

CHAP. VI.

Wherein is contained a survey of the third dayes work; together with such things as are pertinent to it.

Sect. I.

Shewing into how many main parts the businesse of this day may be distinguished.



Being come from the second to the third dayes work, I cannot say with *Virgil* now, *Ille ego qui quondam gracili modulatus avenâ:* But rather on the contrary, *Ille ego qui superis volitabam nuper in oris,*

Nunc humilis sequor arva soli, nunc tenuia presso Ore loquor—

Because in the former day, the work belonging to it, compelled my winged pen to soar aloft, not suffering her to come unto the ground till now. For she was to walk above the Firmament, and view the out-spread buildings laid in the flowing waters: then through the Regions of the liquid aire she was to trace a path; which finished, she must be content to frame her self unto a lower pitch, before any leave be granted to ascend again. And indeed I think it is what both she and I desired; for we were long detained there.

And now, having both of us obtained our wishes, we finde that Gods inspired pen-man, holy Moses, so setteth down the admired work of his Almighty maker, done

done on this third day of the world, that into three main parts it may be severd: for by viewing the words which he hath written of it, the same will be apparent. *And God* (saith he) *said, Let the waters under the heaven be gathered together unto one place, and let the drie-land appeare: and it was so.*

And God called the drie-land Earth, and the gathering together of the waters called he Seas: and God saw that it was good.

And God said, Let the earth bring forth grasse, the herb yeelding seed, and the fruit-tree yeelding fruit after his kinde, whose seed is in it self, upon the earth: and it was so.

And the earth brought forth grasse, and herb yeelding seed after his kinde; and the tree yeelding fruit, whose seed was in it self, after his kinde: and God saw that it was good.

And the evening and the morning were the third day.

This is the summe of all; which (as before was said) consisteth of three severall parts.

The first whereof concerneth the gathering together of the waters, in these words, *And God said, Let the waters under heaven be gathered together unto one place.*

The second concerneth the drying of the ground, in these words, *And let the drie-land appeare.*

The third is pertinent to the sprouting and springing of the earth, in these words, *And God said, Let the earth bring forth grasse, the herb yeelding seed, and the fruit-tree yeelding fruit after his kinde, &c.*

All which in their orders are severally to be diseufsed, together with such other things as are pertinent to the said division.

And concerning the two first, observe that God bestowes as it were surnames on them; calling the gathering together of the waters, Seas: and the drie-land he calleth Earth.

Sect. 2.

*Of the gathering together of the waters, which
God called Seas.*

VVater and earth are the two lowest elements; and this was that day which brought them to perfection: for untill now they were confused; because their matter, although not quite void of form, received at this time a better form of due distinction and more comely ornament. The informitie was expressed before, when Moses said that the earth was void and invisible, because covered with waters: but the formitie is then expected and declared when the waters are gathered, and the drie-land made apparent.

It is a wonder (sure) to think what a confused tyrannie the waters made by their effusion; for they did rather tyrannize then orderly subdue or govern this inferior mirie masse: wherefore it seemed good to the Almighty maker, first to divorce one from the other, before he gave them leave so to be joynd each to other, that both together might make one globie bodie; which (according to the best approved writers) is one and twentie thousand and six hundred miles in compass.

But concerning this gathering together of the waters, there arise certain questions, which may not altogether be forgotten.

As first, it is enquired, How the waters were gathered together.

Secondly, How it can be said that they were gathered to one place; seeing there be many seas, lakes, rivers, and fountains that are farre asunder.

Thirdly, Whether they be higher then the earth.

Fourthly, Whether there be more water then earth.

Fifthly, Whether the earth be founded upon the waters.

Sixthly,

Questions concerning the waters which are said to be gathered together.

Sixthly, Why the seas be salt, and rivers fresh.

Seventhly and lastly, What causeth an ebbing and flowing in the sea, rather then in rivers.

Concerning the first of these questions, those who think that there be no *Antipodes*, supposed that the waters did runne together and cover the other part of the earth which is opposite to this where we dwell. But the experience of skilfull navigatours and famous travellers, yea and reason it self, doth crie against it.

Others imagine that it was some mighty winde which dried them up; or that the fervent heat of the sunne effected it. But both think amisse; because the drie-land (saith one) appearing all at once, was so prepared by a greater power then either of the winde or sunne, which could not work it at once, nor scarcely in a long continuance of time: neither was the sunne made untill the next day after. *Dixit igitur & factum est*; he spake the word onely, and by the power of that word it was done. For the efficient cause of the sea was the onely word of God; the materiall was the waters; the formall was their gathering together; and the finall partly was, that the drie-land might appeare. *Ezekiel** wheels were one within the compasse of another: and so was the earth, water, and aire, before the powerfull word of God commanded this their gathering: the earth within the water; the water within the aire; and the aire within the concave of the Firmament. Which if they had all for ever so remained, and man made as he is, the world had been no lrouse for him to dwell in, neither had it been a work so full of never ended admiration as now it is.

Perhaps the pores and holes of the ground were full before this gathering; yet nevertheless their bodies must be willing to be made the beds for more. That they were full, it proceedeth from the nature of the water, falling

Quest. I.
Which streweth
how the waters
were gathered
together.

* *Ezek. i. 16.*

falling downwards and filling them. That being full, they are yet made capable of more, might proceed both from a more close compofure of the not hollow parts of the earth, and alfo by making thefe waters thicker then they were before. For whileft the not hollow parts were made more folid, the hollow could not choofe but be * enlarged: and whileft the thin and vapourie waters were better thickened and condensed, the outfice of the ground could not be obscured, but fhew it felf as one releafed from out a waterie prifon. Some adde unto this their heaping together in the high and wide feas, whereby it cometh to paffe that they flow to and fro at flouds and ebbs, and do often force out water-fprings from out the higheft mountains: which laft, whether it be fo or no, fhall be examined afterwards.

* Job 38. 10.

Quest. 2.
Shewing how
they were gather-
ed to one place.

The next queftion was, how it can be faid that they were gathered to one place; feeing there be many feas, lakes, rivers and fountains that are farre afunder.

It was a ftrange conceit of him who thought that this one place unto which the waters were gathered, was feperate fo from the earth that the waters by themfelves fhould make a globe, and have their proper centre; for leaving to defcend towards the centre of the earth, they were gathered to a centre of their own, and fo the drie-land appeared.

* Eſay 40. 22.

But this opinion is very falſe, and worthy to be reckoned amongst abſurdities: for (as the * Prophet Eſay writeth) the Lord is faid to *fit upon the circle of the earth*. Now experience fheweth that it is not the earth alone, but the earth and fea together that make one globe or circle.

This one place then whither the waters were gathered, was not a place feperated from the earth, being in the aire or elfewhere, but was in the very body of the earth it felf. Neither was it one place ſtrictly taken, as
it

it meant one point or angle of the earth: or, as if there were no *Antipodes*, half the earth under us was to be covered with water.

But rather it is called one place, becauſe in the whole globe of the earth, every place is either water or land: or (if not fo) becauſe there is but one body of all the waters that are: for every part of the water is joynd unto the whole as it were with arms and legs, and veins diverſly dilated and ſtretched out. So that either under the earth, or above the earth, all the waters are joynd together: which alſo the wiſe man witneſſeth, *Eccleſ. 1. 7.*

But haply ſome may think, becauſe this gathering together of the waters is called Seas, that therefore the one place, unto which they were gathered, is not to be underſtood of every collection or gathering of water, but onely of the ſea.

Well, be it ſo. And if this rather then the other be the meaning of Moſes his words, it may be answered, that although the ſea be divers in name, yet all ſeas are fo continued together, that one ſea is perpetually joynd with another: and thereupon the name given, is not *Sea*, but *Seas*; as in the text is manifeſt.

Yea and hereupon it alſo is, that Geographers make theſe waters come under a fourefold diviſion. For they either call this gathered water, *Oceanus*, *Mare*, *Fretum*, or *Sinus*.

1. *Oceanus*, the ocean, is that generall collection of all waters, which environeth the world on every ſide.

2. *Mare*, the ſea, is a part of the ocean, to which we cannot come but through ſome ſtrait.

3. *Fretum*, a ſtrait, is a part of the ocean reſtrained within narrow bounds, and opening a way to the ſea.

4. *Sinus*, a creek, or bay, is a ſea contained within a crooked ſhore, thruſting out (as it were) two arms to embrace the lovely preſence of it.

B b

Object.

Object. But perhaps you will say that the Caspian sea is a sea by it self, and therefore all seas joyn not the one unto the other.

Answer. To which it is answered, that this sea is either as a * lake in respect of the contiguous or joyning seas; or else it was no sea in the beginning of the world, but began onely at the ceasing of the Flood, & was caused by the waters coming down from the Caspian hills, settling themselves in those declivie and bottomie places where the said sea is. *Plinie* and *Solinus* are perswaded that it joyneth it self unto other seas by running into the Scythian or Northern ocean through some occult passages under ground; which is not improbable. But howsoever, this we are sure of, that the river *Volga* is joyned to it, being as another sea, and having no lesse then seventie mouths to emptie it self: which river is also joyned to the river *Don*, and that hath great acquaintance with the *Euxine* sea. Besides, *Volga* is not a stranger to * other waters which fall either into the Scythian or Baltic ocean: infomuch that it may be said, this Caspian sea is tied (as it were) with certain strings to ^b three other seas; and so, not onely all waters are made one bodie, like as before I shewed, but (if this gathering must needs be referred to the seas) even all seas also shake hands, and by one means or other mutually embrace one the other.

A third question is, Whether the waters be higher then the earth. Concerning which there be authorities on both sides; some affirming, some denying.

That they be higher then the earth, it is thus affirmed.

First, because water is a bodie not so heavie as earth.

Secondly, it is observed by sailors, that their ships flie faster to the shore then from it; whereof no reason can be given, but the height of the water above the land.

Thirdly, to such as stand on the shore, the sea seemeth

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* Dr. Falk in his *Mer. lib. 4.* saith that some lakes are so great that they bear the names of seas: among which he reckoneth this Caspian sea.

a As *Dulna major* and *Dulna minor* called also *Onega*. Look into the maps of *Russia* or *Moscovia*.
b Viz. the *Buxine*, *Baltick*, and *Scythian* or *Northern* seas.

Quest. 3. Shewing whether the waters be higher then the earth.

to swell into the form of an hill, till it put a bound to their sight.

Fourthly, it is * written of *Sesoftris* King of Egypt, and after him of *Darius* King of Persia, that they would have cut the earth and joyned *Nilus* and the Red sea together; but finding the Red sea higher then the land of Egypt, they gave over their enterprize, lest the whole countrey should be drowned.

Fifthly, the arising of springs out of the highest mountains doth declare it, because the water cannot be forced higher then the head of the fountain opposite to it. As for example. Like as we see a spring that riseth in an hill, conveyed in lead unto a lower ground, will force his waters to ascend into the height it beareth at the fountain: even so the waters which stand above the mountains, do force out springs of water, by necessary and naturall cause, out of the highest mountains.

Sixthly, the * Psalmist doth witness the same, affirming moreover that God Almighty hath made the waters to stand on an heap, and hath set them a bound which they shall not passe, nor turn again to cover the earth. And *Jer. 5. 22.* Fear ye not me, saith the Lord? will ye not tremble at my presence, which have placed the sand for the bound of the sea, by a perpetuall decree that it cannot passe it; and though the waves thereof rage, yet can they not prevail? Thus on the one side.

But notwithstanding all this, methinks the other part (yet choose which you will) is most probable.

For first the water indeed is a bodie not so heavie as earth, yet heavie enough to descend, not being of an aspiring nature, but presseth eagerly towards the same centre that a stone or any part of the earth coveteth: It cannot therefore possibly be above the earth, although not so heavie as earth, unlesse there were no hollow places in the ground to receive it. But God Almighty, in

B b 2

gathering

c *Herodot. in Euterpe, & in lib. sequenti.*
Din. lib. 6. cap. 39.

* *Psal. 104.*

gathering them, provided lodgings for them, lest they should turn again and cover the earth: which also is insinuated by the Hebrew word *Kava*, signifying to congregate or gather together; from whence the Latine word *Cavus*, hollow, may seem to be derived. Besides, should it be alledged that the hollow places could not be deep enough to receive them, what were this but to curtall the earths Diameter or thicknesse? for suppose the waters stood above the hills before they were gathered to one place; yet know that even the Semidiameter of the earth is deeper by no few miles then the highest hill. Suppose you could imagine an hill to be above a thousand miles high (which is impossible) yet the earths Semidiameter would be two thousand, foure hundred, and above 36 miles deeper then that height. As for example; if the earth be 21600 miles in compass, then the Diameter will be 6872 $\frac{1}{2}$ miles; and if the Diameter be 6872 $\frac{1}{2}$ miles, then the Semidiameter must be half so much, viz. 3436 $\frac{1}{4}$ miles.

Secondly, suppose it be observed by sailers that their ships fly faster to the shore then from it; this proveth not the sea higher then the land. For know that it is no wonder to see a ship sail more speedily homewards then outwards; because when it approacheth to the shore, it cometh with a continued motion which makes it the swifter: but when it goeth from the shore, it doth but begin its motion, and is therefore slower then before. This (if need were) might be proved by many plain and familiar examples.

Thirdly, suppose that the sea seemeth, to such as stand on the shore, to swell higher and higher; till it put a bound to the sight; this rather proveth the sphericall roundnesse of the earth and sea, then any thing else; shewing that both together make one globe bodie. Which, why it is perceived rather in the water then the land,

land, this may be a reason; namely because the sea, being a plain and liquid element, and spacious enough, doth better shew it then the earth, which hindereth our full view by reason of many woods, trees, and other fixed obstacles which the sight meeteth and encountreth by the way.

Fourthly, although *Sesostris* K. of Egypt, and after him *Darius* K. of Persia, dared not to make a cut out of the Red sea into *Nilus*, for fear of drowning the country, because they supposed that the sea lay three cubits higher then the land of Egypt: yet (as some report; how truly, I cannot tell) the *Ptolomes*, kings of Egypt, effected the work without any danger of inundation. But suppose they had not done it, or suppose it were granted that the Red sea were higher then the plains of Egypt; yet it followeth not (unlesse one swallow can make a summer) that the sea in generall is every where higher then the earth. As for the height of the Red sea above the land neare adjoining to it, *Aristotle* seemeth to give a reason, perswading himself that there is such a change in the universe, as that that which hath been sea is sometimes land, and that which hath been land is sometimes sea: and so he thinketh of those low grounds neare the Red sea, that they have been gained from the sea. The like we may also think of many places in the Netherlands, and of that small part of sea which is between *Dover* and *Callis*; as *Verstegan* proveth in his restitution of decayed antiquities, cap. 4. pag. 97.

Fifthly, suppose that certain springs arise out of the highest mountains, must the sea therefore needs be higher then those mountains? surely I think not. For albeit I be not of *Aristotles* minde, nor of their opinions who do not derive the rivers from the seas, nor make subscription unto them who give a sucking and an attractive po-

power to the veins of the earth; yet I finde it as a thing possible, although that part of the sea which lieth opposite to the head of the fountain, or to the place where the water first breaketh out, be lower then the ground, that the said water may neverthelesse easily ascend, and not break forth untill it finde a place convenient. Now this ascent is caused by the sea, which, seeing it is a vast bodie, is very ponderous and heavie, and cannot be thrust back by the water at the head of the fountain opposite to it, but rather it doth potently and strenuously crowd on the said water through the hollow ports and passages of the earth, untill at the last it springeth forth.

Were it so indeed that there were an equall weight of both waters, (I mean of the sea-water driving, and of the spring-water arising) then the ascent of the one could not be higher then the *superficies* of the other: but seeing the weights are unequal (which ^c *Cardan* did not well consider) the stronger and heavier must needs drive on the weaker and lighter, causing it sometimes to ascend even above it self.

Sixthly and lastly, that which the Psalmist witnesseth concerning the standing of the waters on an heap, I take to be nothing else but the gathering of them to one place, so and in such a manner, that their coming together may be called Seas, and their forsaking the land be called Earth; for if one place of Scripture be expounded by another, it will appear to be even so. First, because it is said, Ecclesiastes 1. 7. *All the rivers go into the sea:* but the water hath his naturall course downwards, and cannot be forced up, but by the heavier weight; as hath been shewed. Secondly, because it is said Psal. 107. 23. *They go down to the sea in ships: down, as to the lower place; and not up, as to the higher.* And for that alledged out of Jeremy, viz. *Fear ye not me? &c.* The Prophet speaks there of no miraculous work against nature,

c De subtili, lib. 3.
pag. 123.

ture, but of the ordinary providence of God by naturall means, keeping back and bounding the sea; as at the 24. verse is manifest. For there he gives the like instance of the rain; which we know is not wrought by miracle, and yet it sheweth the watchfull providence of God, preserving the world by the naturall course of the creatures.

Judge then if they be not mistaken, who would have the sea higher then the earth.

The fourth question is, Whether there be more water then earth.

Now here I am perswaded that the answer may be either double or doubtful. For if we have respect to the known parts of the world, then I think there may be more sea then land. But if we have respect to all, both known and unknown, then perhaps there may be as much land as sea: For we see that in the maps of the world, the Southern parts are not known, and therefore they write *Terra Australis nondum cognita*: which whether it be sea or land, is uncertain. *Pareus*, upon Genesis, is perswaded that the land is more then the sea, alledging a proof out of * *Esdra*s, where it is said that when God commanded the waters to be gathered, he gathered them into the seventh part of the earth, and dried up the six other parts: which although it be Apocryphall in respect of the autoritie of the book, yet (saith he) it serves to shew that the waters are not more then the earth.

The next question is, Whether the earth be founded upon the waters.

The Psalmist seemeth to affirm it, Psal. 24. verse 2. For (according to the common reading) it is, *He hath founded it upon the seas, and prepared it upon the flouds.*

To which it is answered, that if the earth (as it is) be the receptacle for the waters, or holdeth the waters in the concavities of it, how can it be that the waters are

Quest. 4.
Shewing whether
there be more
water then earth.

* 2. Esdr. 6. 44.

Quest. 5.
Shewing upon
what the earth
is founded.

are in stead of a foundation? Job saith, *He hangeth the earth upon nothing*, chap. 26. 7. If upon nothing, then not upon the waters, for they are something. And again, even the Psalmist also saith, *The foundation of the earth cannot be moved*, Psal. 104. 5. If not moved, then not founded upon the waters, for they are moveable; flitting to and fro, sometimes this way, sometimes that way, and never standing still.

Wherefore when the Psalmist saith, *The earth is founded upon the seas*, he meaneth that it is so placed above them, as that it is made fit to be a place for habitation: And so Expositours understand the Hebrew word *Gnal*; viz. in such a sense that it doth signifie *above*, and not *upon*: In which sense, the waters that it sustaineth do not hold it, but are holden by it: for they are in it *tanquam in vitro*, as in a certain vessel; and do alwayes strive to come as neare the centre as is possible.

For conclusion then of this question, thus much must be known; namely, that when God made the world, he made * all things in number, weight, and measure: in somuch that the earth (although it be hanged upon * nothing) is so equally poysed on every side, that it cannot but be firmly upheld; and no more fall then the sun out of the firmament, or the starres out of heaven. For hath not man sometimes shewed an admired portion of skill in this or that rare work which he hath wrought, and effected by nothing else but onely the deep and profound rules of art? yes surely hath he. And if man be so potent as to make his skill admired, yea and by those who are men as well as he; what may we think of the Maker of men, but that his art is much more then commendable, and his wisdom much more then matchlesse; so that the world, and all the parts thereof, afford nothing but matter of wonder? It is therefore an acclamation which deserves impression in the hearts of us mortal

* Wisd. 11. 22.

* Job 26. 7.

tall men; *Oh God, how manifold are thy works! in wisdom thou hast made them all: And being made, his providence doth sustain them.*

The sixth question is concerning the saltnesse of the sea, and freshnesse of rivers.

Aristotle, in his second book of *Meteors*, at the 3. chapter, setteth down (besides his own) three opinions concerning this saltnesse. One whereof is, that the waters overflowing the earth in the beginning of the world, were so dried up by the heat of the sunne, that not onely the drie-land appeared, but all those waters which remained (being the sea) were so sucked and robbed of their sweet savour, that they could not but be salt.

Another opinion agreeing to that of *Plato*, who generating the sea *ex tartaro*, or from great and deep gulfs in the earth, or (with others) drawing it through the bowels of the earth, gave occasion to think that the water in it self was sweet, and yet became salt by reason of the divers favours that it met withall in the ground or veins of the earth. Which cause, by the interpretours of *Aristotle*, is also attributed to *Anaxagoras* & *Metrodorus*, as being pleasing to them. For as water strained through ashes is endued with a certain tart and salt kinde of acrimonie; so the sea is made salt by some such kinde of earth through which it passeth: which is as others have also thought, who suppose that the saltnesse of Mineralls doth much conduce to this purpose.

A third was the opinion of *Empedocles*, who affirmed that the sea was but the sweat of the earth, being (as it were) rosted by the heat of the sunne; and was therefore salt, because all sweat is of such a savour.

Now these three opinions *Aristotle* endeavoured to confute by severall reasons, shewing other causes of the seas saltnesse. And indeed had it been so with him that

C c

Quest. 6.

Shewing why
the sea is salt,
and rivers fresh.i Necem. in Arist.
de Met. lib. 2.
cap. 1.

he could have repaired unto Moses, then had the first opinion been struck dead more easily then it was; because Moses would have told him that the drying of the earth, and gathering of the waters, were one day elder then either sunne or starres.

And for the second, if it be taken in a qualified sense, it is not much amisse: for although *Aristotle* saith that if it be a true opinion, then rivers would be salt as well as seas, because they runne in the veins of the earth; yet know that all and every vein is not of one and the same temper; as is apparent by the differing qualitie of springing waters.

As for the third, it seemeth rather a ridiculous then philosophical opinion: for sweat is but a small part of that humour contained in any bodie that yeeldeth sweat; but the sea is not the smallest part of humour in the bodie of the earth: therefore it neither causeth the sea, nor saltnesse of it.

But beside all these, there are other opinions also. Wherefore some again have attributed the cause to adust vapours, partly let fall on the sea; and partly raised from it to the brinks and face thereof; Others to the motion of the sea; Some to under-earth, or rather under-sea fires, of a bituminous nature, causing both the motion and saltnesse also; Others to an hot and drie aspiration exhaled out of the earth, and mixed with the water of the sea.

But that which followeth seemeth absolutely the best, namely that it is effected by the working of the sunne, which draweth out the purer and finer parts, leaving the grosser and more base behinde; even as in this little world of our bodies, the purest part of our nourishment being employed in and on the bodie, the urine and other excrements remaining do retain a perfect saltnesse. Unto which opinion they also assent, who affirm that the saltnesse is radically or originally in

*k. Lyd. de vitig.
font. cap. 3, 179.*

*l. via. under the
wacer.*

in the matter of the water; which must be so understood as the water hath in it an earthy kinde of substance of a drying nature: which (as I suppose) was not first in the matter of the waters before they were gathered unto this one place where now they are; because, as is reported and written, there be salt mines in sundry places, as in a certain hill in *Barbary*, out of which perfect salt is digged, and used for salt after it is made clean and beaten small. All which doth greatly commend the providence and wisdom of God: For it is not unlike but that the sea was by his wisdom and providence gathered into such salt valleys of the earth, as were otherwise barren and unfruitfull: with which substance, the gathered water being mixed, must needs partake both of an earthy matter, and also of a salt favour; yet so, as this salt favour cannot be drawn out, and sensibly perceived in the mixture of many sweet humours joyned with it, without a separation first made by the heat of the sunne, of the thinner parts from the thicker: And so the sunne is a disponent, though not a productive cause of this saltnesse.

Now this opinion may be strengthened by many reasons.

First, because sea-water, when it is boyled, doth evaporate a dewie or watric humour, which being collected and kept together, hath a sweet tast or flavour.

Secondly, because vapours drawn from the sea and turned into rain, are void of saltnesse.

Thirdly, because the sea in summer, and towards the South (as *Aristotle* affirmeth) is more salt then elsewhere; which cometh to passe in that the sunne, at that time and place, draweth away more of the sweet humours then at other times.

Fourthly, because the sea is fresher towards the bottom, then at the top; as some have found by using practise to experience it.

C c 2

Fifthly,

*The sea made
salt by the substance of the
ground: that is
my opinion.*

Fifthly, because (as *Aristotle* again testifyeth) if an emptie vessel sealed up with wax, be by some means or other caused to sink into the sea, and there let lie for a certain space, it will at the last be filled with very fresh and sweet water, issuing in through the insensible small pores of the wax: for by this manner of passing into the vessel, the thin is strained from the thick: yea by this means, the earthy and adust part, which carrieth the saltnesse in it, is excluded, whilest the other is admitted. For in every salt favour, two things are required; viz. an adustion, and an earthie kinde of substance of a drying nature: both which are found in the sea. For (according to the testimonie of Physicians) sea-water doth heat and drie more then other waters, and is also more ponderous or heavie; yea and it doth more easily sustain a heavie burden, giving it lesse leave to sink then the fresh silver-seeming streams.

And thus we see how the sea comes to be salt. It followeth to shew why rivers be not salt, as well as seas. Now for the better explaining of this, the first thing considerable will be concerning the originall of fountains and rivers.

Aristotle handled them amongst Meteors of a watry kinde, because he supposed that there was the same originall of rivers within the earth, which was of watry Meteors in the aire above the earth. For if this aire (saith he) coming neare to the nature of a vapour, is by cold turned into water; then the aire which is in the caverns of the earth, may be, by the same cause, condensed into water also. According to which grounds, we cannot but make this the originall of fountains and rivers; namely, that they are ingendred in the hollow concavities of the earth, and derive both their birth and continuall sustentance from the aire; which piercing the open chinks or *chasm's* of the earth, and congealed by

Of rivers; and from whence they proceed.

Arist. de Met. lib. 1. cap. 13.

the cold of those places, dissolveth into water (as we see the aire in winter nights to be melted into a pearlie dew; sticking on our glasse windows) and being grown to some quantitie, it will either finde a way, or make a way to vent its superfluitie. All which agreeth very well to the nature of the aire, which seeing it is hot and moist, the heat being gone it is thickened, and so easily turned into water.

And as for a continuall running of rivers caused by this water, it is (saith *Aristotle*) by a perpetuall succession of new aire.

But to this opinion we may not absolutely make subscription; for although aire may be thus converted into water; yet the sole matter of rivers cannot come from hence: it may haply be an helping cause, but not a prime, or principall cause. For first, sith the aire is a thin subtil bodie, there is necessarily required an abundance of aire to make but a little quantitie of water; in somuch that it is not doubted by some without cause, whether the dennes and hollow places of the earth be vast enough to receive so much aire as can make water enough to runne along, untill it break out into a river or spring. Secondly, there be many fountains which have (as it were) a kinde of ebbing and flowing at certain direct and set times, which they keep as constantly as the very sea it self. As for example, among other strange rivers, *Plinie* makes mention of *Dodon*, Jupiters fountain, which evermore decreaseth from midnight untill noon; thence it increaseth untill midnight again. And in the island *Delus*, the fountain of *Inopus* (as he also affirmeth) keeps his course with *Nilus*. Also he makes mention of a little island in the sea over against the river *Timavus* or *Brenta* in Italie, having certain fountains in it which increase and decrease, according to the ebbing and flowing of the vast bodie of *Amphirrite* or the sea.

Plin. lib. 2. cap. 103.

Wherefore the wise man *Siracides* thought more truly (*Ecclus. 40. 11.*) concerning these things; affirming that *all things which are of the earth shall turn to the earth again: and that which is of the waters doth turn again into the sea.* Which saying of his I do not say is much strengthened, but absolutely confirmed by one more authentick then it self; namely by that of *Solomon, Eccl. 1. 7.* where it is witnessed that *all rivers runne into the sea, yet the sea is not full: unto the place from whence the rivers come, thither they return again.* Which testimonie makes it plain that the sea is the principall cause of all rivers: and if therefore *Aristotles* † aëriall vapours have any thing to do in this generation, it is as much as nothing: yet that which they are able to do, I imagine they perform, joyning themselves with the currents which come from the sea; and so they runne together in the veins of the earth, either untill free leave be given them to come abroad, or that (like *Hannibal* in the Alps) they work themselves a way.

Now in this there is little or no difference between *Solomon* and *Plato*, together with the ancient Philosophers before him, although *Aristotle* dissenteth. For that which *Solomon* calleth the sea, ° *Plato* calleth the great * gulf of the earth; saying, *εις τούτο τὸ χάσμα συρρέουσι τὰ πάντα ὅτι ποταμοί, καὶ ἐκ τούτου πάλιν πάντες ἐκβάσιν.* id est, *Ad illum hiatus & omnes fluvii confluunt, & ex hoc vicissim omnes effluunt:* that is, *Into this gulf all rivers do both flow or assemble themselves, and also by their courses come or flow out again.*

But what need more words? It is without controversy that rivers have their first originall from the sea: that is the fountain-head from whence all fountains have their heads. Neither can the saltnesse of the sea, and freshnesse of rivers, stop this current.

For concerning springs, it is true indeed that they are fresh;

† Aëriall vapours are partly a cause of springs.

o *Coel. Dissert. Phys. cap. 19. ex Plat. in Phaed.*
* *Plato* did but expresse *Moses* meaning, *Gen. 7. 11.* in other words.

How Springs come to be fresh, seeing the sea is salt.

fresh; and this freshnesse, notwithstanding their salt originall, may be ascribed to percolation and straining through the narrow spongie passages of the earth, which makes them leave behinde (as an exacted toll) the colour, thicknesse, and saltnesse. So that you see, sea water (though in it self of a salt and brackish savour) by passing through divers windings and turnings of the earth, is deprived of all unpleasantsnesse: and by how much the spring-heads of rivers are ^p remote from the sea, by so much are their waters affected with a delightfull relish: yea and why they ascend up to the highest mountains, already hath been declared. Unto which may be added, that they come not with a direct course from the sea unto those hills; neither do they ascend directly upwards on the sudden, but by degrees: and so, winding themselves through many crooked passages and turnings, they do (as it were) scrue themselves up to the convenientest place of breaking out; and cannot go back, because the sea is a farre heavier bodie then the vein that cometh from it; even as the blond in our veins is nothing in proportion to the liver, from whence each vein of blond hath its first beginning.

But I draw towards a conclusion; adding in the last place, that of waters (be they seas, or rivers) we have a threefold use and benefit.

First, that out of them, drink may be afforded to man and beast; as it is *Psal. 104. 11.* *They give drink to every beast of the field: the wilde asses quench their thirst, &c.*

Secondly, that running through the earth, as blond through the bodie, by interlacing it, and sometimes overwhelming it, they make the earth able to produce those fruits which are necessary for the life of man: which benefit of overflowing, so fattens the whole land of *Egypt*, that the priests of that countrey did thereupon ascribe the beginning of time, or of every thing that now

p *Plat. prope mare, salis longior, minus, procul, nihil. Jul. Scal. exercitat. 50.*

The benefit and use of waters.