Matter which it meets withal; which matter it works upon as a Ferment, and by its motion procureth*

Dr. *Jordan* of Natural Bathes. Cap. 2. p. 58, 59.

procureth an actual heat, as an Instrument to further its work; which actual heat is increased by the fermentation of the Matter.

51 The like we see in making of Malt, where the Grains of Barley being moyst'ned with water, the Generative Spirit in them is dilated, and put in Action; and the superfluity of the water being removed [which might choak it] and the Barley laid up in heaps, the Seeds gather heat, which is increased by the contiguity of many Grains lying one upon another. In this work Natures intent is to produce more individuals, according to the Nature of the Seed; and therefore it shoots forth in spires; but the Artist abuses the intention of Nature, and converts it to his ends, that is, to increase the Spirit of his Malt.

52 The like we find in Mineral Substances, where this Spirit, or Ferment, is resident, as in Allom, and Copperas-Mines; which being broken, exposed, and Moystned, will gather an actual heat, and produce much more of these Minerals than else the Mine would yield; as Agricola, and Thurnifer do affirm, and is proved by common experience. The like is generally observed in Mines, as

Agricola,

Agricola, Eraſtus, Libavius, &c. *do avouch out of the daily experience of Mineral Men; who affirm, that in moſt places they find their Mines ſo hot, as they can hardly touch them; although it is likely, that where they work for perfect Minerals, the heat, which was in fermentation whilſt they were yet in breeding, is now much abated, the Minerals being now grown to their perfection. And for this heat we need not call for the help of the Sun, which a little Cloud will take away from us; much more the body of the Earth, and Rocks; nor for ſubterranean fires. This imbred heat is ſufficient, as may appear: alſo by the Mines of Tinglaſs, which being digged, and laid in the moyſt Air, will become very hot; ſo Antimony and Sublimate being mixed together, will grow ſo hot as that they are not to be touched. If this be ſo in little quantities, it is likely to be much more in great quantities, and huge Rocks. Heat of it ſelf differs not in kind, but only in degree, and therefore is inclined no more to one Species, than to another; but as it doth attend, and ſerve a more worthy Superiour, ſuch as this Generative Spirit is.* Thus far he.

Moreover,

Moreover, that Minerals, and Metals have their proper Seeds, hear further what a Myſtical Chymiſt, (but a very rational Man) *Coſmopolita* ſayes, *Semen Minerale, vel Metallorum, creat natura in viſceribus terræ; propterea non creditur tale ſemen eſſe in rerum natura, quia inviſible eſt.* "*Nature doth Create the* "*Mineral, or Metalline Seed, in the Bowels* "*of the Earth; therefore it is not believed,* "*that there is ſuch a Seed in Nature, be-* "*cauſe it is inviſible.* And the ſame Author again, thus: *Et quam prærogativam vegetabilia præ Metallis habent, ut Deus illis ſemen inderet, & hæc immeritò excluderet? Nonne ejuſdem dignitatis Metalla apud Deum, cujus & arbores? Hoc pro certo ſtatuatur, nihil ſine ſemine creſcere; ubi enim nullum eſt ſemen, res eſt Mortua;* that is, "*And what prerogative have Vege-* "*tables above Metals, that God ſhould* "*put Seed into them, and undeſervedly* "*exclude theſe? Are not Metals of the* "*ſame dignity with God that Trees are?* "*This may be held for certain, that no-* "*thing doth increaſe without Seed: for* "*where there is no Seed, that thing is* "*Dead.*

53 *Nov. Lum. Chym. Tract. 6. p. 319.*

So that it is plain, you ſee, by the afore-cited Authorities, that Minerals, and

and Metals have Seed, & that this Seed is inviſible; and that it works by the help of its ferment, or as a ferment. That ſtones grow, common experience teacheth us; as alſo the tenth Hiſtory alleadged, in the firſt Section of this preſent Eſſay; and conſequently muſt be endowed with ſeed, and ferment; ſo that here is, at leaſt, an analogous way of production to that of Animals, and Vegetables (which we have declared above) and was the thing we intended here to prove.

But before I proceed, that I may be 55
the more clearly underſtood, I ſhall declare what I underſtand by the Ferment of the ſeed. The word *Fermentum*, which ſignifieth Leaven, is by ſome eſteem'd to be *quaſi fervimentum*, or a thing made hot; and generally is uſed to denote, not only a turgeſcence, and dilatation of the parts of Matter, (as in Leavened Bread, &c.) but alſo ſignifieth the working of any ſort of Liquor, till it become Maturated, and exalted into a generous, and ſprightly Drink. Fermentation is thus defined by the Learned Dr. *Willis*: *Fermentatio eſt motus inteſtinus particularum, ſeu principiorum cujuſvis corporis, cum tendentia ad perfectionem*

fectionem ejuſdem Corporis, vel propter mutationem in aliud; "*Fermentation is an in-*
"*teſtine* [*or intire*] *motion of the Princi-*
"*ples, or particles, of which any Body*
"*conſiſts, with an intent to perfect the ſaid*
"*Body, or change it into another.* Ferments then are ſubtile, tenuous Bodies, [which we generally call Spirits; for as to Leaven, Yeaſt, &c. they are but the cloathings of theſe Spiritual, and finer Subſtances; as we before ſhewed the Grains of Vegetables, and the Sperm of Animals were:] which fine ſubtile breath (the Ferment) hath an expanſive power; by which, being immerſed in any Matter, or Subſtance, it deſiring to dilate it ſelf, variouſly agitates the ſmall particles of that matter it is joyned to, and making Excurſions through all parts of the Subject it is reſident in, it adhering intimately to every ſmall patt of the Matter, doth firſt by the peculiar motion it hath put them into, alter and break the particles into new ſhapes, and ſizes; and then by conveneing together with them, conſtitute a new texture of that Matter; and thus a new Concrete is made by the power of the Ferment.

So that, in truth, the Ferment of a

Seed, [I mean Natural Ferment] is not any Substance distinct, or separable from the Seed it self; since it is connatural with it, and intimately the same, [and is indemonstrable *à priore*, as well as the Seed, and may be thus defined. 516

A Ferment is an Expansive, Elastick, or Springy power of the Seed of any thing; by which motion of its self it also moveth the smallest particles of that Matter in which it is immersed: by which motion also [which is of divers kinds, according to the variety of Seeds] the particles of Matter acquire new shapes, sizes, and postures amongst themselves; and so a new texture of the whole is produced, agreeable to the peculiar Nature of the Seed, and correspondent to its Idea; [which Idea we shall explain in its place.] 517

We have likewise declared often, that seeds do operate by Odors, or scents; which we think is not said without cause: for if it be well observed, it will be found, that no seeds do generate; but in the time of their acting upon the Matter there are specifick Odors produced; that is, while they are in Fermentation, and the work incompleat: for, when the Concrete is perfected, the Odor is much 518

much abated: [as, not to instance in artificial things, making of Malt, the fermenting of Beer, and Wine, in the Barrel, and the leavening of Dough, &c.] for 'tis observable, that the Grains of Wheat, or other Vegetables, sown in the ground, when their invisible seed begins to ferment, do send forth Odors; so also the Eggs of Birds, on which the Hen hath sat. And that Minerals, and Metals, whilst in their making they do send forth such plenty of stinking Odors, that many times the workmen in Mines are suffocated therewith, no body can be ignorant. Now these Odors are fine and subtile *Effluviums*, [or small particles of the Matter now put into motion by the power of the seed, Ferment: which having extricated themselves from their Companions, and roving in the Air, do at last strike against those parts of our Noses that are fitted by Nature to be sensible of the touch of such very small Bodies.

59 Odors then are a sign of Fermentation begun, and are nothing but small particles of Matter got loose from their Fellows, begun to be alter'd, and specificated by the seed; and therefore are very various, according to the diversity of

seeds, and their Ferments, from whence they proceed.

Having before declared, that all Bodies proceed, and are made from Seminal Beings; and that the real seeds, and Ferments of things are invisible; and having declared, what I would have understood by a seedy Fermenr, and Odor; and also having hinted above, that all Bodies are Materially [and Primarily] nothing but water; I shall now endeavour to prove the same more fully, and clearly; the which I shall do by three sorts of Arguments. The first is grounded upon tha· Philosophical Axiom, *viz.* *Quæ sunt prima in Compositione, sunt ultima in resolutione: Et quæ sunt ultima in resolutione, sunt prima in Compositione.* "*That which is first in the Composition, is* "*last in the resolution: And those things* "*which are last in the resolution, the same are* "*first in the Composition.* The second Argument is grounded upon another axiom commonly received. That is, *Nutrimur iisdem quibus constamus.* "*We are Nouri-*"*shed by those things of which we are con-*"*stituted, or made.* The third argument shall be to shew, and prove a necessity of all Bodies being formed out of water; because neither the four Elements

of

of the *Peripateticks*, nor the *Tria Prima*, or three Principles of the Chymists, can possibly concur to the constituting of Bodies, as either the Efficient, or Primary Matter; they being themselves but great disguised Schemes of one and the same Catholick Matter, *Water*, from whence they were made, and into which they are ultimately to be resolved, and uniformly to be reduced, either by Art, or Nature. All which assertions I hope to prove, both by Experiment, and Reason, and shall likewise endeavour to strengthen by good and sufficient Authorities.

Section the Fourth.

61 AS to the first Argument, founded on that Axiom, that *All Bodies are made of that Matter into which they are ultimately resolved*, and *è Contra*; This Maxim is agreed upon of all hands, both by the *Aristotelians*, the Old Chymists, and the New ones; and that almost upon the same ground. For the first supposed all Bodies reducible at last into Fire, Air, Water, and Earth; and therefore

held the Quaternary of Elements, [*which, by the way, they could never yet sufficiently prove.*] And the Second believed Salt, Sulphur, and Mercury to be the first Principles of all Bodies. And the last sort, the modern Chymists, hold Spirit, Oyl, Salt, Water, and Earth, to be the true Primary Principles of Bodies, for the same reason; *viz.* because many Concrets are resolvable by fire into the first three, if not into the last five, distinct Substances before named.

But that all Bodies are by Art to be brought back, uniformly, into water; hear what that Learned Man, *Helmont*, saith. 62

Helmont in Tract. de Elementa. §. 11, 12. p. 43. & De Terra. p. 45. §. 15.

Nostra namque operatio Mechanica mihi patefecit, omne Corpus [*puta saxum*] *Lapidem, Gemmam, Silicem, Arenam, Marcasitam, argillam, terram, Lapides coctos, vitrum, Calces, Sulphur, &c. Transmutari in Salem actualem, æquiponderantem suo Co pori, unde factus est: Et quod iste sal aliquoties cohobatus, cum sale circulato* Paracelsi, *suam omnino fixitatem amittat, tandem transmutetur in Liquorem, qui etiam tandem in aquam insipidam transit: Et quod ista aqua æquiponderet sali suo, unde manavit.* —— *Plantam verò, carnes, ossa, Pisces, &c. quicquid similium est,*

est, novi redigere in mera sua Tria, unde post modum aquam insipidam Confeci; Metallum autem, propter sui seminis anaticam commistionem, & arena [quellem] difficilimè in salem reducuntur. Cum igitur arena, sive terra Originalis, tam Artis, quam Naturæ resistat, nec queat ullis [unico duntaxat Gehennæ artificialis igni excepto] Naturæ vel artis, à primæva sui constantia recedere; sub quo igne artificiali, arena sal fit, ac tandem aqua; quia vim habet agendi super sublunaria quævis absq; reactione, &c. "*For our handy-craft Opera-*
"*tion* [*that is, his Liquor,* Alkahest]
"*hath manifested to me, that all Bodies* [*to*
"*wit, the Rocky Stones*] *the Pebble, the*
"*Precious stone, the Flint, Sand, Marca-*
"*sits, Clay, Earth, Brick, Metal, Glass,*
"*Lime, and Brimstone, &c. may be reduced*
"*into a real Salt, equal in weight to its own*
"*Body from whence it proceeded: And*
"*that Salt being often cohobated with the cir-*
"*culated Salt of* Paracelsus, *doth altogether*
"*lose its fixedness, and is transmuted into a*
"*Liquor, which also at length becomes insi-*
"*pid water; and that water is of equal weight*
"*to the Salt of which it was made.* —— *But*
"*Plants, Flesh, Bones, Fish, &c. and*
"*every such thing* [saith he] *I know how*
"*to reduce into its three first Principles,*

"*from whence afterwards I have made an*
"*insipid water: but Metal, by reason of its*
"*strict, and exact commixture with its Seed,*
"*and the Sand* [*quellem jure most difficul-*
"*ly reduced into Salt: for Sand, or the Ori-*
"*ginal Earth, doth resist as well Art, as*
"*Nature, neither will by any means* [*the*
"*only artificial fire of* Gehenna *excepted;*
"*that is, the* Alkahest] *be made to recede*
"*from its first-born constancy, &c.* [*un-*
"*der which artificial fire the Sand is made*
"*Salt; and at last water*] *because it*
"*hath a power to work upon any sublunary*
"*Body, without its re-acting upon it*
"*again.*

Helment. *Complex. atque Mistion. Figment. p.* 88. *ll.* 27.

He likewise tells us, in his Tract, entituled, *Complexionum atque Mistionum figmentum. Novi enim aquam* [*quam manifestare non Libet, &c. For I know a Water* [*which it is not fit to discover, meaning the* Alkahest,] *by whose help all Vegetables are changed into a distillable juice, which leaveth no feces in the bottom of the glass: which distilled juice, if it be mixed with* Alkalies, [*or fixed Salts*] *is reduced totally into insipid and Elementary Water.* 63

And a little further in the same Tract, he tells us: *That he took an Oak-Charcoal, and mixing it with an equal weight of the* 64

Liquor

Liquor Alkaheſt, *he put it in a glaſs, Hermetically Sealed, which being kept in a* Balneo *for three dayes, it was in that time turned into a couple of Diaphanous Liquors, of different colours, which ſwam upon each other; which being diſtilled together [in Sand] by a heat of the ſecond degree, it left the bottom of the glaſs as clear, as if it had never been uſed. The two Liquors of the Coal might be diſtilled with the heat of a Bath, but the diſſolving Liquor, [or* Menſtruum *] in that degree of heat would remain at the bottom of the Glaſs, not impaired in its weight, or Virtue. And that the aforeſaid two Liquors of the Coal, being mixed with a little Chalk, at thrice diſtilling, did aſcend of the ſame weight as before; but having loſt all their diſtinguiſhing qualities, it became undiſcernable from Rain-water.*

65 The Operations of this Liquor [which you have heard] in reducing all Bodies uniformly into water, is, I think, of very great force to evince, what I have here affirmed, *viz.* that all Bodies were Originally Water. But after all this ſtreſs I lay upon theſe Experiments of *Helmont*'s, it may be objected by ſome, That they not being poſſeſſors of this Liquor, may be allowed to doubt of the

the truth of what he hath deliver'd concerning it. To which I answer, first, that I think it no cogent Argument, to conclude there is no such thing, because many men are not possessors of it; and if this should be admitted, all other Arts and things, that are possessed by any Man [and not known to the common people] would be liable to the same exception; and every Cobler, or Ploughman would conclude the impossibility of the effects produced by most Mathematical Automatons, or Engines, because he either knoweth not, or hath not seen the contrivance of the thing, or else is not able to conceive the reason of its Operation: And if every Man [that knoweth more than the Vulgar] would make it his own case, they would, I suppose, think it an unreasonable and hard way of judging of things.

Secondly, the Man is so consentaneous 66
to himself in his Experiments, that that very thing to me appeareth an Argument of his Truth. And as to his veracity in those things he delivers as matter of fact, [and upon his own knowledge,] I do not find that even his Enemies have detected him of Falshood; and I am sure, I have hitherto found him most true, in what-

whatsoever he hath delivered us as his own Experience [though possibly many of those things do not at first sight seem over-probable.] But lest I may seem over-partial, I will give you a Testimony of him [that may be *instar omnium*] and that shall be from a Man, of whom the World is fully satisfied, not only as to his candid Temper, but also of his ability to judge, both of Men, and things; and the unwillingness of his Nature to encourage falshood: and that is the Inquisitive, and Honourable Mr. *Boyl*, who saith thus both of him, and the *Alkahest*.

76 *If our Chymists will not reject the solemn, and repeated Testimony of a Person* [speaking of *Helmont*] *who cannot but be acknowledged for one of the greatest Spagirists they can boast of, they must not deny that there is to be found in Nature another Agent, able to analyze compound Bodies less violently, and both more genuinely, and more universally than Fire: And for my own part, I have found* Helmont *so faithful a Writer, even in divers of his improbable Experiments, that I think it somewhat harsh to give him the lye, especially to what he delivers upon his own proper Tryal. And I have heard from very credible Eye-witnesses some things,*

Scept. Chymist. Carneades Dialogus p.

things, and seen some others my self, which argue so strongly, that a Circulated salt [*or a* menstruum, *such as it may be*] *may by being abstracted from compound Bodies, whether Minerals, Animals, or Vegetables, leave them more unlocked than a wary Naturalist would easily believe; that I dare not confidently measure the power of Nature, and Art, by that of the Menstruums, and other Instruments, that even eminent Chymists themselves are as yet wont to imploy about the Analyzing of Bodies.* Thus far he.

Besides, he that had laboured more 68
than thirty years in the fire, and making Experiments, in all probability might attain this secret: since *Geber*, and many of the *Arabian* Philosophers had it before him; as also *Basil Valentine*, *Raymund Lully*, and *Paracelsus*. Nor can I believe so grave and great a man, would in his Old Age, near his Death, impose falshoods and lyes upon the World.

But without the assistance of this Li- 69
quor, this Doctrine may be made out; though by more troublesome, and tedious wayes; as we shall now proceed to shew.

The same worthy man, *Helmont*, saith, 70
[and

[and I have found it true by experience] *Olea & pinguedines, per ignem ſeparata; adjecto pauco ſale* Alkali, *ſaponis Naturam aſſumunt, atque in aquam Elementalem abeant.* [And again, thus:] *Omne* Alkali, *addita pinguedine, in aqueum Liquorem, qui tandem mera & ſimplex aqua ſit, reducitur* [*ut videre eſt in ſapone, &c.*] *quoties per adjuncta fixa, ſemen pinguedinis deponit*; That is, "*That fats, and* "*Oyls diſtilled by fire, a little of an* Alkaly, "[*or fixt ſalt*] *being added, do become* "*ſoap, and at laſt, may be turned into* "*Elemental Water.* —— *All* Alkalies, "*fats being added, are converted into watry* "*Liquors, which at laſt is made and reduced* "*into mere ſimple water* [*as it is to be* "*ſeen in ſoap, &c.*] *as often as by a fixed* "*adjunct,* [ſuch as Chalk] *it ſhall be* "*made to lay aſide its ſeed, and fatneſs.* *Complex. & Miſtion. Elem. ſigm. p 86 ſſ 12.*

71 And again, *Omne Oleum diſtillatum, in ſalem eſt mutabile, & in aquam per adjuncta.* "*All diſtilled Oyl is to be chan-* "*ged into Salt, and by adjuncts into water.* Alſo, the beſt ſpirit of Wine, which is totally inflamable, if it be joyned with ſalt of Tartar, will be tranſmuted into mere water: which ſalt of Tartar it ſelf, by the help of Oyls [as is above declared] will at laſt be reduced into water.

All

All Vegetables are reducible by distil- 72
lation into Water, Oyl, and Salt; the water cohobating upon Chalk becomes merely Elemental; the Oyl and Salt may, as is said above, be made to unite into a Saponary Body, which distilled, yield a stinking water, which being oft re-distilled from Chalk [or some such Body] having laid aside its seminal qualities, is indiscriminate from common water: The Salt it self [which is accounted the most permanent principle] yet by the help of fire, well contrived Vessels, and proper adjuncts, it may be reduced into a *Volatil Menstruum*, which being put to act upon Bodies, as a dissolvent, it loseth its saline acrimony, and by repeated operations it is totally converted into insipid water.

All Animals upon the face of the 73
Earth are remigrable into water [of which they were formed.] And first, as to Snakes, Vipers, Eels, Froggs, &c. these being perfect Animals, as consisting of Organical parts, as Hearts, Stomacks, Livers, Galls, Eyes, &c. [not to mention Worms, and other insects] some of them accounted hot Creatures, and so full of vivacity and life, that several of them will survive after the taking their

hearts

hearts out of their Bodies some hours, [not to say, dayes;] I say one would little suspect by their out-side, these Creatures should abound with moysture as they do. For, if any of them be put to distillation, you shall perceive them to boyl in their own juice, and to afford an incredible quantity of Phlegmatick Liquor, which being cohobated upon dry Bodies, as is directed in the reduction of Vegetables, returneth to water; also their Oyls, and fatty substances, being joyned with an *Alkaly*, and made into a soap, then distilled, they yield a stinking water, which cohobated, as the other, doth likewise return into water.

74 All other sorts of living Creatures are, by the help of fire, to be dissected into Oyls, a fixt, and a volatile Salt [though they yield most of the latter] an Empireumatical Spirit, and Phlegm: all which by the above-said helps, and the like repeated Operations, will at last be brought into water.

75 Middle Minerals, and Mineral Salts, by Art are reducible into Corrosive Spirits; which acting upon Bodies, are dispoil'd of their acrimony; and, at last, return to the shape of water.

76 As for Minerals, and Metals; if they be

be fluxed with *Alkalies*, they are thereby rob'd of their Sulphurs; to which if you add Oyl, it is made soap, and then to be dealt with as is above directed, by the Example of both Vegetables, and Animals: or else the Sulphurs of Minerals, separated from the *Alkalizate* Salt, may be burnt, and the Fume caught by a Glass-Bell, [as is usual in making Oyl of Sulphur *per Campanam*] it will be turned into a corrosive Spirit, which will be reduced into water; as I have shewed above, other corrosive Spirits may be by acting upon Bodies.

Metalline *Mercury*, or Quick-Silver, 77
[that peerless body for homogeneity, and likeness of parts] which exceedeth water in weight at least fourteen times, [the parts of it being so forcibly compressed by the power of its Seed] may yet totally be reduced into water, in purposely contrived Vessels, and a skilfull management of the fire; as *Raymund Lully* doth witness, and Experience with him.

Nay, Nature her self doth in time 78
[by the help of Putrefaction, and ferments residing in the Earth,] reduce into water the bodies of Vegetables, and Animals, whether Fish, or Flesh; also

Salts,

Salts, Aſhes, Stones burnt to Lime, &c. witneſs the dunging of Land by theſe things. Nay, Metals themſelves in time, having paſt their ακμὴ or prime, degenerate into middle-Minerals, and Salts; and then return to water. So that you ſee, all Bodies have water for their firſt Matter; and are by Art and Nature reducible into it again at laſt.

79 *Paracelſus* [a Perſon hardly inferiour to any Man in the knowledge of Metals, and Minerals] giveth us his Opinion of the production of Metals, and Stones, from water, in theſe words. *Sic ergo Mirabili Conſilio Deus conſtituit, ut prima Materia Naturæ eſſet aqua, mollis, levis, potabilis; Et tamen fœtus ſeu fructus ipſius eſt durus; ut Metalla, Lapides, &c. quibus nihil durius eſt.* "So therefore "God hath ordered, by a wonderful Counſel, "that the firſt Matter of Nature ſhould be "water, ſoft, gentle, potable; and never- "theleſs the off-ſpring, or fruit of it, is "hard; as Metals, and Stones, &c. than "which nothing is harder.

Paracel. *Liber de Miner. Tract.* 1. *p.* 342.

Plato alſo is of the ſame judgment with him; for he tells us: *Aquæ genera duo ſunt præcipua, unum humidum* ὑγρὸν, *alterum fuſile* χυτὸν: "There are two ſorts "of Waters, one moyſt, the other fuſil, or

Plato *Timæo. p. Græc.* 488. *Latin. p.* 718.

" *to be melted.* And presently after, he explaineth what he meaneth by *fusil* waters. *Ex his verò quas aquas fusiles appellavimus, quod ex tenuissimis, levissimisque, fit densissimum, uniforme, splendidum, flavumque, & pretiosissima res est, aurum florescens per petram compactum est:* " *But of* " *these, which we call* fusil *waters,* [*or to* " *be melted*] *Gold flowering through the* " *Rock is compacted; for it is, of a most soft,* " *fine, and tender thing, made most hard,* " *uniform, splendid, and yellow, and is a most precious thing.*

The Seeds of Minerals, and Metals are invisible Beings; [as we have shewed, above, the true Seeds of all other things are;] but to make themselves visible Bodies they do thus: Having gotten themselves sutable Matrices in the Earth, and Rocks, [according to the appointment of God, and Nature] they begin to work upon, and Ferment the water; which it first Transmutes into a Mineral-juice, call'd *Bur*, or *Gur*: from whence by degrees it formeth Metals. To which purpose I shall give you a testimony, or two. The first we borrow from that Book, Entituled, *Arcæ Arcani artificiosissimi apertæ*, beginning thus: *Igitur Notandum est*, &c. Which

because

becauſe the paſſage is long, we will only give you in *Engliſh*, thus: *Therefore it is to be Noted, that Nature hath her paſſages and Veins in the Earth, which doth diſtill waters, either Salt and Clear, or elſe turbid. For it is alwayes obſervable by ſight, that in the Pitts, or Groves of Metals, ſharp, and ſalt waters diſtill down; therefore while theſe waters do fall downwards, [for all heavy things are carried downwards] there doth aſcend from the Centre of the Earth, Sulphurous Vapours, which do meet them. Wherefore if ſo be, the waters be ſaltiſh, pure, and clear, and the Sulphurous Vapours pure alſo, and both of them do ſtrictly embrace each other in their meeting, then a pure Metal is produced; but in defect of ſuch purity,* [that is, of the Water, and Vapour] *then an impure Metal is generated: in Elaborating of which Nature ſpendeth near a thouſand years before ſhe is able to bring it to perfection; and this happeneth either by reaſon of the impurity of the Salt, Mercurial Waters, or the impure Sulphurous Vapours. When theſe two do embrace each other, ſhut up cloſe in Rocky places; then by the Operation of Natural heat there doth ariſe from them a moyſt, thick, fat Vapour, which ſeateth it ſelf where the Air cannot*

Theatrum Chym. vol. 6. p. 305.

come, [*for else it would flye away:*] *of this Vapour a Mucilaginous, and unctuous Matter is made, which is white like Butter;* Matheſius *calls it* Gur *: it will ſpread like Butter, which I alſo can ſhew in my hand, above, and out of the Earth.* And the ſame Author again, thus. *The Matter of Metals before it be Coagulated into a Metalline form, is like Butter made of the Cream of Milk, which may be clam'd, or ſpread as Butter, which he* [he meaneth *Matheſius*] *calleth* Gur, *which I alſo* [ſaith the Author] *have found in the Mines, where Nature hath produced Lead.* And that Induſtrious Metallurgiſt, *Webſter,* [who hath likewiſe noted the ſame paſſages out of this Author] aſſureth us, that he hath in his poſſeſſion ſome pounds weight of this Metalline Liquor, called *Gur.*

Arca Arcan. p. 318.

Metallograph. p. 50.

To which I will alſo add my own Teſtimony; which is, that about eighteen years paſt, having made a Viſit to a Friend, who dwelt upon the Borders of *Derby-ſhire*; and who had at that time newly diſcover'd a Lead-Mine in his Ground: I remember, that being at the ſaid Mine I ſaw upon the Work-man's breaking a ſtone of Lead-Ore, a bright ſhineing Liquor ſpurt forth; which in a little

little while did coagulate, and become solid.

83 And that Worthy Man, *Helmont*, confirms what we have related of this Metalline juice, in these words:

Non rarò nempe contingit, quod Metallarius, in fodinis, saxa diffringens, debiscat paries, & rimam det, unde tantillum aquæ, subalbidæ, virescentis, manavit, quod mox concrevit instar saponis liquidi [Bur voco] *mutatòque deinceps pallore subviridi, flavescit, vel albescit, vel saturatius viridescit. Sic enim visum est, quod alias intus, absque saxi vulnere, fit; Quia succus ille interno Efficiente perficitur. Est ergo prima seminis Metallici vita in Conda, sive Promptuario loci, homini plane incognita: at ubi semen in lucem, Liquore vestitum, prodit, Et gas incæpit Sulphur aquæ inquinare, vita est seminis media; ultima verò, cum jam indurescit*: that is, "*It many times happeneeh, that a Mine-*" *Man, in the Pits, breaking stones, the Wall* "*is opened, and a Chink is made; from* "*whence a little water hath flowed, of a* "*whitish greeness, which presently hath* "*thickned like soft soap.* [*I call it* Bur, "saith he, but I suppose it should be "written *Gur*] *and by and by the some-*" *what greenish paleness being changed, it*

Helmont in Magn. Oport. p. 127.

"*groweth yellowish, or whitish, or more*
"*fully greenish: So that that is brought*
"*to sight, which nevertheless was made*
"*within, if the stone had not been broken;*
"*because that juice* [*or Liquor*] *is*
"*brought to perfection by an internal Effici-*
"*ent; therefore the first life of the Metal-*
"*lick seed is hid in the little store-house,*
"[*or Cellar*] *of the place, altogether*
"*unknown unto Man: but when the seed*
"*is brought to light, invested with a Li-*
"*quor, and the* Gas *hath begun to defile*
"*the Sulphur of the water, it is then the*
"*middle life of the seed; but the last life*
"*is, when it is now grown hard,* [that is,
"become a true Metal.]

And again, that this Metalline juice, 83
which he calls *Bur*, [and other Authors *Gur*, which is the true proximate Matter of all Metals] was Originally nothing but water, coagulated by the power of Metalline Seeds; Hear what the same Author sayes: *In terra nimirum fracescens aqua, semen locale vel insitum acquirit, ideoque vel in Liquorem,* [*Leffas*] *ad omnem Plantam, vel in succum* [Bur] *Mineralem transit, juxta species, per directionem seminum Electas:* "*Indeed the*
"*water, by continuing in the Earth, grow-*
"*ing putrid, doth obtain a local, or*
"*im-*

Helmont, *in Element. p.* 43.

" *implanted Seed; and by that means it is*
" *changed either into the Liquor* [Leffas,]
" *for all Plants* [*to be made out of it*] *or*
" *elſe into the Mineral juice* [Bur] *ac-*
" *cording to the particular kinds, choſen by*
" *the direction of the Seeds.*

85 But that you may not think, that Lead alone is formed from this Buttery, or Soap-like ſubſtance, which we have been ſpeaking of; but alſo that all other Metalline, and Mineral bodies are produced from the ſame; I ſhall give you an Inſtance, or two; *Eraſtus*, as I find him quoted by *Webſter*, ſaith, *I have two ſtones of Iron, one of them of an Ironiſh colour, the other of the colour of the ſhell of a ripe Cheſnut; altogether ſoft, and fatty, that may like Butter be wrought with the fingers; from which, notwithſtanding, hard, and good Iron was extracted by the fire.* *Metal. p.* 44.

86 Concerning the generating Silver from ſuch a Mineral-Liquor, that Honourable Perſon, Mr. *Boyl*, tells us [from *Gerrhardus*] thus. *Item aqua Cærulea inventa eſt* Annebergæ, *ubi Argentum adhuc erat in primo Ente, quæ coagulata, reducta in Calcem fixi & boni argenti*: " *Alſo that at* Anneberge *a blew water* " *was found, where Silver was yet in its* " *firſt Being, or Ens, which coagulated,* *Scept. Chym. p.* 360.

"*was reduced into the powder, or Calx of*
"*fixed and good Silver.*

As for Gold, and Antimony, *Paracelsus* saith, it is to be found in its *Ens primum*, or first Being, Liquid, and in the form of a Red Liquor, or Water, which afterwards is coagulated and exalted into Gold.

Paracelsus, *in lib. de Ren. & Restor. p.* 43, 44, 45 *& Chyrurg. Mag. p.* 117 243, 244. *De Renov. p.* 45. *Rer. Natur. Lib.* 8. *p.* 104.

Again, he sayes of the *primum Ens lege solis*, that it is a fugacious Spirit, as yet consisting in volatility, as an Infant in the Womb of a Woman, and is sometimes like a Liquor, and sometimes it is found like an *Alcool*, or subtile powder.

'Tis a common known thing, that those Men which bore the Ground to find out Coal-mines, do, when they come near the Mine, bring up in their borer a sort of matter they call Soapstone, which is like fat Clay, but of a black colour, and will, when new taken out of the Ground, spread like butter, as *Gur* will do; but in the Air will soon become so hard, that it will not cut with a Knife.

I might here take notice of what *Rulandus* hath said of the *Medulla Lapidis*, which the *Germans* call **Steinmarck**; some of which is white, some red, and some of other colours;

and most of it in substance like the forementioned *Gur*: but to avoid being tedious, I forbear. And of this sort of coagulated water were those Pebbles made, which *Peireskius* found soft under his feet in the River *Rosne*; as is related in the tenth History of Petrification, in the first Section of this Discourse.

90 So that, I think, it is evident, first, by the afore-cited Authorities, which hold that all bodies were made of water, and seed; and secondly, by the alleadged Experiments, teaching the Reduction of all bodies into water again; that the Original of all Concrets, [even those solid ones of Metals, and Stones] is water.

91 And I do not find that very ingenious man, Mr. *Boyl*, to be against this Opinion: for he saith thus; *Yet thus much I shall tell you at present, that you need not fear my rejecting this Opinion; since however the* Helmontians *may in Complement to their Master, pretend it to be a new discovery, yet though the Arguments be for the most part his, the Opinion it self is very Ancient.* *Scept. Chym p. 218.*

92 I have now done with the first Argument, that is, that all Bodies are made of

of those things into which they are at last to be resolved, and that I have proved to be water.

I now proceed to the second Argument, *viz.* that all Bodies are Nourished by that of which they are Constituted. 93

Section the Fifth.

THat Vegetables are nourished by water, will plainly appear from hence, that no Plants do either grow, or increase without the assistance of water; either by the way of Rain, or Dew, or else by the overflowing of some Spring, or River; for if they be destitute of water, they dye, and wither. 94

And it is commonly known, that the tops of Rosemary, Marjoram, Mint, Baume, Penny-ryal, Crows-foot, and many other Plants, will thrive, flourish, and grow to a large Bulk [without being Planted in the Earth,] if they be only put into a Glass with fair water in it; into which they will shoot out springy Roots, and from whence they will gather 95

suf-

ſufficient Nouriſhment to become large Plants.

96 To confirm which I ſhall relate a couple of very remarkable paſſages; the one borrowed from that honourable Philoſopher, Mr. *Boyl*; the other from that Learned Naturaliſt, *Helmont*.

97 Mr. *Boyl* tells us, that he cauſed a certain quantity of Earth to be digged up, baked in an Oven, and weighed; and then put into an Earthen Pot, in the which he ſet the ſeed of a Squaſh, which grew very faſt, [though planted too late, *viz.* in the Moneth of *May*] it being watered only with Spring, or Rain-water: in *October* [by reaſon of the approaching Winter] he cauſed it to be taken up, and the weight of it, with its ſtalk, and leaves, was found to be two pounds, twelve Ounces; and the Earth [in which it grew] being baked as before, it was found to be exactly the ſame weight. *Scept. Chymiſt. p.*

98 *Helmont*'s Relation is this: He took, he ſaith, two hundred pounds weight of Earth, which was dryed in an Oven, and putting it into an Earthen Pot, he moyſtened it with Rain-water, and in it he Planted the trunck of a Willow-Tree, which weighed five pounds, [covering the *Complex. & Miſt. fig. p.* 88. *ſſ.* 30.

the Pot with an Iron cover, which had a hole for the Tree to grow out at,] and at the end of five years, he took up the Tree, and found it to weigh one hundred sixty nine pound, three Ounces; and the Earth being dryed, was of the same weight as at first.

Now if this be throughly consider'd, 59
from what can we possibly suppose, the bulk of the Swash, and this great addition of 164. pounds weight to the Tree, did proceed but from meer water; there being nothing else added to either of them? and no doubt, Nature observeth the same course in producing all other Vegetables; whether springing up from their innate Seeds, or transplanted into other soyls: for the Earth is only a Receptacle to receive the seeds of things, [and to sustain the weight of Minerals, Animals, and Vegetables: which Seeds conceive in the water; where they beget themselves Bodies, and from which all Plants arise; and by the power of the Architectonick Spirit of the seed, fermenting the particles of water, do proceed the stalks, wood, leaves, flowers, fruit, grain, [or Casket of the real seed] as also the Colours, Odors, Tastes, and all the specificate qualities of the

Plant,

Plant, according to the *Idea* wrapt up in the bosom of the seed. Animals also are nourished by water; some immediately, others mediately.

100 Immediately, from meer water, as Salmon, Sturgeon, and several other sorts of Fish, in whose stomacks no food, that I know of, was ever yet found. And to confirm this; *Rondeletius* [an Author of good credit] affirms, that his Wife kept a Fish in a large glass, and fed it with nothing but water [so long] till it grew so big, that it could no longer be contained in the glass; which they were forced to break to get it out.

101 Those living Creatures that are nourished immediately by water and Vegetables, are most sort of Cattel proper for food; so that in these Beasts, which feed upon Corn, Grass, and other Herbs, [which are really but water, once removed from its primitive simplicity by the power of Seeds,] water is a second time transmuted, by the Ferment of a Beasts stomack, by which it is changed into Chyle, Blood, Milk, Urine, Flesh, Bones, Fat, Sinews, &c. and all these different one from another, according to the species of the Beasts that feed upon them.

Now

Now these Creatures, and their parts [as the flesh and milk of beasts] serve for food to those Animals that are nourished mediately from water; such are Men, and divers Wild beasts, who live upon the flesh, milk, and blood of Cattel, and by the Ferments of whose stomacks these things are again Transmuted into another kind of Chyle, blood, flesh, bones, milk, Urine, &c. which juices of our bodies are still but water, disguised by the operation of different seeds, and Ferments; which is quickly discovered by distilling them: for, if our blood be distilled, five or six parts of seven will rise in Phlegm [which is easily reducible into simple water, as we have shewed in the last Section before this.]

Nay, the sperm of Man [by which we propagate our selves;] is nothing but water [Originally] altered by the several Ferments of the body, and circulated in the seminal Vessels.

Upon this Subject there is much good matter to be found in that ingenious man, *Simpson*, in his *Hydrologia*.

It now remains, that we prove the growth, and nourishment of Metals and stones from water: which that we may

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the better do, I think it neceſſary, in the firſt place, to diſcover, whether they do really grow, and increaſe or no; for ſome men believe, that God Created them at firſt, when he formed the world; but that ſince they do neither grow, nor increaſe: which error we ſhall endeavour to confute by ſeveral good Obſervations, taken from approved Authors.

105 Almoſt all the Myſtical Chymiſts have handled this point ſo obſcurely, that though they have aſſerted, that metals and ſtones do grow and increaſe, and that they are generated from a ſeminal principle; yet have they proved nothing clearly; but left it as a principle to be granted, without any further diſpute.

106 'Tis a known truth in *Cornwall*, that after all the Tin, that could be found in a Mine, hath been taken out, and the Mine filled up with Earth; yet within thirty years they have opened them again, and found more Tin generated: of which Dr. *Jordan* doth take notice alſo, and in the above-cited place he ſayes thus: *The like hath been obſerved in Iron, as* Gandentius Merula *Reports of* Ilna, *an Iſland in the* Adriatick *Sea, under the* Venetians, *where*

Nat. Bath. Cap. 11. P. 51, & 52.

where Iron is bred continually, as fast as they can work it; which is confirmed also by Agricola, *and* Baccius. *The like we reade of at* Saga *in* Lygiis, *where they dig over their Mines every ten years.*

And of Ilna *it is remembred by* Virgil, *who saith,* Ilnaque inexhaustis Chalybum generosa metallis. John Mathesius *giveth us Examples of almost all sorts of Minerals, and Metals, which he had observed to grow, and regenerate. The like Examples you may find in* Leonardus Thurnisserus; Erastus *affirms, that he did see in St.* Joachim's *Dale, Silver grow upon a Beam of wood, which was placed in the Pit to support the work; and when it was rotten, the Work-men coming to set new Timber in the place, found the Silver sticking to the Old Beam. Also he reports, that in* Germany *there hath been unripe, and unconcocted Silver found in Mines, which the best Workmen affirmed would become Silver in less than thirty years. The like* Modestinus, Fucchius, *and* Mathesius, *affirm, of unripe, and liquid Silver; which when the Workmen find, they use to say, we are come too soon.*

In Sarept. Conc. 3. p. 11, &c. Alchym. Mag. De Metallis. p. 17, & 19

Lex. Alchym. p. 56.

And *Rulandus* saith [speaking of Silver that is to be found Naturally purified 107

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in the Mine;] *Sed hoc argentum purum tenuissimis bracteis amplectitur Lapidem; interdum etiam præ se fert speciem Capillorum, interdum virgularum, interdum globi fert speciem, quasi filis convoluti candidis, aut rubris; interdum præ se fert speciem arboris, Instrumenti, Montium, Herbarum, & aliarum rerum.* "*And* "*this pure Silver doth embrace the Stone* "*with most fine Plates; it sometimes also doth* "*bear the shape of hair, sometimes of little* "*twiggs, sometimes of a Globe, as though* "*wrap'd about with thred, white, or red;* "*sometimes it appeareth in the shape of* "*a Tree, Mountain, Instrument, Herbs,* "*and of other things.*

08 Mr. *Boyl* tells us from *Gerrhardus*, thus. In Valle *Joachimacæ*, &c. [saith he] *In the Vale of* Joachim, *Dr.* Shreter *is a Witness, that Silver, in the manner of Grass, had grown out of the stones of the Mine, as from a Root, the length of a finger; who hath shewed these veins, very pleasant to behold, and admirable, at his own House, and given of them to others.*

And to shew you, that Metals do grow even like Vegetables, it is very remarkable what is quoted by *Webster*, out of *Peter Martyr*, Councellour to the Emperour *Charles* the Fifth, in these words: *They have found by Experience, that the Vein of Gold is a Living Tree, and that the same by all wayes spreadeth, and springeth from the Root, by the soft pores and passages of the Earth, putteth forth branches even to the uppermost part of the Earth; and ceaseth not till it discover it self to the open Air; at which time it sheweth forth certain beautiful colours in the stead of flowers: round stones of Golden Earth, instead of fruit, and thin Plates in stead of leaves: These are they which are dispersed through the whole Island* [he is speaking of *Hispaniola*] *by the course of the Rivers, Eruptions of the Springs out of the Mountains, and other falls of the Floods: for they think, such grains are not ingendered where they are gathered, especially on the dry Land, but otherwise in the Rivers. They say, that the root of the Golden Tree extendeth to the Centre of the Earth, and there taketh nourishment of increase; for the deeper that they digg, they find the trunck*

Peter Martyr. Decad. 3. Cap. 8. p. 139. Webster, p. 48.

trunck the bigger, as far as they may follow it for abundance of water, ſpringing in the Mountains: of the branches of this Tree, they find ſome as ſmall as a thread, and others as big as a mans finger, according to the largeneſs, or ſtreightneſs of the Rifts, and Clefts; they have ſometimes lighted upon whole Caves, ſuſtained, and born up, as it were, by Golden Pillars, and this in the way by which the branches aſcend: the which being filled with the ſubſtance of the Trunck, creeping from beneath the branch, maketh it ſelf way, by which it may paſs out. It is oftentimes divided by incountring with ſome kind of hard ſtone; yet is it in other Clefts nouriſhed by the exhalations and Virtue of the Root.

To which I might add what *Fallopius* ſaith of Sulphur, [*viz.*] *Sunt enim loca, è quibus ſi hoc Anno Sulphur effoſſum fuerit, intermiſſa foſſione per quadriennium, redeunt foſſores, & omnia Sulphure, ut antea, rurſus inveniunt plena*: "For there are places, from whence if this "Year the Sulphur be digged out, and for-"bearing to dig, by the ſpace of four years,

"*the Mine-men return, and find them*
"*all full of Sulphur, as before.*

And that Salt-Petre groweth, and increaseth, our common Salt-Petre-men will justifie; for after they have extracted all the Salt that they can get out of the Earth that yieldeth it, in two or three years after, they work the same Earth [which for that purpose they carefully lay up] over again; and it yields them a considerable quantity of Salt-Petre, as before.

And concerning Table-Salt, *Matthias Untzerus* produceth many Testimonies from credible Authors, that besides that which is made of Salt-Springs, there are in *Spain*, the *Indies*, and divers other parts of the World, large Mountains of Salt, which as fast as they can be digg'd, grow again, and are quickly filled with Salt.

Untz de Sale. Cap. 7. p. 33, 34, & 35.

And for Lead, [besides what *Galen* observeth of its increase, both in bulk, and weight, by being kept in a damp Cellar,] *Foccatius Certaldus*, as he is cited

cited by Mr. *Boyl*, saith thus of its growth: *Fesularum Mons*, &c. Of the Mountain of *Fesula*, a Village near *Florence*, that it hath Lead-stones; which if they be digg'd up, yet in a short space of time they will be supplied afresh, and generated anew. I might instance in many more particulars, but I think these sufficient.

14 That Stones do grow, and are made since the Creation, every mans Observations will sufficiently acquaint him: And the Histories cited in the first Section of this Discourse do confirm; and that they are nourished by water, is apparent from the Situation of Rocks in the Sea, the production of Pebbles in the bottom of Rivers, and that both Mountains, and also gravelly places, are never destitute, or unaccompanied of Springs and Rivulets.

15 And *Paracelsus*, I remember [somewhere] giveth us this Experiment, to prove that stones do grow, and are nourished by water; *viz.* that if a Flint, or Pebble be put in a glass Vessel, and Rain,

or Spring-water put upon it, and distilled from it, if this be often repeated, it will cause the stone to grow so bigg, that at last it will fill up the Glass that contained it.

That Metals, and Minerals are nourished by water, is more than probable from hence, that no considerable Mines are found without a great conflux of waters; which the Work-men are forced to make drains and Pumps to carry away, that they may work dry.

And there is an Experiment, written by Monsieur *De Rochas* [a considerable *French* Author, and Transcribed from him by the Honourable, Mr. *Boyl*] which I shall here insert. *Having* [saith he] *discerned such great wonders by the Natural Operation of water, I would know what might be done with it by Art, imitating Nature; wherefore I took water which I well knew not to be compounded with any other thing than the Spirit of Life; and with a heat artificial, continual, and proportionate, I prepared it, and disposed it, by graduati-*

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ons of Coagulation, Congelation, and Fixation, untill it was turned into Earth; which Earth produced Animals, Vegetables, and Minerals: The Animals did eat, move of themselves, &c. and by the true Anatomy I made of them, I found they were composed of much Sulphur, little Mercury, and less Salt: the Minerals began to grow, and increase, by converting into their own Nature one part of the Earth; they were solid, and heavy; and by this truly demonstrative Science, namely, Chymistry, I found they were composed of much Salt, little Sulphur, and less Mercury.

According to this Experiment, Minerals were Generated out of, and nourished by water.

118 From what hath been related, both in this and the fore-going Section, concerning the growth, increase, and Vegetability both of Metals, Minerals, and Stones; as also concerning those Mineral, Metalline, and stony juices, called *Gur*, [or *Bur*] Soap-coal, and the *Medulla Lapidis*, &c. I think it will

appear, that both Metals, and Stones, are made, do grow, and are nouriſhed, daily, and at this time; and that from water, of which they were at firſt made, by the power of their Seeds: And this is the reaſon, that Metals, and Mines are now uſually found in thoſe places where for many Years before there were none; as both *Sandivogius*, and *Helmont* aſſure us. *Inde fit, quod hodie reperiantur Mineræ in locis ubi ante mille annos nullæ fuerunt:* "*From* "*hence it is come to paſs, that Minerals* "*may be found in places, where before a* "*thouſand years ſince, there have been* "*none.* And *Helmont*, thus: *Loca enim quæ fodinis caruêre olim, ſuo quandoque die, Maturato ſemine, fœnora reddent, ditioribus non imparia; quia radices, ſive fermenta Mineralium, ſedent in loco immediatè, ac in dierum plenitudinem ſine faſtidio anhelant: quam ubi ſemen complevit, tum Gas obſidens aquam ibidem, ſemen à loco ſuſcipit, quod aquæ ſulphur dein impregnat, aquam condenſat, atque ſenſim aquam Mineralem tranſplantat:* "*For* "*places which have wanted* [or had no] "*Mines in times paſt, will in their own* "*time,*

Nov. Lum. Chym. Tract 4. p. 314.

Helmont, In Mag. Oport. p. 127. ſſ. 39.

"*time, their Seed being ripened, reſtore*
"*Uſury, equal to the richer ſort [of*
"*Mines] becauſe the Roots, or Mineral*
"*Ferments, are ſeated immediately in the*
"*place; and their full time being come,*
"*they [pant] or breathe without [weari-*
"*neſs] or loathing: and when it hath*
"*gained a compleat Seed, then the Gas*
"*which is ſeated in the water of that place,*
"*receiveth that ſeed of the place, which af-*
"*terwards begets the Sulphur of the water*
"*with Child; condenſeth the water, and*
"*by degrees turneth, or tranſplants it into*
"*a Mineral water.*

119 And, to conclude this Section, I will give you the Judgment of that great Naturaliſt, *Helmont*, by way of confirmation; becauſe I find him exactly to correſpond with all that I have hitherto delivered.

120 His words are theſe, which you ſhall find in his *Imago Fermenti*; which becauſe they are long, I will only give you their ſence in *Engliſh*. *And indeed becauſe the Schools have been unacquainted with Ferments, they have alſo been ignorant, that*

Helmont, *Imag. Ferment. p.* 94. §. 29, 30, 31.

that solid Bodies are framed only of water, and Ferment: for I have taught, that Vegetables, and Grain, and whatsoever Bodies are nourished by them, do proceed only from water: for the Fisher-man never found any food in the stomack of a Salmon; if therefore the Salmon be made of water only, [even that of Rivers] he is also nourished by it. So the Sturgeon wants a mouth, and appeareth only with a little hole below in his Throat, whereby the whole fish draweth nothing besides water. Therefore every Fish is nourished, and made of water, if not immediately, yet at least by Seeds, and Ferments, if the water be impregnat therewith. From the Salt Sea every fresh Fish is drawn; therefore the Ferment [of the Fish] turneth Salt into no Salt, or at least water into it self. Lastly, Shell-fish do form to themselves stony shells of water, in stead of Bones; even as also all kind of Snails do; and Sea-Salt, which scarce yieldeth to the force of a very strong fire, groweth sweet by the Ferment in Fishes; and their flesh becometh volatile: for, at the time of distributing the nourishment, it is wholly dissi-

dissipated, without a residence, or dreg. So also Salt passeth over into its Original Element of water; and the Sea, though it receive salt Streams, yet is not every day increased in saltness. So the most unmixed, and most pureſt water, under the Equinoctial Line becometh hory, and stinketh: strait-way it getteth the colour of a half-burnt brick, then it is greenish, then red, and quaketh very remarkably, which afterwards of its own accord returns to it self again: truly this cometh to pass by reason of the conceived Ferment of that place, which being consumed, all these appearances cease. So the most pure Fountain-water groweth filthy, through the musty Ferment of the Vessel; it conceiveth Worms, breedeth Gnats, and is covered with a skin. Fenns putrifie from the bottom, and hence arise Frogs, Shell-fish, Snails, Horse-leaches, Herbs, &c. also swiming Herbs do cover the water, being contented with drinking only of this putrid water. And even as stones are from Fountains wherein a stony Seed exists; So the Earth stinking with Metallick Ferments, doth make out of water,

ter, a Metalline, or Mineral Bur; but the water being in other places ſhut up in the Earth, if it be nigh the Air, and ſtirred up with a little heat, it putrifieth by continuance, and is no longer water, but the juice Leffas of Plants; by the force of which hory Ferment, a Power is conferred on the Earth of budding forth Herbs. For that putrifying juice by the prick of a little heat doth aſcend in ſmoak, becomes ſpungy, and is compaſſed with a skin, becauſe the ferments therein hid require it. Therefore that putrefaction hath the office of a Ferment, and the Virtue of a Seed, and by degrees it obtaineth ſome meaſure of Life, and haſteneth by the Virtue of its Seeds into the Nature of Archeuſs. Therefore this putrid juice of the Earth, is Leffas: from whence ſprings every Plant not having viſible ſeed, which nevertheleſs bring forth ſeeds, according to their deſtinations. Therefore there are as many rank, putrid, muſty ſmells, as there are proper ſavours of things. For Odors are not only the Meſſengers of Savours, but alſo their promiſcuous Parents. The ſmoak Leffas being now compreſt together,

ther, doth first grow pale, then somewhat yellowish, and presently after is of a whitish green colour, and at last fully green. And the power of the several species being unfolded, it gains divers marks, and different colours: in which course it imitates the Example of the water under the Equinoctial Line. Yet in this it differs, that those waters have borrowed too Spiritual and volatile a Ferment from the Stars, and place, without a Corporal hory putrefaction; and therefore through their too frail Seed they presently return into themselves. But Leffas is constrained to finish the Act, [and obey the Power] of the Conceived Seed. Therefore Rain Conceiving a hory Ferment, is made Leffas, and is sucked in by the lustfull Roots: 'Tis experienced also, that within this Kitchin [of the Root] there is a new hory putrefaction produced by the Ferment which is Tenant there; by and by it is brought from thence to the Bark [which is as it were the Liver of the Plant,] where it is inriched with a new Ferment of that part, and is made a Herby, or Woody juice; and at length it being come to

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Maturity, it is made Wood, an Herb, or becometh Fruit. If the Arm, or Stem of a Tree shall be putrefied under the Earth, then the Bark or Rinde becometh dry, and cleaveth asunder, and sendeth forth a smoak by its own Ferment, which in the beginning is spungy, but at length hardens into a true Root: and so Planted Branches become Trees by the abridgment of Art.

Therefore it is now evident, there 12 E
is no mixture of Elements, and that all Bodies primitively, and materially are made of water, by the help of Seeds, and their Ferments; and that the Seeds being worn out, and exhausted by Acting, all Bodies do at length return into their Ancient principle of water: yea, that Ferments do sometimes work more strongly than fire, because that fire can turn great stones into Lime, and burn Wood into ashes, but there it stops; but notwithstanding, if they shall assume a Ferment in the Earth, they return into the juice of Leffas, *and at last into simple water. For Stones, and Bricks,*

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do of their own accord decline into Salt-petre. Lastly, Glass which is unconquered by the fire, and uncorrupted by the Air, in a few years putrifieth by continuance [in the Earth] and undergoes the Laws of Nature, &c.

122 Having now gone through the two first Arguments, by which I proposed to prove the Doctrine I have asserted, which Arguments were grounded on two generally received and allowed Axioms, [*viz.*] Those things which are the last in the resolving, [or retexing] of a Body, the same are found to be the first in its composition. Secondly, we are nourished by those things of which we are made, [or consist.] And having, I hope, sufficiently proved by both of them, that Water is the Original Matter, and Seeds the Efficients of all Bodies; I am now come to the third, and last Argument, which was to shew, and prove a necessity of all Bodies being formed out of water; because neither the four Elements of the *Aristotelians*, nor the three Principles of the Old Chymists, no, nor yet the five of the Modern

dern Chymists, can possibly concur to the constituting of Bodies, as either their Primary Matter, or Efficient; they being themselves but great disguised Schemes of one and the same Catholick Matter, Water, from whence they themselves were made; and into which they are ultimately to be resolved, and uniformly to be reduced.

Section

Section the Sixth.

AND First for the *Chimical* Principles; I have shewed [in the Fourth *Section* of this Discourse,] That the Oyls of *Vegetables*, and their Fermented Spirits, which are their *Sulphurs*; that the Fats, and Oyles of Animals, which are their *Sulphurs*, and also the *Sulphurs* of Minerals, and Mettals, are all of them reducible into Water: As are also both Mineral, Animal, and Vegetable Salts. And as to the *Mercury* of Animals, and Vegetables (improperly enough so called,) they being but of a loose Contexture, are easily made to *remigrate* into water; (as I have taught in the same place:) As also is [though with somewhat more reluctancy, because of its strong Compression by its Seed,) true Mettallin *Mercury*, or *Quicksilver*, as my own experience hath assured me: Which is also confirmed by *Raymundus Lullyus*, the ingenious Mr. *Boyl*, and divers others.

126 All this may be performed two ways, that is, Either by the means prescribed in the forecited pages, or else more solemnly, speedily, and universally, by the help of that rare Solvent, the *Alkahest*; The manner of whose operating upon Bodies, I have described from the relation of that worthy man *Helmont* [in the fourth Section.]

127 Now as to the two other Principles added by the Modern *Chymists*; the one of them, *viz.* Earth, doth properly belong to the School of the *Stagyrit*; and therefore I speak to that, when I come to discourse of the four supposed Elements of Bodies.

128 But as to the other, *viz.* Spirits; they are all of them of one of these two Classes; either Vinous, and made by Fermentation; or Saline, and made without.

129 Now for the Vinous, they are totally inflamable Bodies; and therefore to be Ranked under the Classis of *Sulphurs*; and may be reduced to water, as I have shewed you above: Other *Sulphurs*, and Spirit of Wine it self may.

130 The other sort of Spirits, *viz.* Saline, are nothing but Volatile Salts, diluted with

with Phlegme or water; and therefore by repeated distillations, and careful rectifications, will be brought to constitute a *Lump* or *Mass* of dry Salt: Wherefore it is not an other Principle, distinct from the former *three* of the Old Chymists; and by the same handycraft-means may at last be reduced to water, as I have before shewed the three Principles of the Chymists may be.

1 Nor indeed can any of these three Bodies, called Salt, Sulphur, and Mercury, pretend to be the principles of all Concretes, except only Mercury, or Water; for it is proper for Principles, that they be Primary, and not further resolveable into more simple parts: But both Salts, and Sulphurs[as I have made out above] Being further reducible, *viz.* into Water; they therefore cannot [whilst such] deserve the Name of Principles.

2 Besides, it is very much questioned by those two great Phylosophers, *Helmont*, and *Boyl*, whether the Fire indeed be an *adequate* and fit instrument to Anatomise Bodies? And whether or no those distinct Schemes, into which the common Chymists resolve the matter of Bodies by Fire, [and which they call their three

Principles] were indeed really *existing* in those Bodies, from which they were Educed; [that they were materially there, no man will deny; they being themselves composed of water?] But whether they were resident in the Concrete that yielded them, in the same Figures, and Shapes, that the Fire Exhibites them to our Sences, is very disputable? And it may easily be imagined, that the Fire acting upon a Body that it can master, [for some it cannot] doth not only put the small parts, of which that Body consisted, and which were before [in some measure] at rest amongst themselves, into a tumultuous motion; by means of which, they are sent hastily off into the Receiver; but doth also break by forcing them asunder, those small particles of that body into other Shades, Figures, and Sizes: upon which account they do convene together after new manners; and so the Fire may present us with new Bodies, which were not præ-existent in the Concrete, when first exposed to its Action.

But because this point is throughly, and Learnedly handled both by *Helmont*, and my excellent Friend Mr. *Boyl*, in his

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Sceptical Chymiſt, I ſhall ſpare my ſelf the pains of expatiating upon it; and refer the Inquiſitive to thoſe two Authors, for full ſatisfaction in this point.

133 Only I think it very neceſſary in this place, to examine the Arguments which are brought by a very learned man, and Eminent Phyſitian, to evince the real Exiſtence of the Chymical Principles in Bodies, and to prove that they are not products of the Fire. And I the rather take notice of it here; Firſt, becauſe they are not bare ratiocinations of this Learned mans, but experiments; upon which he hath built very much: And Secondly, ſhould I omit to examine theſe Experiments, [which indeed do ſeem weighty] they might perhaps be produced againſt the Doctrine I defend: And ſome might likewiſe object, that I had not dealt candidly with the Chymiſt; in that I had taken no cogniſance of the beſt weapon they have to defend their Cauſe.

134 This Learned man then intending to prove the real exiſtence of Salin and Sulphurous Principles in Bodies, before the action of the Fire upon them, produces Experiments nevertheleſs, that are made

by the Fire. His sence is this: For the

Dr. Willis de ferm. cap 20. p. 16.

first, [viz. *Salt*] *it is commonly known, that if the Salt be once washed out of the Ashes of any vegetable, if they be again calcined, they will yeild no more Salt. Moreover, if any concrete being distilled, shall yeild a very sharp, and acid Liquor, their Calces* [*or Ashes*] *do remain less Salt*; *and* è contra, *that is, where the Salt is volatized, and become a Liquor, and doth ascend by the Alimbec, you shall in vain seek for it in the* caput mortuum: *That which vindicates the Existence of the Principle of Sulphurs in Vegetables, is this*; *Take* Guajacum, *or any other sort of heavy wood, in pieces or shavings, and putting it into a Glass-Retort, distill it by degrees*; *and it will give you, together with a sower Liquor* [*which is the Saline* Latex] *a blackish Oyl* [*which is its sulphury part*] *in a great quantity. That this was at first in the distilled Body, and not all produced by this* ἐγχείρησις, *appeareth from hence, because if you do proceed another way, by which the Sulphur may be taken from the concrete, before it be distilled, the Liquor which cometh forth, will be almost totally deprived of its Oylyness: Wherefore, if you shall pour Spirit of Wine upon the Shavings*

vings of this wood, this menſtruum *will extract a great quantity of pure Rozin from it, which is the ſame Sulphury parts; and if afterwards you take theſe Shavings that are left, and waſh them with common water, and being dry, put them in a Retort, and diſtil them* [*as at firſt*] *you ſhall have but a little Oyl. But that which is more to be wondred at, and which doth more fully confirm this truth, is, that ſeveral Bodies which have little of Spirit, or Sulphur in them* [*they being for the moſt part found amongſt Volatils*] *and which chiefly conſiſt of Salt, Earth, and Water, and are ſeparated into theſe Elements by diſtillation, which being again mixed together, doth reſtore us the ſame ſort of mixts, marked with the ſame ſort of qualities as before;* V. G. *if you diſtil Vitriol in a reverberating Furnace, you ſhall have a Phlegme, almoſt* inſipid, *which is its watry part: Then a very ſower Liquor, or rather a fluid Salt, and in the bottom remains a Red Earth of a pleaſant purple Colour: Theſe being rightly performed, if the two diſtilled Liquors be poured back upon the* Caput Mortuum, *we ſhall have the ſame Vitriol as before, revived of the ſame colour, taſte, and almoſt of the ſame weight. The like may be*

done with Nitre, Sea-ſalt, Salt of Tartler, and perhaps, with Alome, and other Mineral bodies, which you may proceed withal with the ſame ſucceſs; ſo that thoſe concretes that conſiſt of fixed and ſtable Elements, may, like Mechanical Engins be taken to pieces, and put together again, without any prejudice. Thus far he.

135 Firſt then, he ſaith, that if Salt be waſhed from the Aſhes of a vegetable, though the Aſhes be afterwards never ſo much calcined, yet will they yeild no more Salt; and alſo that thoſe things that yeild a ſower Liquor, have little or no fixt Salt in their Aſhes.

136 The matter of fact I do not deny, but the inference from thence, I ſuppoſe I may. For it is no neceſſary conſequence, that a thing was really exiſting in that form, in the body that yeilded it, in the which Art preſents us with it, when ſeparated from the ſaid body: As for Example, who ever believed, that a Cole was ever really Exiſtent, [as a Cole] in wood, any otherwiſe than materially; and it is ſufficiently known, that the Cole is a product of the Fire, which hath diſſipated ſome parts, of which the wood conſiſted and new modified the

reſt;

reſt? From which action of the Fire, the new body of the Cole reſulted: From which Cole, if it be fluxed with an Alkalizat-Salt, may be obtained a perfect, true, and totally inflamable Sulphur, no way diſtinguiſhable from common Brimſtone, [as I have often proved:] Which Brimſtone is a body very different from that of Salt, which the ſame Cole, if burnt to Aſhes, will yeild us in the room of this Brimſtone. And if it ſhall be objected, that this Brimſtone is the Oyl of the Wood or Plant, which this Learned man is pleaſed to call the Sulphury Principle, and which he afterwards tells us may be obtained [together with an acid Saline Liquor, upon which it ſwimmeth] by diſtillation from *Guajacum*; if this be objected, I deſire it may be conſidered, Firſt, that the Oyl of the wood was before ſent off into the Receiver; and that a much greater Streſs of Fire is required to burn the wood into a Cole, then is needful to ſeparate all its Oyl from it. And Secondly, that after it hath afforded all the Oyl which the Fire can make of it, yet then at laſt this Brimſtone may be made out of it. And thirdly, that it be taken notice of, that it is not a ſufficient

ground

ground [nay, that it is a liberty not to be allowed] to give different bodies the ſame denomination, becauſe they agree in ſome one quality: as this Oyl, and the Sulphur do in that of Inflammability, when they differ in ſo many others, as is obvious to every man.

137 And as to that part of the Experiment alledged by this Learned man; in the firſt place, *viz.* that theſe Concrets, which yeild in diſtilling a ſower Spirit, which is [ſaith he] their Salt volatiſed, and brought into the form of a Liquor; and therefore, as he ſaith, in vain to be ſought for in their Aſhes, in which very little will be found: It proveth no more but this, that according as Bodies are differently made up, ſo the Fire acts diverſly upon their Matter: As is to be ſeen in Wax and Clay, the former of which the fire melts, and the laſt it hardens. Nor doth it appear, that this Saline Liquor was ſuch, whilſt it recided in the Concrete, and before the action of the Fire upon it; any more than it doth, that there is really, and actually reſiding in the body of Wheat, or Barly, before they be made into Mault, and afterwards Brewed and Fermented, a vinous, and

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inebriating Spirit: Which when they are so managed we find there is. But if otherwise these grains of Barly, or Wheat, shall be ground into Flower, and made into Bread, they then become wholesome Food; of which a great quantity may be eate without procuring drunkennes, which their fermented liquors will cause. And yet from this very substance of the Grain, which affordeth two such bodies, as Drink, and Bread; by a different managing of it, may be made a liquor which is so far a Corrosive, that it will draw Tinctures, [which are solutions of the small parts of bodies] from divers Minerals, Mettals, and Stones, and that many times without the help of External heat. Nor can it with more Justice be affirmed, that these Salts [whether fixt, or volatile] were really and in that form, existing in the wood, or other Concrete; then it may be said, and believed, that there is actually in Bread-corn, the Flesh, Blood, Bones, Sinews, Hair, Nailes, *&c.* of a man; because we see, that by the action of a humane stomach, these things are made out of Bread.

And as to what is alledged concerning the

the Oyl of *Guajacum*, it yieldeth if it be distilled *per se*, but if it be infused in Spirit of Wine, it will impregnate it with a certain *Rozin*, or *Gum*. And the wood after this Extraction, if it be committed to distillation, will not then afford the same quantity of Oyl as before it would have done: That I easily grant, but then it will quite destroy the inference for which this Learned man brings it; *viz.* That Oyl was in that form a constituant Principle of the mixt. For there is a vast difference betwixt *Rozin*, and Oyl; the one being a firm body that will admit of pulverisation, the other a fluid, and unctious body. And besides many other specifical differences, [which, not to be tedious, I purposely omit,] The *Rozin* is a product of Nature, the Oyl, of the Fire. For the *Rozin* or *Gum*, is to be seen in the wood before distillation; and is only taken up, and dissolved in the Spirit of Wine, which being evaporated, it appears again in its own form. But the Oyl is, I grant, substantially, and materially the same with the *Rozin*; and therefore, that being for the greatest part, or totally taken away, the Fire produceth either lesse, or no Oyl: Because if the

Ro-

Rozin be left in the wood, when it is committed to the Fire, the Fire doth ſpread abroad, break, and new alter the texture of the *Rozin*, and elevating, and making a new combination of its parts; it conſtitutes that Body which we call Oyl; which is in this caſe a real and new product of the Fire, and was not before formally Exiſting in that Body.

138 And it is plain, beſides the inſtances before cited, that by a different mannagement of one and the ſame Concrete, I will cauſe the Fire to Exhibite very different ſubſtances from it; as for Example, take any herb, as Wormwood, Mint, &c. and having bruiſed them, add Yeſt to them, or by any other means, procure a fermentation in the Matter; and then commit it to diſtillation, it will afford you an Oyl, and a vinous Spirit [which rectified, are both of them totally inflamable] but if the ſame herb be bruiſed, and ſuffered to lie upon the Flore ſome dayes, without fermenting, and if it be thus put to diſtillation, inſtead of yielding a vinous Spirit, and an Oyl, as the other did; it will afford an urinous or Armoniack Spirit; which being carefully rectified, will coagulate totally into a maſs of Salt; and

that every man knows, is very different both from an Oyl, and a vinous Spirit: For this Salt is not only brittle, but also absolutely uninflamable.

139 And Lastly, as to what this Author instances, concerning Vitriol, Saltpeter, Tarter, and Alome, yeilding of Saline Spirits, which being poured back upon their *Caput Mortuums*, do redentigrate; and return to the same bodies as they were before. The matter of Fact I allow to be true; but withal, must be allowed to say, that it proveth not what he brings it for; nor doth evince, that Salt, and Sulphur, are principles in all bodies; for 'tis the effect of their seeds, that forms these bodies out of water: For Salts sometimes are the products of seeds; as I have proved from the regular figures, into which these Concrete juices do constantly shoot; as in Section the Second of this Discourse. So that it is not strange, that the smaller parts of these Saline juices, being by Fire divorced from the grosser, upon their being put together, do hastily run into, and lodge themselves in the cavities of their own bodies, from whence they were forced by the Fire. And to conclude, there are many bodies

which

which the Fire cannot force to confeſs they are conſtituted ſo much as of two of the five modern Chymical Principles; as to inſtance in Gold, Talk, Silver, &c. and yet by the operation of the Alkaheſt, even theſe are at laſt reducible to water, of which they were made by the power of ſeed; and the afore-ſaid Oyls, Salts, and Concrete juices, are to be all of them returned to water by the means preſcribed in the Fourth Section of this Diſcourſe.

140 And here I muſt again take notice of two things, Firſt, that this Learned Doctors Experiments are all made by the Fire; which of it ſelf alone I deny to be a proper Agent, to Analize bodies, and to diſcover to us the truth of thoſe principles of which they are conſtituted; and that for theſe reaſons, becauſe it doth not work uniformly upon all bodies expoſed to its action; for, as I have ſaid before, it cannot of it ſelf ſeparate any one of theſe ſuppoſed Principles, from Gold, Talk, Sand, Silver, and many other Concrets; and yet of ſome other bodies it will frame, not only Oyles, Salt, Spirit, Aſhes, [or Earth, as he is pleaſed to call it] but alſo a Cole, Brimſtone,

and

and at last Glass: which three last, no man I suppose will imagin, were really existing, in those bodies of which they are made; and yet are they made by the same Agent, and from the same Subject, of which the Fire produced Salts, Oyls, Ashes, &c. and therefore upon the same ground, may as justly plead for the prerogative of being the constituent principles of bodies.

141 The Second thing I would have considered is this: That those different Shapes and Appearances, into which the Fire hath put the matter of any Concrete, *viz.* Salts, Oyl, Ashes, Spirits, all of them are yet so compound, that they may be yet further returned and divided into more simple parts; *viz.* into water, which is indeed the only, and true material Principle [deservedly so called,] for it is a primary, and simple body, into which at last, all Concrets, [and even the other Four supposed principles of this Learned mans] are reduced both by Art, and Nature; and of which they were made. So that we may truly affirm with the Antient Philosophers, ἓν εἶναι τὰ πολλὰ, καὶ τὰ πολλὰ ἕν; One is many, and many One.

Plato, Hippo, & Anaxag.

So that though this Learned Doctor, ſhewed much witt in building ſo fair and ſpecious a Philoſophical Structure, from theſe five ſuppoſed principles, yet can it be no ſafe dwelling in it; becauſe the Foundation is unſound.

143 I have been the fuller in diſcuſſing the Experiments brought by this great man, in favour of his five Chymical Principles; Firſt, becauſe indeed they have a very fair appearance, till they be throughly examined.

And Secondly, I would be very loath to have it thought, I would endeavour inconſiderately or upon ſlight grounds, to diminiſh the fame this ingenious man hath already gained in the World by his Writings.

And now having examined not only the *Tria Prima* [or three firſt Principles of the Old Chymiſts] but alſo the five Principles of our Modern Chymical Philoſophers; and not being able to allow them the Title of Principles, for the reaſons above alleadged; I will likewiſe examine the Quaternary, or four Elements of the *Ariſtotelians*, and ſee, whether they can plead any better Title to be allowed, and eſtabliſhed, the Principles, or Elements, of which all Bodies are made.

Section the Seventh.

145 THe *Quadriga*, or four Elements of the Peripateticks, hath for a long time gained the priviledge, of being esteemed the constituent Principles of all Concretes: [which therefore are usually stilled compound-Bodies] for they say of Fire, Air, Water, and Earth, all sublunary Bodies are made, and from the divers mixtures of these, do arise all generations, corruptions, alterations, and changes, that happen to all sorts of Bodies.

146 And first for the Element of Fire, [placed by *Aristotle* under the Globe of the *Moon*, but never yet seen by any man,] certainly it is nothing else but Heat; and that we know is caused by the violent and nimble agitation of the very minute-parts of Matter: And though there be Heat, [and consequently a kind of Fire] in the Bodies of Animals, yet this is no radical Principle

ciple; but a product of vital Fermentation. The like of which we see is produced by the fermentation of Wines in the Barrel, to whose Bung, if the flame of a Candle be held, the subtil vapours of the Wine take flame and burn; which vapours, if they be otherwayes debarred of all vent, they by their brisk motion, cause an intense heat; and sometimes burst the Vessels that contain them. And this hapneth not only to Wines, but even to water it self; for it hath been observed in long Voyages [which somewhere is also taken notice of by Mr. *Boyl*] that our *Thames* water, being kept close stopt, assisted by the motion of the Ship, and its own secret fermentation, a Candle being brought near the vent, upon the opening of it, hath set all the Cavity of the Vessel into a flame. There is the like reason for the bursting forth of flame from wett and closely compressed Hay; as also from the Action of dissolvents upon Mettallin Bodies, &c. in which action, if the Glasses be stopt, they break with great violence: From the incoercible nature of which, we may conclude, that Fire [if there were

such an Element] can never enter, as a constituant Principle, into the Composition of Bodies; but it is rather, as *Helmont* stiles it, *destructor seminum*, the destroyer of Seeds, and is a fitter Instrument to Analize, and take Bodies in pieces, by not suffering their parts to be at rest amongst themselves, [to which purpose it is generally employed] than to constitute any. And therefore in this particular, *Paracelsus* was grosly mistaken, where he undertakes to teach us a way to separate the Element of Fire from Bodies, and afterwards pretends to make a new separation of Elements from them again. For, if we will suppose an Element of Fire, yet if that be further reducible, it must of necessity lose both the name and nature of an Element.

147 But Fire is but an Accident, [no distinct substance, or radical Principle of Bodies;] for Fire, or Heat, as I have said before, doth result from the motion, which the small parts of Matter are put into by the power of their Seeds, and Ferments. For Fire cannot subsist of it self [as matter can, and doth] but necessarily requireth some

some other Body, to which it may adhere, and upon which it may Act: Which Bodies are either of a Vinous nature, as the fermented Spirits of Vegetables; or their Rozinous, and Brimstony parts; or else of an unctuous, and fatty nature, as the Grease, and Fatts of Animals; or else of a Bituminous substance, as the Sulphurs of Minerals and Mettals are. And that all this is but disguised Water, which hath got new textures by the operation of Seeds, and Ferments, I hope I have sufficiently evinced before. So that without we will much injure Truth, we must degrade Fire from being an Element or Principle, in the constituting of Bodies.

148 Nor doth *Air* enter Bodies, as an Element of which they are composed; though it be not only useful, but absolutely necessary both to Animals, and Vegetables; without which, neither of them live, or grow, and by the means of which, the Circulation and Volatization of the blood in Animals is promoted: By the help of which, also the motion of every part is performed. It also doth not only

afford a convenient help to the Vegetation of Plants, by its compressing the surface of the water, and so forcing it to ascend into the stringy Roots and Fibers of Trees and Herbs; but also by acting the part of a Separator, [for it is, contrary to the received opinion of the *Aristotelians*, a very dry and tenious Body,] it, in its passage over the surface of the water, inbibes and takes into its Cavities, store of water, which it Transports to distant places [where Springs and Rivers are wanting;] and then being no longer able to suspend it, by reason of its plenitude, and weight, it returns it to the Earth, where it proves a fit nourishment for Plants, and a proper matter for all sort of Seeds to form themselves Bodies out of.

149 An other use of the Air, is to be a receptacle, to receive vapours ascending from the water, through the pores of the Earth, where finding many Cavities, these vapours rove about, till by the cold of the place, or the great extencion of them, the Seminal Principle contained in them, and by which they were specifically distinguished

from

from water, is forced to desert the Body of the vapour; and so at last it returns to the Earth, in the form of the Catholike and universal matter, *water*.

150 It likewise serveth as a fit Body for the Stars to glide through, and move in; and also by its Elatery Spring, pressing equally upon all parts of this Terraqueous Globe, it keeps it firmly supported in its place; and doth the same Office, which I suppose *Zoroastes* means by his *Prestor*.

151 These are some of the Offices, and Uses, that God and Nature hath designed the *Expansum*, or *Firmament*, or *Etherical* Air for, but that Air we live in, and enjoy, is very far estranged from the nature of pure *Ether*, it being filled and defiled, with the Subtil steames and effluviums of all sorts of Bodies, which are there in a constant Flux, by which means particles of matter differently figur'd, [and as yet retaining some slight touch, as I may say, of their seminate natures,] meeting together, by their action and reaction upon each other, generate Metors; which having spent themselves, return to the bosome of the catholick matter, *water*.

152 But before I take leave of this subject, give me leave to take notice of a great mistake in the *Aristotelians*; who affirm, that Air may be Transmuted into water; which change was never yet performed, either by Nature or Art. For, if it be to be done, by their own confession it must be performed by the means of compression, or condensation. But compression will not do the feat, as is manifest by winde-Guns; in which the Air is forcibly compressed [into, somtimes the Twentyeth part of the space it possessed before;] yet for all that, it is so far from being Transmuted into water, that by the help of this Compression, it hath its Elastick or Springy faculty so far advanced, that it will with as much impetuosity and vigour throw forth a Bullet, as Gunpowder set on fire would do.

153 Nor will condensation serve the turn. For the moysture which we see affix it self to the walls of Cellars, and Caves, or any other subteranious places, is not Air Transmuted; but the vapours of water lodged in the Cavities of the Air; which being compres-

sed

ſed by the cold of thoſe places, becoms drops too bigg, and heavy for the Air to keep up; and ſo falling down, they ſettle in their priſtin ſhape of water.

154 And as Air is not Tranſmutable into water, neither is water into Air. For it is manifeſt in diſtillations, that though water be converted into very ſubtile vapours, yet by the touch of the cold Air, it returns again into water as before, and ſo diſtils into the Receiver. And I have ſhewed above, that in natures Circulations, though water be ſo diſtended as to become a moſt ſubtile vapour, or *Gas*, it doth yet conſtantly at laſt return, in its own Shape, to its own fountainwater, from whence it ſprang.

155 From what hath been ſaid, it will follow, that though we do allow Air to be a very great Body, and a conſiderable part of the Univerſe, and alſo exceeding uſeful to all Bodies, we cannot yet afford it to be a material Principle, or Element, out of which any ſublunary body is Conſtituted or Made.

156 Laſtly, let us examine whether the *Earth* have any right to be counted

ed an Element or Principle, of which Bodies are constituted. For, although the *Aristotelians* [as well as the *Chymists*] pretend to resolve all concretes into their first Principles by Fire; which they think they evince, by the example of burning wood. For, say they, That which supplies the flame, is Fire: That which sweats forth of the ends of the wood, is water; and that which ascends in smoak, is Air; but that which remaines fixed [*viz.* the Ashes] after the Fire hath disbanded the other parts, is Earth. Yet if we examine this experiment of theirs, it will be found too Grosse, to make out what they endeavour to Illustrate by it.

157 For first, the Phlegme of the wood is not a simple water; but contains a sower Salt, and doth both need, and will admit of a further division to reduce it to Elementary water.

158 Nor were those parts which are converted into flame, Fire; but Roziny, or [as the Chymists phrase it] Oyly, or Sulphury parts: which I have before shewed to be far from an Elementary simplicity.

Neither is the smoak, which is seen

to

to arise in the conflagration, Air. For it will affix it self to the funnel of the Chimny in the form of Soot; after which it may be divided into Water, Oyl, Salt, and Earth, [as they call it.]

159 And the Ashes [which they are pleased to take the liberty to call Earth] every Wash-maid knows, are far enough from being so; since they are yet so compound a Body, that they contain very much of a lixiviate and fixt Salt. So that in reason it cannot be called an Element: [For Elements ought to be pure, and simple Bodies, not capable of a further reduction into different parts.]

160 And here it is necessary to remember my promise, and to take notice, that the modern Chymists, after they have washed the Salt from these Ashes, do not scruple to call it Earth, and allow it the place of one of their five Principles, of which they affirm all Bodies are compounded, and framed. But, as I declared before, so I do now again affirm, that the separating of these parts from Concrets by the force of Fire, is not a true *Analisis*, or proper way of taking Bodies to pieces; and

therefore

therefore is no Genuine reduction of them; but a forcing of their parts asunder by the Fire, by which new combinations of the parts of Matter are made; and consequently the products of the Fire, are not to be looked upon as Principles, which were existing in Bodies under that form, in which the Fire presents them us.

161 Besides, were Fire an adequate and proper Agent to dissolve the Texture of Bodies, and to present us with their real Principles, it would act uniformly upon all Bodies, and exhibit to us the same Schemes of matter, with certainty from all alike; which it doth not do. For [as for example] from Gold, Silver, Talk, Diamonds, Rubies, common Stones, Sand, and many other Bodies, who ever separated? not to say the four Elements, or the five Chymical Principles, but even any two of them; and yet if we may credit that worthy man *Helmont*, all these Bodies, by the operation of his *Alkahest*, are to be reduced into simple water, equal to their own weight. So that this soluent, must [from the uniformity of its operation] be allowed to be a much

more

more fit instrument to discover what Bodies are composed of, then Fire alone can be supposed to be. And if we strictly examine the business, we shall find, that Earth doth not enter any natural Body, as a constitutive Principal thereof; but indeed Earth, or Ashes, may help to compose Artificial Bodies, such as Pots, and Glasses.

162 For all sorts of Earths are but various Coagulations of water, diversified by different Seeds, and Ferments, and are as much the products of water, as I have shewed Mineral Salts, middle Minerals, Stones, &c. to be. All which, as *Helmont* assureth us, are reducible to water, by his great Solvent, [the *Alkahest*] which possibly I have somwhat more reason to affirm, than I am willing to declare.

Earth I confess, to me appeareth to be the first product of the water, and is designed by nature as a firm foundation, [or Pedestal] to support the weight of Animals, Vegetables, and Minerals, and to afford proper Wombs for the water to deposite its seeds in. For the Earth produceth nothing of its self; but all things by the assistance of water,

ter impregnated with Seeds; which it depositeth in its bosome.

163 And that the Earth was the first product of the water, is confirmed by the Testimony of *Moses*, in the first Chapter of *Genesis*, at the *9th.* verse; where describing the Creation of the Earth, he says no more but this: *God commanded the water together into one place, and the dry Land appeared.*

164 From what hath been said, it is I think, very clearly made out, that Water, and Seeds, are the true and only Principles, of which all Bodies are made, and that neither the *Tria Prima* of the old Chymists, nor the five Principles of the Chymists of our Age, no nor yet the four Elements of the *Aristotelians*, can rationally be allowed to be the Principles, or Elements of Bodies. So that as *Helmont* sayes, *ruit totum quaternarium Elementorum prætor aquam: The whole Doctrine of the four Elements falleth to the ground: Excepting water only.*

165 Having now in some measure, made out the truth, or at least probability of these Principles I assumed to defend, both by reason, and experiment;

it remains, that according to my promise, I strengthen these assertions by Authority. And shew this is no Noval opinion; but that it was held, and believed by the Antienteſt Philosophers: Such as *Moses*, *Sanchoniathon*, *Mochus*, *Orpheus*, *Thales*, *Pithagoras*, *Timæus*, *Locrius*, *Plato*, &c. After which I shall make some short examination of the Histories of Petrification, alledged in the first Section of this Discourse, and so put an End to this Essay.

Section the Eighth.

166 THat *Moses* held water to be the First and universal Matter, will appear from what he tels us in the First chapter of his Book of the Creation, called *Genesis*, verse the Second, where he acquaints us, that the first material substance out of which God made this Beautiful and Orderly frame of the World, which from its Beau-

Beauty the *Greeks* call κόσμος, was water. His words are these; *And the Spirit of God moved upon the Face of the Waters.* Where it is to be observed, that the word which our Translation renders *moved*, is in the Original *Hebrew* מרחפת, *Moracephet*; which properly signifieth not a bare motion, but such a motion as we call Hovering, or Incubation, as Birds use to do over their Eggs to hatch them. By which expression we have not only an account of the first matter out of which the World was afterwards made; but also of the Efficient, by which this matter was wrought into so great a variety of Bodies. For in all probability, the sence of the Expression is, that at that time, [*viz.* in the beginning] God infused into the bosome of the waters, the seeds of all those things, which were afterwards to be made out of the waters, setting them their constant Laws, and Rules of acting [and thus was Nature Created, that is, the Order, and Rule of those things were established, which God designed to make:] and by the power of the words, *increase and multiply*, they had a faculty

ty given them, to continue themſelves in the ſame Order, till the world ſhall be deſtroyed by Fire, [the great deſtroyer of Seeds;] at which time all Seminal beings ſhall deſert their groſs Bodies, and return to their firſt Fountain, and great exemplar God, on whom they have at this time a conſtant dependance. For according to the Apoſtle, *In him and to him, and through him, are all things; and in him we live, move, and have our being.*

167 *Sanchoniathan*, the great *Phenician* Philoſopher, [whom ſome Chronologers make contemporary with *Gideon*] ſome part of whoſe Works are yet to be met with in *Philo-Biblius*, and *Euſebius*; and a good account of whoſe Works we may alſo find in the writings of that Learned, and Ingenious man, Mr. *Gale*. This *Sanchoniathan* I ſay, exactly correſponds with *Moſes*. For he ſays, In the beginning there was χάος ἐρεβῶδες, which in the *Phenitian* Tongue, is חוח ערב, *Chauth Ereb*; that is, *Night or Evening Darkneſs*. Then he further ſayeth to this purpoſe; *From the commixtion of the Spirit with the Chaos, was produced*

Court of the Gentils. part 2d. p. 95

Mot, which some call [ιωη] that is *matter, or watery moysture: Out of this was produced the whole Seed of the Creation, and the Generation of the whole.*

168 Also *Mochus*, an other *Phenitian*-Philosopher, who continued the Philosophick History, begun by *Sanchoniathon*, [and who is said to have written long before the *Trojan* War,] was also of the same opinion, as *Bochard* affirms.

169 And that *Thales* of *Miletus*, [who is held the first Philosopher that writ in *Greek*] taught that the world was made out of water, no body can be ignorant. And that, which *Sanchoniathan* calls *Mot*, fluid Matter, he calls ὕδωρ, water. And *Tully* affirms, that *Thales held water to be the beginning of things: And that God out of water framed all things.*

Tully *de Natur. Deorum. lib.* 1. *cap.* 2*d.*

170 *Orpheus* also is of the same judgment, and tells us, ἐκ τε ὕδατος ἰλὺς κατισχη; *of water, Slime was made.* And *Apollonius* says, ἐξ ἰλὺς ἐβλάστη χθὼν αὐτή, *Earth, of Slime was made.* And the Scholiasts give a good explication of these words; for they affirm, that the

Chaos,

Chaos, of which all things were made, was water, which coàgulated it self, and became Slime; and that Slime condenſed, became ſolid Earth.

171 Thus you ſee, that *Thales*'s ὕδωρ, or water; and the χάος, μὼτ, and ὕλης, *i. e.* watery moyſture, of *Sanchoniathon*, and *Mochus*, was believed and held by them to be the firſt Principle of all things: From which the ὕλη of *Pythagoras*, and *Plato*, differs not; as I will ſhew by and by.

172 *Pherecides* [an antient *Greek*-Philoſopher] who was *Pythagoras* his Maſter, and who we are told, was one of the firſt *Greeks* that held the Immortality of the Soul; though he ſeem to differ from *Thales*, and *Orpheus* in ſome things, yet agreed with them in the main, or the thing taken for granted by them all, *viz.* That *water* was the firſt Matter of all things.

173 Alſo *Pythagoras*, the Founder of the *Italick* Sect of Philoſophers, correſponds exactly in Opinion with *Moſes*, concerning the Origin of the World, and its firſt Matter. For he poſitively held, that the World was made by God; and by him adorned with an

excellent Order, Harmony, and Beauty in all its parts; and therefore he was the first that called it κόσμος, from κοσμεῖν, to Adorn or Beautify: Secondly, his ὕλη, or first Matter, was the same with *Sanchoniathons* ἰλὺς, or Μῶτ; and *Thales* and *Orpheus* their ὕδωρ, *viz.* water: Agreeable all of them to *Moses*, *Genesis* the first.

Thirdly, *Pythagoras*, and all the Antient Philosophers before him, held, that the Divine Providence, which they stile νοῦς, did inspire and influence the whole Creation, governing, and directing all things to their proper and peculiar Offices, Functions, and Ends. And this Providence was by them somtimes stiled ψυχὴ τοῦ κόσμου, the Soul of the World; by which, sayth *Seranus*, they understood nothing else but the Fire, Spirit, or Efficacy, which is universally diffused in the Symmetry of the Universe, for the Forming, Nourishing, and Fomenting all things according to their respective natures: Which Vivifick Principle *Plato* calls πῦρ δημιουργὸν, effective Fire; but this they never understood, or meant to be a material part of any Body; but is the same which

Mo-

Moſes calls the Spirit of God.

174 And now in the laſt place, I am come to give you the mind of *Plato*, and his conformity with *Moſes*; His judgment hath always been ſo eſteemed, that men, to expreſs the Reverence they had of him, did uſually call him the Divine *Plato*: And in delivering his opinion, I ſhall alſo at the ſame time give you that of *Timæus Locrius*, that great Philoſopher, and Diſciple of *Pythagoras*; from whom *Plato* borrowed much.

175 Firſt then, *Plato* tells us that the World was made: For he puts the queſtion whether the World had a beginning, or was made? To which he anſwers, γέγονεν, it was made. Then as to the firſt matter, of which the World, and all the Bodies in it were made, he ſays thus, [in his *Timæus*] it is γένος, εἶδος ἐξ ὧν τὸ πᾶν συνεστῶτα, *the Genus or Species out of which every thing is compoſed*; and He calls it ὕλη, or firſt Matter, and is indeed the ſame with *Sanchoniathans* ἰλύς, *Mot*, &c. and *Thales*, and *Orpheus's* ὕδωρ; and all of them the ſame with *Moſes* his *Chaos* and *Water*, as will appear by comparing

their descriptions together. Thus first, *Moses* calls his first matter בהו *Bohu*, without form; which *Rabby Kinchi* calls ὕλη [as *Fabius* tells us] which is the same word that *Plato* uses to express his first matter by; and differs little, in sound, but less in the sence from the ὑλὺς of *Sanchoniathon*, which *Philo Biblius* stiles *Mot*, from the *Hebrew*, and *Phenitian* מוד *Mod*, which signifieth Matter: Yea, *Plato* expresly calls his first Matter ἀμορφοντὶ, *somewhat without form*; just like *Moses* his *Bohu*.

176 And in his *Timæus* he tells us, that God out of this first matter [*water*] commonly called *Chaos* [because disordered, and irregular] διεκόσμησε, διέταξε, καὶ διεσχημάτισατο, *Beautified, Ordered, and Figured, or Form'd the Universe*; and as *Moses* says, the Spirit of God moved upon the Face of the waters: So *Plato* affirmeth, that God made the World, ἐκ πουχίαν ἄγον ἀλλὰ κινόμενον πλημμελῶς καὶ ἀτάκτως, that is, *by an importunate motion, fluctuating, and not quiescing upon the matter.* And as for *Plato*'s ψυχὴ τοῦ κόσμου, *or Soul of the World*, we are assured by *Ludovicus Vives*, he meant by it the same Spirit of God which

Lud. Vives in com super

Moses

Moſes ſays moved upon the waters in the Beginning; and which the Pſalmiſt calls the breath of his mouth: (*Pſalm 33. verſe 6.*) For, according to *Platoes* Philoſophy, [as well as that of *Moſes*] God is the Executive cauſe, and productive Efficient of all things, and therefore he uſually ſtiles God, ἀρχηγός, πρωτέργος, τελεσιυργὸς, ὑσιοποιὸς πάντων ὄντων, *the Supream Fabricator, Perfector, and Eſſentialiſor of all things.* And as to the manner, how all things were made, he ſays, δραστηρίοις λόγοις τὶ πᾶν ὑσιῶται; *Every thing was eſſentialiſed by certain Prolifick, or efformative words,* which the *Stoicks* call λόγον σπερματικὸν, a Spermatick, or Seedy word: Which agrees exactly both with *Moſes* his *Fiat*, and with that of St. *Paul*; *The Worlds were framed by the word of God*; that is, Gods *Fiat* was the Creator of all the Seminal and Prolifick Principles of all things; and thoſe created Seeds were τὸ ποιητικὸν, *the Efficients*; and ἡ ὕλη, or ὕδωρ, *water*, was the Matter of which they were all made.

Epiſtle to the Heb. *cap.* 11. *verſe* 3.

177 Theſe Seminal or Efficient Principles of things do contain within themſelves

ſelves certain Pictures or Images of thoſe things which they are to make out of the matter, [*viz. water.*] To which purpoſe let us here what *Plato* ſays of his *Ideas*, which is to this effect; *There are two ſorts of Worlds; one, that hath the form of a Paradigm, or Exemplar, which is an intelligible Subject, and always the ſame in being: but the ſecond, is the Image of the Exemplar, which had a beginning, and is viſible.* By his Intelligible World, *Plato* means the Divine Decrees; which are inherent in the Mind and wiſdom of God: and theſe Original *Idea*'s, he ſays, do produce a Secondary ſort of *Idea*'s [that is, the *Seeds* of things;] and theſe he makes to be the more immediate Delineation, or Image of the whole work; ſomtimes calling them παράδειγμα, *an Exemplar*; ſomtimes εἰκόνα, *an Image*: His words run thus; τούτῳ τίνι προσχρώμενος παραδείγματι τὴν ἰδέαν καὶ δύναμιν ἀπεργάζεται: *making uſe of this Exemplar, he frames the Idea, and Powers*; that is, *the Seeds of things.* So that he makes the firſt, and Original *Idea*, [which is reſident in the Divine Wiſdom or Mind of God, and which

Plato Timæus. fol. 49.

which Divines call the [Decrees of God] to be much more Noble than the latter, or ſecondary *Idea*, or Seed, and to be the cauſe of it. And this laſt *Idea* and Seed, contains the Picture of the thing to be made; and depends upon the Primary, or Original *Idea*, and Exemplar, which is ſeated in God himſelf.

179 Which Doctrine rightly conſidered, we have a ſatisfactory account of the cauſe, why the laſt *Idea*'s, viz. the Seeds of things do proceed ſo regularly, conſtantly, and unerringly in the producing their likes. For, if we conſider, that the Seeds of things do depend upon their Paradigmes, and that they are inherent in the Mind of God himſelf, who is a God of Order; this will appear not ſo abſtruſe, as it hath hitherto done.

180 And though we, out of Pride, and ſelf-love to our own Nature, are unwilling to afford any creature, that is not of our Species, the Priviledg of doing any thing by a Principle of reaſon; that is, with a deſign, tending towards the accompliſhment of ſuch an End; yet it is certain, that all creatures,

tures, even those that we count inanimate, do enjoy, upon the account of their Seminal Principles, not only Life, but even reason in some measure: Which, wanting the use of Languages, they do nevertheless plainly declare [to heedful and inquisitive men] not only by their regular, [and consequently designed] working the parts of matter, till they have produced such a distinct sort of Body; but also by those affections which wee call Sympathy and Antipathy; and, for want of this knowledg, have hitherto referred to occult or hidden causes, the usual Sanctuary of Ignorance; by which Sympathy, and Antipathy of theirs, it is very manifest, they have hatred and love; and have a knowledg of those things, which are either pleasing or agreeable too, or else unpleasant or hurtful to their natures. And this is not only to be observed in Beasts, and visible moving Creatures, but also in all other sorts of Creatures, which we very injuriously call Dead, or Inanimate.

181 But to return from whence I digreſſed, I ſhall in ſhort ſay thus much of the *διότι, or manner how* the Ideas and Seeds do work upon Matter, and form themſelves Bodies; which they perform on this manner: Firſt, by their Fermentative faculty, [or Springy power] they put the Body of the water into a peculiar ſort of motion, by which they congregate thoſe particles, which are moſt agreeable to their deſign, and conſequently fitteſt to adhere, and ſtick to each other. Secondly, they break the reſt into convenient ſhapes, and Sizes: And Thirdly, by this motion they alſo put theſe particles into commodious Poſtures, and Scituations amongſt themſelves, and by theſe means frame themſelves Bodies, exactly correſpondent to their own præconceived Figures.

182 By this declaration of my thoughts, I hope it will plainly appear, that I am no Enemy to that rational way of explicating the *Phænomena* of Nature, uſed by the *Atomical, Carteſian*, or *Corpuſcularian* Philoſophers; for certainly, they do

give

give us not only a very ingenious, but also a very true account of the διότι, or manner how, matter is, or may be modified; to which, if they would please to add, as some do, the powerful efficacy of Seeds upon Matter, by which indeed all the several σχέσεις, or various shapes of Matter is produced, we might then hope to receive some satisfactory account of that hitherto perplexed Subject, the Generation of Natural Bodies: Which Principle if it were received, and taken into the Philosophy of our Age, I am apt to believe it would silence many Litigations, now daily commenced by men of Parts against each other; and oblige them to love truth more then the desire of being accounted witty Disputants; Truth being so desirous a thing, that *Porphyry* in the Life of *Pythagoras* [though a Heathen] tells us; τὸ ἀληθεύειν μόνον δύνασθαι, τοὺς ἀνθρώπους ποιεῖν θεῷ παραπλησίους, that is, *Truth only can make men near to God.*

183. Now therefore, though rude and unguided motion, will naturally have some kinds of result upon matter,

as

as we see the springy motion of the Air, or some more subtile Body doth form of the Water, of Rain, and Dew, round Drops, by equally Compressing it; yet because this general kind of motion doth something, we are not from thence to conclude it doth all things. For, this were a Sophisme, fitter to impose upon Fooles or Children, then upon Men of mature reason. Nor can such kind of motion be ever able to forme such bodies, as imply a wise Councel, and curious contrivance; as, for Example [to say nothing of Living Creatures] the strong and useful bodyes of Metals, Minerals, and Stones, and the beautiful Branches, Flowers, and Fruits of Plants, are. Wherefore we must in all reason acknowledge and confess, that there is an internal Mind, virtue, and Idea, contained in the Seeds of things, which workes rationally, [that is, to a Designed end;] by which Principle, the matter is put into a peculiar motion, and usefully guided, till it be changed, and formed into a body, such as the Idea was designed by God to make, who still governes these Seedy Principals: And therefore in Scrip-

Scripture, we are told, *He Giveth to Every Seed, its own Body.*

184. Thus then, I hope, I have proved, that I am of the same Judgement with the Antienteſt, and beſt Philoſophers; viz. that there is but Two Principles of all things, Efficients, and Matter; Seeds, and Water.

185. And now having cleared the Doctrine propoſed; I intend in the laſt place, to inquire, How thoſe Tranſmutations of different Bodies into Stone, the Hiſtoryes of which you will find ſet down in the firſt Section of this diſcourſe, were performed: upon which, I will only Touch, and ſo Conclude.

186. It is the Opinion of ſome Men, that the change of Leaves, Moſſe, Wood, Leather, and other Subſtances, into Stone, [wrought by thoſe Petrifying Waters, and Caves, I have mentioned in the firſt Section of this Eſſay] are no real Tranſmutations of thoſe Bodies into Stone, by the Operation of a Petrifying Seed; but that they are nothing elſe, but the oppoſition of certain ſmall Stony Particles, hid in the Water, to thoſe Bodies immerſed in them; and that by this means they become Cruſted over

with a ſtony Coat or Bark, and ſo they become increaſed both in Bulk, and Weight, by continual addition. But if this were ſo, then indeed the Leaves, Wood, &c. caſt into theſe Waters, would not be really tranſchanged into perfect Stony Nature; but only ſeemingly ſo.

187. Nevertheleſs, if we look warily into the thing, we ſhall have Cauſe to believe, that there is, not only an Aggregation of theſe ſmall Stony particles, and an incruſtation upon the outſide of thoſe things put into the Water; but even that the ſmalleſt Atomes of the Wood, Leather, &c. are really Petrifyed; in ſo much, that we can diſcern them to be no other then Stones, not only by our Eyes alone, but by them aſſiſted with the beſt Microſcopes. Nor if they be examined by the Fire, will they make any other Confeſſion: For they will not burn like Wood, but calcine like Stones; and though great peices of Wood, and Trees, will not be ſo ſoon converted into Stone, as Twiggs, Leaves, or Moſs, are; yet by continuance of Time, great bulkes of Wood will be Stonifyed totally, both within,

and

and without; so that by these kind of Waters, bodies are not only Crusted over with stone, but the Wood, Leaves, &c. are really and truly changed into Stone. I do not deny, but that there may be an affixing of some stony Corpuscles Latent in these Waters, which may increase both the bulk and weight of those things Changed by them; but that this is all, that I deny.

188. For, if so, then those Bodies thus changed, would not be altered into a true Stony Nature, *per minima*, and in their smallest parts, internally, as Experience shews they are; and though the Explicating, how this Change is Wrought, is somewhat difficult, yet in all probability it is thus.

189. The Saxeous, or Rocky Seed, contained in these Waters, [which is so fine, and subtile a Vapour, that it is Invisible; as I have before shewed all true Seedes are,] doth penetrate those Bodies which come within the Sphere of its Activity; and by reason of its Subtilty, passeth through the pores of the Wood, or other Body, to be changed: by which permeating those Bodies, it doth these four things: First,

it Extruds the Globuli Ætherai [as the Carteſians Phraſe it] or the Airy Particles Lodged in their pores: Secondly, it puts the Particles of thoſe Bodies into a new and different motion, from that they were in before; by which meanes they become broken into Figures, and Sizes, and obtain new and convenient Situations. Thirdly it intangleth and Lodgeth it ſelf intimately amongſt the ſmalleſt parts of thoſe Bodies; by which meanes their parts being drawn cloſer together, they obtain a greater Weight and Solidity: And laſtly, it Acts as a Ferment, and by reaſon of its Contiguity, and Touch with every ſmall part of the matter it doth, as Leaven uſeth to do, [though mixed with a much greater quantity of Dough, then it ſelf] Convert the whole into its own Nature. So alſo this Stonifying Seed, by its operating Ferment, doth tranſchange every particle of the matter it is joyned unto, into perfect Stone; according to its Idea or Image, Connatural with it ſelf.

190. As to thoſe Converſions of Animals into Stone, related in Hiſtory, the 13, 15, 16, and 17, of the firſt

Section of this Essay; they also are wrought by the same powerful Operations of a petrescent Seed or vapour; and by the same Circumstances, and Contrivances: which sheweth, that the strength and Power of a Petrifying Seed is above, and beyond all other: For, other sorts of Seeds do require, that the subject matter be reduced into a sequatious juice, or obedient Liquor, and Consequently doth require, that the Figure, and Shape of the precedent Concrete be destroyed, or else they cannot Act. But the Petrifying Seed, the Human, or other Living Cretures Figure being still intire, without any intervening putrefaction, or dissolution of the matter, doth transchange [*Totum per Totum*] the whole, throughout the whole; that is, as well the Bones, as the Blood, and Skin: So that here is not an incrustation of the Stony matter upon the External parts, [only] but a real change, intrinsically, and throughout, of the Bony, Fleshy, and Sinnewy parts of the Animal into a stony Substance.

191. By the same operations Water it self is converted into Stone, [*viz.* by

by the power of Petrifying Seeds] as we may see by the 7, 8, 9, 10, 11, 12, and Fourteenth History of the first Section: As also doth appear by the Relation of those that have seen those Famous Grots in *France*, called, *Les Caves Goutieres*, where the Drops falling from the top of the Cave, doth [even in its falling] coagulate before your eyes into little Stones. Now this Transmutation of Water into Stone, by a Petrescent Seed, is not only much more usual, than the change of other Substances is, but also much Easier: For Water is a Primary, simple, liquid, tremulous Body, consisting of very minute parts, already in Motion, and therefore readily Obeying the Command of all sorts of Seedes.

192. Nature is uniforme in her manner of produceing Bodies, and therefore, as I have demonstrated in the body of this Discourse, as she usually, nay constantly produceth, both Animals, Vegetables, and Mettals, from liquid Principles, viz. Water. So doth she most commonly Stones; which before their becomming such hard Bodies, were at sometime in *Principiis*

Solutis, that is, their matter was in a looſe, open, and fluid Forme: And, as I have ſhewed, the Spiritual Seedes of Vigetables, do aſſimilate, and change Water, into Mint, Roſemary, &c. According to the diverſe Ideas, and characters of their peculiar Kindes; ſo alſo the Stony Seedes, do form themſelves Bodies out of Water; and theſe of very different Figures, Compaction, and Colours; and this is done ſometimes ſuddenly, ſometimes ſlowly, and by length of time: Now, the difference of compaction, and hardneſs, that we find in Stones, as alſo their ſudden or ſlow Coagulation, depends chiefely upon the plenty, or paucity of the ſtony Seed, or Spirit, in reſpect to the quantity of the matter to be wrought upon, and changed by it. But the difference of the Figure, is chiefely to be referred to the peculiar Nature of the Seed, and its Idea; [as we ſee in Chriſtals, and other Stones, which have a determinate Figure:] and ſometimes it is to be referred to the veſſel, or place, containing the Water, or other Liquor, before its converſion into Stone. And for the Colour, that is alſo chiefely cauſed

sed by the operation of the peculiar sort of stony Seed; which in its working upon the Water, hath given it a determinate Texture, and superficies; by which it reflects and modifies the Light, after a peculiar manner. But sometimes it is to be referred also to the Waters being impregnated with the Tinctures of some Mineral or Mettallin Bodies, before its coagulation. As Granets containe the Tincture of Iron in them; and therefore are drawn by the Loadstone.

But to put it out of all doubt, that Stones were at first Water; [or at least, some Liquid Matter] I will Cite a passage or two out of the Works of my often mentioned, Honourable Friend, Mr. *Boyle*. His words are these: *And here I will Confess further, that I have oftentimes doubted, whether or no not only Consistent Bodyes, but some of the most Solid Ones in the World, may not have been Fluid in the form, either of Steemes, or Liquors, before their Coalition and their Concretion either into Stones, or other Mineral Bodies.* And then speaking of the Opinion of some Men, who will have it, that Stones, and Mettals, [were

Boyl in his Essay of Ferm. p. 281.

indeed Created at the beginning of the World by God, but that since they] are neither Made, nor do Grow, and increase: He further saies [viz. that they were once in a fluid forme] thus: *Of this, besides what we elsewhere deliver Concerning it, we shall anon have Occasion to mention some Proofs; and therefore we shall now only mention two or three instances: the first whereof shall be, that we saw, among the rarities of a Person, exceedingly Curious of them, a Stone flat on the outside, on one of whose internal surfaces was most Lively Ingraven, the Figure of a small Fish, with all the Finns, Scales, &c. which was affirmed to have been incloſed in the Body of of that Stone, and to have been accidentally discovered, when the Stone chancing to receive a rude Knock upon its Edge, split a sunder. I Remember also that a while since a House-keeper of mine in the Countrey informed me, that whilest a little before, he Caused in my absence one of my Walls to be repaired; the Mason, I was wont to imploy, Casually breaking a Stone, to make use of it about the Building, found in it [to his Wonder] a peece of Wood, that seemed part*

of

of the branch of some Tree, and Consequently was afterwards inclosed with that solid Case wherein he found it. This Example seemes to me a more cogent Proof of the increase of Stones, then some others, that Eminent Naturalists much rely on, for reasons discourſed of in an other place.

193. And again, He tells us in the same place, that He hath seen several large Stones, such as they make Statues of, that when they were sawed, and broken, had Caveties in them, which contained Mettals, and other substances: And I my self have observed pebbles inclosed in great free Stones. And it is commonly known, that Spiders and Toads have been found upon the breaking of great Stones, inclosed in their innermost substance.

194. And now I have shewed you, how agreeable I am with this Learned Person in this Doctrine concerning the matter, and growth of Stones; I will also shew you his Opinion, as to their Efficient: for he says; *I know that not only profest Chymists, but other persons who are deservedly ranked amongst the Modern Philosophers, do with much Confidence* Essay of Form. P. 275.

entirely ascribe the induration, and especially the Lapidescence of Bodies, to a certaine secret internal principal, by some of them called a Forme, and by others a Petrifying Seed, lurking for the most part in some Liquid Vehicle: And for my part, having had the opportunity to be in a place, where I could in a dry Mould, and a very elevated peice of Ground, cause to be digged out several Christalline Bodies, whose smooth sides, and Angles, were as Exquisitly figured, as if they had bin wrought by a skillful Artist at cutting of precious Stones; and having also had the opportunity to consider divers exactly or regularly shaped Stones, and other Minerals, some digged out of the Earth by my Friends, and some yet growing upon Stones, newly Torn from the Rocks, I am very forward to grant that [as I elsewhere intimate] it is a Plastick Principal implanted by the most wise Creator, in certain parcels of matter, that doth produce in such Concretions, as well the hard Consistance, as the determinate Figure. Thus far He; Then which, what more consonant to the Doctrine I have asserted in this Discourse?

195. Conclude we then [and I hope

at last upon probable Grounds] since we have not only the before cited Authorities, both of the best Antient, and Modern Philosophers; and also are taught by the experiments, and Manual Operations laid down in this Discourse, which shew us the reduction of all bodies ultimately into Water; and their Nourishment from thence; as also from the inaptitude of at least two of the four *Aristotalian* Elements [*viz.* Fire, and Aire] to concur to the Constituting of Bodies; and likewise from the Compound Nature, of two of the Old Chymical Principles, viz. Sulphur and Salt: and from the same compound Nature of four of our moderne Chymists Principles, viz. Oyle, Salt, Spirit, Earth, which all of them are further reducible into Water, and therefore not to be allowed for Principles; as I have before demonstrated: Let us then, I say, conclude in, and acknowledge the truth of the Moysaick, Platonick, and Helmontian Doctrine.

195. That is, that all Bodies consist but of two Parts, or Priniciples, Matter, and Seed; that their Universal Matter is Water: That the Seedes of things do from

from this Matter, [by the help of Fermentation] alter, break, and new compose the Particles of which it Consists, till they have formed a Body, Exactly Corresponding to the Images, or Idea's contained in themselves: Also that the true Seedes, of all things, are of a very subtle Nature, and Invisible, and are secundary Idea's and Images; and that they are Connexed to, and depend upon their Primary Idea's, and Exemplars; which are Inherent and resident in God himself: And that for that reason they Act with Design, and to a purposed End, which they constantly, and regularly Accomplish; and this is somewhat Analogous to reason in them. Lastly, that Nature, or the Law of Kind, is uniforme in its productions thus far, that it makes all Bodies out of Water, by the power of invisible Seedes; so that the Matter of all Bodies is Identically the same. And that they are all of them reducible into the same Matter at Last: But that their Seeds are various, and therefore produce different Effects upon the same Matter: yet do they all agree in this, viz. That they are all invisible Beings, and all of them have a dependance upon

on their Exemplars, which are the Decrees of God, and are constantly inherent in him.

FINIS.

An Advertiſement.

THere is lately Printed, a Book, in which is ſhewed the neceſſity that lies upon all Honeſt, Diſcreet, and Conſcientious Phyſitians, to reſume that Antient, and Laudable Cuſtom of making, and Diſpencing their own Medicines; with the Advantages thereby accrewing to the Patient: Both as to ſaving of Charges; and the ſpeedy cure of their Diſtempers. In which the New way of Preſcribing Bills, [or making Medicines with the Pen] is ſhewed to be deſtructive to the Intereſt, both of the Patient, and Phyſitian: It expoſing them to the Fraudulent dealing of Practiſing Apothecaries, in which you will find the Marrow of what hath been writt upon this Subject, by Dr. Cox, Dr. Merrit, Dr. Goderd, and others; together with certain new, and cogent Arguments not formerly

merly made use of. The Subject I conceive, of such general concern, that I thought it it very fit to give notice of it here.

The Title of it is Praxis Medicorum Antiqua, & Nova, *Or the Ancient, and Modern Practice of* Physick *examined, Stated, and Compared,* &c. *It was written by the Industrious, and Ingenious Dr.* Everrard Manewring. *And is to be sold by* William Cademan *Bookseller, at the Sign of the* Popes Head, *at the little Door of the* New Exchange, *next* Durham Yard.

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