now is, to that time of the yeare when their *Nilus* overflowed, or when it first began to lift up it self above the banks, and diffuse an ample portion of manuring bountie into the lap of the land: which is as good to them as if *Jupiter* should descend in a golden shower. And for other places, where there be no such luckie flouds, there it is found that these bounteous watrie bodies yeelding vapours, do purchase for them such dropping showers of rain, that *the valleys stand so thick with corn, that they laugh and sing*: and therefore these are great benefits challenging most humble thanks; as it is Psal. 107.

The third is, that they can quell the rage of the hottest element, and keep our mansions from cinders, or a flamie conversion into ashes.

The fourth is, that they yeeld us an easinesse and speedinesse of conduct and trafficke, by which each place partaketh of the blessings of every place.

Yea these, and many more, are the benefits of water, without which the life of man could not be sustained. But here I contract my sails, and end this question: for by coming on the shore, I shall the better view that which remaineth concerning this liquid element. Wherefore it followeth.

Quest. 7. Wherein is shewed the cause of the ebbing and flowing of the sea.

The next and last question propounded, was concerning the fluxion and refluxion of the sea; wherein I purpose (as neare as I can) to shew, both why seas have that alternate motion, as also why such murmuring brooks and rivers, as do not ebbe and flow, are destitute of the foresaid courses.

The motion of the sea is either naturall, or violent. The first it performeth on its own accord: the other it doth not, but by some externall force compelling it.

The first, being a naturall motion, is such as is in every other water; namely that all waters do evermore flow into the lowest place, because they have an heavinesse or

or ponderositie in them. And thus the ocean naturally floweth from the North, where it is highest, unto the South as the lower place: for [q] there, in regard of the great cold, the waters are not onely kept from drying up, but also increased, whilest much aire is turned into water: whereas in the South, by reason of great heat, they are alwayes sucked up and diminished. Now this motion is called a motion of Equation; because it is for this end, namely that the *superficies* of the water may be made equall, and distant alike on every side from the centre of gravitie.

[q] *Zanch. Tom. 3. lib. 4. cap. 1. quest. 6. thes. 1.*

The other, being that which dependeth upon some externall cause, is such as may be distinguished into a threefold motion. One is rapt, and caused by force of the heavens, whereby it floweth from * East to West. The second is a motion of Libration, in which the sea striving to poise it self equally, doth (as it were) wave from one opposite shore to another. And note that this is onely in such as are but strait and narrow seas, being a kinde of trepidation in them, or (as I said before) a motion of Libration; just like a rising and falling of the beam of an equall-poised balance, which will not stand still, but be continually waving to and fro. The third and last is *Reciprocatio*, or *Æstus maris*, called the ebbing and flowing of the sea.

*Note that this is pertinent to the openest seas, as the Atlantick and South seas, and especially between the Tropicks, where is a constant Easterly breath caused by the superiour motions which draw together with them, not onely the element of fire, but of the aire and water also.

The cause of which hath added no little trouble, nor small perplexitie, to the brains of the best and greatest Philosophers. *Aristotle*, that master of knowledge, helps us little or nothing in this question. And yet [r] *Plutarch* affirmeth that he attributed the cause to the motion of the sunne. [s] Others have gathered from him that he seemed to teach, it was by certain exhalations which be under the water, causing it to be driven to and fro according to contrary bounds and limits. But howsoever he taught, or whatsoever he thought, this we finde, that

[r] *De placit. Philos. lib. 3. cap. 17.*

[s] *Dr. Fulk, Meteor. lib. 4.*

nothing troubled him more. For (as [t] *Cœlius Rhodiginus* writeth) when he had ſtudied long about it, and at the laſt being weary, he died through the tedioufneſſe of ſuch an intricate doubt. [u] Some ſay he drowned himſelf in *Negropont*, or *Euripus*, becauſe he could finde no reaſon why it had ſo various a fluxion and reflaxion, ebbing and flowing ſeven times a day at the leaſt; adding, before that his untimely and diſaſtrous precipitation, theſe words, Ἐπειδὴ Ἀριστοτέλης οὐχ ἕλκει τὸν Εὔριπον, Εὔριπος ἕλκυσε τὸν Ἀριστοτέλη· *Quandoquidem Ariſtoteles non capit Euripum, Euripus capiat Ariſtotelem*; That is, *Although Ariſtotle hath not taken Euripus, yet Euripus ſhall take Ariſtotle:* meaning that that ſhould end him, whoſe cauſe could not be comprehended by him.

But leaving *Ariſtotle*, we ſhall finde as little help from his maſter *Plato*, who (as did alſo the Stoicks) attributed the cauſe to the breath of the world. Such alſo have been the fancies of others; among whom, *Kepler* may not be forgotten, who in good earneſt affirmeth and beleeveth that the earth is a great living creature, which with the mightie bellows of her lungs firſt draweth in the waters into her hollow bowels, then by breathing reſpires them out again. A prettie fiction this; and well worthy the pen of ſome fabling poet, rather then to be ſpoken in good ſober ſadneſſe, and affirmed as a truth.

Others would have the cauſe to be by reaſon of waters in the holes of the earth forced out by ſpirits; which comes ſomething neare to that before concerning the breath of the world.

A third ſort attribute the cauſe to the circular motion of the earth; affirming that there is a daily motion of the earth round about the heavens, which it performeth in 24 houres: the heavens in the mean time onely ſeeming to move, and not moving in very deed. This opinion came firſt from the *Pythagoreans*, and is defended by the

[t] *Antiquarum lectionum lib. 29. cap. 8.*

[u] *Juſt. Mart. Greg. Naz. Æſchines orat. contra Ctef. L. Valla Dialog. de lib. arbitrio, &c.*

[x] *Livie* ſaith that it is not ſeven times a day; but *temere in modum venti nunc huc, nunc illuc rapitur, lib. 8. dec. 3.*

the *Copernicanians* as an effect of the foreſaid motion. As for example; the earth moving ſwiftly round, the water not able to follow the motion, is left behinde, and cauſed to flow to and fro; like as in a broad ſhallow veſſel may be ſeen: for put water in ſuch a veſſel, and let it be ſwiftly pulled forward, and then you ſhall ſee that by being left behinde, it will beat it ſelf againſt the one ſide, before the other can at all partake of its company: and ſo it is alſo in the earth, leaving the waters behinde whileſt it moveth.

But if this opinion be true; firſt tell me how it comes to paſſe that the ſea doth not ebbe and flow alwayes at one and the ſame time, but altereth his courſe, and is every day about one houre later then other. Secondly, ſhew me why the tides are at one time of the moneth higher then at another. Thirdly, let me be informed why broad lakes and large rivers do not flow as well as ſeas. Fourthly, let me be rightly inſtructed how it comes to paſſe that things tend to the earth as their centre, if the ſunne (as *Copernicus* and his followers imagine) be the centre of the world. Fifthly, ſhew me why the aire in the middle Region is not rather hot then cold: for ſurely if the earth ſhould move round with a diurnall motion, as they maintain, then the middle Region muſt be either farre higher then it is, or elſe the aire would be ſo heated by going round, that the coldneſſe in it would be either little or none at all; for it is a ruled caſe, that *Remotio à motu circulari dat quietem, frigiditatem, et gravitatem; ſicut propinquitas dat motum, calorem, et levitatem:* and thereupon it comes to paſſe that we have coldneſſe in the middle Region, the cauſe firſt beginning it being in reſpect of the hills which hinder the aire from following the motion of the heavens; as in * two ſeverall places of the ſecond dayes work I have declared. Sixthly, I would alſo know why an arrow being ſhot upright

The earth hath no circular motion.

* Viz. chap. 4. ſect. 2. and chap. 5. ſect. 2. Paragraph 1.

should fall neare upon the same place where the shooter standeth, and not rather fall beyond him, seeing the earth must needs carry him farre away whilest the arrow flyeth up and falleth down again: or why should a stone, being perpendicularly let fall on the West side of a tower, fall just at the foot of it; or on the East side, fall at all, and not rather be forced to knock against it? We see that a man in a ship at sea, throwing a stone upright, is carried away before the stone falleth; and if it be mounted up in any reasonable height, not onely he which cast it, but the ship also is gone. Now why it should be otherwise in the motion of the earth, I do not well perceive. If you say that the earth equally carries the shooter, aire, arrow, tower, and stone; then methinks you are plainly convinced by the former instance of the ship: or if not by that, then by the various flying of clouds, and of birds; nay, of the smallest grashopper, flie, flea, or gnat, whose motion is not tied to any one quarter of the world; but thither onely whither their own strength shall carry them: some flying one way, some another way, at one and the same time. We see that the winde sometimes hindereth the flight of those prettie creatures; but we could never yet perceive that they were hindered by the aire; which must needs hinder them if it were carried alwayes one way by the motion of the earth: for from that effect of the earths motion, this effect must needs also be produced.

Arm'd with these reasons, 'twere superfluous
To joyn our forces with Copernicus.

But perhaps you will say it is a thing impossible for so vast a bodie as the heavens to move dayly about the earth, and be no longer then 24 houres before one revolution be accomplished: for if the compasse were no [y] more then such a distance would make as is from hence to Saturns sphere, the motion must extend, in one first scruple

y *Lansberg. comment. in motum terræ diurn. pag. 7.*

scruple or minute of time, to 55804 miles; and in a moment, to 930 miles: which is a thing impossible for any Physicall bodie to perform.

Unto which I must first answer, that in these mensurations we must not think to come so neare the truth, as in those things which are subject to sense, and under our hands: For we oft times fail, yea even in them, much more therefore in those which are remote, and (as it were) quite absent, by reason of their manifold distance.

Secondly, I also answer, that the wonder is not more in the swiftnesse of the motion, then in the largenesse of the circumference: for that which is but a slow motion in a little circuit (although it be one and the same motion still) must needs be an extraordinary motion in a greater circle; and so, I say, the wonder is not more in the motion then in the largenesse of the circumference. Wherefore, he that was able, by the power of his word, to make such a large-compassed bodie, was also able so to make it, that it should endure to undergo the swiftest motion that the quickest thought can keep pace with, or possibly be forged in imagination: For *his works are wonderfull, and in wisdome he hath made them all.*

Besides, do but go on a while, and adhere a little to the sect of *Copernicus*, and then you shall finde so large a space between the convexitie of Saturns sphere, and the concavitie of the eighth sphere (being more then 20 times the distance of Saturn from us, and yet void of bodies, and serving to no other purpose but to salve the annuall motion of the earth) so great a distance, I say, that thereby that proportion is quite taken away which God the Creatour hath observed in all other things; making them all * in number, weight and measure, in an excellent portion and harmonie.

* Wisd. 11. 22.

Last of all, let me demand how the earths motion and heavens

heavens reſt can agree with holy Scripture. It is true indeed (as they alledge) that the grounds of Aſtronomie are not taught us in Gods book: yet when I heare the voice of the everlaſting and ſacred Spirit ſay thus, **Sun ſtand thou ſtill, and thou Moon in the valley of Ajalon*, I cannot be perſwaded either to think, teach, or write, that the earth ſtood ſtill: but the ſunne ſtood, and the moon ſtayed, untill the people had avenged themſelves on their enemies. Neither do I think after this that it was the earth which went back, but the ſunne upon Ahaz his diall in the dayes of Ezekias. For when God had made the earth, what ſaid he? did he bid it move round about the heavens, that thereby dayes, weeks, moneths and yeares might be produced? No. What then? This was its office, and this that which it ſhould do; namely *bud and bring forth fruit for the uſe of man. And for motion, it was abſolutely and directly bellowed upon the heavens and ſtarres: witneſſe thoſe very words appointing to the ſunne and moon their courſes; ſetting them in the heavens ſo as they ſhould never reſt, but be for ſignes, and for ſeaſons, for dayes and for yeares. And ſo alſo the wiſe *Siracides underſtood it, ſaying, *Did not the ſunne go back by his means, and was not one day as long as two?*

*Joſh. 10. 12, 13.

Eſay 38. 8.

2. *Motus terræ* is nothing but *Germinatio terræ.*

Gen. 1.

*Eccluſ. 46. 4.

I conclude therefore, and concluding cannot forget that ſweet meditation of a religious and learned *Prelate, ſaying, *Heaven ever moves, yet is that the place of our reſt: Earth ever reſts, yet is that the place of our travell and unreſt.*

* Biſh. Hall.

And now, laying all together, if the cauſe be taken away, the effect periſheth. My meaning is no more but thus; that ſeeing the earth is void of motion, the ebbing and flowing of the ſea cannot be cauſed by it, but dependeth upon ſome other thing.

Or again, were it ſo that the earth had ſuch a motion,

I ſhould ſcarce beleeve that this ebbing and flowing depended on it. For (as I ſaid before) if this were the cauſe, it could never be that the courſe of ebbs and flouds ſhould keep ſuch a regular alteration as they do day by day: Neither could it produce a cauſe why the tides ſhould be more at one time of the moneth then at another: Nor yet (as ſome ſuppoſe) could the waters be ſuffered to flow back again, but alwayes muſt be going on as faſt as they can, toward the Eaſtern part of the world. But I leave this and come to another.

It was a mad fancie of him who attributed the cauſe to an Angel, which ſhould ſtand in a certain place of the world, and ſometimes heave up the earth above the waters, ſometimes conſtraining it to ſink below them. In an ebbe, he heaves it up; and in a floud he lets it ſink.

As improbable alſo is that of ſome others who imagine one Angel to be an Angel of the water, whoſe office is (as in the pool of *Betheſda*) to move the waters to and fro: and for proof of this, that place is alledged in the * Revelation, where when the vials were poured out upon the kingdome of the beaſt, one of the Angels is called an Angel of the waters. But know that the ſame anſwer made before concerning the moving of the windes, will ſerve to ſtop this gap. Or were it ſo that we muſt be tied to a literall ſenſe, the compulſion overthrows the aſſertion; becauſe he is called an Angel of the waters, not for that he cauſeth them to ebbe and flow, but becauſe it was his office to corrupt them and turn them into bloud.

* Revel. 16. 5.

More probable was their opinion who attribute the cauſe to certain ſubterranean or under-ſea fires, whoſe matter is of neare akin to the matter of the Moon; and therefore, according to her motion, they continue their times of burning: and burning, they make the ſea

so to boyl as that it is a tide or high-water; but going out, the sea sinks again.

But now if this opinion were true, then the water in a tide would be thinner, through the heat which causeth it to ascend, thinner then at other times: and so a ship carrying one and the same weight, would sink deeper in a flood then in an ebbe; which experience shews to be otherwise. Yea were it so that there were such supposed fires in the bottome of the sea, causing it to swell up like boyled water, then it would also follow that the sea-water would be so hot that it might not be touched: For if the heat of the supposed fire be sufficient to make it ascend, it is sufficient also to make it hot: which would appeare lesser in an ebbe then in a flood.

This is the most probable cause why the Sea ebbs and flows.

Wherefore, omitting these and the like opinions, the most allowable is to attribute this flux and reflux, to the effects of the divers appearances of the Moon: For we see by experience, that according to the courses of the Moon, the tides are both ordered and altered. By which it is not improbable that the waters are drawn by the power of the Moon, following her daily motion, even as she is carried with the *Primum Mobile*. Yea were it not so that the sea were hindered by some accident, some have supposed that these waters would go round from East to West in 24 houres; and so round again, even day by day. The accident hindering this circular motion, is in regard that the West ocean sea is shot in between the firm land of America on the West part, and the main land of Africa and Europe on the East part. But were it so that there were no such accidentall let in the sea, to be hindered by the land, it would orderly follow the Moon, and go daily round: And seeing also it is hindered by such an impediment, it is a probable conjecture to think, that it cannot but be forced to retire;

tire; for the firm land beats it back again. Thus Mr *William Bourn*, in the 5 book of his treasure for travellers, chap. 6. determineth.

Others there be who attributing the cause to the moon, do demonstrate it after another manner; namely that through her influence she causeth these alternate motions: and this influence of hers worketh according to the quadrate and opposite aspects of her position in the heavens; or according to the quadrate and opposite configurations from that place where she was at the beginning. For the seas, [a] saith a well learned writer, begin to flow when the moon by her diurn rapt motion from East to West, cometh to the nine a clock point in the morning, or is South-east: then they will continue flowing untill she come to a quadrate aspect, or to 90 degrees, which will be about 3 of the clock in the afternoon, or be South-west when they cease from flowing and begin to ebbe, continuing so untill she come to 180 degrees, or the opposite place, which will be somewhat after nine of the clock at night, being the opposite place to that from which she began her flowing. Then again they begin to flow, and so continue untill she attain to 270 degrees from her first place, which will be after three in the morning. And then lastly they begin to ebbe, and so continue still, untill the moon come to that place where she was at the beginning: for there the flood begins again. Thus it is ordinarily; yet her illumination, the sunne and other starres may hasten, hinder, or something alter the moons influence, as we see in spring-tides, at the change and full; and neap-tides, at quarters and half quarters of the moon: confessed by [b] those who have been great masters in Astrologie.

[a] Sir Christopher Heydon, in his defence of Judiciall Astron. chap. 23. pag. 432.

[b] *Idem, pag. 433. cap. 22.*

And let this also be known, that though the moon have dominion over all moist bodies, yet not alike, because of other causes concurring; as the indisposition of

Why all seas do not ebbe and flow

unfitneſſe of the ſubject, or for want of matter, and the like conſiderations. As for example, though it be probable that there be tides *in mari Atlantico*, yet they are not to be perceived, by reaſon of the vaſt wideneſſe and profunditie thereof: in other places alſo of the ſea are no tides, being hindered by the ſtrength of ſome current, which prevaileth: and in freſh water there is no tide, becauſe of the raritie, thinneſſe, and ſubtiltie thereof, which cannot retain the influence of the moon.

Why freſh waters do not ebbe and flow.

And note alſo that in ſuch havens and rivers as ebbe and flow, there may be great diverſitie; which cometh to paſſe both according to the indraught, as alſo by reaſon of the crooked and narrow points and turnings of the banks, which do let and ſtay the tide from that which is the common and ordinary courſe in the main bodie of the ſea: but afterwards, when it is in, and hath taken his ſway, then it cannot ſo ſoon reverſe back, but muſt continue untill the water behinde it be deſcended or ebbed into the ſea. The river *Thames* may ſerve as an inſtance in this: for it is not a full ſea in all places of it at one inſtant, being three parts of a flood at the lands end, before it can be any flood at *London*. But were it ſo that there were no creeks, iſlands, ſtraits, turnings, or other accidentall hinderances, then there ſhould be no difference found in any ſea, but the whole bodie ſhould be ſwayed up and down with a conſtant courſe: whereas ſince it is otherwiſe, the times for every ſuch place muſt be once found out, that thereby they may be known for ever.

Wherefore the cavils of ſome men are nothing worth, who by bringing particular and rare (perhaps vain) examples, do think to take away this power from the moon. For ſith this lunar regiment is pertinent to moſt ſeas, and that all our ocean doth follow her; the exceptions taken from certain ſtraits, creeks, bayes, or ſuch

ſuch like places, ought to be referred to accidentall hinderances; as to the unaptneſſe of the places, rocks, qualities of the regions, differing nature of the waters, or other ſecret and unknown impediments; ſuch as manifeſt themſelves in *Cambaia*. For it is reported, that there, although the tides keep their courſe with the moon, yet it is contrary to the courſe they hold in theſe parts; for they are ſaid to increaſe, not with the full of the moon, but with the wane; and ſo the ſea-crabs do likewiſe: amongſt other things the nature of the water and qualitie of the region may much avail to this, if it be true. And in the iſland of *Socotora* (ſaith M^r *Purchas*) Don John of *Caſtro* obſerved many dayes, and found (contrary both to the Indian and our wont) that when the moon riſeth, it is full ſea, and as the moon aſcends, the tide deſcends and ebbeth, being dead low water when the moon is in the meridian. Theſe things are thus reported, and if they ſhould be true, yet we muſt know that they are but in particular ſeas, as I ſaid before, where a generall and univerſall cauſe may be much hindered, and in a manner ſeem as if it were altered.

They that deſcend the brinie waves
Of liquid Thetis flouds,
And in their ſhips of brittle ſtaves Pſal. 107. 23. 24.
Trade to augment their goods;
Theſe men behold, and in the deeps they ſee
How great Gods wonders of the waters be.

I conclude therefore, and cannot but ſay, that this is as great a ſecret, to be in every point diſcuſſed and unfolded, as any nature can afford: *Arcanum enim naturæ magnum eſt*, It is a great ſecret of nature, and gives us therefore principall occaſion to magnifie the power of God, whoſe name onely is excellent, and whoſe power above heaven and earth.

Laſt of all, this is the finall cauſe of the ſeas motion:

God hath ordained it for the purging and preſerving of the waters. For as the aire is purged by windes, and as it were renewed by moving to and fro; ſo this motion keeps the waters of the ſea from putrefaction.

An Appendix to the former Section, wherein the properties and vertues of certain ſtrange rivers, wells, and fountains, are declared.

I Do not well know how to end this diſcourſe of waters, before I have ſpoken ſomething of the ſtrange properties that are in certain rivers, wells, and fountains. Some are hot, becauſe they are generated and flow out of veins of brimſtone, or receive heat from thoſe places where ſubterranean fires are nouriſhed. For this is a generall rule, that all waters differ according to the qualitie of the place from whence they ariſe. Some again are ſowre or ſharp like vineger; and theſe runne through veins of allome, copperas, or ſuch mineralls. Some may be bitter, that flow out of ſuch earth as is bitter by aduſtion or otherwiſe. Some may be ſalt, whoſe current is through a ſalt vein. And ſome may be ſweet; theſe are ſuch that be well ſtrained through good earth, or runne through ſuch mineralls as be of a ſweet taſte.

Our baths in the Weſt countrey, and S. Anne of Buckſtones well in the North part of *England*, and many other elſewhere, are hot. *Ariſtotle* writeth of a well in *Sicilie*, whoſe water the inhabitants uſed for vineger: and in divers places of *Germanie* be ſprings which harbour much ſharpneſſe. In *Bohemia*, neare to the citie called *Bilen*, is a well (ſaith Dr *Fulk*) that the people uſe to drink of in the morning, in ſtead of burnt wine. And ſome (ſaith he) have the taſte of wine; as in *Paphlagonia* is a well, that maketh men drunk which drink of it: now this is, becauſe that water receiveth the fumoſitie of brimſtone,

Water uſed in ſtead of vineger.

Water uſed in ſtead of burnt wine.

Water which makes men drunk.

brimſtone, and other minerals, through which it runneth: and retaining their vertue, it filleth and entoxicateth the brain, as wine doth. For it is poſſible that fountains may draw ſuch efficacie from the mines of brimſtone, that they may fill their brains with fume that drink thereof, who alſo become drunk therewith. To which purpoſe *Ovid* ſpeaketh thus,

Quam quicunque parùm moderato gutture traxit,
Haud aliter titubat, quàm ſi mera vina bibiſſet.
Which whoſo draws with an immoderate throat,
Trips, as his brains in meer good wine did float.

And *Du Bartas* alſo,

Salonian fountain, and thou Andrian ſpring,
Out of what cellars do you daily bring
The oyl and wine that you abound with ſo?
O earth, do theſe within thine entralls grow?
What? be there vines and orchards under ground?
Is Bacchus trade and Pallas art there found?

Ortelius, in his Theatre of the world, makes mention of a fountain in *Ireland*, whoſe water killeth all thoſe beaſts that drink thereof, but not the people, although they uſe it ordinarily.

A water which is deadly to beaſts, but not to men.

It is alſo reported, that neare to the iſle *Ormus*, there is a great fountain found, the water whereof is as green as the field in ſpring-time, and ſalt as the ſea. He which drinketh but a little of it, is incontinently taken with a violent ſcowring; and he that drinketh very much thereof, dieth without remedie.

A purging killing water.

Ælianus makes mention of a fountain in *Bœotia* neare to *Thebes*, which cauſeth horſes to runne mad, if they drink of it.

A water which makes horſes mad.

Plinie ſpeaketh of a water in *Sclavonia* which is extreamly cold; yet if a man caſt his cloth cloak upon it, it is incontinently ſet on fire.

A cold burning water.

Ortelius again ſpeaketh of a boyling fountain, which

A water which will both roſt and bake.

will preſently ſeethe all kinde of meat put into it: it will alſo bake paſte into bread, as in an oven well heated. This is ſaid to be in the iſle of *Grontland*.

A river which braedeth flies.

The river *Hypanis* in Scythia every day brings forth little bladders, out of which come certain flies. They are bred in the morning, fledge at noon, and dead at night: wherein mankinde is alſo like them. For his birth is as his morning; his ſtrongeſt time, or his middle time (be his time long or ſhort) is as his noon; and his night is that, when he takes leave of the world, and is laid in the grave to ſleep with his fathers: For this hath been the ſtate of every one, ſince firſt the world had any one. The day breaking, the Sunne ariſeth; the Sunne ariſing continues moving; the Sunne moving, noontime maketh; noontime made, the Sunne declines; the Sunne declining threatens ſetting; the Sunne ſetting, night cometh; and night coming our life is ended. Thus runnes away our time. If he that made the heavens Sunne, hath ſet our lives Sunne but a ſmall circumference, it will the ſooner climbe into the noon, the ſooner fall into the night. The morning, noon, and evening (as to thoſe flies) theſe three conclude our living.

A water which maketh oxen white.

Clitumnus, ſaith *Propertius*, *lib.* 3. is a river or ſpring in Italie which maketh oxen that drink of it, white. Dr. *Fulk* yeeldeth this reaſon, namely becauſe the qualitie of the water is very flegmatick, Fulk. Met. lib. 4.

Water which maketh ſheep black or white.

Plinie ſpeaketh of the river *Melas* in *Bœotia*, which maketh ſheep black: But *Cephiſus*, another ſtream which flows out of the ſame lake, makes them white. See *Plin.* in the 103. chap. of his 2 book.

Water which makes them red.

Plinie alſo, in the former book and chapter, makes mention of the river *Xanthus*, which will make the flocks turn red, if they drink the water. *Solinus* affirmeth the like of a fountain in *Arabia* neare to the Red-ſea, ſaying, *in littore maris iſtius fontem eſſe, quem ſi oves biberint,*

rint, mutent vellerum qualitatem, at fulvo poſtmodum nigreſcant colore. To which purpoſe we may heare *Du Bartas* deſcant thus,

[b] *Cerona, Xanth, and Cephiſus, do make*
The thirſty flocks, that of their waters take,
Black, red, and white: And neare the crimſon deep,
Th' Arabian fountain maketh crimſon ſheep.

b *Plin. lib.* 31. *cap.* 2. See alſo *lib.* 2. *cap.* 103.

A water like to the former.

Seneca ſpeaketh of a river which maketh horſes red. Now theſe things may be, as Dr. *Fulk* yeelds probable conjecture, in that the qualitie of the water may alter the complexion; and the complexion being altered, the colour of their wooll and hairs may be changed. *Ariſtotle*, in his 3 book, chap. 12, *de hiſtor. animal.* maketh mention of ſuch like waters alſo: as there is a river in *Aſſyria*, called *Pſychrus*, of that coldneſſe, which cauſeth the ſheep that drink thereof to yean black lambes: in *Antandria* there are two rivers, the one maketh the ſheep white, the other black: the river *Scamander* doth die them yellow. Dr. *Will.* in his Hexap. on Gen. *ex Ariſtot.*

A water cold in the day, and hot in the night.

Plinie makes mention of the Hammonian fountain, ſaying, *Jovis Hammonis fons interdiu frigidus, noctibus fervet*; The fountain of Jupiter Hammon is cold in the day time, and hot in the night. Like unto which is that which he calleth the fountain of the Sunne; excepting that the water is ſweet at noon, and bitter at midnight: but for the times of cold and heat, it is like to the other fountain. *lib.* 2, *cap.* 103. Some ſeem to think that this may be the reaſon, namely, that the cold humidity of the night nouriſheth the heat, and by an *Antiperiſtaſis* cauſeth it to reinforce it ſelf inward: But by day (the Sunne-beams ſucking up that heat which is in the ſurface, that is to ſay, above) the water remaineth cold. Others determine thus, ſaying that this may be by the ſame reaſon that well-water is colder in ſummer then it is in winter.

We

A water turning wood into stone.

We have in *England*, wells which make wood and all things else that be cast into them, stones: the cause whereof is great cold.

A river which rests every seventh day.

Josephus, de Bello Judaic. lib. 7. cap. 24. writeth that there is a river in *Palestine*, which passeth between two cities, called by these names, viz. *Arcen*, and *Raphanee*, which river is admirable for an extraordinarie singularitie: namely, that having entertained his violent and swift course for the space of six dayes, on the seventh it remaineth dry: which being past, it runneth as before; and therefore is called the river of the Sabbath: [c] *Du Bartas* calleth it the Jews religious river,

Keeping his waves from working on that day
Which God ordain'd a sacred rest for ay.

c In his 3 day.

A strange well in *Idumea*.

In *Idumea* was a well, which one quarter of the yeare was troubled and muddy, the next quarter bloudie, the third green, and the fourth cleare. *Isiodore* makes mention of this, and it is called the fountain of Job.

Poysoning waters.

Seneca and others affirm that there be rivers whose waters are poyson: now this may be, in regard that they run through poysonous mineralls, and receive infection from their fume, and the like. Such is the water *Nonacrinis* in *Arcadia*: of which it is recorded, that no vessell of silver, brasse, or iron, can hold it, but it breaketh in pieces; onely a mules hoof and nothing else can contain it. [d] Some write that *Alexander* the great, through the treacherie and plots of *Antipater*, was poysoned with this water. *Curtius* calleth it the water of *Styx*, *lib.* 10. *juxta finem.*

d Plutarch. See also Just. *lib.* 12. and Curt. *lib.* 10.

A water which makes cattell give black milk.

In an isle of *Pontus*, the river *Astaces* overfloweth the fields; in which whatsoever sheep or other milch cattell be fed, they always give black milk. This river *Plinie* forgetteth not, *lib.* 2. *cap.* 103.

Poysoning waters.

It is reported that in *Poland* is a fountain so pestilent, that the very vapour thereof killeth beasts when they approach unto it. There

Water which makes men mad.

There be some waters which make men mad who drink of them. Which is, in a manner, by the same reason that other fountains have made men drunk.

A water that spoils the memorie.

Some again spoil the memorie, and make men very forgetfull: which may very well be, by procuring obstructions in the brain. *Fulk.*

A water which procureth lust.

Seneca speaketh of a water, that being drunk provoketh unto lust. *Plinie*, in the second chapter of his 31 book, speaketh of certain waters in the Region of *Campania*, which will take away barrennesse from women, and madnesse from men. And in *Sicilia* are two springs: one maketh a woman fruitfull; the other, barren.

A water which causeth barrennesse, and another which causeth the teeth to fall, &c.

The foresaid *Plinie*, in the same book and chapter, saith that the river *Amphrysus* or *Aphrodisium*, causeth barrennesse.

And again, in his 25 book and 3 chapter, he speaketh of a strange water in *Germanie*, which being drunk, causeth the teeth to fall out within two yeares, and the joynts of the knees to be loosed.

Lechnus, a spring of *Arcadia*, is said to be good against abortions.

In *Sardinia* be hot wells that heal sore eyes: and in *Italie* is a well which healeth wounds of the eyes. In the isle of *Chios* is said to be a well which makes men abhorre lust: and in the same countrey, another whose propertie is to make men [e] dull-witted. Now these and the like qualities may as well be in waters which are mixed with divers mineralls and kindes of earth, as in herbs, roots, fruits, and the like.

e For this see *Plinie lib.* 31 *cap.* 2. where also you may reade of another that sharpeneth the senses.

The lake *Pentasium* (as *Solinus* saith) is deadly to serpents, and wholesome to men. And in *Italie*, the lake *Clitorie* causeth those that drink of it, to abhorre wine. *Fulk, Met. lib.* 4.

Fountains of oyl.

Ortelius, in the description of *Scotland*, maketh mention of divers fountains, that yeeld forth oyl in great

quantitie: which cometh to passe by reason of the viscositie or fatnesse of the earth where they passe, and from whence they arise. The like may be also said concerning pitchie streams, &c.

Waters of a strange temper.

Some waters are of that temper, that men sink not in them, although they know not how to swimme. The like lake is said to be in *Syria*, in which (as *Seneca* relateth) no heavie thing will sink.

Of the fountain Dodone.

That which *Plinie* writeth of the fountain *Dodone*, *lib. 2. cap. 103.* is very strange: whereupon *Du Bartas* makes this descant,

What should I of th' Illyrian fountain tell?
What shall I say of the Dodonean well?
Whereof the first sets any clothes on fire;
Th' other doth quench (who but will this admire?)
A burning torch; and when the same is quenched,
Lights it again, if it again be drenched.

There be some wells, whose waters rise and fall, according to the ebbing and flowing of the sea, or of some great river unto which they are neare adjoyned. The reason therefore of this is plain.

Waters which work miracles.

But strange is that which D^r *Fulk* mentioneth of the river *Rhene* in *Germanie*, which will drown * bastard children that be cast into it, but drive to land them that be lawfully begotten. Or is not this strange which he also mentioneth of a certain well in *Sicilia*, whereof if theeves drink, they are made blinde by the efficacie of the water? The like I finde in other authours concerning certain fountains in *Sardinia*: for it is said that they have this marvellous propertie; namely, that if there be a cause to draw any one to his oath, he that is perjured and drinketh thereof, becometh blinde, and the true witnesse seeth more clearely then he did before. *Solinus* and *Isiodore* report it.

* In which he was deceived: it was rather to trie their strength, and make them hardie; as *Pausanias* well declareth, *Restitut. cap. 2. pag. 45.*

Solinus also and [f] *Aristotle* make mention of a water called

[f] *De admirandis cap. 51, & 52.*

called the *Eleusinian* or *Haleſinian* ſpring, which, through the noiſe of ſinging or muſick, is moved as if it danced or capered up and down: whereas at other times it is ſtill and quiet. But I conclude, and (as that [g] honoured Poet) cannot but ſay,

[g] *Du Bart. 3 day.*

Sure in the legend of abſurdeſt fables
I ſhould enroll moſt of theſe admirables,
Save for the reverence of th' unſtained credit
Of many a witneſſe, where I yerſt have read it;
And ſaving that our gain-ſpurr'd Pilots finde,
In our dayes, waters of more wondrous kinde.

We ought to make the beſt uſes of the ſtrangeſt things.

Unto which (in things that are ſtrange, and not fabulous) let this alſo be added, that God Almighty hath propoſed infinite ſecrets to men, under the key of his wiſdome, that he might thereby humble them; and that, ſeeing what meer nothings they are, they might acknowledge that all are ignorant of more then they know: for indeed this is a rule, *Maxima pars eorum quæ ſcimus, eſt minima pars eorum quæ neſcimus; The greateſt part of thoſe things which we know, is the leaſt part of thoſe things which we know not.*

Sect. 3.

Of the drie-land appearing after the gathering of the waters.

THe waters were no ſooner gathered, but the drie-land then appeared: and this may be called the ſecond part of the third dayes work. For the end of the gathering of the waters was, that the earth might ſhew it ſelf; and not onely ſo, but that alſo it might appeare ſolid and drie.

Two things therefore (ſaith *Pareus*) did the earth in this act principally receive: one was that it might be conſpicuous; the other, that it might be ſolid and drie: