





March the 14th 1645.

I Have perused these Learned Animadversions upon the Common Tenets and Opinions of men in former and in these present times, Entitled Pseudodoxia Epidemica; and finding them much transcending vulgar conceipt, and adorned with great variety of matter, and multiplicity of reading; I approve them as very worthy to be Printed and Published.

JOHN DOVVNAME,



Nathan Wright of Englefield

Pseudodoxia Epidemica:
O R,
ENQUIRIES

INTO

Very many received

TENETS,

And commonly presumed

TRUTHS.

By THOMAS BROVNE Dr. of Physick.

IUL. SCALIG.

Ex Libris colligere quae prodiderunt Authores longe est periculosissimum; Rerum ipsarum cognitio vera e rebus ipsis est.

LONDON,

Printed by T. H. for Edward Dod, and are
to be sold in Ivy Lane. 1646.



TO THE
READER.



Would Truth dispense,
we could be content,
with Plato, that
knowledge were but
Remembrance; that
Intellectuall acqui-
sition were but Remi-
niscentiall evocation,
and new impressions

but the colourishing of old stamps which stood
pale in the soul before. For, what is worse, know-
ledge is made by oblivion; and to purchase a clear
and warrantable body of Truth, we must forget
and part with much wee know. Our tender En-
quiries taking up Learning at large, and together
with true and assured notions, receiving many,
wherein our renewing judgements doe finde no
satisfaction; and therefore in this Encyclopædie
and round of knowledge, like the great and ex-

To the Reader.

emplary wheelles of heaven, wee must observe two Circles: that while we are daily carried about, and whirled on by the swindge and rapt of the one, wee may maintaine a naturall and proper course, in the slow and sober wheele of the other. And this wee shall more readily performe, if we timely survey our knowledge; impartially singling out those encroachments, which junior compliance and popular credulity hath admitted. Whereof at present wee have endeavoured a long and serious *Adviso*; proposing not onely a large and copious List, but from experience and reason, attempting their decisions.

And first wee crave exceeding pardon in the audacity of the Attempt; humbly acknowledging a worke of such concernment unto truth, and difficulty in it selfe, did well deserve the conjunction of many heads: And surely more advantageous had it beene unto Truth, to have fallen into the endeavours of some cooperating advancers, that might have performed it to the life, and added authority thereto: which the privacie of our condition, and unequall abilities cannot expect. Whereby notwithstanding wee have not beene diverted, nor have our solitary attempts beene so discouraged, as to despaire the favourable looke of learning upon our
single

To the Reader.

single and unsupported endeavours.

Nor have wee let fall our penne, upon discouragement of contradiction, unbeleeffe, and difficulty of dissuasion from radicated beliefs, and points of high prescription; although we are very sensible how hardly teaching yeares do learn; what roots old age contracteth into errours, and how such as are but twigges in younger dayes, grow Oaks in our elder heads, and become inflexible unto the powerfulllest arme of reason. Although we have also beheld, what cold requitals others have found in their severall redemptions of truth; and how their ingenuos enquiries have been dismissed with censure, and obloquie of singularities.

Some consideration we hope from the course of our Profession, which though it leadeth us into many truths that passe undiscerned by others, yet doth it disturbe their communications, and much interrupteth the office of our pens in their well intended transmissions: and therefore surely in this worke attempts will exceed performances: it being composed by snatches of time, as med icall vacations, and the fruitlesse importunity of Vroscopy would permit us. And therefore also perhaps it hath not found that regular and constant stile, those infallible experiments, and those assured determinations, which the subject
some

Inspection of
Urines.

To the Reader.

sometime requireth, and might be expected from others, whose quiet doors and unmolested hours afford no such distractions. Although who shall indifferently perpend the exceeding difficulty, which either the obscurity of the subject, or unavoidable paradoxologie must often put upon the Attemptor, will easily discern, a worke of this nature is not to bee performed upon one legge, and should smell of oyle if duly and deservedly handled.

Our first intentions considering the common interest of Truth, resolved to propose it unto the Latine republike and equall judges of Europe; but owing in the first place this service unto our Country, and therein especially unto its ingenuous Gentry, we have declared our selfe in a language best conceived. Although I confesse, the quality of the Subject will sometimes carry us into expressions beyond meere English apprehensions; and indeed, if elegancie still proceedeth, and English Pennes maintaine that stream wee have of late observed to flow from many, wee shall within few yeares bee faine to learne Latine to understand English, and a work will prove of equall facility in either. Nor have wee addressed our penne or stile unto the people, (whom Bookes doe not redresse, and are this way incapable of reduction) but unto the know-
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To the Reader.

ing and leading part of Learning; as well understanding (at least probably hoping) except they be watered from higher regions, and fructifying meteors of knowledge, these weeds must lose their alimentall sappe and wither of themselves; whose conserving influence, could our endeavors prevent, wee should trust the rest unto the sythe of time, and hopefull dominion of truth.

Wee hope it will not bee unconsidered, that wee finde no open tract, or constant manuduction in this Labyrinth; but are oft-times faine to wander in the America and untravelled parts of truth: For though not many years past, Dr. Primrose hath made a learned & full Discourse of vulgar Errors in Physick, yet have we discussed but two or three thereof. Laurentius Ioubertus, by the same title led our expectation into thoughts of great releef; whereby notwithstanding we reaped no advantage; it answering scarce at all the promise of the inscription. Nor perhaps (if it were yet extant) should wee finde any farther Assistance from that ancient peece of Andreas, pretending the same title. And therefore wee are often constrained to stand alone against the strength of opinion; and to meet the Goliath and Gyant of Authority, with contemptible pibbles, and feeble arguments, drawne from the scrip and slender stocke of our selves. Nor have wee in-
deed

To the Reader.

deed scarce named any Author whose name we doe not honour; and if detraction could invite us, discretion surely would containe us from any derogatory intention, where highest pennes and friendiest eloquence must faile in commendation.

And therefore also wee cannot but hope the equitable considerations and candour of reasonable mindes. We cannot expect the frowne of *Theologie* herein; nor can they which behold the present state of things, and controversie of points so long received in Divinity, condemne our sober enquiries in the doubtfull appertinancies of Arts, and Receptaries of Philosophy. Surely Philologers and Criticall Discourfers, who look beyond the shell and obvious exterior of things, will not be angry with our narrower explorations. And wee cannot doubt, our brothers in Physicke (whose knowledge in naturals will lead them into a nearer apprehension of many things delivered) will friendly accept, if not countenance our endeavours. Nor can we conceive it, may be unwelcome unto those honoured Worthies, who endeavour the advancement of Learning: as being likely to finde a clearer progression, when so many rubbes are levelled, and many untruths taken off, which passing as principles with common beliefs, disturb the

To the Reader.

the tranquility of Axiomes, which otherwise might bee rayfed. And wise men cannot but know, that Arts and Learning want this expurgation: and if the course of truth bee permitted unto its selfe, like that of Time and uncorrected computations, it cannot escape many errors, which duration still enlargeth.

Lastly, wee are not Magisteriall in opinions, nor have wee Dictator-like obtruded our conceptions, but in the humility of Enquiries or disquisitions, have only proposed them unto more ocular discerners. And therefore opinions are free, and open it is for any to thinke or declare the contrary. And wee shall so farre encourage contradiction, as to promise no disturbance, or reoppose any Penne, that shall Elenchically refute us, that shall onely lay hold of our lapses, single out digressions, Corollaries, or ornamentall conceptions, to evidence his own in as indifferent truths. And shall only take notice of such, whose experimentall and ludicious knowledge shall solemnly looke upon it; not onely to destroy of ours, but to establisth of his owne, not to traduce or extenuate, but to explaine, and dilucidate, to adde and ampliate, according to the laudable custome of the Ancients in their sober promotions of Learning. Vnto whom notwithstanding, wee shall not contentiously re-

To the Reader.

rejoyne, or onely to justifie our owne, but to applaud or confirme his maturer assertions; and shall conferre what is in us unto his name and honour. Ready to bee swallowed in any worthy enlarger: as having acquired our end, if any way, or under any name wee may obtaine a worke, so much desired, at least, desiderated of truth.

T. B.

THE



A
TABLE OF THE
CONTENTS.

THE FIRST BOOKE.

Containing the Generall part.

Of the first cause of common Errors, the common infirmity of humane nature.	Chapter 1.
A further illustration of the same.	chap. 2.
Of the second cause of popular Errors, the erroneous disposition of the people.	chap. 3.
Of the neerer causes of common errors both in the wiser and common sort, misapprehension, fallacy or false deduction, credulity, supinity, adherence unto Antiquity, Tradition and Authority, contained in the following Chapters.	
Of mistake, misapprehension, fallacy or false deduction.	chap. 4.
Of credulity and supinity.	chap. 5.
Of obstinate adherence unto Antiquity.	chap. 6.
Unto Authority.	chap. 7.
Of Authors who have most promoted popular conceits.	chap. 8.
Of others indirectly effecting the same.	chap. 9.
Of the last and great promoter of false opinions, the endeavours of Satan.	chap. 10, 11.



THE SECOND BOOKE.

Beginning the particular part concerning Minerall and Vegetable bodies.

The common Tenent, that CrySTALL is nothing else but Ice strongly congealed.	Chap. 1.
Concer-	

The Table.

Concerning the Loadstone, of things particularly spoken thereof evidently or probably true: of things generally beleev'd or particularly deliver'd evidently or probably false. Of the Magneticall vertue of the earth. Of the foure motions of the stone, that is, its verticity or direction, its coition or Attraction, its Declination, variation, and also of its Antiquity. chap. 2.

A Rejection of sundry opinions and Relations thereof, Naturall, Medicall, Historicall, Magicall. chap. 3.

Of bodies Electricall in generall.

Of Iet and Amber in particular, that they attract all light bodies, except Basill, and bodies cyled. chap. 4.

Compendiously of severall other Tenents.

That a Diamond is made soft, or broke by the blood of a Goate.

That Glasse is poyson.

Of the cordiall quality of Gold in substance or Decoction.

That a pot full of ashes will containe as much water as it would without them.

Of white powder that kils without report.

That Corall is soft under water, but hardeneth in the Ayre.

That Porcellane or China dishes lye under the earth an hundred yeares in preparation, with some others. chap. 5.

Of sundry Tenents concerning Vegetables.

That the roote of Mandrakes resembleth the shape of man.

That they naturally grow under Gallows and places of execution.

That the roote gives a shreeke upon eradication.

That it is fatall or dangerous to dig them up.

That Cinnamon, Ginger, Cloves, Mace, are but the parts or fruits of the same tree.

That Misseltoe is bred upon trees, from seeds which birds let fall thereon.

Of the Rose of Ierico that flowreth every yeare upon Christmas Eve.

That Sferra Cavallo hath a power to breake or loosen Iron.

That Bayes preserve from the mischief of Lighning and Thunder.

That bitter Almonds are preservatives against Ebriety, with some others. chap. 6.

THE

The Table.



THE THIRD BOOK.

Of popular and received Tenents concerning Animals.

That an Elephant hath no joynts. chap. 1.

That an horse hath no Gall. chap. 2.

That a Pigeon hath no Gall. chap. 3.

That a Bever to escape the hunter bites off his Testicles or Stones. chap. 4.

That a Badger hath the legs of one side shorter then of the other. chap. 5.

That a Beare brings forth her cubs informous or unshaped. chap. 6.

Of the Basilisk. chap. 7.

That a Wolfe first seeing a man begets a dumbnesse in him. chap. 8.

Of the long life of Deere. chap. 9.

That a Kings fisher hanged by the bill sheweth where the winde is. chap. 10.

Of Gryphins. chap. 11.

Of the Phanix. chap. 12.

Of the pissing of Toads, of the stone in their head, and of the generation of Frogs. chap. 13.

That a Salamander lives in the fire. chap. 14.

Of the Amphibiana or Serpens with two heads moving either way. chap. 15.

That young Vipers force their way through the bowels of their dam. chap. 16.

That Hares are both male and female. chap. 17.

That Moles are blinde and have no eyes. chap. 18.

That Lampries have many eyes. chap. 19.

That Snayles have two eyes, and at the ends of their hornes. chap. 20.

That the Chamaleon lives onely by Aire. chap. 21.

That the Ostridge digesteth Iron. chap. 22.

Of the Vnicornes horne. chap. 23.

That all Animals in the land are in their kinde in the Sea. chap. 24.

The Table.

Compendiously of some others.

Of the muscull note of Swans before their death.
 That the flesh of Peacocks corrupteth not.
 That Storkes will onely live in Republicks and free States.
 Of the noyse of a Bitterne by putting the bill in a Reed.
 That Whelps are blind nine dayes, and then begins to see.
 Of the antipathy betweene a Toade and a Spider, a Lion and a Cock.
 That an Earewig hath no wings.
 Of wormes.
 That Flyes make that humming noyse by their mouths or wings.
 Of the Taintet or small red Spider
 Of the Gloweworme.
 Of the providence of Pismires in biting off the ends of Corn. chap. 25.



THE FOVRTH BOOK.

Of many popular and received Tenents concerning Man.

That man hath onely an erect figure and that to looke up to Heaven. chap. 1.
 That the heart of a man is seated on the left side. chap. 2.
 That plurifies are onely on the left side. chap. 3.
 Of the fourth finger of the left hand whereon we weare our Rings. chap. 4.
 Of the right and left hand. chap. 5.
 Of swimming, that some men swimme naturally, that men drowned doe floate the ninth day when their gall breaketh, women prone and men supine or upon their backs. chap. 6.
 That men weigh heavier dead then alive, and before meate then after. chap. 7.
 That there are severall passages for meate and drinke. chap. 8.
 Of the custome of saluting or blessing upon sneezing. chap. 9.
 That lewes stinke. chap. 10.
 Of Pygmies. chap. 11.
 Of the great Climactericall yeare that is 63. chap. 12.
 Of the Canicular or Dog. dayes. chap. 13.

THE

The Table.



THE FIFTH BOOK.

Of many things questionable as they are described in Pictures.

Of the picture of the Pelecan. chap. 1.
 Of the picture of Dolphins. chap. 2.
 Of the picture of a Grasshopper. chap. 3.
 Of the picture of the Serpent tempting Eve. chap. 4.
 Of the pictures of Adam and Eve with Navels. chap. 5.
 Of the pictures of the Iews and Easterne Nations at their feasts, and our Saviour at the Paschever. chap. 6.
 Of the picture of our Saviour with long haire. chap. 7.
 Of the picture of Abraham sacrificing Isaac. chap. 8.
 Of the picture of Moses with hornes. chap. 9.
 Of the Scutcheons of the twelve Tribes of Israel. chap. 10.
 Of the pictures of the Sybils. chap. 11.
 Of the picture describing the death of Cleopatra. chap. 12.
 Of the pictures of the nine Worthies. chap. 13.
 Of the picture of Ieptha sacrificing his daughter. chap. 14.
 Of the picture of Iohn the Baptist in a Camels skin. chap. 15.
 Of the picture of the Christopher. chap. 16.
 Of the picture of S. George. chap. 17.
 Of the picture of Ierome. chap. 18.
 Of the pictures of Mermaids, Vnicornes and some others. chap. 19.
 Of the Hieroglyphicall pictures of the Egyptians. chap. 20.

Compendiously of many popular customes, opinions, pictures, practises and observations.

Of an Hare crossing the high way.
 Of the ominous appearing of Owles and Ravens.
 Of the falling of salts.
 Of breaking the Eggeshell.
 Of the true lovers knot.
 Of the cheek burning, or eare tingling.

of

The Table.

Of speaking under the Rose.
 Of smok following the fairest.
 Of sitting crosse-leg'd.
 Of haire upon Molls.
 Of the set time of payring of nayles.
 Of Lions heads upon spouts and cisternes.
 Of the saying ungirt unlest.
 Of the picture of God the Father.
 Of the picture of Sun, Moone, and the Winds.
 Of the Sun dancing on Easter day.
 Of the silly Howe or covering about some childrens heads.
 Of being drunk once a month.
 Of the appearing of the Devill with a cloven hoofe.
 Of Moses his rod in the discovery of Mines.
 Of discovering of doubtfull matters by booke or staffe. chap. 21.



THE SIXTH BOOK.

Concerning sundry Tenents Geographical and Historicall.

Concerning the beginning of the world that the time thereof is not precisely knowne, as commonly it is presumed. chap. 1.
 Of mens enquiries in what season or point of the Zodiack it began, that as they are generally made they are in vaine, and as particularly incertaine. chap. 2.
 Of the divisions of the seasons and foure quarters of the yeare, according unto Astronomers and Physitians, that the common compute of the Ancients, and which is still retained by some, is very questionable. chap. 3.
 Of some computation of dayes, and diductions of one part of the yeare unto another. chap. 4.
 A Digression of the wisdom of God in the site and motion of the Sunne. chap. 5.
 Concerning the vulgar opinion that the earth was slenderly peopled before the flood. chap. 6.
 Of East and West, and properties respectively ascribed unto Countries. chap. 7.
 Of the seven heads of Nile. chap. 8.

The Table.

Of the greatnesse of Nile. chap. 8.
 Of its Inundation and certaine time thereof. chap. 9.
 That it never rayneth in Egypt, &c. chap. 10.
 Of the Red Sea. chap. 11.
 Of the blacknesse of Negroes. chap. 12.
 Of the same.
 A digression of Blacknesse.



THE SEVENTH BOOK.

Concerning many historicall Tenents generally received, and some deduced from the history of holy Scripture.

That the forbidden fruit was an Apple. chap. 1.
 That a man hath one Rib lesse then a woman. chap. 2.
 That Methuselah must needs bee the longest liver of all the posterity of Adam. chap. 3.
 That there was no Rainebow before the flood. chap. 4.
 Of Sem, Ham and Iaphet. chap. 5.
 That the Tower of Babel was erected against a second deluge. chap. 6.
 Of the Mandrakes of Leah. chap. 7.
 Of the three Kings of Collein. chap. 8.
 Of the food of Iohn the Baptist in the wildernesse. chap. 9.
 Of the conceit that Iohn the Evangelist should not dye. chap. 10.
 Of some others more briefly. chap. 11.
 Of the cessation of Oracles. chap. 12.
 Of the death of Aristotle. chap. 13.
 Of the wish of Philoxenus to have the neck of a Crane. chap. 14.
 Of the lake Asphaltites, or the dead Sea. chap. 15.

Of divers other Relations.

Of the woman that conceived in a Bathe.
 Of Crassus that never laughed but once.
 That our Saviour never laughed.
 Of Surgius the second or Bocca de Porco.
 That Tamerlane was a Scythian shepherd. chap. 16.

Of

how without feare or doubt she could discourse with such a creature, or heare a Serpent speake, without suspition of imposture. The wits of others, have been so bold as to accuse her simplicity in receiving his temptation so coldly, and when such specious effects of the fruit were promised, as to make them like gods, not to desire, at least not to wonder he pursued not that benefit himselfe; and had it been their owne case would perhaps have replied, If the taste of this fruit maketh the eaters like gods, why remainest thou a beast? If it maketh us but like gods, we are so already. If thereby our eyes shall be opened hereafter, they are at present quicke enough to discover thy deceit; and we desire them no opener to behold our owne shame. If to know good and evill be our advantage, although we have free will unto both, wee desire to performe but one, we know 'tis good to obey the Commandement of God, but evill if we transgresse it.

They were deceived by one another, & in the greatest disadvantage of delusion, that is the stronger by the weaker: For Eve presented the fruit, and Adam received it from her. Thus the Serpent was cunning enough to begin the deceit in the weaker; and the weaker of strength, sufficient to consummate the fraud in the stronger. Art and fallacy was uled unto her, a naked offer proved sufficient unto him: so his superstruction was his ruin, & the fertility of his sleep, an issue of death unto him. And although the condition of sex & posterity of creation might somewhat extenuate the error of the woman: Yet was it very strange and inexcusable in the man, especially if as some affirme, he was the wisest of all men since, or if as others have conceived, he was not ignorant of the fall of the Angels, and had thereby example and punishment to deterre him.

They were deceived from themselves, and their owne apprehensions, for Eve either mistooke or traduced the commandement of God. Of every tree of the garden thou maiest freely eat, but of the tree of knowledge of good and evill thou shalt not eat, for in the day thou eatest thereof, thou shalt surely dye. Now Eve upon the question of the Serpent returned the precept in different termes, You shall not eat of it, neither shall you touch it lest perhaps you dye. In which delivery, there were no lesse then two mistakes, or rather additionall mendacities, for the commandement forbids not the touch of the fruit, and positively said ye shall surely dye, but she extenuating replied, *ne forte moriamini*, lest perhaps ye dye. For so in the vulgar translation it runneth, and so is it expressed in the Thargum or Paraphrase of Jonathan. And therefore although it be said, and that very truly that the divell was a liar from the beginning, yet was the woman herein the first expresse beginner, and falsified twice before the replye of Satan, and therefore also to speak strictly, the sin of the fruit was not the first offence, they first transgressed the rule of their own reason, and after the commandement of God.

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They were deceived through the conduct of their senses, and by temptations from the object it selfe, whereby although their intellectualls had not failed in the theorie of truth, yet did the inservient and brutall faculties controule the suggestion of reason: Pleasure and profit already overswaying the instructions of honesty, and sensuallity perturbing the reasonable commands of vertue. For so is it delivered in the text; That when the woman saw that the tree was good for food, and that it was pleasant unto the eye, and a tree to be desired to make one wise, she tooke of the fruit thereof and did eat. Now hereby it appeareth, that Eve before the fall, was by the same and beaten way of allurements inveigled, whereby her posterity hath been deluded ever since; that is those three delivered by St. John, the lust of the flesh, the lust of the eye, and the pride of life, wherein indeed they seemed as weakly to faile as their debilitated posterity, ever after. Whereof notwithstanding some in their imperfections, have resisted more powerfull temptations, and in many moralities condemned the facility of their seductions.

Againe, they might for ought we know, be still deceived in the unbelieve of their mortality, even after they had eat of the fruit. For Eve observing no immediate execution of the curse, she delivered the fruit unto Adam, who after the taste thereof, perceiving himselfe still to live, might yet remaine in doubt, whether he had incurred death, which perhaps he did not indubitably believe, untill he was after convicted in the visible example of Abel; for he that would not believe the menace of God at first, it may be doubted whether before an ocular example hee believed the curse at last, and therefore they are not without all reason, who have disputed the fact of Cain, that is although he purposed to mischiefe, whether he intended to murder his brother, or designed that, whereof he had not beheld an example in his owne kinde, there might be somewhat in it that he would not have done, or desired undone, when he brake forth as desperately as before hee had done unmannerly, My iniquity is greater then can be forgiven me.

Some nicities I confesse there are which extenuate, but many more that aggravate this delusion, which exceeding the bounds of our Discourse, and perhaps our satisfaction, we shall at present passe over. And therefore whether the sinne of our first parents were the greatest of any since, whether the transgression of Eve seducing, did not exceed that of Adam seduced, or whether the resistibility of his reason did not equivalence the facility of her seduction, wee shall referre it unto the Schoolman. Whether there were not in Eve as great injustice in deceiving her husband, as imprudence in being deceived her self, we leave it unto the Morallist. Whether the whole relation be not Allegoricall, that is, whether the temptation of the man by the woman, bee not the seduction of the ratioll, and higher parts by the inferiour and femi-

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nine faculties : or whether the tree in the midst of the garden, were not that part in the centre of the body, on which was afterward the appointment of circumcision in males, we leave it unto the Thalmudist. Whether there were any policie in the devill to tempt them before conjunction, or whether the issue before tentation might in justice have suffered with those after, we leave it unto the Lawyer. Whether Adam foreknew the advent of Christ, or the reparation of his error by his Saviour, how the execution of the curse should have been ordered, if after Eve had eaten, Adam had yet refused. Whether if they had tasted the tree of life before that of good and evil, they had yet suffered the curse of mortality; or whether the efficacie of the one had not overpowred the penalty of the other, we leave it unto God : for he alone can truly determine these and all things else, who as he hath proposed the world unto our disputation, so hath he reserved many things unto his owne resolution, whose determinations we cannot hope from flesh, but must with reverence suspend unto that great day, whose justice shall either condemne our curiosities, or resolve our disquisitions.

Lastly, man was not only deceiveable in his integrity, but the Angels of light in all their clarity. He that said he would bee like the highest did erre if in some way he conceived himselfe not so already; but in attempting so high an effect from himselfe, hee mis-understood the nature of God, and held a false apprehension of his owne; whereby vainly attempting not only insolencies, but impossibilities, he deceived himselfe as low as hell. In brieft, there is nothing infallible but God, who cannot possibly erre. For things are really true as they correspond unto his conception, and have so much of verity, as they hold of conformity unto that intellect, in whose Idea they had their first determinations : And therefore being the rule he cannot bee irregular, nor being truth it selfe conceiveably admit the impossible society of error.

CHAP. II.

A further illustration of the same.

Being thus deluded before the fall, it is no wonder if their conceptions were deceitfull, and could scarce speake without an error after; for what is very remarkable (and no man I know hath yet observed) in the relation of Scripture before the flood, there is but one speech delivered by man, wherein there is not an erroneous conception; and strictly examined, most hainously injurious unto truth. The penne of Moses is brieft in the account before the flood, and the speeches recorded are six.

The first is that of Adam, when upon the expostulation of God, he re-

replied; I heard thy voice in the garden, and because I was naked, I hid my selfe : In which reply, there was included a very grosse mistake, and if with pertinacity maintained, a high and capitall error: for thinking by this retirement to obscure himselfe from God, he infringed the omniscieny and essentiall ubiquity of his Maker; who as he created all things, so is he beyond and in them all, not onely in power, as under his subjection, or in his presence, as being in his cognition, but in his very Essence, as being the soule of their causalities, and the essentiall cause of their existences. Certainly his posterity at this distance and after so perpetuated an impayement, cannot but condemne the poverty of his conception, that thought to obscure himselfe from his Creator in the shade of the garden, who had beheld him before in the darknesse of his Chaos, and in the obscurity of nothing; that thought to flye from God, which could not flye himselfe, or imagined that one tree should conceale his nakednesse from Gods eye, as another had revealed it unto his owne. Those tormented spirits that with the mountaines to cover them, have fallen upon desires of lesse absurdity, and chosen wayes of lesse improbable concealement; though this be also as ridiculous unto reason, as fruitlesse unto their desires; for he that laid the foundations of the earth, cannot be excluded the secrecy of the mountains, nor can there any thing escape the perspicacity of those eyes which were before light, and unto whose opticks there is no opacity. This is the consolation of all good men, unto whom his ubiquity affordeth continuall comfort and security : And this is the affliction of hell, unto whom it affordeth despaire, and remediless calamity. For those restless spirits that flye the face of the Almighty, being deprived the fruition of his eye, would also avoid the extent of his hand; which being impossible, their sufferings are desperate, and their afflictions without evasion, untill they can get out of Trismegistus his circle, that is, to extend their wings above the universe, and pitch beyond ubiquity it selfe.

The second is that speech of Adam unto God, the woman whom thou gavest me to be with me, she gave me of the Tree, and I did eate : this indeed was a very unsatisfactory reply, and therein was involved a very impious error, as implying God the Author of sinne, and accusing his Maker of his transgression : as if he had said, If thou hadst not given me a woman I had not beene deceived : Thou promisedst to make her a help, but she hath proved destruction unto me; had I remained alone, I had not sinned, but thou gavest me a consort, and so I became seduced. This was a bold and open accusation of God, making the fountaine of good the contriver of evil, and the forbidder of the crime an abetter of the fact prohibited. Surely, his mercy was great that did not revenge the impeachment of his Justice; and his goodnesse to be admired, that it refuted not his argument in the punishment

ment of his excusation, or onely pursued the first transgression without a penalty of this the second.

The third was that of Eve. The Serpent beguiled me, and I did eate. In which reply there was not onely a very feeble excuse, but an erroneous translating her owne offence upon another. Extenuating her sinne from that which was an aggravation, that is to excuse the fact at all, much more upon the suggestion of a beast, which was before in the strictest termes prohibited by her God. For although we now doe hope the mercies of God will consider our degenerated integrities unto some minoration of our offences, yet had not the sincerity of our first parents, so colourable expectations, unto whom the commandment was but single, and their integrities best able to resist the motions of its transgression: And therefore so hainous conceptions have risen hereof, that some have seemed more angry therewith then God himselfe, being so exasperated with the offence, as to call in question their salvation, and to dispute the eternall punishment of their Maker. Assuredly with better reason may posterity accuse them, then they the Serpent, or one another; and the displeasure of the Pelagians must needs be irreconcilable, who peremptorily maintaining they can fulfill the whole Law, will insatisfactorily condemne the non-observance of one.

The fourth was that speech of Cain upon the demand of God, Where is thy Brother? and he said, I know not. In which negation, beside the open impudence, there was implied a notable error; for returning a lye unto his Maker, and presuming in this manner, to put off the Searcher of hearts, he denied the omniscience of God, whereunto there is nothing concealable. The answer of Satan in the case of Job, had more of truth, wisdom and reverence, then this; Whence comest thou Satan? and he said, from compassing of the earth. For though an enemy of God, and hater of all truth, his wisdom will hardly permit him to falsifie with the Almighty: for well understanding the omniscience of his nature, he is not so ready to deceive himselfe, as to falsifie unto him whose cognition is no way deludable: And therefore when in the tentation of Christ he played upon the falacy, and thought to deceive the Author of truth, the method of this proceeding arose from the uncertainty of his divinity, whereof had he remained assured, he had continued silent, nor would his discretion attempt so unsucceedable a temptation. And so againe at the last day, when our offences shall be drawne into accompt, the subtilty of that Inquisitor shall not present unto God a bundle of calumnies or confutable accusations, but will discreetly offer up unto his Omniscience, a sure and undeniable list of our transgressions.

The fifth is another reply of Cain upon the denouncement of his curse, My iniquity is greater then can be forgiven: For so is it expressed

sed in some translations. The assertion was not onely desperate, but the conceit erroneous, overthrowing that glorious attribute of God his mercy, and conceiving the sinne of murder unpardonable; which how great soever, is not above the repentance of man, but far below the mercies of God, and was as some conceive expiated, in that punishment he suffered temporally for it. There are but two examples of this error in holy Scripture, and they both for murder, and both as it were of the same person; for Christ was mystically slaine in Abel; and therefore Cain had some influence on his death, as well as Judas; but the sinne had a different effect on Cain, from that it had on Judas, and most that since have fallen into it; for they like Judas desire death, and not unfrequently pursue it: Cain on the contrary grew afraid thereof, and obtained a securement from it. Assuredly if his despaire continued, there was punishment enough in life, and justice sufficient in the mercy of his protection. For the life of the desperate equals the anxieties of death, who in uncessant inquietudes but as the life of the damned, and anticipate the desolations of hell. Tis indeed a sinne in man, but a punishment onely in the devils, who offend not God but afflict themselves, in the appointed despaire of his mercies. And as to be without all hope is the affliction of the damned, so is it the happiness of the blessed, who having their expectations present, are not distracted with futurities. So is it also their felicity to have no faith, for enjoying the beatifical vision there is nothing unto them inevident, and in the fruition of the object of faith, they have received the full evacuation of it.

The last speech was that of Lamech, I have slaine a man to my wound, and a young man to my hurt: If Cain be avenged seven fold, truly Lamech seventy and seven fold. Now herein there seemes to be a very erroneous illation; from the indulgence of God unto Cain, concluding an immunity unto himselfe, that is, a regular protection from a single example, and an exemption from punishment in a fact that naturally deserved it. The Error of this offender was contrary to that of Cain, whom the Rabbins conceive that Lamech at this time killed. He despaired of Gods mercy in the same fact, where this presumed of it, he by a decollation of all hope annihilated his mercy, this by an immoderancy thereof destroyed his justice, though the sin were lesse, the error was as great; For as it is untrue that his mercy will not forgive offenders, or his benignity cooperate to their conversions, So is it also of no lesse falsity to affirme his Justice will not exact account of sinners, or punish such as continue in their transgressions.

And thus may we perceive, how weakely our fathers did erre before the flood, how continually and upon common discourse they fell upon errors after, it is therefore no wonder we have been erroneous ever since: And being now at greatest distance from the beginning of error,

or endeavoured the banishment of learning like the other. And though Galen doth sometime nibble at Moses, and beside the Apostate Christian, some Heathens have questioned his Philosophicall part or treatise of the Creation. Yet is there surely no reasonable Pagan, that will not admire the rationall and well grounded precepts of Christ, whose life as it was conformable unto his doctrine, so was that unto the highest rules of reason; and must therefore flourish in the advancement of learning, and the perfection of parts best able to comprehend it.

Again, their individuall imperfections being great, they are moreover enlarged by their aggregation, and being erroneous in their single numbers once huddled together, they will be error it selfe; for being a confusion of knaves and fooles, and a farraginous concurrence of all conditions, tempers, sex, and ages, it is but naturall if their determinations be monstrous, and many wayes inconsistent with truth. And therefore wise men have alwayes applauded their owne judgement, in the contradiction of that of the people, and their soberest adversaries, have ever afforded them the stile of fooles and mad men; and to speak impartially, their actions have often made good these Epithites. Had Orestes been Judge, he would not have acquitted that Lystrian rabble of madnesse, who upon a visible miracle, falling into so high a conceit of Paul and Barnabas, that they termed the one Jupiter, the other Mercurius, that they brought oxen and garlands, and were hardly restrained, from sacrificing unto them, did notwithstanding suddenly after fall upon Paul, and having stoned him, drew him for dead out of the citie. It might have hazarded the sides of Democritus, had hee been present at that tumult of Demetrius, when the people flocking together in great numbers, some cryed one thing, and some another, and the assembly was confused, and the most part knew not wherfore they were come together; notwithstanding, all with one voice for the space of two houres cryed out, Great is Diana of the Ephesians. It had overcome the patience of Job, as it did the meeknesse of Moses, and would surely have mastered any, but the longanimity and great sufferance of God, Had they beheld the mutiny in the wilderness, when after tenne great miracles in Egypt, and some in the same place, they melted down their stolen ear-rings into a calf, and monstrously cryed out, These are thy gods O Israel! that brought thee out of the land of Egypt. It much accuseth the impatiencie of Peter, who could not endure the staves of the multitude, and is the greatest example of lenitie in our Saviour, when he desired of God forgiveness unto those, who having one day brought him into the Citie in triumph, did presently after, act all dishonour upon him, and nothing could be heard but *Crucifige* in their courts. Certainly hee that considereth these things in Gods peculiar people, will easily discern how little of truth, there is in the wayes of the

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the multitude; and though sometimes they are flattered with that Aphorisme, will hardly beleve the voyce of the people to bee the voyce of God.

Lastly, being thus divided from truth in themselves, they are yet farther removed by advenient deception. For true it is, (and I hope shall not offend their vulgarities) if I say they are daily mocked into error by subtler devisors, and have been expressly deluded, by all professions whatsoever. Thus the Priests of Elder time, have put upon them many incredible conceits, not onely deluding their apprehensions, with Ariolation, South-saying, and such oblique Idolatries, but winning their credulities unto the literall and downe-right adoration of Cats, Lizards, and Beetles; and thus also in some Christian Churches, wherein is presumed an irreproveable truth. If all be true that is suspected, or halfe what is related, there have not wanted, many strange deceptions, and some thereof are still confessed by the name of Pious fraudes. Thus Theudas an Imposture was able to lead away foure thousand into the wilderness, and the delusions of Mahomet almost the fourth part of mankind. Thus all heresies how grosse soever, have found a welcome with the people. For thus, what is scarce imaginable, many of the Jews were wrought into believe, that Herod was the Messias, and David George of Leyden and Arden, were not without a partie amongst the people, who maintained the same opinion of themselves almost in our dayes. Physitions (many at least that make profession thereof) beside divers lesse discoverable wayes of fraude, have made them beleve, there is the book of fate, or the power of Aarons breast-plate in Urines. And therefore hereunto they have recourse as unto the Oracle of life, the great determinator of virginity, conception, fertilitie, and the inscrutable infirmities of the whole body. For as though there were a feminalitie in Urine, or that like the seed that carried with it the Idea of every part, they foolishly conceive wee visibly behold therein the Anatomy of every particle, and can thereby indigitate their affections.

Saltimbancos, Quacksalvers, and Charlatans, deceive them in lower degrees; were Æsop alive the Piazza and Ponte Neuse could not but speake their fallacies, meane while there are too many, whose cries cannot conceale their mischiefs: for their Impostures are full of crueltie, and worse then any other, deluding not onely unto pecuniary defraudations, but the irreparable deceit of death.

Astrologers, which pretend to be of Caballa with the starres, such I meane as abuse that worthy enquire, have not been wanting in their deceptions, who having wonne their believe unto principles whereof they make great doubt themselves, have made them beleve that arbitrary events below, have necessary causes above, whereupon their credulities assent unto any prognosticks, and daily swallow the predicti-

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ons of men, which besides the independency of their causes, and contingency in their events, are onely in the prescience of God.

Fortune tellers, Juglers, Geomancers, and the like incantatory impostors, though commonly men of inferiour ranke, and from whom without infusion they can expect no more then from themselves, doe daily and professedly delude them: unto whom (what is deplorable in men and Christians) too many applying themselves, betwixt jest and earnest, betray the cause of truth, and incensibly make up, the legionarie body of error.

Statistes and Politicians, unto whom *Ragione di Stato*, is the first considerable, as though it were their businesse to deceive the people, as a Maxime, do hold, that truth is to be concealed from them, unto whom although they reveale the visible designe, yet doe they commonly conceale the capitall intention; and therefore have they alway beene the instruments of great designs, yet seldome understood the true intention of any, accomplishing the drifts of wiser heads as inanimate and ignorant Agents, the generall designe of the world; who though in some latitude of fence, and in a naturall cognition performe their proper actions, yet do they unknowingly concurre unto higher ends, and blindly advance the great intention of nature. Now how farre they may bee kept in ignorance, a great example there is in the people of Rome, who never knew, the true and proper name of their owne City. For beside that common appellation received by the Citizens, it had a proper and secret name concealed from them: *Cujus alterum nomen dicere secretis Ceremoniarum nefas habetur*, saith Plinie. The reason hereof was superstitious, lest the name thereof being discovered unto their enemies, their Penates and Patronall gods, might be called forth by charms and incantations. For according unto the tradition of Magitians, the tutelary spirits wil not remove at common appellations, but at the proper names of things whereunto they are protectors.

Thus having beene deceived by themselves, and continually deluded by others, they must needs be stuffed with errors, and even overrunne with these inferiour falsities, whereunto whosoever shall resigne their reasons, either from the root of deceit in themselves, or inability to resist such triviall ingannations from others, although their condition and fortunes may place them many Spheres above the multitude, yet are they still within the line of vulgaritie, and the Democraticall enemies of truth.

CHAP. IIII.

Of the nearer and more Immediate Causes of popular errors, both in the Wiser, and common sort, Misapprehension, Fallacy, or false deduction, Credulity, Supinety, adherence unto Antiquitie, Tradition, and Authority.

THE first is a mistake, or a conception of things, either in their first apprehensions, or secondary relations. So Eve mistook the Commandement, either from the immediate injunctiō of God, or from the secondary narration of her husband. So might the Disciples mistake our Saviour, in his answer unto Peter, concerning the death of John, as is delivered, John 21. Peter seeing John, saith unto Jesus, Lord, and what shall this man doe? Jesus saith, If I will, that he tarry till I come, what is that unto thee? Then went this saying abroad among the brethren, that that Disciple should not die. Thus began the conceit and opinion of the Centaures, that is in the mistake of the first beholders, as is declared by Servius, when some young Thessalians on horsebacke were beheld a farre off, while their horses watered, that is, while their heads were depressed, they were conceived by their first spectators, to be but one animall, and answerable hereunto have their pictures been drawn ever since.

And as simple mistakes commonly beget fallacies, so men rest not in false apprehensions, without absurd and inconsequent deductions, from fallacious foundations, and misapprehended mediums, erecting conclusions no way inferrible from their premises. Now the fallacies whereby men deceive others, and are deceived themselves, the Ancients, have divided into Verball and Reall. Of the Verball, and such as conclude from mistakes of the word, although there be no lesse then fixe, yet are there but two onely thereof worthy our notation: and unto which the rest may be referred: that is the fallacie of *Æquivocation* and *Amphibologie*, which conclude from the ambiguity of some one word, or the ambiguous sintaxis of many put together. From this fallacy arose that calamitous error of the Jewes, misapprehending the Prophecies of their Messias, and expounding them alwayes unto literall and temporall expectation. By this way many errors crept in and perverted the doctrine of Pythagoras, whilest men received his precepts in a different sense from his intention, converting Metaphors into proprieties, and receiving as litterall expressions, obscure and involved truths. Thus when he enjoyned his Disciples, an abstinence from beanes, many conceived they were with severity debarred the use of that pulse; which notwithstanding could not be his meaning, for as Aristoxenus who wrote his life, averreth he delighted much in that kind of food himselfe; but herein as Plutarch observeth, he had no other intention, then to dissuade men from Magistracie, or undertaking the publike offices of state; for by beanes were the Magistrates elected

lected in some parts of Greece; and after his dayes, wee read in Thucydides, of the Councell of the beane in Athens. The same word also in Greeke doth signifie a testicle, and hath been thought by some an injunction only of continencie, as Aul. Gellius hath expounded, and as Empedocles may also be interpreted, *παν δειλοι κωμωδον απο κειρες εχουσι*, that is, *Testiculis miseri dextras subducite*. Again his injunction is, not to harbour Swallowes in our houses: Whose advice notwithstanding we doe not contemne, who daily admit and cherish them; for herein a caution is only implied not to entertain ungratefull and thanklesse persons, which like the swallow are no way commodious unto us, but having made use of our habitations, and served their owne turnes, forsake us. So he commands to deface the print of a cauldron in the ashes, after it hath boyled. Which strictly to observe were most condemnable superstition: For hereby he covertly adviseth us not to persevere in anger, but after our choler hath boyled, to retaine no impression thereof. In the like sense are to be received, or they will else be misapprehended, when he adviseth his Disciples to give the right hand but to few, to put no viands in a chamberpot, not to passe over a ballance, not to rake up fire with a sword, or pisse against the Sunne, which enigmatical deliveries comprehended usefull verities, but being mistaken by literall Expositors at the first, they have been understood by most since, and may bee occasion of error to verball capacities for ever.

This fallacy in the first delusion Satan did put upon Eve, and his whole tentation might be this Elench continued; so when he said, Yee shall not dye, that was in his equivocation, she shall not incur a present death, or a destruction immediatly ensuing your transgression. Your eyes shall be opened, that is, not to the enlargement of your knowledge, but to the discovery of your shame and proper confusion. You shall know good and evill, that is you shall have knowledge of good by its privation, but cognisance of evill by sense and visible experience. And the same fallacy or way of deceit so well succeeding in Paradise, hee continued in his Oracles through all the world. Which had not men more warily understod, they might have performed many acts inconsistent with his intention: Brutus might have made haste with Tarquine to have kissed his owne mother. The Athenians might have built them wooden walls, or doubled the Altar at Delphos.

The circle of this fallacie is very large, and herein may be comprised all Ironical mistakes; for intended expressions receiving inverted significations, all deductions from metaphors, parables, allegories, unto reall and rigid interpretations. Whereby have arisen not only popular errors in Philosophy, but vulgar and senselesse heresies in Divinity, as will be evident unto any that shall examine their foundations, as they stand related by Epiphanius, Austin, or Prateolus.

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Other wayes there are of deceit which consist not, in false apprehension of words, that is verball expressions or sententiall significations, but fraudulent deductions, or inconsequent illations, from a false conception of things. Of these extradiictionary and reall fallacies, Aristotle and Logicians make in number six, but we observe that men are most commonly deceived by foure thereof: those are, *Petitisio principii*. *A dicto secundum quid ad dictum simpliciter*. *A non causa pro causa*. And *fallacia consequentis*.

The first is *petitisio principii*, which fallacie is committed, when a question is made a medium, or we assume a medium as granted, whereof we remaine as unsatisfied as of the question. Briefly where that is assumed as a principle, to prove another thing which is not conceded as true it selfe. By this fallacie was Eve deceived, when shee took for granted, the false assertion of the devill; Yee shall not surely dye, for God doth know that in the day she shall eat thereof, your eyes shall be opened, and you shall be as gods; which was but a bare affirmation of Satan without any prooffe or probable inducement, contrary unto the command of God and former believe of herselfe; and this was the Logick of the Jews, when they accused our Saviour unto Pilate, who demanding a reasonable impeachment, or the allegation of some crime worthy of condemnation, they only replied, if he had not been worthy of death, we would not have brought him before thee; wherein there was neither accusation of the person, nor satisfaction of the Judge, who well understood a bare accusation was no presumption of guilt, and the clamors of the people no accusation at all. The same fallacy is sometime used in the dispute, between Job, and his friends, they often taking that for granted which afterward he denyeth and disproveth.

The second is *a dicto secundum quid ad dictum simpliciter*, when from that which is but true in a qualified sense an inconditionall and absolute verity is inferred, transferring the speciall consideration of things unto their generall acceptions, or concluding from their strict acceptation, unto that without all limitation. This fallacie men commit when they argue from a particular to a generall, as when we conclude the vices or qualities of a few upon a whole Nation, or from a part unto the whole. Thus the divell argued with our Saviour, and by this he would perswade him he might be secure if hee cast himselfe from the pinnacle: for said he, it is written, he shall give his Angels charge concerning thee, and in their hands they shall beare thee up, lest at any time thou dash thy foot against a stone. But this illation was fallacious leaving out part of the text, Psalme 91. He shall keep thee in all thy wayes; that is, in the wayes of righteousness, and not of rash attempts: so he urged a part for the whole, and inferred more in the conclusion, then was contained in the premises. By this same fallacie we proceed, when we conclude from the signe unto the thing signified. By this in-

incroachment Idolatry first crept in, men converting the symbolically use of Idols into their proper worship, and receiving the representation of things as the substance and thing it selfe. So the statue of Belus at first erected in his memory, was in after times adored as a Divinity. And so also in the Sacrament of the Eucharist, the bread and wine which were but the signalls or visible signes, were made the things signified, and worshipped for the body of Christ. And hereby generally men are deceived that take things spoken in some latitude without any at all. Hereby the Jewes were deceived concerning the commandment of the Sabbath, accusing our Saviour for healing the sicke, and his disciples for plucking the ears of corne, upon that day. And by this deplorable mistake they were deceived unto destruction, upon the assault of Pompey the great made upon that day, by whose superstitious observation they could not defend themselves, or performe any labour whatsoever.

The third is a *non causa pro causa*, when that is pretended for a cause which is not, or not in that sense which is inferred. Upon this consequence the law of Mahomet forbids the use of wine, and his successors abolished Universities: by this also many Christians have condemned literature, misunderstanding the counsell of Saint Paul, who adviseth no further then to beware of Philosophy. On this foundation were built the conclusions of Southsayers in their Auguriall, and Tripudiary divinations, collecting presages from voice or food of birds, and conjoyning events unto causes of no connexion. Hereupon also are grounded the grosse mistakes, in the cure of many diseases, not only from the last medicine, and sympathetical receipts, but amulets charms, and all incantatory applications, deriving effects not only from inconcurring causes, but things devoid of all efficiencie whatever.

The fourth is the fallacie of the consequent, which if strictly taken, may be a fallacious illation in reference unto antecedencie, or consequence, as to conclude from the position of the antecedent, unto the position of the consequent, or from the remotion of the consequent to the remotion of the antecedent. This is usually committed, when in connexed propositions the termes adhere contingently. This is frequent in Oratorie illations, and thus the Pharisees, because he conversed with Publicans and sinners, accused the holinesse of Christ. But if this fallacy be largely taken, it is committed in any vitious illation, offending the rules of good consequence, and so it may be very large, and comprehend all false illations against the settled laws of Logick; but the most usuall consequences are from particulars, from negatives, and from affirmative conclusions in the second figure, wherein indeed offences are most frequent, and their discoveries not difficult.

C H A P.

C H A P. V.

Of Credulity and Supinuity.

A Third cause of common Errors is the Credulity of men, that is an easie assent, to what is obtruded, or a believing at first earre what is delivered by others; this is a weaknesse in the understanding, without examination assenting unto things, which from their natures and causes doe carry no perswasion; whereby men often swallow falsities for truths, dubiosities for certainties, feasibilityes for possibilities, and things impossible as possibilities themselves. Which though a weaknesse of the Intellect, and most discoverable in vulgar heads, yet hath it sometime fallen upon wiser braines, and great advancers of truth. Thus many wise Athenians so far forgot their Philosophy, and the nature of humane production, that they descended unto believes, the originall of their Nation was from the Earth, and had no other beginning then from the feminality and wombe of their great Mother. Thus is it not without wonder, how those learned Arabicks so tamely delivered up their believe unto the absurdities of the Alcoran. How the noble Geber, Avicenna and Almanzor, should rest satisfied in the nature and causes of earthquakes, delivered from the doctrine of their Prophet; that is, from the motion of a great Bull, upon whose hornes all the earth is poised. How their faiths could decline so low, as to concede their generations in heaven, to be made by the smell of a citron, or that the felicity of their Paradise should consist in a Jubile of conjunction, that is a coition of one act prolonged unto fifty years. Thus is it almost beyond wonder, how the believe of reasonable creatures, should ever submit unto Idolatry: and the credulity of those men scarce credible, without presumption of a second fall, who could believe a Deity in the worke of their owne hands. For although in that ancient and diffused adoration of Idolls, unto the Priests and subtiler heads, the worship perhaps might be symbolically, and as those Images some way related unto their deities, yet was the Idolatry direct and downe-right in the people, whose credulity is illimitable, who may be made believe that any thing is God, and may be made believe there is no God at all.

And as Credulity is the cause of Error, so incredulity oftentimes of not enjoying truth, and that not only an obstinate incredulity, whereby wee will not acknowledge assent unto what is reasonably inferred, but any Academicall reservation in matters of easie truth, or rather scepticall infidelity against the evidence of reason and sense. For these are conceptions befalling wise men, as absurd as the apprehensions of fooles, and the credulity of the people which promiscuously swallow any thing. For this is not only derogatory unto the wisdom of God, who

who hath proposed the world unto our knowledge, and thereby the notion of himselfe, but also detractory unto the intellect, and sense of man expessedly disposed for that inquisition. And therefore *huc tantum scio quod nihil scio*, is not to be received in an absolute sense, but is comparatively expressed unto the number of things whereof our knowledge is ignorant; nor will it acquit the insatisfaction of those which quarrell with all things, or dispute of matters concerning whose verities we have conviction from reason, or decision from the inerrable and requisite conditions of sense. And therefore if any man shall affirme the earth doth move, and will not believe with us, it standeth still, because he hath probable reasons for it, and I no infallible sense nor reason against it, I will not quarrell with his assertion: but if like Zeno he shall walke about, and yet deny there is any motion in nature, surely it had been happy he had been born in Antycera, and is only fit to converse with their melancholies, who having a conceit that they are dead, cannot be convicted into the society of the living.

The fourth is a supinity or neglect of enquiry, even in matters whereof we doubt, rather beleeving, as we say, then going to see, or doubting with ease and gratis, then beleeving with difficulty or purchase; whereby either by a temperamentall inactivity we are unready to put in execution the suggestions or dictates of reason, or by a content and acquiescence in every species of truth we embrace the shadow thereof, or so much as may palliate its just and substantiall acquirements. Had our forefathers sat downe in these resolutions, or had their curiosities been sedentary, who pursued the knowledge of things through all the corners of nature, the face of truth had been obscure unto us, whose lustre in some part their industries have revealed.

Certainly the sweat of their labours was not salt unto them, and they took delight in the dust of their endeavours. For questionlesse in knowledge there is no slender difficulty, and truth which wise men say doth lye in a well, is not recoverable but by exantlation. It were some extenuation of the curse, if *in sudore vultus tui*, were confineable unto corporall exercitations, and there still remained a Paradise or unthorny place of knowledge; but now our understandings being eclipsed, as well as our tempers infirmed, we must betake our selves to wayes of reparation, and depend upon the illumination of our endeavours; for thus we may in some measure repaire our primarie ruins, and build our selves men againe. And though the attempts of some have been precipitous, and their enquiries so audacious as to come within command of the flaming swords, and lost themselves in attempts above humanity, yet have the inquiries of most defected by the way, and tyred within the sober circumference of knowledge.

And this is the reason why some have transcribed any thing, and although they cannot but doubt thereof, yet neither make experiment by

by sence or enquiry by reason, but live in doubts of things whose satisfaction is in their owne power, which is indeed the inexcusable part of our ignorance, and may perhaps fill up the charge of the last day. For not obeying the dictates of reason, and neglecting the cryes of truth, we faile not onely in the trust of our undertakings, but in the intention of man it selfe, which although more veniall unto ordinary constitutions, and such as are not framed beyond the capacity of bea-ten notions, yet will it inexcusably condemne some men, who having received excellent endowments, and such as will accuse the omissions of perfection, have yet sat downe by the way, and frustrated the intention of their habilities. For certainly as some men have sinned, in the principles of humanity, and must answer, for not being men, so others offend if they be not more; *Magis extra vitia quam cum virtutibus*, would commend those, These are not excusable without an Excellency. For great constitutions, and such as are constellated unto knowledge, do nothing till they outdoe all; they come short of themselves if they go not beyond others, and must not sit downe under the degree of worthies. God expects no lustre from the minor stars, but if the Sun should not illuminate all, it were a sin in Nature. *Ultimus bonorum*, will not excuse every man, nor is it sufficient for all to hold the common levell; Mens names should not onely distinguish them: A man should be something that men are not, and individuall in somewhat beside his proper nature. Thus while it exceeds not the bounds of reason, and modesty, we cannot condemne singularity. *Nos numerus sumus*, is the motto of the multitude, and for that reason are they fooles. For things as they recede from unity, the more they approach to imperfection, and deformity; for they hold their perfection in their simplicities, and as they neereft approach unto God.

Now as there are many great wits to be condemned, who have neglected the increment of Arts, and the sedulous pursuit of knowledge, so are there not a few very much to be pittied, whose industry being not attended with naturall parts, they have sweat to little purpose, and roled the stone in vain: which chiefly proceedeth from naturall incapacity, and geniall indisposition, at least to those particular wayes whereunto they apply their endeavours. And this is one reason why though Universities bee full of men, they are oftentimes empty of learning. Why as there are some which do much without learning, so others but little with it, and few that attaine to any perfection in it. For many heads that undertake it, were never squared nor timbred for it. There are not onely particular men, but whole nations indisposed for learning, whereunto is required not onely education, but a pregnant Minerva and teeming constitution. For the wisdom of God hath divided the Genius of men according to the different affaires of the world, and varied their inclinations according to the variety of Acti-

ons to be performed therein, which they who consider not, rudely rushing upon professions and wayes of life unequall to their natures; dishonour not onely themselves and their functions, but pervert the harmony of the whole world. For if the world went on as God hath ordained it, and were every one implied in points concordant to their Natures, Professions, Arts and Common-wealths would rise up of themselves; nor needed we a Lanthorne to finde a man in Athens.

CHAP. VI.

Of adherence unto Antiquity.

BUT the mortallest enemy unto knowledge, and that which hath done the greatest execution upon truth, hath beene a peremptory adhesion unto Authority, and more especially the establishing of our beliefe upon the dictates of Antiquities. For (as every capacity may observe) most men of Ages present, so superstitiously do look on Ages past, that the authorities of the one, exceed the reasons of the other. Whose persons indeed being farre removed from our times, their works which seldome with us passe uncontrouled, either by contemporaries or immediate successors, are now become out of the distance of envious. And the farther removed from present times, are conceived to approach the neerer unto truth it selfe. Now hereby we think wee manifestly delude our selves, and widely walke out of the tracke of truth.

For first, men hereby impose a thralldome on their times, which the ingenuity of no age should endure, or indeed the presumption of any did ever yet enjoyne. Thus Hippocrates about 2000. yeare agoe, conceived it no injustice, either to examine or refute the doctrines of his predecessors: Galen the like, and Aristotle most of any; yet did not any of these conceive themselves infallible, or set downe their dictates as verities irrefragable; but when they either deliver their owne inventions, or rejected other mens opinions, they proceed with Judgement and Ingenuity, establishing their assertion, not onely with great solidity, but submitting them also unto the correction of future discovery.

Secondly, men that adore times past, consider not that those times were once present, that is, as our owne are at this instant, and wee our selves unto those to come, as they unto us at present; as wee rely on them, even so will those on us, and magnifie us hereafter, who at present condemne our selves; which very absurdity is dayly committed amongst us even in the esteeme and censure of our owne times. And to sprake impartially, old men from whom wee should expect the greatest example of wisdom, do most exceede in this point of folly; commending the dayes of their youth, they scarce remember, at least

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well understood not; extolling those times their younger yeares have heard their fathers condemne, and condemning those times the gray heads of their posterity shall commend. And thus is it the humour of many heads to extoll the dayes of their fore-fathers, and declaim against the wickednesse of times present; which notwithstanding they cannot handsomely doe, without the borrowed helpe and satyres of times past, condemning the vices of their times, by the expressions of vices in times which they commend, which cannot but argue the community of vice in both; Horace therefore, Juvenall and Perseus were no prophets, although their lives did seeme to indigitate and point at our times. There is a certaine list of vices committed in all ages, and declaimed against by all Authors, which will last as long as humane nature, or digested into common places may serve for any theme, and never be out of date untill Doomes day. Thirdly, the testimonies of Antiquity and such as passe oraculously amongst us, were not if wee consider them alwayes so exact, as to examine the doctrine they delivered. For some, and those the acutest of them, have left unto us many things of falsitie, controulable, not onely by criticall and collective reason, but common and countrey observation. Hereof there want not many examples in Aristotle, through all his booke of animals; we shall instance onely in three of his Problemes, and all contained under one Section. The first enquireth why a Man doth cough, but not an Oxe or Cow? whereas notwithstanding the contrary is often observed by husbandmen, and stands confirmed by those who have expressly treated *de re Rustica*, and have also delivered diverse remedies for it. Why Jumentis (*ζωον* he termes them) as Horses, Oxen and Asses, have no eructation or belching, whereas indeed the contrary is often observed, and also delivered by Columella. And thirdly, *cur solus homo, totius exet*, why man alone hath gray hayres? whereas it cannot escape the eyes, and ordinary observation of all men, that horses, dogs, and foxes, wax gray with age in our Countries, and in colder regions many other animals without it.

Other Authors write often dubiously, even in matters wherein is expected a strict and definitive truth, extenuating their affirmations, with *aiunt, ferunt, fortasse*. As Dioscorides, Galen, Aristotle, and many more. Others by heare say, taking upon trust most they have delivered, whose volumes are meer collections, drawne from the mouthes or leaves of other Authours; as may bee observed in Plinie, Aelian, Athenæus, and many others. Not a few transcriptively, subscribing their names unto other mens endeavours, and meerely transcribing almost all they have written. The Latines transcribing the Greekes, the Greekes and Latines each other. Thus hath Justine borrowed all from Trogius Pompeius, and Julius Solinus in a manner transcribed Plinie, thus have Lucian and Apuleius served Lucius Prætextus, men both

both living in the same time, and both transcribing the same Authour, in those famous Bookes, Entituled Lucius by the one, and Aureus Afinus by the other. In the same measure hath Simocrates in his Tract *de Nilo*, dealt with Diodorus Siculus, as may be observed, in that worke annexed unto Herodotus, and translated by Jungermannus. Thus Eratosthenes wholly translated Timotheus *de Insulis*; not reserving the very Preface. The very same doth Strabo report of Eddorus and Ariston in a Treatise entituled *de Milo*. Clemens Alexandrinus hath also observed many examples hereof among the Greekes, and Plinie speaketh very plainly in his Preface, that conferring his Authors, and comparing their workes together, hee generally found those that went before *verbatim* transcribed, by those that followed after, and their originalls never so much as mentioned. Even the magnified Virgil hath borrowed almost all his works: his Eclogues from Theocritus, his Georgicks from Hesiod and Aratus, his *Aeneads* from Homer, the second Booke thereof containing the exploit of Sinon and the Trojan horses, (as Macrobius observeth) he hath *verbatim* derived from Pisander. Our own profession is not excusable herein. Thus Oribasius, Aetius and Aegineta have in a manner transcribed Galen. But Marcellus Empericus who hath left a famous worke *de medicamentis*, hath word for word, transcribed all Scribonius Largus, *de compositione medicamentorum*, and not left out his very peroration. And thus may we perceive the Ancients were but men, even like our selves. The practise of transcription in our dayes was no monster in theirs: Plagiaries had not its nativitie with printing, but began in times when thefts were difficult, and the paucity of bookes scarce wanted that invention.

Fourthly, while we so eagerly adhear unto Antiquity, and the accounts of elder times, we are to consider the fabulous condition thereof; and that wee shall not deny if wee call to minde the mendacity of Greece, from whom we have received most relations, and that a considerable part of Ancient times, was by the Greeks themselves termed *μυθικόν*, that is made up or stuffed out with fables, and surely the fabulous inclination of those dayes, was greater then any since, which swarmed so with fables, and from such slender grounds, tooke hyntes for fictions, poysoning the world ever after; wherein how far they exceeded, may be exemplified from Palæphatus, in his book of fabulous narrations. That fable of Orpheus, who by the melody of his musick, made woods and trees to follow him, was raised upon a slender foundation; for there were a crew of mad women, retyred unto a mountain, from whence being pacified by his Musicke, they descended with boughs in their hands, which unto the fabulosity of those times, proved a sufficient ground to celebrate unto all posteritie the Magick of Orpheus harpe, and its power to attract the senselesse trees about it. That Medea the famous Sorceresse could renew youth, and make old

old

old men young againe, was nothing else but that from the knowledge of simples shee had a receipt to make white haire black, and reduce old heads into the tincture of youth againe. The fable of Gerion and Cerberus with three heads was this: Gerion was of the City Tricarina that is of three heads, and Cerberus of the same place was one of his dogs, which running into a cave upon pursuit of his masters oxen, Hercules perforce drew him out of that place, from whence the conceits of those dayes affirmed no lesse, then that Hercules descended into hell, and brought up Cerberus into the habitation of the Living. Upon the like grounds was raised the figment of Briareus, who dwelling in a city called Hecatonchiria, the fancies of those times assigned him an hundred hands. 'Twas ground enough to fancy wings unto Dædalus, in that he stole out of a window from Minos, and sailed away with his son Icarus, who steering his course wisely, escaped, but his son carrying too high a saile was drowned. That Niobe weeping over her children was turned into a stone, was nothing else but that during her life, she erected over their sepulchres, a marble tombe of her owne. When Actæon had undone himselfe with dogs, and the prodigall attendance of hunting, they made a solemne story how he was devoured by his hounds. And upon the like grounds was raised the Anthropophagie of Diomedes his horses. Upon as slender foundation was built, the fable of the Minotaur; for one Taurus a servant of Minos begat his mistress Pasiphae with childe, from whence the infant was named Minotaurus. Now this unto the fabulosity of those times was thought sufficient to accuse Pasiphae of Beastialitie, or admitting conjunction with a Bull, and in succeeding ages gave a hynte of depravity unto Domitian to act the fable into Realitie.

Fifthly, we applaude many things delivered by the Ancients, which are in themselves but ordinarie, and come short of our own conceptions. Thus we usually extoll, and our Orations cannot escape the sayings of the wisemen of Greece. *Nosce teipsum* of Thales: *Nosce tempus* of Pittacus: *Nihil nimis* of Cleobulus, which notwithstanding to speake indifferently, are but vulgar precepts in Morality, carrying with them nothing above the lyne, or beyond the extemporall sententiousness of common conceits with us. Thus we magnifie the Apothegmes, or reputed replies of wisdom, whereof many are to be seen in Laertius, more in Lycosthenes, not a few in the second booke of Macrobius, in the salts of Cicero Augustus, and the Comickal wits of those times: in most whereof there is not much of admiration, and are me thinks exceeded, not only in the replies of wise men, but the passages of societie and daily urbanities of our times. And thus we extoll their adages or proverbs; and Erasmus hath taken great pains to make collections of them, whereof notwithstanding the greater part will, I beleieve, unto indifferent judges be esteemed no such rarities, and may be paralleled, if not

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not exceeded, by those of more unlearned nations, & many of our own.

Sixtly, wee urge authorities, in points that need not, and introduce the testimony of ancient writers, to confirm things evidently beleaved, and whereto no reasonable hearer but would assent without them, such as are, *Nemo mortalium omnibus horis sapit. Virtute nil prastantius, nil pulchrius, Omnia vincit amor. Præclarum quiddam veritas.* All which, although things knowne and vulgar, are frequently urged by many men, and though triviall verities in our mouthes, yet noted from Plato, Ovid, or Cicero, they receive immediate additions, and become reputed elegancies. For many hundred to instance but in one we meet with while we are writing. Antonius Guevara that elegant Spaniard, in his book intituled, *The Diall of Princes*, beginneth his Epistle thus. Apolonius Thyaneus disputing with the Schollers of Hiarchas, said, that among all the affections of nature, nothing was more naturall, then the desire all have to preserve life; which being a confessed truth, and a veritie acknowledged by all, it was a superfluous affectation, to derive its authoritie from Apolonius, or seeke a confirmation thereof as farre as India, and the learned Schollers of Hiarchus; which whether it be not al one to strengthen common dignities and principles known by themselves, with the authoritie of Mathematicians; or thinke a man should beleave, The whole is greater then its parts, rather upon the authoritie of Euclide, then if it were propounded alone, I leave unto the second and wiser cogitations of all men. Tis sure a practise that favours much of Pedantry, a Reserve of Puerilitie wee have not shaken off from Schoole, where being seasoned with Minor sentences, by a neglect of higher enquiries, they prescribe upon our riper cares, and are never worne out but with our memories.

Lastly, while we so devoutly adhere unto Antiquity in some things, we doe not consider we have deserted them in severall other; for they indeed have not only been imperfect, in the conceit of many things, but either ignorant or erroneous in divers other. They understood not the motion of the eight spheare from West to East, and so conceived the longitude of the starres invariable. They conceived the torrid Zone uninhabitable, and so made frustrate the goodliest part of the earth. But we now know 'tis very well empeopled, and the habitation thereof esteemed so happy, that some have made it the proper seat of Paradise, and beene so farre from judging it uninhabitable that they have made it the first habitation of all. Many of the Ancients denyed the Antipodes, and some unto the penalty of contrary affirmations; but the experience of our enlarged navigations, can now assert them beyond all dubitation. Having thus totally relinquisht them in some things, it may not be presumptuous, to examine them in others, but surely most unreasonable to adhere to them in all, as though they were infallible or could not erre in any.

CHAP. VII.

Of Authority.

NOr is only a resolved prostration unto Antiquity a powerfull enemy unto knowledge, but also a confident adherence unto any Authority, or resignation of our judgements upon the testimony of any Age or Author whatsoever. For first, to speake generally an argument from Authority to wiser examinations, is but a weaker kinde of prooffe, it being no other but a topicall probation, and as we terme it, an inartificiall argument, depending upon a naked asseveration: wherein neither declaring the causes, affections or adjuncts of what we believe. It carrieth not with it the reasonable inducements of knowledge, and therefore *contra negantem principia, Ipse dixit, or oportet discipulum credere*, although they may be postulates, very accomodable unto Junior indoctrinations, yet are their authorities but temporary, and not to be imbraced beyond the minority of our intellectuals. For our advanced beliefs are not to be built upon dictates, but having received the probable inducements of truth, we become emancipated from testimoniall engagements, and are to erect upon the surer base of reason. Secondly, unto reasonable perensions it hath no place in some Sciences, small in others, and suffereth many restrictions, even where it is most admitted. It is of no validity in the Mathematicks, especially the mother part thereof Arithmetick and Geometry: For these Sciences concluding from dignities and principles knowne by themselves, they receive not satisfaction from probable reasons, much lesse from bare and peremptory asseverations. And therefore if all Athens should decree, that in every triangle, two sides which soever be taken are greater then the side remaining, or that in rectangle triangles the square which is made of the side that subtendeth the right angle, is equall to the squares which are made of the sides containing the right angle: Although there be a certaine truth therein, would Geometritians notwithstanding, receive a satisfaction without demonstration thereof? 'Tis true by the vulgarity of Philosophers, there are many points beleaved without probation, and if a man affirme from Ptolomy, that the Sun is bigger then the Earth, shall he probably meet with any contradiction herein, whereunto notwithstanding Astronomers will not assent without some convincing argument or demonstrative prooffe thereof? And therefore certainly of all men a Philosopher should be no swearer: for an oath which is the end of controversies in Law cannot determine any here, nor are the deepest sacraments or desperate imprecations of any force to perswade where reason only, and necessary mediums must induce.

In naturall Philosophy, and which is more generally pursued amongst us, it carryeth but slender consideration, for that also proceeding

ding from settled principles, therein is expected a satisfaction from scientificall progressions, and such as beget, a sure and rationall beleefe. For if Authority might have made out the assertions of Philosophy, wee might have held, that snow was blacke, that the sea was but the sweat of the earth, and many of the like absurdities. Then was Aristotle injurious to fall upon Melissus, and to reject the assertions of Anaxagoras, Anaximander, and Empedocles, and then were we also ungratefull unto himselfe, from whom our Junior endeavours embracing many things by his authority, our mature and secondary enquiries, are forced to quit those receptions, and to adhere unto the nearest accounts of reason. And although it be not unusuall, even in Philosophicall tractates to make enumeration of Authors, yet are there reasons usually introduced, and to ingenuous readers doe carry the stroake in the perswasion. And surely if we account it reasonable among our selves, and not injurious unto rationall Authors, no farther to abet their opinions then as they are supported by solid reason; certainly with more excusable reservation may we shrink at their bare testimonies, whose argument is but precarious and subsists upon the charity of our assentments. In Morality, Rhetorick, Law and History, there is I confesse a frequent and allowable use of testimony, and yet herein I perceive, it is not unlimitable, but admitteth many restrictions. Thus in Law both Civill and Divine, that is only esteemed *legitimum testimonium*, or a legall testimony, which receives comprobatation from the mouths of at least two witnesses; and that not onely for prevention of calumny, but assurance against mistake, whereas notwithstanding the solid reason of one man, is as sufficient as the clamor of a whole Nation; and within imprejudicate apprehensions begets as firm a beleefe as the authoritie or aggregated testimony of many hundreds: For reason being the very root of our natures, and the principles thereof common unto all, what is against the lawes of true reason, or the undeceived understanding of any one, if rightly apprehended, must be disclaimed by all Nations, and rejected even by mankind.

Againe, a testimony is of small validity if deduced from men out of their owne profession; so if Lactantius affirme the figure of the earth is plaine, or Austin himselfe deny there are Antipodes; though venerable Fathers of the Church, and ever to be honoured, will their authorities prove sufficient to ground a beleefe thereon? whereas notwithstanding the solid reason or confirmed experience of any man, is very approveable in what profession soever. So Raymund Sebund, a Physitian of Tholouze, besides his learned Dialogues, *de natura humana*, hath written a naturall Theologic, demonstrating therein the Attributes of God, and attempting the like in most points of Religion. So Hugo Grocius a Civilian, did write an excellent Tract in Dutch of the verity of Christian Religion, and hath since contracted the same into

into six booke in Latine, wherein most rationally delivering themselves, their works will be embraced by most that understand them, and their reasons enforce beleefe even from prejudicate Readers. Neither indeed have the authorities of men bin ever so awfull, but that by some they have beene rejected, even in their owne professions. Thus Aristotle affirming the birth of the Infant or time of its gestation, extendeth sometimes unto the eleventh month, but Hippocrates averring that it exceedeth not the tenth. Adrian the Emperour in a solemne processe, determined for Aristotle, but Justinian many yeares after, tooke in with Hippocrates and reversed the Decree of the other. Thus have Councils not onely condemned private men, but the Decrees and Acts of one another. So Galen after all his veneration of Hippocrates, in some things hath fallen from him. Avicen in many from Galen, and others succeeding from him: and although the singularity of Paracelsus be intollerable, who sparing onely Hippocrates, hath reviled not onely the Authors, but almost all the learning that went before him; yet is it not much lesse injurious unto knowledge obstinately and convincibly to side with any one: Which humour unhappily possessing many men, they have by prejudice withdrawne themselves into parties, and contemning the sovereignty of truth, seditiously abetted the private divisions of error.

Moreover a Testimony in points historicall, and where it is of unavoidable use, is of no illation in the negative, nor is it of consequence that Herodotus writing nothing of Rome, there was therefore no such city in his time; or because Dioscorides hath made no mention of Unicorne's horne, there is therefore no such thing in Nature. Indeed intending an accurate enumeration of Medicall materials, the omission hereof affords some probability; it was not used by the Ancients, but will not conclude the nonexistence thereof. For so may we annihilate many simples unknowne to his enquiries, as Senna, Rhabarbe, Bezoar, Ambregris, and divers others. Whereas indeed the reason of man hath no such restraint, concluding not onely affirmatively but negatively, not onely affirming there is no magnitude beyond the last heavens, but also denying there is any vacuity within them: Although it be confessed the affirmative hath the prerogative illation; and Barbara engrosseth the powerfull demonstration.

Lastly, the strange and unimaginable relations made by Authors, may sufficiently discourage our adherence unto Authority, and which if we beleefe we must be apt to swallow any thing. Thus Basil will tell us, the Serpent went erect like man, and that that beast could speake before the fall. To status would make us beleefe that Nilus encreaseth every new Moone. Leonardo Fioravanti an Italian Physitian, beside many other secrets assumeth unto himselfe the discovery of one concerning Pellitory of the wall; that is, that it never groweth in the

sight of the North star. *Done si possa vedere la stella Tramentana*, wherein how wide he is from truth is easily discoverable unto every one, who hath but Astronomy enough to know that starre. Franciscus Sanctius in a laudable Comment of his upon Alciats Emblems, affirmeth, and that from experience, a Nightingale hath no tongue. *Auem Philomelam lingua carere pro certo affirmare possum, nisi me donli fallunt*. Which if any man for while shall beleve upon his experience, he may at his leasure refute it by his owne. What foole almost would beleve, at least, what wise man would rely upon that Antidote delivered by Pierius in his Hieroglyphicks against the sting of a Scorpion: that is, to sit upon an Asse with ones face toward his taile; for so the paine, from its sting leaveth the man, and passeth into the beast. It were me thinks but an uncomfortable receite for a Quartane Ague, and yet as good perhaps as many others used, to have recourse unto the remedy of Sammonicus, that is, to lay the fourth book of Homers Iliads under ones head, according to the precept of that Physitian and Poet, *Mæonie Iliados quartum suppone trementi*. There are surely few that have beliefeto swallow, or hope enough to experiment the Collyrium of Albertus, which promisseth a strange effect, and such as Thieves would count inestimable; that is, to make one see in the darke: yet thus much, according unto his receit, will the right eye of an Hedge-hog boyled in oyle and preserved in a brasen vessell effect. As strange it is, and unto vicious inclinations were worth a nights lodging with Lais, what is delivered in Kiranides, that the left stone of a Weesell, wrapt up in the skin of a she Mule, is able to secure incontinency from conception.

These with swarmes of others have men delivered in their writings, whose verities are onely supported by their Authorities: but being neither consonant unto reason, nor correspondent unto experiment, their affirmations are unto us no Axiomes, wee esteeme thereof as things unsaid, and account them but in the list of nothing. I wish herein the Chymistes had bene more sparing, who overmagnifying their preparations, inveigle the curiosity of many, and delude the security of most. For if their experiments would answer their encomiums, the Stone and Quartane Agues, were not opprobrious unto Physitians; And we might contemne that first, and most uncomfortable Aphorisme of Hippocrates; *Ars Longa, Vita Brevis*. For surely that Art were soone attained, that hath so generall remedies, and life could not be short, were there such to prolong it.

CHAP.

CHAP. VIII.

A briefe enumeration of Authors.

Now for as much as we have discoursed of Authority, and there is scarce any tradition or popular error but stands also delivered by some good Author; we shall endeavour a short discovery of such as for the major part have given authority hereto: who although excellent and usefull Authors, yet being either transcriptive, or following the common relations of things, their accounts are not to be swallowed at large, or entertained without a prudent circumspection. In whom *discipule dixit*, although it be no powerfull argument in any, is yet lesse authentick then in many other, because they deliver not their owne experiences, but others affirmations, and write from others as we our selves from them.

1. The first in order as also in time, shall be Herodotus of Halicarnassus, an excellent and very elegant Historian, whose books of history were so well received in his owne dayes, that at their rehearfall in the Olympick games, they obtained the names of the nine Muses, and continued in such esteeme unto descending Ages, that Cicero termed him *Historiarum parens*. And Dionysius his Countreyman, in an Epistle to Pompey, after an expresse comparifon, affords him the better of Thucydides; all which notwithstanding, he hath received from some, the stile of *Mendaciorum pater*; his authority was much infringed by Plutarch, who being offended with him, as Polybius had bin with Philarcus, for speaking too coldly of his Countreyman, hath left a particular Tract, *de Malignitate Herodoti*. But in this latter Century, Camerarius and Stephanus have stepped in, and by their witty Apologies, effectually endeavoured to frustrate the arguments of Plutarch, or any other. Now in this Author, as may be observed in our ensuing Discourse, and is better discernable in the perusal of himselfe, there are many things fabulously delivered, and not to be accepted as truthe: whereby neverthelesse if any man be deceived, the Author is not so culpable as the believer. For he indeed imitating the father Poet, whose life he hath also written, and as Thucydides observeth, as well intending the delight as benefit of his Reader, hath besprinkled his worke with many fabulofities, whereby if any man be led into errour, he mistaketh the intention of the Author, who plainly confesseth he writeth many things by hearesay, and forgetteth a very considerable caution of his, that is, *Ego quæ fando cognovi, exponere narratione mea debeo omnia; credere autem esse vera omnia, non debeo*.

2. In the second place is Ctesias the Cnidian, Physitian unto Artaxerxes King of Persia, his books are often cited by ancient Writers, and by the industry of Stephanus and Rodomanus, there are extant some

some fragments thereof in our dayes; he wrote the History of Persia, and many narrations of India. In the first as having a fair oportunity to know the truth: And as Diodorus affirmeth the perusall of Persian records, his testimony is acceptable in his Inditary relations, wherein are contained strange and incredible accounts, he is surely to be read with suspension; and these were they which weakned his authority with former ages, and made him contemptible unto most. For as we may observe, he is seldome mentioned, without a derogatory parenthesis in any Author; Aristotle besides the frequent undervaluing of his authority, in his bookes of Animals gives him the lie no lesse then twice, concerning the seed of Elephants. Strabo in his xi. booke hath left a harder censure of him. *Equidem facilius Hesodo & Homero, aliquis fidem adhibuerit, itemque Tragicis Poetis, quam Ctesia Herodoto, Hellenico & eorum similibus.* But Lucian hath spoken more plainly then any. *Scripsit Ctesias de Indorum regione, deque iis qua apud illos sunt, ea quae nec ipse vidit, neque ex ullius sermone audiuit.* Yet were his relations taken up by most succeeding Writers, and many thereof revived by our Country-man, Sir John Mandevell Knight and Doctor in Physicke, who after thirty years peregrination dyed at Leige, and was there honourably interred. He left behinde him a booke of his travells, which hath been honoured with the translation of many languages, and hath now continued above three hundred years; herein he often attesteth the fabulous relations of Ctesias, and seems to confirme the refuted accounts of Antiquity: all which may still be received in some acceptions of morality, and to a pregnant invention, may afforde commendable mythologic, but in a naturall and proper Exposition, it containeth impossibilities and things inconsistent with truth.

3. There is a Book *de mirandis auditionibus*, ascribed unto Aristotle, another *de mirabilibus narrationibus*, written long after by Antigonus, another also of the same title by Plegon Trallianus translated by Xilander, and with the Annotations of Meursius, all whereof make good the promise of their titles and may be read with caution; which if any man shall likewise observe in the Lecture of Philostratus, concerning the life of Apolonius, or not only in ancient Writers, but shall carry a wary eye, on Paulus Venetus, Jovius, Olaus Magnus, Nierembergius, and many other, I thinke his circumspection is laudable, and he may thereby decline occasion of Error.

4. Dioscorides Anazarbeus, hee wrote many bookes in Physicke, but six thereof *de Materia Medica*, have found the greatest esteeme; hee is an Author of good Antiquity, and better use, preferred by Galen before Cratevas, Pamphilus, and all that attempted the like description before him; yet all hee delivereth therein is not to be conceived Oraculous: For beside that, following the warres under Anthony, the course of his life would not permit a punctuall examen in all; There are

are many things concerning the nature of simples, traditionally delivered, and to which I beleeve he gave no assent himselfe. It had been an excellent receit, and in his time when Sadles were scarce in fashion of very great use, if that were true, which he delivers, that Vitex, or Agnus Castus held only in the hand, preserveth the rider from galling. It were a strange effect, and whores would forsake the experiment of Savine. If that were a truth which hee delivereth of Brake or femall fearne, that only treading over it, it causeth a sudden abortion. It were to be wished true, and women would Idolize him, could that be made out which he recordeth of Phyllon, Mercury, and other vegetables, that the juice of the masle plant drunke, or the leaves but applied unto the genitalls, determines their conceptions unto males. In these relations although he be more sparing, his predecessours were very numerous; and Gallen hereof most sharply accuseth Pamphilus: many of the like nature we meet sometimes in Oribasius, Acius, Trallianus, Serapion, Evax, and Marcellus, whereof some containing no colour of verity, we may at first sight reject them, others which seem to carry some face of truth, we may reduce unto experiment. And herein we shall rather performe good offices unto truth, then any disservice unto their relators, who have well deserved of succeeding ages, from whom having received the conceptions of former times, we have the readier hint of their conformity with ours, and may accordingly explore their verities.

5. *Plinius Secundus* of Verona, a man of great eloquence, and industry indefatigable, as may appeare by the number of the writings, especially those now extant, and which are never like to perish, but even with learning it selfe, that is, his naturall Historie comprised in 36. bookes; hee was the greatest Collector or Rhapsodist of all the Latines, and as Suetonius *de viris Illustribus* observeth, hee collected this piece out of 2000. Latine and Greeke Authors. Now what is very strange, there is scarce a popular error passant in our dayes, which is not either directly expressed, or diductively contained in this worke, which being in the hands of most men, hath proved a powerfull occasion of their propogation; wherein notwithstanding the credulitie of the Reader, is more condemnable then the curiositie of the Authour. For commonly he nameth the Authors, from whom he received those accounts, and writes himselfe by heare say, as in his Preface unto Vespasian he acknowledgeth.

6. *Claudius Aelianus*, who flourished not long after in the raigne of Trajan, unto whom he dedicated his *Tacticks*, an elegant and miscellaneous Author, he hath left two bookes which are in the hands of every one, his History of Animals, and his *Varia historia*, wherein are contained many things supicious, not a few false, some impossible; hee is much beholding unto Ctesias, and in many subjects writes more confidently then Plinie.

7. *Julius*

7. Julius Solinus, who lived also about his time: He left a work entitled Polyhistor, containing great varietie of matter, and is with most in good request at this day: but to speake freely what cannot bee concealed, it is but Plinie varied, or a transcription of his naturall historie; nor is it without all wonder it hath continued so long, but is now likely, and deserves indeed to live for ever; not so much for the elegancy of the text, as the excellency of the comment, lately performed by Salmasius, under the name of Plinian exercitations.

8. Athenæus a delectable Author, and very various, and as Causebone in his Epistle styles him *Græcorum Plinius*: There is extant of his, a famous piece under the name of *Deipnosophista*, or *cæna sapientum*, containing the discourse of many learned men, at a feast provided by Laurentius. It is a laborious collection out of many Authors, and some whereof are mentioned no where else. It containeth strange and singular relations, not without some spice or sprinckling of all learning. The Author was probably a better Gramarian then Philosopher, dealing but hardly with Aristotle and Plato, and betrayeth himselfe much in his Chapter *de curiositate Aristotelis*. In brieft, he is an Author of excellent use, and may with discretion, be read unto great advantage; and hath therefore well deserved, the Comments of Causebon and Dalecampius: but being miscellaneous in many things, he is to be received with suspicion; for such as amasse all relations, must erre in some, and may without offence be unbeleaved in many.

9. Wee will not omit the workes of Nicander, a Poet of good Antiquity, that is, his *Theriaca*, and *Alexipharmaca*, translated and commented by Gorraeus: for therein are contained severall traditions, and popular conceits, of venemous beasts, which only deducted, the worke is ever to be embraced, as containing the first description of poysons, and their Antidotes, whereof Dioscorides, Pliny, and Galen, have made especiall use in elder times; and Ardoynus, Grevinus and others, in times more neere our owne. Wee might perhaps let passe Oppianus, that famous Cilician Poet. There are extant of his in Greeke, foure bookes of *Cynegeticks* or venation, five of *Halieuticks* or piscation, commented and published by Ritterhusius, wherein describing beasts of venerie, and fishes, hee hath indeed but sparingly inserted the vulgar conceptions thereof: so that abating onely the annuall mutation of Sexes in the Hyæna, the single Sex of the Rhinoceros, the antipathy betweene two drummes, of a Lambe and a Wolfes skinne, the informity of Cubbes, the venation of Centaures, the copulation of the Murena and the Viper, with some few others, hee may be read with great delight and profit. It is not without some wonder, his elegant lines are so neglected. Surely hereby wee reject one of the best Epick Poets, and much condemn the judgement of Antoninus, whose apprehensions so honoured his Poems, that as some report, for every verse, hee assigned him a Stater of gold.

10. More

10. More warily are we to receive the relations of Philes, who in Greeke Iambicks delivered the proprieties of Animals, for herein hee hath amassed the vulgar accounts recorded by the Ancients, and hath therein especially followed Ælian, and likewise Johannes Tzetzes, a Gramarian, who besides a Comment upon Hesiod and Homer, hath left us *Chiliads de varia Historia*, wherein delivering the accounts of Ctesias, Herodotus, and most of the Ancients, he is to be embraced with caution, and as a transcriptive relator.

11. Wee cannot without partialitie omit all caution even of holy Writers, and such whose names are venerable unto all posterity, not to meddle at all with miraculous Authours, or any Legendary relators: Wee are not without circumspection to receive some bookes even of Authentick and renowned Fathers. So are we to read the leaves of Basil and Ambrose in their bookes, entitled *Hexameron*, or *The description of the Creation*; wherein delivering particular accounts of all the Creatures, they have left us relations sutable to those of Ælian, Plinie and other naturall Writers; whose authorities herein they followed, and from whom most probably, they desumed their Narrations. And the like hath been committed by Epiphanius, in his *Phisiologie*, that is, a booke he hath left concerning the nature of Animals. With no lesse caution must we looke on Isidor, Bishop of Seville, who having left in 25. bookes, an accurate worke *de Originibus*, hath to the Etymologie of words, superadded their received natures; wherein most generally hee consents with common opinions and Authors which have delivered them.

12. Albertus Bishop of Ratisbone, for his great learning and latitude of knowledge surnamed Magnus, besides divinitie, he hath written many Tracts in Philosophie; what we are chiefly to receive with caution, are his naturall Tractates, more especially those of Mineralls, Vegetables, and Animals, which are indeed chiefly Collections out of Aristotle, Ælian, and Plinie, and respectively containe many of our popular errors. A man who hath much advanced these opinions by the authoritie of his name, and delivered most conceits, with strickt enquire into few. In the same classis, may well be placed Vincentius Belluacensis, or rather he from whom he collected his *Speculum naturale*, that is, *Gulielmus de Conchis*, as also *Hortus Sanitatis*, and *Bartholomeus Glanvill*, surnamed *Anglicus*, who writ *de Proprietatibus rerum*. Hither also may be referred Kiranides, which is a collection of Harpocraton the Greek, and sundry Arabick writers, delivering not onely the Naturall but Magicall proprietie of things, a worke as full of vanitie, as varietie, containing many relations, whose invention is as difficult as their beliefes, and their experiments sometime as hard as either.

13. We had almost forgot *Ieronymus Cardanus* that famous Physition

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tion of Milan a great enquirer of truth, but too greedy a receiver of it, he hath left many excellent discourses, Medicall, Naturall, and Astrologically; the most suspicious are those two he wrote by admonition in a dream, that is, *de subtilitate & varietate rerum*. Assuredly this learned man hath taken many things upon trust, and although examined some, hath let slip many others. He is of singular use unto a prudent Reader, but unto him that desireth Hoties, or to replenish his head with varieties, like many others before related, either in the originall or confirmation, he may become no small occasion of error.

14. Lastly, those Authors are also suspicious, nor greedily to be swallowed, who pretend to write of secrets, to deliver Antipathies, Sympathies, and the occult abstrucities of things, in the list whereof may be accounted, Alexis Pedimont: Antonius Mizaldus, Trinum Magicum, and many others; not omitting that famous Philosopher of Naples, Baptista Porta, in whose workes, although there be contained many excellent things, and verified upon his owne experience; yet are there many also receptary, and such as will not endure the test: who although he have delivered many strange relations in other peices, as his Phylognomy, and his Villa; yet hath he more remarkably expressed himselfe in his Naturall Magick, and the miraculous effects of Nature: which containing a various and delectable subject, with all promising wondrous and easie effects, they are entertained by Readers at all hands, whereof the major part sit downe in his authority, and thereby omit not onely the certainty of truth, but the pleasure of its experiment.

And thus have we made a brieve enumeration of these learned men, not willing any to decline their Workes, (without which it is not easie to attaine any measure of generall knowledge) but to apply themselves with caution thereunto. And seeing the lapses of these worthy pens, we are to cast a wary eye on those diminutive, and pamphlet Treaties daily published amongst us, pieces maintaining rather Typography then verity. Authors presumably writing by common places, wherein for many yeares promiscuously amassing all that makes for their subject, they break forth at last in trice and fruitlesse Rapfodies, doing thereby not onely open injury unto learning, but committing a secret treachery upon truth. For their relations falling generally upon credulous Readers, they meet with prepared beliefs, whose supinities had rather assent unto all, then adventure the triall of any.

Thus, I say, must these Authors be read, and thus must we be read our selves, for discourfing of matters dubious, and many controvertible truths, we cannot without arrogancy entreate a credulity, or implore any farther assent, then the probability of our reasons, and verity of experiments induce.

CHAP.

CHAP. IX.

Of the same.

There are beside these Authors and such as have positively promoted errors, diverse other which are in some way accessory, whose verities although they do not directly assert, yet doe they obliquely concur unto their beliefs. In which account are many holy Writers, Preachers, Moralists, Rhetoricians, Orators and Poets; for they depending upon invention deduce their mediums from all things whatsoever, and playing much upon the smile, or illustrative argumentation, induce their Enthymemes unto the people, they take up popular conceits, and from traditions unjustifiable or really false, illustrate matters, though not of consequence, yet undeniable truths. Wherein although their intention be sincere, and that course not much condemnable, yet are the effects thereof unwarrantable, in as much as they strengthen common errors, and confirme as veritable those conceits, which verity cannot allow.

Thus have some Divines drawne into argument the fable of the Phœnix, made use of that of the Salamander, Pellican, Basilisk, and divers relations of Pliny, deducing from thence most worthy morals, and even upon our Saviour. Now although this be not prejudicial unto wiser judgements, who are indeed but weakly moved with such kind of argument, yet is it oftentimes occasion of error unto vulgar heads, who expect in the fable as equall a truth as in the morall, and conceive that infallible Philosophy, which is in any sence delivered by Divinity. But wiser discerners do well understand, that every Art hath its owne circle, that the effects of things are best examined, by sciences wherein are delivered their causes, that strict and definitive expressions, are alway required in Philosophy, but a loose and popular delivery will serve oftentimes in Divinity; as may be observed even in holy Scripture, which often omitteth the exact account of things, describing them rather to our apprehensions, then leaving doubts in vulgar minds, upon their unknowne and Philosophicall descriptions. Thus it termeth the Sun and the Moone, the two great lights of heaven. Now if any man shall from hence conclude, the Moone is second in magnitude unto the Sun, he must excuse my belief; and I thinke it cannot be taken for heresie, if I herein rather adhere unto the demonstration of Ptolomy, then the popular description of Moses. Thus is it said, Chron. 2. 4. That Solomon made a molten sea of ten cubits, from brim to brim round in compasse, and five cubits the height thereof, and a line of thirty cubits did compasse it round about. Now in this description, the circumference is made just treble unto the diameter, that is, 10. to 30. or 7. to 21. But Archimedes demonstrates in his Cyclometria, that

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that the proportion of the diameter, unto the circumference, is as 7 unto almost 22, which will occasion a sensible difference that is almost a cubit. Now if herein I adhere unto Archimedes who speaketh exactly rather than the sacred Text which speaketh largely, I hope I shall not offend Divinity. I am sure I shall have reason and experience of every circle to support me.

Thus Morall Writers, Rhetoricians and Orators make use of severall relations which will not consist with verity. Aristotle in his Ethicks takes up the conceit of the Bever, and the divulsion of his Testicles. The tradition of the Beare, the Viper, and divers others are frequent amongst Orators. All which although unto the illiterate, and undiscerning hearers may seem a confirmation of their realities; yet is this no reasonable establishment unto others, who will not depend hereon otherwise than common Apologues, which being of impossible falsities do notwithstanding include wholesome moralities, and such as do expiate the trespasses of their absurdities.

The Hieroglyphicall doctrine of the Egyptians (which in their four hundred yeares cohabitation, some conjecture they learned from the Hebrewes) hath much advanced many popular conceits, for using an Alphabet of things, and not of words, through the Image and pictures thereof, they endeavoured to speak their hidden conceits, in the letters and language of nature; in pursuit whereof, although in many things, they exceeded not their true, and reall apprehensions, yet in some other they either framing the story, or taking up the tradition, conduceable unto their intentions, obliquely confirmed many falsities, which as authentick and conceded truths did after passe unto the Greeks, from them unto other Nations, are still retained by symbollicall writers, Emblematistes, Heraldes and others, whereof some are strictly maintained for truths, as naturally making good their artificiall representations; others symbolically intended are literally received, and swallowed in the first sense, without all gust of the second. Famous in this doctrine in former ages were Heraiscus, Cheremon, and Epius, especially Orus, Apollo, Niliacus, who lived in the reigne of Theodosius and in Egyptian language left two bookes of Hieroglyphicks, translated into Greek by Philippus, in Latine published by Hoschelius, and a full collection of all made lately by Pierius.

Painters who are the visible representers of things, and such as by the learned sense of the eye endeavour to informe the understanding, are not inculpable herein, who either describing naturalls as they are, or actions as they have been, have oftentimes erred in their delineations, which being the bookes that all can read, are fruitfull advancers of these conceptions, especially in common and popular apprehensions, who being unable for farther enquiry must rest in the text, and letter of their descriptions.

Lastly,

Lastly, Poets and Poeticall Writers have in this point exceeded others, leaving unto us the notions of Harpes, Centaurs, Gryphins, and divers others. Now how ever to make use of fictions, Apologues and fables be not unwarrantable, and the intent of these inventions might point at laudable ends: Yet doe they afford to our junior capacities a frequent occasion of error, setting impressions in our tender memories, which our advanced judgements, doe generally neglect to expunge. This way the vaine and idle fictions of the Gentils, did first insinuate into the heads of Christians, and thus are they continued even unto our dayes: Our first and literary apprehensions being commonly instructed in Authors which handle nothing else; wherewith our memories being stuffed, our inventions become Pedantick, and cannot avoid their allusions, driving at these as at the highest elegancies, which are but the frigidities of wit, and become not the genius of our more manly ingenuities. It were therefore no losse like that of Galens study; if these had found the same fate, and would in some way requite the neglect of solid Authors, if they were lesse pursued. For surely were a pregnant wit educated in ignorance hereof, receiving only impressions from realities, from such solid foundations, it must needs raise more substantiall superstructions, and fall upon very many excellent straynes, which have been jussled off by their intrusions.

CHAP. X.

Of the last and common promoter of false Opinions, the endeavours of Satan.

BUT beside the infirmities of humane nature, the seed of error within our selves, and the severall wayes of delusion from each other, there is an invisible Agent, and secret promoter without us, whose activity is undiscerned, and playes in the darke upon us, and that is the first contriver of Error, and professed opposer of Truth, the Divell. For though permitted unto his proper principles, Adam perhaps would have sinned, without the suggestion of Satan, and from the transgressive infirmities of himselfe might have erred alone, as well as the Angels before him. And although also there were no divell at all, yet is there now in our natures a confessed sufficiency unto corruption; and the frailty of our owne Oeconomic, were able to betray us out of truth; yet wants there not another Agent, who taking advantage hereof, proceedeth to obscure the diviner part, and efface all tract of its traduction, to attempt a particular of all his wiles, is too bold an Arithmetick for man, what most considerably concerneth his popular, and practised wayes of delusion, he first deceiveth mankind in five maine points concerning God and himselfe.

And first his endeavours have ever been, and they cease not yet to instill

instill a beleefe in the minde of man, There is no God at all; and this he specially labours to establish in a direct and literall apprehension, that is, that there is no such reality existent, that the necessity of his entity dependeth upon ours, and is but a politicall Chymera; That the naturall truth of God is an artificiall erection of man, and the Creator himselfe but a subtile invention of the creature. Where hee succeeds not thus high, he labours to introduce a secundary and deductive Atheisme, that although they concede there is a God, yet should they deny his providence; and therefore assertions have flown about, that he intendeth only the care of the species or common natures, but letteth loose the guard of individualls, and single essences therein: That hee looks not below the Moone, but hath designed the regiment of sublunary affaires unto inferiour deputations; to promote which apprehensions or empuzzell their due conceptions, he casteth in the notions of fate, destiny, fortune, chance and necessity; tearms commonly misconceived by vulgar heads, and their propriety sometime perverted by the wisest. Whereby extinguishing in mindes the compensation of vertue and vice, the hope and feare of heaven or hell, they comply in their actions unto the drift of his delusions, and live like creatures below the capacity of either.

Now hereby he not only undermineth the Base of religion, and destroyeth the principle preambulous unto all beleefe, but puts upon us the remotest error from truth. For Atheisme is the greatest falsity, and to affirme there is no God the highest lie in Nature: and therefore strictly taken, some men will say his labour is in vaine; For many there are, who cannot conceive there was ever any absolute Atheist, or such as could determine there was no God, without all checke from himselfe, or contradiction from his own opinions; and therefore those few so called by elder times, might be the best of Pagans, suffering that name rather, in relation to the gods of the Gentiles, then the true Creatour of all. A conceit that cannot befall his greatest enemy, or him that would induce the same in us, who hath a sensible apprehension hereof, for he beleeveth with trembling. To speake yet more strictly and conformably unto some opinions, no creature can wish thus much, nor can the will which hath a power to runne into velleities, and wishes of impossibilities, have any *ultimum* of this. For to desire there were no God, were plainly to unwish their owne being, which must needs be annihilated in the subtraction of that essence, which substantially supporteth them, and restraines them from regression into nothing. And if as some contend, no creature can desire his owne annihilation, that nothing is not appetible, and not to be at all, is worse then to bee in the miserable condition of something; the divell him selfe could not embrace that motion, nor would the enemy of God be freed by such a Redemption.

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But coldly thriving in this designe, as being repulsed by the principles of humanity, and the Dictates of that production, which cannot deny its originall, he fetcheth a wider circle, and when he cannot make men conceive there is no God at all, hee endeavours to make them beleefe, there is not one but many; wherein he hath been so successfull with common heads, that hee hath lead their beleefe thorow all the workes of Nature.

Now in this latter attempt, the subtilty of his circumvention, hath indirectly obtained the former. For although to opinion there be many gods, may seem an excesse in Religion, and such as cannot at all consist with Atheisme, yet doth it diductively and upon inference include the same: for unity is the inseparable and essentiall attribute of Deitie; And if there be more then one God, it is no Atheisme to say there is no God at all. And herein though Socrates onely suffered, yet were Plato and Aristotle guilty of the same truth, who demonstratively understanding the simplicity of perfection, and the indivisible condition of the first causator, it was not in the power of earth, or Areopagus of hell to work them from it. For holding an Apodicticall knowledge, and assured science of its verity, to perswade their apprehensions unto a plurality of gods in the world, were to make Euclide beleefe there were more then one Center in a Circle, or one right Angle in a Triangle; which were indeed a fruitlesse attempt, and inferreth absurdities beyond the evasion of hell. For though Mechanicke and vulgar heads ascend not unto such comprehensions, who live not commonly unto halfe the advantage of their principles, yet did they not escape the eye of wiser Minervaes, and such as made good the genealogie of Jupiters braines, who although they had divers styles for God, yet under many appellations acknowledged one divinity: rather conceiving thereby the evidence or acts of his power in severall wayes and places, then a multiplication of Essence, or reall distraction of unity in any one.

Againe, to render our errors more monstrous, (and what unto miracle sets forth the patience of God) hee hath endeavored to make the world beleefe, that he was God himselfe, and sayling of his first attempt to be but like the highest in heaven, he hath obtained with men to be the same on earth, and hath accordingly assumed the annexes of divinity, and the prerogatives of the Creator, drawing into practise the operation of miracles, and the prescience of things to come. Thus hath he in a specious way wrought cures upon the sick: played over the wondrous acts of Prophets, and counterfeited many miracles of Christ and his Apostles. Thus hath he openly contended with God; And to this effect his insolency was not ashamed to play a solemne prize with Moses, wherein although his performance was very specious, and beyond the common apprehension of any power below a Dietie, yet was it not such as could make good his Omnipotency. For

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Areopagus
the severe
Court of
Athens.

he was wholly confounded in the conversion of dust into lice. An act Philosophy can scarce deny to be above the power of Nature, nor upon a requisite predisposition beyond the efficacy of the Sun. Wherein notwithstanding the head of the old Serpent was confessedly too weak for Moses hand, & the arm of his Magicians too short for the finger of God. Thus hath he also made men beleve that he can raise the dead, that he hath the key of life and death, and a prerogative above that principle which makes no regression from privations. The Stoicks that opinioned the soules of wise men, dwelt about the Moone, and those of fooles wandred about the earth, advantaged the conceit of this effect, wherein the Epicureans, who held that death was nothing, nor nothing after death, must contradict their principles to be deceived. Nor could the Pythagorian or such as maintained the transmigration of souls give easie admittance hereto: for holding that separated soules, successively supplied other bodies, they could hardly allow the raising of soules from other worlds, which at the same time, they conceived conjoynd unto bodies in this. More inconsistent with these opinions, is the error of Christians, who holding the dead doe rest in the Lord, doe yet beleve they are at the lure of the divell, that he who is in bonds himself commandeth the fetters of the dead, and dwelling in the bottomlesse lake, the blessed from Abrahams bosome. That can beleve the resurrection of Samuel, or that there is any thing but delusion, in the practise of Necromancy and popular conception of Ghosts.

He hath moreover endeavoured the opinion of Deitie, by the delusion of Dreames, and the discovery of things to come, in sleepe above the prescience of our waked senses. In this expectation he perswaded the credulity of elder times to take up their lodging before his temple, in skinnies of their owne sacrifices, till his reservednesse had contrived answers, whose accomplishments were in his power, or not beyond his presagement. Which way although it hath pleased Almighty God, sometimes to reveale himself, yet was their proceeding very different. For the revelations of heaven are conveyed by new impressions, and the immediate illumination of the soule; whereas the deceaving spirit, by concitation of humors, produceth his conceited phantasmes, or by compounding the species already residing, doth make up words which mentally speake his intentions.

But above all other hee most advanced his Deitie in the solemne practise of Oracles, wherein in severall parts of the world, he publicly professed his divinity; but how short they flew, of that spirit, whose omniscience they would resemble, their weaknesse sufficiently declared. What jugling there was therein, the Oratour plainly confessed, who being good at the same game himselfe, could say that Pythia Phillippised: who can but laugh at the carriage of Ammon unto Alexander, who addressing unto him as God, was made to beleve, hee was
a god

a god himselfe? How openly did he betray his Indivinity unto Cræsus, who being ruined by his Amphibologie, and expostulating with him for so ungratefull a deceit, received no higher answer, then the excuse of his impotency upon the contradiction of fate, and the settled law of powers beyond his power to controule what more then subliunary directions, or such as might proceed from the oracle of humane reason, was in his advice unto the Spartans in the time of a great plague; when for the cessation thereof, he wisht them to have recourse unto a Fawn, that is in open terms unto one Nebrus, a good Physition of those dayes. From no diviner a spirit came his reply unto Caracalla, who requiring a remedy for his gout, received no other counsell then to refraine cold drinke, which was but a dieteticall caution, and such as without a journey unto Æsculapius culinary prescription and kitchen Aphorismes, might have afforded at home. Nor surely if any truth there were therein of more then naturall activity was his counsell unto Democritus, when for the falling sicknesse he commended the Maggot in a Goats head, for many things secret are very true, sympathyes and antipathyes are safely authenticke unto us, who ignorant of their causes may yet acknowledge their effects. Beside being a naturall Magician he may performe many acts in wayes above our knowledge, though not transcending our naturall power, when our knowledge shall direct it; part hereof hath been discovered by himselfe, and some by humane indagation which though magnified as fresh inventions unto us, are stale unto his cognition: I hardly beleve, he hath from elder times unknowne the verticity of the loadstone, surely his perspicacity discerned it to respect the North, when ours beheld it indeterminately. Many secrets there are in nature of difficult discovery unto man, of naturall knowledge unto Satan, whereof some his vain-glory cannot conceale, others his envy will never discover.

Againe, such is the mystery of his delusion, that although he labour to make us beleve that he is God, and supremest nature whatsoever, yet would he also perswade our beleeves that he is lesse then Angels or men, and his condition not only subjected unto rationall powers, but the action of things which have no efficacy on our selves; thus hath hee inveigled no small part of the world into a credulity of artificiall Magick. That there is an Art, which without compact commandeth the powers of hell, whence some have delivered the polity of spirits, and left an account even to their Provinciall dominions, that they stand in awe of charmes, spells and conjurations, that he is afraid of letters and characters of notes and dashes, which set together doe signifie nothing, and not only in the dictionary of man, but the subtiler vocabulary of Satan. That there is any power in Bitumen, pitch or brimstone, to purifie the aire from his uncleannesse, that any vertue there is in Hipericon to make good the name of *fuga Demonis*, any such magick as is ascri-

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bed unto the root Baaras by Josephus or Cynospastus by Ælianus, it is not easie to beleeve, nor is it naturally made out what is delivered of Tobias, that by the fume of a fishes liver, he put to flight Asmodeus. That they are afraid of the pentangle of Solomon, though so set forth with the body of man, as to touch and point out the five places wherein our Saviour was wounded. I know not how to assent if perhaps he hath fled from holy water, if he cares not to heare the sound of Tetragrammaton, if his eye delight not in the signe of the Crosse, and that sometimes he will seem to be charmed with words of holy Scripture, and to flye from the letter and dead verbality, who must only start at the life and animated interiors thereof. It may be feared they are but Parthian flights, Ambuscado retreats, and elusory tergiversations, whereby to confirme our credulities, he will comply with the opinion of such powers which in themselves have no activities, whereof having once begot in our mindes an assured dependence, he makes us relye on powers which he but precariously obeyes, and to desert those true and only charmes which hell cannot withstand.

Lastly, to lead us farther into darknesse, and quite to lose us in this maze of error, he would make men beleeve there is no such creature as himselfe, and that hee is not onely subject unto inferiour creatures but in the ranke of nothing: Insinuating into mens mindes there is no divell at all and contriveth accordingly, many wayes to conceale or indubitate his existency: wherein beside that hee annihilates the blessed Angels and spirits in the ranke of his creation, hee begets a security of himselfe and a carelesse eye unto the last remunerations. And therefore hereto he inveigleth, not only the Sadduces and such as retaine unto the Church of God, but is also content that Epicurus Democritus or any of the heathen should hold the same. And to this effect he maketh men beleeve that apparitions, and such as confirme his existence are either deceptions of sight, or melancholy depravements of phancy: Thus when he had not only appeared but spake unto Brutus, Cassius, the Epicurian was ready at hand to perswade him it was but a mistake in his weary imagination, and that indeed there were no such realities in nature. Thus he endeavours to propagate the unbelief of witches, whose concession infers his coexistency, and by this means also he advanceth the opinion of totall death, and staggereth the immortality of the soul: for those which deny there are spirits subsistent without bodies, will with more difficulty affirme the separated existence of their own.

Now to induce and bring about these falsities he hath laboured to destroy the evidence of truth, that is the revealed verity and written word of God. To which intent he hath obtained with some to repudiate the books of Moses, others those of the Prophets, and some both to deny the Gospell and authentick histories of Christ, to reject that of John, and receive that of Judas, to disallow all and erect another of

Thomas.

Thomas. And when neither their corruption by Valentinus and Arrian, their mutilation by Marcion, Manes and Ebion could satisfie his designe, he attempted the ruine and totall destruction thereof, as he sedulously endeavoured, by the power and subtilty of Julian, Maximinus and Dioclesian.

But the longevity of that peece, which hath so long escaped the common fate, and the providence of that Spirit which ever waketh over it, may at last discourage such attempts; and if not, make doubtfull its mortality, at least indubitably declare, this is a stone too bigge for Saturnes mouth, and a bit indeed Oblivion cannot swallow.

And thus how strangely hee possesseth us with errors may clearly be observed, deluding us into contradictory and inconsistent falsities, whilest he would make us beleeve: That there is no God. That there are many. That he himselfe is God. That he is lesse then Angels or Men. That he is nothing at all. Nor hath hee onely by these wiles depraved the conception of the Creator, but with such riddles hath also entangled the Nature of our Redeemer. Some denying his humanity, and that he was one of the Angels, as Ebion; that the Father and Sonne were but one person, as Sabellius. That his body was phantasticall, as Manes, Basilides, Priscillian, Jovinianus; that hee onely passed through Mary, as Eutichus and Valentinus. Some deny his Divinity, that he was begotten of humane principles, and the seminall sonne of Joseph, as Carpocras, Symmachus, Photinus. That hee was Seth the sonne of Abraham, as the Sethians. That hee was lesse then Angells, as Cherinthus. That hee was inferiour unto Melchisedech, as Theodotus. That he was not God, but God dwelt in him, as Nicolaus. And some embroyled them both. So did they which converted the Trinity into a quaternity, & affirmed two persons in Christ, as Paulus Samosatenus; that held he was man without a soul, and that the word performed that office in him, as Apollinaris. That he was both Sonne and Father, as Montanus. That Jesus suffered, but Christ remained impatible, as Cherinthus. And thus he endeavours to entangle truths: And when he cannot possibly destroy its substance he cunningly confounds its apprehensions, that from the inconsistent and contrary determinations thereof, collective impieties, and hopefull conclusion may arise, there's no such thing at all.

CHAP. XI.

A further Illustration.

Now although these wayes of delusions, most Christians have escaped, yet are there many other whereunto we are dayly betrayed, and these we meet with in visible and obvious occurrents of the world, wherein

wherein he induceth us, to ascribe effects unto causes of no cognation, and distorting the order and theorie of causes perpendicular to their effects, he drawes them aside unto things whereto they runne parallel, and in their proper motions would never meet together.

Thus doth he sometime delude us in the conceits of Starres and Meteors, beside their allowable actions ascribing effects thereunto of independent causations. Thus hath he also made the ignorant sort believe that naturall effects immediatly and commonly proceed from supernaturall powers, and these he usually derives from heaven, and his owne principality the ayre, and meteors therein, which being of themselves, the effects of naturall and created causes, and such as upon a due conjunction of actives and passives, without a miracle must arise unto what they appeare, are alwayes looked on by the ignorant spectators as supernaturall spectacles, and made the causes or signs of most succeeding contingencies. To behold a Rain-bow in the night, is no prodigie unto a Philosopher. Then eclipses of Sun or Moon, nothing is more naturall. Yet with what superstition they have been beheld since the Tragedy of Niceas, and his Army, many examples declare.

True it is, and we will not deny it, that although these being naturall productions from second and fetled causes, we need not alwayes looke upon them as the immediate hands of God, or of his ministring Spirits, yet doe they sometimes admit a respect therein, and even in their naturalls, the indifferencie of their existences contemporised unto our actions, admits a farther consideration.

That two or three Suns or Moons appeare in any mans life or reign, it is not worth the wonder, but that the same should fall out at a remarkable time, or point of some decisive action, that the contingencie of its appearance should be confined unto that time. That those two should make but one line in the booke of fate, and stand together in the great Ephemerides of God, beside the Philosophical assignment of the cause, it may admit a Christian apprehension in the signality.

But above all he deceiveth us when wee ascribe the effects of things unto evident & seeming causalities which arise from the secret & undiscerned action of himself. Thus hath he deluded many Nations in his Auguriall and Extispicious inventions, from casual and uncontrived contingencies divining events succeeding. Which Euscan superstition first ceasing upon Rome hath since possessed all Europe. When Augustus found two galls in his sacrifice, the credulity of the City concluded a hope of peace with Anthony, and the conjunctions of persons in choler with each other. Because Brutus and Cassius met a Blackmore, and Pompey had on a darke or sad coloured garment at Pharsalia; these were presages of their overthrow, which notwithstanding are scarce Rhetoricall sequells, concluding metaphors from realities, and from conceptions metaphoricall inferring realities again.

Now

Now these divinations concerning events being in his power, to force, contrive, prevent or further, they must generally fall out conformably unto his predictions. When Gracchus was slaine, the same day the Chickens refused to come out of the coope. And Claudius Pulcher underwent the like successe, when he contemned the Tripudary Augurations. They dyed not because the Pullets would not feed, but because the devill foresaw their death, he contrived that abstinence in them. So was there no naturall dependance of the event upon the signe, but an artificall contrivance of the signe unto the event. An unexpected way of delusion, and whereby he more easily led away the incircumspection of their believe. Which fallacy he might excellently have acted, before the death of Saul, which being in his power to foretell, was not beyond his ability to foreshew, and might have contrived signes thereof through all the creatures, which visibly confirmed by the event, had proved authentick unto those times, and advanced the Art ever after.

He deludeth us also by Philsters, Ligatures, Charmes, ungrounded Amulets, Characters, and many superstitious wayes in the cure of common diseases, seconding herein the expectation of men with events of his owne contriving: which while some unwilling to fall directly upon Magick, impute unto the power of imagination, or the efficacy of hidden causes, he obtaines a bloody advantage; for thereby he begets not onely a false opinion, but such as leadeth the open way of destruction; In maladies admitting naturall relieves, making men rely on remedies, neither of reall operation in themselves, nor more then seeming efficacy in his concurrence, which whensoever he pleaseth to withdraw, they stand naked unto the mischief of their diseases, and revenge the contempt of the medicines of the earth which God hath created for them. And therefore when neither miracle is expected, nor connexion of cause unto effect from naturall grounds concluded; however it be sometime successfull, it cannot be safe to rely on such practices, and desert the knowne and authentick provisions of God. In which ranke of remedies, if nothing in our knowledge or their proper power be able to relieve us, wee must with patience submit unto that restraint, and expect the will of the Restrainer.

Now in these effects although he seeme oft times to imitate, yet doth hee concurre unto their productions in a different way from that spirit which sometime in naturall meanes produceth effects above Nature; For whether he worketh by causes which have relation or none unto the effect, he maketh it out by secret and undiscerned wayes of Nature. So when Caius the blinde, in the reigne of Antonius, was commanded to passe from the right side of the Altar unto the left, to lay five fingers of one hand thereon, and five of the other upon his eyes, although the cure succeeded and all the people wondered, there

was

was not any thing in the action which did produce it, nor any thing in his power that could enable it thereunto. So for the same infirmity, when Apher was counselled by him to make a collyrium or ocular medicine with the blood of a white Cock, and honey, and apply it to his eyes for three dayes. When Julian for his hæmoptysis or spitting of blood, was cured by hony and pine Nuts taken from his Altar. When Lucius for the paine in his side, applyed thereto the ashes from his Altar with wine, although the remedies were somewhat rationall, and not without a naturall vertue unto such intentions, can we beleieve that by their proper faculties they produced these effects?

But the effects of powers Divine flow from another operation, who either proceeding by visible meanes, or not unto visible effects, is able to conjoyne them by his cooperation. And therefore those sensible wayes which seeme of indifferent natures, are not idle ceremonies, but may be causes by his command, and arise unto productions beyond their regular activities. If Nahaman the Syrian had washed in Jordan without the command of the Prophet, I beleieve he had bene cleansed by them no more then by the waters of Damascus. I doubt if any beside Elisha had cast in salt, the waters of Jericho had not bin made wholesome thereby. I know that a decoction of wilde gourd or Colocynthis, though somewhat qualified, will not from every hand be dulcified unto aliment by an addition of flower or meale. There was some naturall vertue in the plaster of figs applyed unto Ezechias; we finde that gall is very mundificative, and was a proper medicine to cleere the eyes of Tobit; which carrying in themselves some action of their owne, they were additionally promoted by that power which can extend their natures unto the production of effects beyond their created efficiencies. And thus may he operate also from causes of no power unto their visible effects; for he that hath determined their actions unto certaine effects, hath not so emptied his own but that he can make them effectuell unto any other.

Againe, although his delusions run highest in points of practise, whose errors draw on offensive or penall enormities, yet doth he also deale in points of speculation, and things whose knowledge terminates in themselves, whose cognition although it seemes independent, and therefore its aberration directly to condemne no man. Yet doth he hereby preparatively dispose us unto errors, and deductively deject us into destructive conclusions.

That the Sun, Moone and Stars are living creatures, endued with soule and life, seemes an innocent error, and a harmelesse digression from truth; yet hereby he confirmed their Idolatry, and made it more plausibly embraced. For wisely mistrusting that reasonable spirits would never firmly be lost in the adoration of things inanimate, and in the lowest forme of Nature, he begat an opinion that they were living

ving creatures, and could not decay for ever.

That spirits are corporeall, seemes at first view a conceit derogative unto himselfe, and such as he should rather labour to overthrow; yet hereby he establiseth the doctrine of Lustrations, Amulets and Charmes, as we have declared before.

That there are two principles of all things, one good, and another evil; from the one proceeding vertue, love, light, and unity; from the other division, discord, darknesse and deformity, was the speculation of Pythagoras, Empedocles, and many ancient Philosophers, and was no more then Oromasdes and Arimanius of Zoroaster; yet hereby he obtained the advantage of Adoration, and as the terrible principle became more dreadfull then his Maker, and therefore not willing to let it fall, he furthered the conceit in succeeding Ages, and raised the faction of Manes to maintaine it.

That the feminine sex have no generative emission, affording rather place then principles of conception, was Aristotles opinion of old, maintained still by some, and will be countenanced by him for ever. For hereby he disparageth the fruit of the Virgin, and frustrateth the fundamentall Prophecie, nor can the seed of the woman then breake the head of the Serpent.

Nor doth he onely sport in speculative errors, which are of consequent impieties, but the unquietnesse of his malice hunts after simple lapses, and such whose falsities do onely condemne our understandings. Thus if Xenophanes will say there is an other world in the Moone; If Heraclitus with his adherents will hold the Sunne is no bigger then it appeareth; If Anaxagoras affirme that Snow is black; If any other opinion there are no Antipodes, or that the Stars do fall, shall he want herein the applause or advocacy of Satan. For maligning the tranquillity of truth, he delighteth to trouble its streames, and being a professed enemy unto God, (who is truth it selfe) he promoteth any error as derogatory to his nature, and revengeth himselfe in every deformity from truth. If therefore at any time he speake or practise truth it is upon designe, and a subtile inversion of the precept of God, to doe good that evill may come of it. And therefore sometimes wee meet with wholesome doctrines from hell, *Nosce teipsum*: The Motto of Delphos was a good precept in morality, That a just man is beloved of the gods, an uncontrollable verity. Twas a good deed, though not well done, which he wrought by Vespasian, when by the touch of his foot he restored a lame man, and by the stroake of his hand another that was blinde; but the intention hereof drived at his owne advantage, for hereby hee not onely confirmed the opinion of his power with the people, but his integrity with Princes, in whose power he knew it lay to overthrow his Oracles, and silence the practise of his delusions.

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But indeed of such a diffused nature, and so large is the Empire of truth, that it hath place within the walles of hell, and the devils themselves are dayly forced to practise it; not only as being true themselves in a Metaphysicall verity, that is, as having their essence conformable unto the Intellect of their maker, but making use of Morall and Logicall verities, that is, whether in the conformity of words unto things, or things unto their owne conceptions, they practise truth in common among themselves. For although without speech they intuitively conceive each other, yet doe their apprehensions proceed through realities, and they conceive each other by species, which carry the true and proper notions of things conceived. And so also in Morall verities, although they deceive us, they lye not unto each other, as well understanding that all community is continued by truth, and that of hell cannot consist without it.

To come yet nearer to the point and draw into a sharper angle, They doe not onely speake and practise truth, but may bee said well-wisher thereunto, and in some sense doe really desire its enlargement. For many things which in themselves are false, they doe desire were true; Hee cannot but wish hee were as he professeth, that hee had the knowledge of future events, were it in his power, the Jewes should be in the right, and the Messias yet to come. Could his desires effect it, the opinion of Aristotle should be true, the world should have no end, but be as Immortall as himselfe. For thereby hee might evade the accomplishment of those afflictions, he now but gradually endureth, for comparatively unto those flames hee is but yet in Balneo, then begins his *Ignis Rota* and terrible fire, which will determine his disputed subtiltie, and hazard his immortality.

But to speake strictly, hee is in these wishes no promoter of verity, but if considered some wayes injurious unto truth, for (besides that if things were true, which now are false, it were but an exchange of their natures, and things must then be false, which now are true) the settled and determined order of the world would bee perverted, and that course of things disturbed, which seemed best unto the wise contriver. For whilest they murmur against the present disposure of things, regulating their determined realities unto their private optations, they rest not in their established natures, but unwishing their unalterable verities, doe tacitely desire in them a difformitie from the primitive rule, and the Idea of that minde that formed all things best. And thus hee offended truth even in his first attempt; For not content with his created nature, and thinking it too low, to be the highest creature of God, he offended the ordainer thereof, not onely in the attempt, but in the wish and simple volition thereof.

T H E

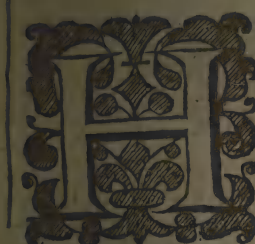


THE SECOND BOOK:

Of sundry popular Tenents concerning Mineraill, and vegetable bodies, generally held for truth, which examined, prove either false, or dubious.

CHAP. I.

Of Crystall.



Hereof the common opinion hath been, and still remaineth amongst us, that Crystall is nothing else, but Ice or Snow concreted, and by duration of time, congealed beyond liquation. Of which assertion, if the prescription of time, and numerositie of Assertors, were a sufficient demonstration, we might sit downe herein, as an unquestionable truth; nor should there need *ulterior* disquisition. For indeed, few opinions there are, which have found so many friends, or been so popularly received, through all professions and ages. And first, Plinie is positive in this opinion: *Crystallus fit gelu vehementius concreto*: the same is followed by Seneca, and Elegantly described by Claudian, not denied by Scaliger, and some way affirmed by Albertus, Brasavolus, and directly by many others. The venerable Fathers of the Church have also assented hereto; As Basil in his Hexameron, Isidore in his Etymologies, and not onely Austin a Latine Father, but Gregory the great, and Jerom upon occasion of that terme, expressed in the first of Ezekiel.

All which notwithstanding upon a strict enquiry, we finde the matter controvertible, and with much more reason denied then is as yet affirmed. For first, though many have passed it over with easie affirmatives; yet are there also many Authors that deny it, and the exactest Mineralogists have rejected it. Diodorus in his eleventh booke denyeth it, If Crystall be there taken in its proper acception, as Rhodiginus hath used it, and not for a Diamond, as Salmatius hath expounded it,

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it; for in that place he affirmeth. *Cryſtallum eſſe lapidem ex aqua pura concretum, non tamen frigore ſed divini caloris vi.* Solinus who tranſcribed Plinie, and therefore in almoſt all ſubſcribed unto him, hath in this point diſſented from him. *Putant quidam glaciem coire, & in Cryſtallum corporari ſed fruſtra.* Mathiolus in his Comment upon Dioſcorides, hath with confidence and not without reaſon rejected it. The ſame hath been performed by Agricola *de Natura foſſilium*; by Cardan, Boetius *de Boot*; Cæſius Bernardus, Sennertus, and many more.

Now beſides authoritie againſt it, there may be many reaſons deduced from their ſeverall differences which ſeeme to overthrow it. And firſt, a difference is probable in their concretion. For if Cryſtall be a ſtone, (as in the number thereof it is confeſſedly received) it is not immediatly concreted by the efficacy of cold, but rather by a Minerall ſpirit, and lapidiſicall principles of its owne, and therefore while it lay *in ſolutis principiis*, and remained in a fluid body, it was a ſubject very unapt for proper congelation; for Minerall ſpirits, doe generally reſiſt and ſcarce ſubmit thereto. So wee obſerve that many waters and ſprings will never freez, and many parts in rivers and lakes, where there are Minerall eruptions, will ſtill perſiſt without congelation; as we alſo viſibly obſerve, in *Aqua fortis*, or any Minerall ſolution, either of Vitrioll, Alum, Salpeter, Ammoniac, or Tartar; which although to ſome degree exhale and placed in cold conſervatories, will Cryſtallize and ſhoot into white and glaciouſ bodies; yet is not this a congelation primarily effected by cold, but an inſinſicall induration from themſelves, and a retreat into their proper ſolidities, which were abſorbed by the licour, and loſt in a full imbibition thereof before. And ſo alſo when wood and many other bodies doe petrifie, either by the ſea, other waters, or earths abounding in ſuch ſpirits, doe wee uſually aſcribe their induration to cold, but rather unto ſalinous ſpirits, concretive juyces, and cauſes circumjacent, which doe aſſimilate all bodies not indiſpoſed for their impreſſions.

But Ice is only water congealed by the frigidty of the ayre, whereby it acquireth no new forme, but rather a conſiſtence or determination of its diffuency, and amitteth not its eſſence, but its condition of fluidity; neither doth there any thing properly congeliate but water, or watery humidity; for the determination of quick-ſilver is properly fixation, that of milke coagulation, and that of oyle and unctious bodies onely incrassation; And therefore Aristotle makes a triall of the fertility of humane ſeed, from the experiment of congelation, for that ſayth hee, which is not watery and improlificall will not congeliate, which perhaps muſt not be taken ſtrictly, but in the germe and ſpirited particles: for egges I obſerve will freez, in the generative and albuminous part thereof. And upon this ground Paracellus in his Archi-

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doxis, extracteth the magiſtery of wine, after foure moneths digeſtion in horſedunge, expoſing it unto the extremity of cold, whereby the aqueous parts will freez, but the Spirit retyre and be found uncongealed in the center.

Againe, the difference of their concretion is not without reaſon, collectible from their diſſolution, which being many wayes performable in Ice, is not in the ſame manner effected in Cryſtall. Now the cauſes of liquation are contrary to thoſe of concretion, and as the atoms and indiviſible parcels are united, ſo are they in an oppoſite way diſjoyned. That which is concreted by exſiccation or expreſſion of humidity, will be reſolved by humectation, as earth, dirt, and clay; that which is coagulated by a fiery ficcity, will ſuffer colliquation from an aqueous humidity, as ſalt and ſugar, which are eaſily diſſoluble in water, but not without difficulty in oyle, and well rectified ſpirits of wine. That which is concreted by cold, will diſſolve by a moiſt heat, if it conſiſt of watery parts, as Gums, Arabick, Tragacanth, Ammoniac, and others, in an ayrie heat or oyle, as all refinous bodies, Turpentine, Pitch, and Frankincenſe; in both as gummy refinous bodies, Maſticke, Camphire, and Storax; in neither, as neutralls and bodies anomalous hereto, as Bdellium, Myrrhe and others. Some by a violent dry heat, as mettalls, which although corrodible by waters, yet will they not ſuffer a liquation from the powerfuller heat, communicable unto that element. Some will diſſolve by this heat although their ingredients be earthy, as glaſſe, whoſe materials are fine ſand, and the aſhes of Chali or Fearn; and ſo will ſalt runne with fire, although it bee concreted by heat, and this way alone may bee effected a liquation in Cryſtall, but not without ſome difficulty; that is, calcination or reducing it by Arte, into a ſubtile powder, by which way and a vitreous commixture, glaſſes are ſometime made hereof, and it becomes the chiefeſt ground for artificiall and factitious gemmes; but the ſame way of ſolution is common alſo unto many ſtones, and not only Berylls and Cornelians, but flints and pebbles, are ſubject unto fuſion, and will runne like glaſſe in fire.

But Ice will diſſolve in any way of heat, for it will diſſolve with fire, it will colliquate in water, or warme oyle, nor doth it only ſubmit to an actuall heat, but not endure the potentiall calidity of many waters; for it will preſently diſſolve in *Aqua fortis*, ſp. of vitrioll, ſalt or tartar, nor will it long continue its fixation in ſpirits of wine, as may be obſerved in Ice injected therein.

Againe, the concretion of Ice will not endure a dry attrition without liquation; for if it be rubbed long with a cloth it melteth, but Cryſtall will calefy unto electricity, that is a power to attraſt ſtrawes or light bodies, and convert the needle freely placed; which is a declaration of very different parts, wherein wee ſhall not at preſent

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inlarge, as having discoursed at full concerning such bodies in the Chap. of Electricks.

They are differenced by supernation or floating upon water; for Chrystall will sinke in water as carrying in its owne bulke a greater ponderosity, then the space in any water it doth occupy, and will therefore only swim in molten mettall, and Quicksilver. But Ice will swim in water of what thinnesse soever; and though it sinke in oyle, will float in spirits of wine or *Aqua vite*. And therefore it may swim in water, not only as being water it selfe, and in its proper place, but perhaps, as weighing no more then the water it possesseth. And therefore as it will not sinke unto the bottome, so will it neither float above like lighter bodies, but being neare, or inequality of weight, lye superficially or almost horizontally unto it. And therefore also an Ice or congelation of salt or sugar, although it descend not unto the bottome, yet will it abate, and decline below the surface in thin water, but very sensibly in spirits of wine. For Ice although it seemeth as transparent and compact as Chrystall, yet is it short in either, for its atoms are not concreated into continuity, which doth diminish its translucency; it is also full of spumes and bubbles, which may abate its gravity. And therefore waters frozen in pans, and open glasses, after their dissolution do commonly leave a froth, and spume upon them.

They are distinguisht into substance of parts and the accidents thereof, that is in colour and figure; for Ice is a similiary body, and homogeneous concretion, whose materiall is properly water, and but accidentally exceeding the simplicity of that element; but the body of Crystall is mixed, its ingredients many, and sensibly containeth those principles into which mixt bodies are reduced; for beside the spirit and mercuriall principle, it containeth a sulphur or inflamable part, and that in no small quantity; for upon collision with steele, it will actually send forth its sparkes not much inferior unto a flint. Now such bodies only strike fire as have a sulphur or ignitable parts within them. For as we elsewhere declare, these scintillations are not the accension of the ayre, upon the collision of two hard bodies, but rather the inflamable effluencies discharged from the bodies collided. For diamonds, marbles, heliotropes, and agaths, though hard bodies, will not strike fire, nor one steele easily with another, nor a flint easily with a steele, if they both be wet, for then the sparkes are quenched in their eruption.

It containeth also a salt, and that in some plenty which may occasion its fragility, as is also observable in corall. This by the art of Chymistry is separable unto the operations whereof it is lyable, with other concretions, as calcination, reverberation, sublimation, distillation: And in the preparation of Crystall, Paracelsus hath made a rule for that of Gemms, as he declareth in his first *de preparationibus*. Briefly, it consisteth of such parts so far from an Ice dissolution that powerfull

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menstruums are made for its emolition, whereby it may receive the tincture of minerals, and so resemble Gemms, as Boetius hath declared in the distillation of Urine, spirits of wine, and turpentine, and is not onely triturable, and reduceable into powder, by contrition, but will subsist in a violent fire, and endure a vitrification: Wherby are testified its earthy and fixed parts. For vitrification is the last worke of fire, and when that arriveth, humidity is exhaled, for powdered glasse emits no fume or exhalation although it bee laid upon a red hot iron. And therefore when some commend the powder of burnt glasse against the stone, they fall not under my comprehension, who cannot conceive how a body should be farther burned, which hath already passed the extreamest teste of fire.

As for colour although crystall in his pellucide body seems to have none at all, yet in its reduction into powder, it hath a vaile and shadow of blew, and in its courser peeces, is of a sadder hue, then the powder of Venice glasse, which complexion it will maintaine although it long endure the fire; which notwithstanding needs not move us unto wonder, for vitrified and pellucide bodyes, are of a clearer complexion in their continuities, then in their powders and Atomicall divisions. So *Stibium* or glasse of Antimony, appears somewhat red in glasse, but in its powder yellow; so painted glasse of a sanguine red will not ascend in powder above a murrey.

As for the figure of crystall (which is very strange, and forced Plinie to the despaire of resolution) it is for the most part hexagonall or six cornerd, being built upon a confused matter from whence as it were from a root angular figures arise, as in the Amethysts and Basaltes, which regular figuration hath made some opinion, it hath not its determination from circumscription or as conforming unto contiguities, but rather from a feminall root, and formative principle of its owne, even as we observe in severall other concretions. So the stones which are sometime found in the gall of a man, are most triangular, and pyramidall, although the figure of that part seems not to cooperate thereto. So the *Asteria* or *Lapis Stellaris*, hath on it the figure of a Starre; and so *Lapis Indaricus*, that famous remedy for the stone, hath circular lines in length all downe its body, and equidistant, as though they had been turned by Art. So that we call a Fayrie stone, and is often found in gravell pits amongst us, being of an hemisphericall figure, hath five double lines arising from the center of its basis, which if no accretion distraet them doe commonly concur and meet in the pole thereof. The figures are regular in many other stones, as in the Belemnites, *Lapis anguinus*, *Cornu Ammonis*, and divers beside, as by those which have not the experience hereof may be observed in their figures expressed by Mineralogistes. But Ice receiveth its figure according unto the surface, wherein it concreteth or the circumambieny which conformeth it.

it. So is it plaine upon the surface of water, but round in hayle, (which is also a glaciacion) and figured in its guttulous descent from the ayre. And therefore Aristotle in his Meteors concludeth that haile which is not round is congealed nearer the earth, for that which falleth from an high, is by the length of its journey corraded, and descendeth therefore in a lesser magnitude, but greater rotundity unto us.

They are also differenced in the places of their generation, for though Crystall be found in cold countries, and where Ice remaineth long, and the ayre exceedeth in cold, yet is it also found in regions, where Ice is seldome seen or soon dissolved, as Plinie and Agricola relate of Cyprus, Caramania and an Island in the Red-sea; it is also found in the veynes of Mineralls, in rocks, and sometime in common earth. But as for Ice it will not concrete but in the approachment of the ayre, as we have made tryall in glasses of water, covered halfe an inch with oyle, which will not easily freeze in the hardest frosts of our climate; for water concreteth first in its surface, and so congelates downward, and so will it doe although it be exposed in the coldest mettall of lead, which well accordeth with that expression of God, Job 38. The waters are hid as with a stone, and the face of the deep is frozen.

They have contrary qualities elementall, and uses medicinall; for Ice is cold and moyst, of the quality of water: But Crystall is cold and dry, according to the condition of earth, the use of Ice is condemned by most Physitians; that of Chrystall commended by many. For although Dioscorides and Galen, have left no mention thereof; yet hath Mathiolus, Agricola, and many other commended it in dysenteries and fluxes; all for the encrease of milke, most Chymistes for the stone, and some as Brassavolus and Boetius, as an antidote against poyson: Which occult and specificall operations, are not expectible from Ice; for being but water congealed, it can never make good such qualities, nor will it reasonably admit of secret proprieties, which are the affections of formes, and compositions at distance from their elements.

Having thus declared what Chrystall is not, it may afford some satisfaction to manifest what it is. To deliver therefore what with the judgement of approved Authors, and best reason consisteth, It is a minerall body in the difference of stones, and reduced by some unto that subdivision, which comprehendeth gemmes; transparent and resembling glasse or Ice, made of a lentous colament of earth, drawne from the most pure and limpid juyce thereof, owing unto the coldnesse of the earth some concurrence or coadjuvancy, but not its immediate determination and efficiency, which are wrought by the hand of its concretive spirit, the seeds of petrification and Gorgon within it selfe; as we may conceive in stones and gems, as Diamonds, Beryls, Saphires and the like, whose generation we cannot with satisfaction confine unto the remote activity of the Sun, or the common operation of coldnesse

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nesse in the earth, but may more safely referre it unto a lapidificall succity, and congelitive principle which determines prepared materials unto specificall concretions. And therefore I feare we commonly consider subterraneities not in contemplations sufficiently respective unto the creation. For though Moses have left no mention of minerals, nor made any other description then sutes unto the apparent and visible creation; yet is there unquestionably, a very large Classis of creatures in the earth farre above the condition of elementarity: And although not in a distinct and indisputable way of vivency, or answering in all points the properties or affections of plants, yet in inferiour and descending constitutions, they do like these containe specificall distinctions, and are determined by feminalities; that is created, and defined seeds committed unto the earth from the beginning. Wherein although they attaine not the indubitable requisites of Animation, yet have they a neere affinity thereto. And though we want a proper name and expressive appellation, yet are they not to be closed up in the generall name of concretions, or lightly passed over as onely Elementary, and Subterraneous mixtions.

The principle and most gemmary affection is its Tralucency; as for irradiancy or sparkling which is found in many gems it is not discoverable in this, for it cometh short of their compactnesse and durity: and therefore it requireth not the Emery, as Diamonds or Topaze, but will receive impression from Steele; more easily then the Turchois. As for its diaphanity or perspicuity, it enjoyeth that most eminently, and the reason thereof is its continuity, as having its earthly & salinous parts so exactly resolved, that its body is left imporous and not discreted by atomicall terminations. For, that continuity of parts, is the cause of perspicuity, is made perspicuous by two wayes of experiment, that is either in effecting transparency in those bodies which were not so before, or at least far short of the additionall degree. So snow becomes transparent upon liquation, so hornes and bodies resolveable into continued parts or gelly. The like is observable in oyled paper, wherein the interstitial divisions being continued by the accession of oyle, it becometh more transparent, and admits the visible rayes with lesse umbrosity. Or else by rendring those bodies opacus which were before pellucide and perspicuous. So glasse which was before diaphanous, being by powder reduced into multiplicity of superficies, becomes an opacus body, and will not transmit the light; and so it is in crystall powdered, and so it is also evident before, for if it be made hot in a crucible, and presently projected upon water, it will grow dim, and abate its diaphanity, for the water entring, the body begets a division of parts, and a termination of Atoms united before unto continuity.

The ground of this opinion might be, first the conclusions of some men

men from experience, for as much as Crystall is found sometimes in rockes, and in some places not much unlike the stirious or stillacidious dependencies of Ice; which notwithstanding may happen either in places which havee been forsaken or left bare by the earth, or may be petrifications, or Minerall indurations, like other gemmes proceeding from percolations of the earth disposed unto such concretions.

The second and most common ground is from the name *Crystallus*, whereby in Greeke, both Ice and Crystall are expressed, which many not duly considering, have from their community of name, conceived a community of nature, and what was ascribed unto the one, not unfitly appliable unto the other. But this is a fallacy of *Æquivocation*, from a society in name inferring an Identity in nature. By this fallacy was he deceived that drank *Aqua fortis* for strong water: By this are they deluded, who conceive *sperma Ceti* (which is a bituminous superfluance on the Sea) to be the spawn of the Whale; Or take *sanguis draconis*, (which is the gumme of a tree) to be the blood of a Dragon. By the same Logick we may inferre, the Crystalline humor of the eye, or rather the Crystalline heaven above, to be of the substance of Crystall below; Or that Almighty God fendeth downe Crystall, because it is delivered in the vulgar translation, Psal. 47. *Mittit Crystallum suum sicut Buccellas*: which translation although it literally expresse the Septuagint, yet is there no more meant thereby, then what our translation in plaine English expresseth; that is, hee casteth forth his Ice like morsels, or what Tremellius and Junius as clearly deliver, *Dejicit gela suum sicut frustra coram frigore eius quis consistet?* which proper and Latine expressions, had they been observed in ancient translations, elder Expositors had not beene misguided by the Synonymy, nor had they afforded occasion unto Austen, the Glosse, Lyranus, and many others, to have taken up the common conceit, and spoke of this text conformably unto the opinion rejected.

CHAP. II.

Concerning the Loadstone.

Of things particularly spoken thereof evidently or probably true. Of things generally beleaved, or particularly delivered, manifestly or probably false. In the first of the Magneticall vertue of the earth, of the foure motions of the stone, that is, its Verticity or direction, its Attraction or Coition, its declination, its Variation, and also of its Antiquity. In the second a rejection of sundry opinions and relations thereof, Naturall, Medicall, Historiall, Magicall.

And first we conceive the earth to be a Magneticall body. A Magneticall body, we term not only that which hath a power attractive, but that which seated in a convenient medium naturally disposeth it

self to one invariable and fixed situation. And such a Magneticall vertue we conceive to be in the Globe of the earth; whereby as unto its natural points and proper terms it disposeth it self unto the poles, being so framed, constituted & ordered unto these points, that those parts which are now at the poles, would not naturally abide under the *Æquator*, nor *Green-land* remain in the place of *Magellanica*; and if the whole earth were violently removed, yet would it not forgoe its primitive points, nor pitch in the East or West, but return unto its polary position again. For though by compactnesse or gravity it may acquire the lowest place, and become the center of the universe, yet that it makes good that point, not varying at all by the accession of bodyes upon, or secession thereof, from its surface perturbing the equilibration of either Hemisphere (whereby the altitude of the starres might vary) or that it strictly maintaines the north and southerne points, that neither upon the motions of the heavens, ayre and winds without, large eruptions and division of parts within, its polar parts should never incline or veere unto the *Æquator* (whereby the latitude of places should also vary) it cannot so well be salved from gravity as a magneticall verticity. This is probably that foundation the wisdom of the Creator hath laid unto the earth, and in this sense we may more nearly apprehend, and sensibly make out the expressions of holy Scripture, as that of Ps. 93. 1. *Firma vit orbem terra qui non commovebitur*, he hath made the round world so sure that it cannot be moved: as when it is said by Job, *Extendit Aquilonem super vacuo*, &c. Hee stretcheth forth the North upon the empty place, and hangeth the earth upon nothing. And this is the most probable answer unto that great question, Job 28. whereupon are the foundations of the earth fastened, or who laid the corner stone thereof? Had they been acquainted with this principle, Anaxagoras, Socrates and Democritus had better made out the ground of this stability: Xenophanes had not been faine to say it had no bottome, and Thales Milesius to make it swim in water. Now whether the earth stand still, or moveth circularly, we may concede this Magneticall stability: For although it move, in that conversion the poles and center may still remaine the same, as is conceived in the Magneticall bodies of heaven, especially Jupiter and the Sunne; which according to Galileus, Kepler, and Fabricius, are observed to have Diurnal motions and certaine revolutions about their proper centers; and though the one in about the space of ten dayes, the other in lesse then one, accomplish this revolution, yet do they observe a constant habitude unto their poles and firme themselves thereon in their gyration.

Nor is the vigour of this great body included only in is selfe, or circumferenced by its surface, but diffused at indeterminate distances through the ayre, water and bodyes circumjacent; exciting and impregnating magneticall bodyes within it surface or without it, and performing

forming in a secret and invisible way what we evidently behold effected by the Loadstone. For these effluxions penetrate all bodies, and like the species of visible objects are ever ready in the medium, and lay hold on all bodies proportionate or capable of their action; those bodies likewise being of a congenerous nature doe readily receive the impressions of their motor; and if not fettered by their gravity, conform themselves to situations, wherein they best unite unto their Animator. And this will sufficiently appeare from the observations that are to follow, which can no better way bee made out then this wee speake of the magneticall vigour of the earth. Now whether these effluxions do flye by streated Atomes and winding particles as *Renatus de Cartes* conceaveth, or glide by streames attracted from either pole and hemispheare of the earth unto the *Æquator*, as Sir Kenelme Digby excellently declareth, it takes not away this vertue of the earth, but more distinctly sets downe the gests and progresse thereof, and are conceits of eminent use to salve magneticall phenomena's. And as in Astronomy those hypotheses though never so strange are best esteemed which best do salve apparencies, so surely in Philosophy those principles (though seeming monstrous) may with advantage be embraced, which best confirme experiment, and afford the readiest reason of observation. And truly the doctrine of effluxions, their penetrating natures, their invisible paths, and insuspected effects, are very considerable; for besides this magneticall one of the earth, severall effusions there may be from divers other bodies, which invisibly act their parts at any time, and perhaps through any medium, a part of Philosophy but yet in discovery, and will I feare prove the last leafe to be turned over in the booke of Nature.

First, therefore it is evidently true and confirmable by every experiment, that Steele and good Iron never excited by the Loadstone, discover in themselves a verticity; that is, a directive or polary faculty, whereby conveniently they do septentrionate at one extreme, and Australize at another; & this is manifestible in long and thin plates of steel perforated in the middle and equilibrated, or by an easier way in long wires equiponderate with untwisted silke and soft wax; for in this manner pendulous they will conform themselves Meridionally, directing one extreame unto the North, another to the South. The same is also manifest in Steele wires thrust through little spheres or globes of Corke and floated on the water, or in naked needles gently let fall thereon, for so disposed they will not rest untill they have found out the Meridian, and as neere as they can lye parallell unto the axis of the earth: Sometimes the eye, sometimes the point Northward in divers Needles, but the same point alwayes in most, conforming themselves unto the whole earth, in the same manner as they doe unto every Loadstone; For if a needle untoucht be hanged above a Loadstone, it will

will convert into a parallel position thereto; for in this situation it can best receive its verticity and be excited proportionably at both extremes: now this direction proceeds not primitively from themselves, but is derivative and contracted from the magneticall effluxions of the earth, which they have winded in their hammering and formation, or else by long continuance in one position, as wee shall declare hereafter.

It is likewise true what is delivered of Irons heated in the fire, that they contract a verticity in their refrigeration; for heated red hot and cooled in the meridian from North to South, they presently contract a polary power, and being poyssed in ayre or water convert that part unto the North which respected that point in its refrigeration; so that if they had no sensible verticity before it may be acquired by this way, or if they had any, it might be exchanged by contrary position in the cooling: for by the fire they omit not onely many drossie and scorious parts, but whatsoever they had received either from the earth or loadstone, and so being naked and despoiled of all verticity, the magneticall Atomes invade their bodies with more effect and agility.

Neither is it onely true what Gilbertus first observed, that Irons refrigerated North and South acquire a Directive faculty, but if they be cooled upright and perpendicularly they will also obtaine the same; that part which is cooled toward the North on this side the *Æquator*, converting it selfe unto the North, and attracting the South point of the Needle: the other and highest extreme respecting the South, and attracting the Northerne according unto the Laws Magneticall: for (what must be observed) contrary poles or faces attract each other, as the North the South, and the like decline each other, as the North the North. Now on this side of the *Æquator*, that extreme which is next the earth is animated unto the North, and the contrary unto the South; so that in Coition it applyes it selfe quite oppositely, the coition or attraction being contrary to the verticity or Direction. Contrary if wee speake according unto common use, yet alike if we conceive the vertue of the North pole to diffuse it self and open at the South, and the South at the North againe.

This polarity Iron refrigeration upon extremity and in defect of a Loadstone might serve to invigorate and touch a needle any where; and this, allowing variation, is also the truest way at any season to discover the North or South; and surely farre more certaine then what is affirmed of the graines and circles in trees, or the figure in the roote of Ferne. For if we erect a red hot wire untill it coole, then hang it up with wax and untwisted silke, where the lower end and that which cooled next the earth doth rest, that is the Northerne point; and this we affirme will still be true, whether it be cooled in the ayre or extinguished in water, oyle of vitrioll, Aqua fortis, or Quicksilver. And this

is also evidenced in culinary utensils and Irons that often feele the force of fire, as tongs, fireshovels, prongs and Andirons; all which acquire a magneticall and polary condition, and being suspended, convert their lower extremes unto the North, with the same attracting the Southerne point of the Needle. For easier experiment if wee place a Needle touched at the foote of tongues or andirons, it will obvert or turne aside its lylie or North point, and conforme its cuspis or South extreme unto the andiron. The like verticity though more obscurely is also contracted by bricke and tiles, as wee have made triall in some taken out of the backs of chimneys. Now to contract this Direction, there needs not a totall ignition, nor is it necessary the Irons should bee red hot all over. For if a wire be heated onely at one end, according as that end is cooled upward or downeward, it respectively acquires a verticity, as we have declared before in wires totally candent. Nor is it absolutely requisite they should be exactly cooled perpendicularly, or strictly lye in the meridian, for whether they be refrigerated inclinatoryly or somewhat Equinoxially, that is toward the Easterne or Western points though in a lesser degree, they discover some verticity.

Nor is this onely true in Irons but in the Loadstone it selfe; for if a Loadstone be made red hot in the fire it amits the magneticall vigour it had before in it selfe, and acquires another from the earth in its refrigeration; for that part which cooleth toward the earth will acquire the respect of the North, and attract the Southerne point or cuspis of the Needle. The experiment hereof we made in a Loadstone of a parallelogram or long square figure, wherein only inverting the extremes as it came out of the fire, wee altered the poles or faces thereof at pleasure.

It is also true what is delivered of the Direction and coition of Irons that they contract a verticity by long and continued position; that is, not onely being placed from North to South, and lying in the meridian, but respecting the Zenith and perpendicular unto the center of the earth, as is most manifest in barres of windowes, casements, hindges and the like; for if we present the Needle unto their lower extremes, it wheelles about it and turnes its Southerne point unto them. The same condition in long time doe bricke contract which are placed in walls, and therefore it may be a fallible way to finde out the meridian by placing the Needle on a wall for some bricke therein which by a long and continued position, are often magnetically enabled to distract the polarity of the Needle.

Lastly, Irons doe manifest a verticity not only upon refrigeration and constant situation, but (what is wonderfull and advanceth the magneticall hypothesis) they evidence the same by meer position according as they are inverted, and their extreame disposed respectively unto the earth. For if an iron or Steele not formerly excited, be held perpendicularly

pendicularly or inclinatoryly unto the needle, the lower end thereof will attract the *cuspis* or southerne point; but if the same extreame be inverted and held under the needle, it will then attract the lylie or northerne point; for by inversion it changeth its direction acquired before, and receiveth a new and southerne polarity from the earth as being the upper extreame. Now if an iron be touched before, it varyeth not in this manner, for then it admits not this magneticall impression, as being already informed by the Loadstone and polarly determined by its preaction.

And from these grounds may we best determine why the Northern pole of the Loadstone attracteth a greater weight then the Southerne on this side the Equator, why the stone is best preserved in a naturall and polary situation; and why as Gilbertus observeth, it respecteth that pole out of the earth which it regarded in its minereall bed and subterraneous position.

It is likewise true and wonderfull what is delivered of the Inclination or Declination of the Loadstone; that is, the descent of the needle below the plaine of the Horizon: for long needles which stood before upon their *axis parallel* unto the Horizon, being vigorously excited, incline and bend downeward, depressing the North extreame below the Horizon; that is the North on this, the South on the other side of the Equator, and at the very Lyne or middle circle of the Earth stand parallel, and deflecteth neither. And this is evidenced not only from observations of the needle in severall parts of the earth, but sundry experiments in any part thereof, as in a long Steele, wires equilibrated or evenly ballanced in the ayre; for excited by a vigorous Loadstone it will somewhat depresse its animated extreme, and interest the horizontall circumference. It is also manifest in a needle pierced through a globe of Cork so cut away and pared by degrees that it will swim under water, yet sinke not unto the bottome, which may be well effected; for if the corke bee a thought too light to sinke under the surface, the body of the water may be attenuated with spirits of wine; if too heavy, it may be incrassated with salt; and if by chance too much be added, it may againe be thinned by a proportionable addition of fresh water: if then the needle be taken out, actively touched and put in againe, it will depresse and bow down its northerne head toward the bottome, and advance its southerne extremity toward the brim. This way invented by Gilbertus may seem of difficulty; the same with lesse labour may be observed in a needled sphere of corke equally contiguous unto the surface of the water; for if the needle be not exactly equiponderant, that end which is a thought too light, if touched becommeth even; that needle also which will but just swim under water if forcibly touched will sinke deeper, and sometime unto the bottome. If likewise that inclinatory vertue be destroyed

ed by a touch from the contrary pole, that end which before was elevated will then decline; & this perhaps might be observed in some scales exactly ballanced, and in such needles which for their bulke can hardly be supported by the water. For if they be powerfully excited & equally let fall, they commonly sink down and break the water at that extreame wherat they were septentrionally excited, & by this way it is conceived there may be some fraud in the weighing of precious commodities, and such as carry a value in quarter grains, by placing a powerfull Loadstone above or below, according as we intend to depresse or elevate one extrem.

Now if these magneticall emissions bee only qualities, and the gravity of bodies incline them only unto the earth, surely that which moveth other bodies to descent carryeth not the stroak in this, but rather the magneticall alliciency of the earth, unto which alacrity it applyeth it selfe, and in the very same way unto the whole earth, as it doth unto a single Loadstone: for if an untouched needle be at a distance suspended over a Loadstone, it will not hang parallel, but decline at the north extreme, and at that part will first salute its Director. Again, what is also wonderfull, this inclination is not invariable; for as it is observed just under the line the needle lyeth parallel with the Horizon, but sayling north or south it beginneth to incline, and increaseth according as it approacheth unto either pole, and would at last endeavour to erect it selfe; and this is no more then what it doth upon the Loadstone, and that more plainly upon the Terrella or sphericall magnet geographically set out with circles of the Globe. For at the Equator thereof the needle will stand rectangularly, but approaching northward toward the tropick it will regard the stone obliquely; & when it attaineth the pole directly, and if its bulk be no impediment, erect it selfe and stand perpendicularly thereon. And therefore upon strict observation of this inclination in severall latitudes & due records preserved, instruments are made whereby without the help of Sun or Star, the latitude of the place may be discovered; and yet it appears the observations of men have not as yet been so just & equall as is desirable, for of those tables of declination which I have perused, there are not any two that punctually agree, though some have been thought exactly calculated, especially that which *Ridley* received from *Mr. Briggs* in our time Geometry Professor in *Oxford*.

It is also probable what is delivered concerning the variation of the compasse that is the cause and ground thereof, for the manner as being confirmed by observation we shall not at all dispute. The variation of the compasse is an Arch of the Horizon intercepted between the true and magneticall meridian, or more plainly, a deflexion and siding East and West from the true meridian. The true meridian is a major circle passing through the poles of the world, and the Zenith or Vertex of any place, exactly dividing the East from the West. Now on this lyne the needle exactly lyeth not, but diverts and varieth its point, that is the

the North point on this side the Equator, the South on the other; sometimes unto the East, sometime toward the West, and in some few places varieth not at all. First, therefore it is observed that betwixt the shore of Ireland, France, Spaine, Guinie and the Azores, the North point varieth toward the East, and that in some variety; at London it varieth eleven degrees, at Antwerpe nine, at Rome but five; at some parts of the Azores it deflecteth not, but lyeth in the true meridian on the other side of the Azores; and this side the Equator the north point of the needle wheeleth to the West, so that in the latitude of 36. neare the shore, the variation is about eleven degrees; but on the other side the Equator, it is quite otherwise: for about Capo Frio in Brasilia, the south point varieth twelve degrees unto the West, and about the mouth of the Straites of Magellan five or six; but elongating from the coast of Brasilia toward the shore of Africa it varyeth Eastward, and arriving at Capo de las Agullas, it resteth in the Meridian, and looketh neither way.

Now the cause of this variation may be the inequality of the earth, variously disposed, and differently intermixed with the Sea: withall the different disposure of its magneticall vigor in the eminencies and stronger parts thereof; for the needle naturally endeavours to conforme unto the Meridian, but being distracted driveth that way where the greater & most powerfuller part of the earth is placed, which may be illustrated from what hath been delivered before, and may be conceived by any that understands the generalities of Geographie. For whereas on this side the Meridian, or the Isles of Azores, where the first Meridian is placed, the needle varieth Eastward, it may be occasioned by that vast Tract of earth, that is, Europe, Asia, and Africa, seated toward the East, and disposing the needle that way: For arriving at some part of the Azores, or Islands of Saint Michaels, which have a middle situation betweene these continents, and that vast and almost answerable Tract of America, it seemeth equally distracted by both, and diverting unto neither, doth parallell and place it self upon the true Meridian. But sayling farther it *veers* its Lilly to the West, and regardeth that quarter wherein the land is nearer or greater; and in the same latitude as it approacheth the shoare augmenteth its variation. And therefore as some observe, if Columbus or whosoever first discovered America, had apprehended the cause of this variation, having passed more then halfe the way, he might have been confirmed in the discovery, and assuredly foretold there lay a vast and mighty continent toward the West. The reason I confesse, and inference is good, but the instance perhaps not so. For Columbus knew not the variation of the compasse, whereof Sebastian Cabot first took notice, who after made discovery in the Northern parts of that continent. And it happened indeed that part of America was first discovered, which was on this

this side farthest distant, that is Jamaica, Cuba, and the Isles in the Bay of Mexico. And from this variation do some new discoverers deduce a probability in the attempts of the Northerne passage toward the Indies.

Now because where the greater continents are joyned, the action and effluence is also greater, therefore those needles do suffer the greatest variation which are in Countreys which most do feel that Action. And therefore hath Rome far lesse variation then London; for on the West side of Rome, are seated the great continents of France, Spaine, Germany, which take of the exuperance and in some way ballance the vigour of the Eastern parts; but unto England there is almost no earth West, but the whole extent of Europe and Asia, lyeth Eastward, and therefore at London it varieth eleven degrees, that is almost one *Rhomb*. Thus also by reason of the great continent of Brasilia, Peru, and Chili, the needle deflecteth toward the land twelve degrees; but at the straits of Magellan where the land is narrowed, and the Sea on the other side, it varyeth but five or six. And so likewise, because the Cape *de las Agullas* hath Sea on both sides near it, and other land remote and as it were æquidistant from it, therefore at that point the needle conforms unto the true Meridian, and is not distracted by the vicinity of Adjacencies. And this is the generall and great cause of variation. But if in certaine creekes and valleys the needle prove irregular, and vary beyond expectance, it may be imputed unto some vigorous part of the earth, or Magneticall eminence not far distant. And this was the invention of Dr Gilbert not many yeeres past, a Physician in London. And therefore although some assume the invention of its direction, and others have had the glory of the Carde, yet in the experiments, grounds, and causes thereof, England produced the Father Philosopher, and discovered more in it, then Columbus or Americus did ever by it.

It is also probable what is conceived of its Antiquity, that the knowledge of its polary power and direction unto the North was unknowne unto the Ancients, and though Levinus Lemnius, and Cælius Calcagninus, are of another believe, is justly placed with new inventions by Pancirollus; for their Achilles and strongest argument is an expression in Plautus, a very ancient Author, and contemporary unto Ennius. *Hic ventus jam secundus est cape modo versoriam*. Now this *versoriam* they construe to be the compasse, which notwithstanding according unto Pineda, who hath discussed the point, Turnebus, Cabeus, & divers others, is better interpreted the rope that helps to turne the ship, or as we say, doth make it tack about; the Compasse, declaring rather the ship is turned, then conferring unto its conversion. As for the long expeditions & sundry voiajes of elder times, which might confirm the antiquity of this invention, it is not improbable they were performed by

by the helpe of starres; and so might the Phænicæan navigators, and also Vlysses saile about the Mediterranean, by the flight of birds, or keeping near the shore, and so might Hanno coast about Africa, or by the helpe of oares as is expressed in the voyage of Jonah. And whereas it is contended that this verticity was not unknowne unto Salomon, in whom is presumed a universality of knowledge, it will as forcibly follow he knew the Arte of Typography, powder and gunnes, or had the Philosophers stone, yet sent unto Ophir for gold. It is not to be denied, that beside his politicall wisdom; his knowledge in Philosophie was very large, and perhaps from his workes therein, the ancient Philosophers especially Aristotle, who had the assistance of Alexanders acquirements, collected great observables, yet if he knew the use of the Compasse, his ships were surely very slow, that made a three yeeres voyage from Eziongeber in the red Sea unto Ophir, which is supposed to be Taprobana or Malaca in the Indies, not many moneths sayle, and since in the same or lesser time, Drake and Candish performed their voyage about the earth.

And as the knowledge of its verticity is not so old as some conceive, so is it more ancient then most beleve; nor had its discovery with gunnes, printing, or as many thinke, some yeeres before the discovery of America; for it was not unknowne unto Petrus Peregrinus a French man, who two hundred yeeres since hath left a Tract of the Magnet & a perpetual motion to be made thereby preserved by Gassendus. Paulus Venetus and about five hundred yeeres past, Albertus Magnus, make mention hereof, and quoteth for it a book of Aristotle *de lapide*, which book although we find in the Catalogue of Laertius, yet with Cabeus I rather judge it to be the work of some Arabick writer, not many years before the dayes of Albertus.

Lastly, It is likewise true what some have delivered of *Crocus martis*, that is, Steele corroded with vinegar, sulphur, or otherwise, and after reverberated by fire. For the Loadstone will not at all attract it, nor will it adhere, but lye therein like sand. This is to be understood of *Crocus martis* well reverberated, and into a violet colour: for common chalybs *preparatus*, or corroded and powdered Steele, the Loadstone attracts like ordinary filings of iron, and many times most of that which passeth for *Crocus martis*. So that this way may serve as a test of its preparation, after which it becommeth a very good medicine in fluxes. The like may be affirmed of Flakes of iron that are rusty and begin to tend unto earth; for their cognation then expireth, and the Loadstone will not regard them.

CHAP. III.

Concerning the Loadstone, therein of sundry common opinions, and received relations, Naturall, Historicall, Medicall, Magicall.

And first not onely a simple Heterodox, but a very hard Paradox, it will seeme, and of great absurdity unto obstinate cares, if wee say attraction is unjustly appropriated unto the Loadstone, and that perhaps we speake not properly, when wee say vulgarly the Loadstone draweth Iron, and yet herein we should not want experiment and great authority. The words of Renatus des Cartes in his principles of Philosophy are very plain. *Præterea magnes trahet ferrum, siue potius magnes & ferrum ad invicem accedunt, neque enim ulla ibi tractio est*, The same is solemnly determined by Cælius. *Nec magnes trahit proprie ferrum, nec ferrum ad se magnetem provocat, sed ambo pari conatu ad invicem confluunt*. Concordant hereto is the assertion of Doctor Ridley, Physitian unto the Emperour of Russia in his Tract of Magnetical bodies, defining Magneticall attraction to be a naturall incitation and disposition conforming unto contiguity, an union of one Magneticall body with an other, and no violent haling of the weak unto the stronger. And this is also the doctrine of Gilbertus, by whom this motion is termed coition, and that not made by any faculty attractive of one, but a Syndrome and concurrence of each; a coition alway of their vigours, and also of their bodies, if bulke or impediment prevent not, and therefore those contrary actions which flow from opposite poles or faces, are not so properly expulsion and attraction, as Sequela and Fuga a mutuall flight and following.

The same is also confirmed by experiment; for if a piece of iron be fastened in the side of a bowle or basin of water, a Loadstone swimming freely in a boat of cork, will presently make unto it. And so if a Steele or knife untouched be offered toward the needle that is touched, the needle nimbly moveth toward it, and conformeth unto union with the Steele that moveth not. Again, If a Loadstone be finely filed, the atoms or dust thereof will adhere unto iron that was never touched, even as the powder of iron doth also unto the Loadstone. And lastly, If in two skiffs of cork, a Loadstone and Steele be placed within the orbe of their activities, the one doth not move, the other standing still, but both hoise sayle and steere unto each other, so that if the Loadstone attract, the Steele hath also its attraction; for in this action the Alliciency is reciprocally, which joyntly felt, they mutually approach and run into each others armes.

And therefore surely more moderate expressions become this action, then what the Ancients have used, which some have delivered in the most violent termes of their language, so Austine calls it,

Mirabilem

Mirabilem ferri raptorem: Hippocrates, *λίθον ὃν τὸ σιδηρὸν ἀσπάζεται*, *Lapis qui ferrum rapit*. Galen disputing against Epicurus useth the terme *ἑλκεῖν*. but that is also too violent: among the Ancients Aristotle spake most warily, *λίθον ὃστις τὸ σιδηρὸν κινεῖ*, *Lapis qui ferrum movet*: and in some tollerable acception do runne the expressions of Aquinas, Scaliger and Cusanus.

Many relations are made, and great expectations are raised from the Magnes Carneus, or a Loadstone, that hath a faculty to attract not onely Iron but flesh; but this upon enquiry, and as Cabeus hath also observed, is nothing else but a weake an inanimate kinde of Loadstone, veyned here and there with a few magneticall and ferreous lines, but chiefly consisting of a bolary and clammy substance, whereby it adheres like Hæmatites, or Terra Lemnia, unto the Lipps, and this is that stone which is to be understood, when Physitions joyn it with Ætites or the Eagle stone, and promise therein a vertue against abortion.

There is sometime a mistake concerning the variation of the compasse, and therein one point is taken for another. For beyond the Æquator some men account its variation by the diversion of the Northerne point, whereas beyond that circle the Southerne point is soveraigne, and the North submits his prehemency. For in the Southerne coast either of America or Africa, the Southerne point deflects and varieth toward the land, as being disposed and spirited that way by the meridionall and proper Hemisphere. And therefore on that side of the earth the varying point is best accounted by the South. And therefore also the writings of some, and Maps of others, are to be enquired, that make the needle decline unto the East twelve degrees at Capo Frio, and fixe at the straits of Magellan, accounting hereby one point for another, and preferring the North in the liberties and province of the South.

But certainly false it is what is commonly affirmed and beleaved, that Garlick doth hinder the attraction of the Loadstone, which is notwithstanding delivered by grave and worthy Writers; by Pliny, Solinus, Ptolomy, Plutarch, Albertus, Mathiolus, Rueus, Langius, and many more. An effect as strange as that of Homers Moly, and the Garlick the gods bestowed upon Ulysses. But that it is evidently false, many experiments declare. For an Iron wire heated red hot and quenched in the juyce of Garlick, doth notwithstanding contract a verticity from the earth, and attracteth the Southerne point of the Needle. If also the tooth of a Loadstone be covered or stuck in Garlick, it will notwithstanding attract and animate any Needles excited and fixed in Garlick untill they begin to rust, doe yet retaine their attractive and polary respects.

Of the same stampe is that which is obtuaded upon us by Authors

ancient and moderne, that an Adamant or Diamond prevents or suspends the attraction of the Loadstone, as is in open termes delivered by Pliny. *Adam as disidet cum Magnete Lapide ut juxta positus ferru non patiatu abstrahi, aut si admotus magnes apprehenderit, rapiat atque auferat.* For if a Diamond be placed betweene a needle and a Loadstone, there will neverthelesse ensue a Coition even over the body of the Diamond: and an easie matter it is to touch or excite a needle through a Diamond, by placing it at the tooth of a Loadstone, and therefore the relation is false, or our estimation of these gems untrue; nor are they Diamonds which carry that name amongst us.

It is not suddenly to be received what Paracelsus in his booke *De generatione rerum*, affirmeth, that if a Loadstone be annointed with Mercuriall oyle, or onely put into Quicksilver, it omitteth its attraction for ever. For we have found that Loadstones and touched needles which have laid long time in Quicksilver have not amitted their attraction, and we also finde that red hot needles or wires extinguished in quicksilver, do yet acquire a verticity according to the Laws of position in extinction. Of greater repugnancy unto reason is that which he delivers concerning its graduation, that heated in fire & often extinguished in oyle of Mars or Iron, it acquires an ability to extract or draw forth a naile fastened in a wall; for, as we have declared before, the vigor of the Loadstone is destroyed by fire, nor will it be reimpregnated by any other Magnete then the earth.

True it is, and we shall not deny, that besides fire some other wayes there are of its destruction, as Age, Ruste, and what is least dreamt on an unnaturall or contrary situation; for being impolarily adjoyned unto a more vigorous Loadstone, it will in a short time exchange it poles, or being kept in undue position, that is, not lying on the meridian or with its poles inverted, it receaves in longer time impaire in activity exchange of faces, and is more powerfully preserved by site then by the dust of Steele. But the sudden and surest way is fire, as we have declared before: that is, fire not onely actuall but potentiall; the one surely and suddenly, the other slowly and imperfectly, the one changing, the other destroying the figure. For if distilled Vinegar or Aqua fortis be powred upon the powder of Loadstone, the subsiding powder dried, retaines some magneticall vertue, and will be attracted by the Loadstone: but if the menstruum or dissolvent be evaporated to a consistence, and afterward doth shoote into Icycles or crystalls, the Loadstone hath no power upon them, and if in a full dissolution of Steele a separation of parts be made by precipitation or exhalation, the exsiccated powder hath lost its wings and ascends not unto the Loadstone. And though a Loadstone fired do presently omit its proper vertue, and according to the position in cooling contracts a new verticity from the earth, yet if the same be laid a while in Aqua fortis or other corrosive

corrosive water, and taken out before a considerable corrosion, it still reserves its attraction, and will convert the Needle according to former polarity.

It is improbable what Pliny affirmeth concerning the object of its attraction, that it attracts not only ferreous bodies, but also *liquorem vitri*, for in the body of glasse there is no ferreous or magneticall nature which might occasion attraction. For of the glasse we use, the purest is made of the finest sand and the ashes of Chali or Glasseworte, and the courser or greene sort of the ashes of brake or other plants. Beside, vitrification is the last or utmost fusion of a body vitrifiable, and is performed by a strong and violent fire, which keeps the melted glasse red hot. Now certaine it is, and we have shewed it before, that the Loadstone will not attract even Steele it selfe that is candent, much lesse the incongenerous body of glasse being fired. For fire destroyes the Loadstone, and therefore it declines it in its owne defence, and seekes no union with it. But that the Magnet attracteth more then common Iron, we can affirme. It attracteth the Smyris or Emery in powder, It draweth the shining or glassie powder brought from the Indies, and usually implied in writing dust. There is also in Smiths cinders by some adhesion of Iron whereby they appeare as it were glazed, sometime to bee found a magneticall operation, for some thereof applyed have power to move the Needle.

It is also improbable and something singular what some conceive, and Eusebius Nierembergius a late writer and Jesuit of Spain delivers, that the body of man is magneticall, and being placed in a boate, the vessell will never rest untill the head respecteth the North; if this be true, the bodies of Christians doe lye unnaturally in their graves, and the Jews have fallen upon the natural position, who in the reverence of their Temple, do place their beds from North to South. This opinion confirmed would much advance the microcosmicall conceite, and commend the Geography of Paracelsus; who according to the cardinal points of the world divideth the body of man, and therefore working upon humane ordure, and by long preparation rendring it odiferous, he termes it *Zibeta Occidentalis*, Westerne Civet; making the face the East, but the posteriors the America or Westerne part of his microcosme. The verity or rather falsity hereof, might easily be tried in Wales, where there are portable boats, and made of leather, which would convert upon the impulsion of any verticity, and seeme to bee the same whereof in his description of Brittain, Caesar hath left some mention.

Another kinde of verticity, is that which Angelus doce *mibi* jus, alias, Michael Sundevogis, in a Tract *de sulphure*, discovereth in Vegetables, from sticks let fall or depressed under water; which equally framed and permitted unto themselves, will ascend at the upper end, or that

Anagrammatically.

that which was verticall in its vegetation; wherein notwithstanding, as yet, we have not found satisfaction; although perhaps too greedy of magnallities, we are apt to make but favourable experiments concerning welcome truths, and such desired verities.

It is also wondrous strange and untrue what Lælius Bisciola reporteth, that if unto ten ounces of Loadstone one of Iron be added, it encreaseth not unto eleven, but weighs ten ounces still: a relation inexcusable in the title of his worke, *Hora subseciva*, or leasureable howres: the examination being as ready as the relation, and the falsity tryed as easily as delivered: nor is it to be omitted what is taken up by Cæsius Bernardus a late Mineralogist, and originally confirmed by Porta, that needles touched with a Diamond contract a verticity, even as they doe with a Loadstone, which will not consist with experiment. And therefore, as Gilbertus observeth, he might be deceived, in touching such needles with Diamonds, which had a verticity before, as we have declared most needles to have, and so had he touched them with gold or silver, he might have concluded a magneticall vertue therein.

In the same forme may we place Fracastorius his attraction of silver, Philostratus his Panturbes, Apollodorus, and Beda his relation of the Loadstone that attracted onely in the night: but most inexcusable is Franciscus Rueus, a man of our own profession, who in his Discourse of gemmes mentioned in the Apocalyps, undertakes a Chapter of the Loadstone; wherein substantially and upon experiment he scarce delivereth any thing, making enumeration of its traditionall qualities, whereof he seemeth to beleve many, and some of those above, convicted by experience, he is faine to salve as impostures of the Devill. But Boetius de Boot Physitian unto Rodolphus the second, hath recompenced this defect; and in his Tract, *de lapidibus & gemmis*, speakes very materially hereof, and his discourse is consonant unto experience and reason.

As for relations Historicall, though many there be of lesse account, yet two alone deserve consideration; the first concerneth magneticall rockes, and attractive mountaines in severall parts of the earth. The other the tombe of Mahomet and bodies suspended in the aire. Of rocks magneticall there are likewise two relations; for some are delivered to be in the Indies, and some in the extremity of the North, and about the very pole; the Northerne account is commonly ascribed unto Olaus Magnus Archbishop of Upsale, who out of his predecessour Joannes Saxo, and others, compiled a history of some Northerne Nations; but this assertion we have not discovered in that worke of his which passeth among us, and should beleve his Geographic herein no more then that in the first line of his booke, when he affirmeth that Birmia (which is not seventy degrees in latitude) hath the pole for its Zenith, and Equinoctiall for the Horizon.

Now

Now upon this foundation how uncertaine soever men have erected mighty illations, ascribing thereto the cause of the needles direction, and conceiving the effluxions from these mountaines and rockes invite the lilly toward the north; which conceit though countenanced by learned men, is not made out either by experience or reason; for no man hath yet attained or given a sensible account of the pole by some degrees; it is also observed the needle doth very much vary as it approacheth the pole, whereas were there such direction from the rocks, upon a nearer approachment it would more directly respect them. Beside were there such magneticall rocks under the pole, yet being so far removed they would produce no such effect; for they that saile by the Isle of Flua now called Elba in the Tuscan sea which abounds in veynes of Loadstone, observe no variation or inclination of the needle, much lesse may they expect a direction from rocks at the end of the earth. And lastly, men that ascribe thus much unto rocks of the north must presume or discover the like magneticalls at the south: For in the southern seas and far beyond the Æquator, variations are large, and declinations as constant as in the northerne Ocean.

The other relation of Loadstone, mines, and rocks, in the shore of India is delivered of old by Plinie; wherein saith he, they are so placed both in abundance and vigor, that it proves an adventure of hazard to passe those coasts in a ship with Iron nailes. Serapion the Moore an Author of good esteeme and reasonable antiquity, confirmeth the same, whose expresseion in the word *magnes* in this. The mine of this stone is in the Sea coast of India, whereto when Ships approach, there is no Iron in them which flies not like a bird unto these mountaines, and therefore their Ships are fastened not with Iron but wood, for otherwise they would bee torne to peeces. But this assertion how positive soever is contradicted by all Navigators that passe that way, which are now many and of our owne Nation, and might surely have been controuled by Nearchus the Admirall of Alexander, who not knowing the compass, was faine to coast that shore.

For the relation concerning Mahomet, it is generally beleevd his tombe at Medina Talnabi, in Arabia, without any visible supporters hangeth in the ayre betweene two Loadstones artificially contrived both above and below, which conceit is very fabulous, and evidently false from the testimony of ocular Testators, who affirme his tombe is made of stone and lyeth upon the ground; as besides others, the learned Vossius observeth from Gabriel Sionita, & Joannes Hefronita, two Maronites in their relations hereof. Of such intentions and attempt by Mahometans we read in some relators, and that might be the occasion of the fable, which by tradition of time and distance of place enlarged into the story of being accomplished: and this hath been promoted by attempts of the like nature; for we read in Plinie that one Dinocrates began

gan to Arche the Temple of Arsinoe in Alexandria with Loadstone, that so her statue might be suspended in the ayre to the amazement of the beholders; and to lead on our credulity, herein confirmation may be drawne from History and Writers of good authority: so is it reported by Ruffinus, that in the Temple of Serapis there was an iron chariot suspended by Loadstones in the ayre, which stones removed, the chariot fell and dashed into peeces. The like doth Beda report of Bellerophons horse which framed of iron, and placed betweene two Loadstones with winges expanded, hung pendulous in the ayre.

The verity of these stories we shall not further dispute their possibility, we may in some way determine, if we conceive, what no man will deny, that bodies suspended in the aire have this suspension from one or many Loadstones placed both above and below it, or else by one or many placed only above it. Likewise the body to be suspended in respect of the Loadstone above, is placed first at a pendulous distance in the medium, or else attracted unto that site by the vigor of the Loadstone; and so we first affirm that possible it is a body may be suspended between two Loadstones; that is, it being so equally attracted unto both that it determineth it selfe unto neither: but surely this position will be of no duration; for if the ayre be agitated or the body waved either way, it omits the equilibration and disposeth it selfe unto the nearest attractor. Again, it is not impossible (though hardly feisible) by a single Loadstone to suspend an iron in the ayre, the iron being artificially placed, and at a distance guided toward the stone, untill it find the newtrall point wherein its gravity just equals the magneticall quality, the one exactly extolling as much as the other depreieth; and thus must be interpreted Fracastorius. And lastly, impossible it is that if an iron rest upon the ground, and a Loadstone be placed over it, it should ever so arise as to hang in the way or medium; for that vigor which at a distance is able to overcome the resistance of its gravity and to lift it up from the earth, will as it approacheth nearer be still more able to attract it, and it will never remaine in the middle that could not abide in the extreames; and thus is to be understood Gilbertus. Now the way of *Baptista Porta* that by a thred fasteneth a needle to a table, and then so guides and orders the same, that by the attraction of the Loadstone it abideth in the aire, infringeth not this reason; for this is a violent retention, and if the thred be loosened, the needle ascends and adheres unto the Attractor.

The third consideration concerneth relations Medicall, wherein what ever effects are delivered, they are derived from its minerall and ferreous condition, or else magneticall operation. Unto the ferreous and minerall quality pertaineth what Dioscorides an ancient Writer and Souldier under Anthony and Cleopatra, affirmeth, that halfe a dram of Loadstone given with honey and water, proves a purgative medicine,

cine, and evacuateth grosse humors; but this is a quality of great incertainty, for omitting the vehicle of water and honey, which is of a laxative power it selfe, the powder of some Loadstones in this dose doth rather constipate and binde, then purge and loosen the belly. And if sometimes it cause any laxity it is probably in the same way with iron and Steele unprepared, which will disturbe some bodies, and worke by purge and vomit. And therefore, what is delivered in a booke ascribed unto Galen that it is a good medicine in dropfies, and evacuates the waters of persons so affected: It may I confesse by ficcidity and astringion afford a confirmation unto parts relaxed, and such as be hydropically disposed, and by these qualities it may be usefull in Hernias or Ruptures, and for these it is commended by *Ætius*, *Ægineta* and *Oribasius*, who only affirme that it contains the vertue of *Hæmatites*, and being burnt was sometimes vended for it. To this minerall condition belongeth what is delivered by some, that wounds which are made with weapons excited by the Loadstone, contract a malignity, and become of more difficult cure, which neverthelesse is not to be found in the incision of Chyrurgions with knives and lancets touched, which leave no such effect behind them. Hitherto must we also referre that affirmative which sayes the Loadstone is poyson, and therefore in the lists of poysons we finde it in many Authors; but this our experience cannot confirme, and the practice of the King of Zeilan clearly contradiceth, who as *Garcias ab Horto*, Physitian unto the Spanish Viceroy delivereth, hath all his meat served up in dishes of Loadstone, and conceives thereby he preserveth the vigor of youth.

But surely from a magneticall activity must be made out what is let fall by *Ætius*, that a Loadstone held in the hand of one that is podagricall doth either cure or give great ease in the gout. Or what *Marcellus Empericus* affirmeth, that as an amulet it also cureth the head-ach, which are but additions unto its proper nature, and hopefull enlargements of its allowed attraction; for perceiving its secret power to draw unto it selfe magneticall bodies, men have invented a new attraction to draw out the dolor and paine of any part. And from such grounds it surely became a philter, and was conceived a medicine of some venereall attraction, and therefore upon this stone they graved the Image of *Venus* according unto that of *Claudian*, *Venerem magnetica gemma figurat*. Hither must we also referre what is delivered concerning its power to draw out of the body bullets and heads of arrows, and for the like intention is mixed up in plaisters: which course although as vaine and inefficall it be rejected by many good Authors, yet is it not me thinks so readily to be denyed, nor the practice of many ages and Physitians which have thus compounded plaisters, thus suddenly to be condemned, as may be observed in the *Emplastrum divinum Nicolai*, the *Emplastrum nigrum* of Augspurge, the *Opodeldoch* and *Attrahivum*.

um of Paracellus, with severall more in the Dispensatory of Wecker, and practise of Sennertus; the cure also of Heurnias, or Ruptures in Pareus, and the method also of curation lately delivered by Daniel Beckerus, and approved by the Professors of Leyden in the Tract *de Cultrivoro Prussico*, 1636. that is, of a young man of Spruceland that casually swallowed downe a knife about ten inches long, which was cut out of his stomach and the wound healed up. In which cure to attract the knife to a convenient situation, there was applyed a plaister made up with the powder of Loadstone. Now this kinde of practice Libavius, Gilbertus, and lately Swickardus in his *Ars Magnetica*, condemne, as vaine, and altogether unusefull; and their reason is, because a Loadstone in powder hath no attractive power; for in that forme it omits his polary respects, and looseth those parts which are the rule of its attraction: wherein to speake compendiously, if experiment hath not deceived us, we first affirme, that a Loadstone in powder omits not all attraction. For if the powder of a rich veine be in a reasonable quantity presented toward the Needle freely placed, it will not appeare to be void of all activity, but will be able to stir it; nor hath it only a power to move the Needle in powder and by it selfe, but this will it also doe, if incorporated and mixed with plaisters, as we have made triall in the *Emplastrum de Minio*, with halfe an ounce of the masse, mixing a dram of Loadstone, for applying the magdaleon or roale unto the Needle it would both stir and attract it; not equally in all parts, but more vigorously in some, according unto the mine of the stone more plentifully dispersed in the masse. And lastly, in the Loadstone powdered, the polary respects are not wholly destroyed; for those diminutive particles are not atomically or meerly indivisible, but consist of dimensions sufficient for their conditions, though in obscure effects. Thus if unto the powder of Loadstone or Iron we admove the North pole of the Loadstone, the powders or small divisions will erect and conforme themselves thereto: but if the South pole approach, they will subside, and inverting their bodies respect the Loadstone with the other extreame. And this will happen not only in a body of powder together, but in any particle or dust divided from it.

Now though we affirme not these plaisters wholly ineffectuall, yet shall we not omit two cautions in their use, that therein the stone be not too subtilly powdered; for it will better manifest its attraction in a more sensible dimension; that where is desired a speedy effect, it may be considered whether it were not better to relinquish the powdered plaisters, and to apply an entyre Loadstone unto the part: And though the other be not wholly ineffectuall, whether this way be not more powerfull, and so might have been in the cure of the young man delivered by Beckerus.

The last consideration, concerneth Magicall relations, in which account

count we comprehend effects derived and fathered upon hidden qualities, specificall forms, Antipathies and Sympathies, whereof from received grounds of Art, no reasons are derived. Herein relations are strange and numerous, men being apt in all ages to multiply wonders, and Philosophers dealing with admirable bodies as Historians have done with excellent men, upon the strength of their great achievements, ascribing acts unto them not only false, but impossible, and exceeding truth as much in their relations, as they have others in their actions. Hereof we shall briefly mention some delivered by Authors of good esteem, whereby we may discover the fabulous inventions of some, the credulous supinity of others, and the great disservice unto truth by both; multiplying obscurities in nature, and authorising hidden qualities that are false, whereas wise men are ashamed there are so many true.

And first, Dioscorides puts upon it a shrewd quality, and such as men are apt enough to experiment, and therewith discovers the incontinencie of a wife by placing the Loadstone under her pillow; for then shee will not be able to remaine in bed with her husband. The same he also makes a helpe unto theevery; for theeves saith he, having a designe upon a house, doe make a fire at the foure corners thereof, and cast therein the fragments of Loadstone, whence ariseth a fume that so disturbeth the inhabitants, that they forsake the house and leave it to the spoyl of the robbers. This relation how ridiculous soever, hath Albertus taken up above a thousand years after, & Marbodeus the Frenchman hath continued it the same in Latine verse, which with the notes of Pictorius is currant unto our dayes. As strange must be the Lithomancy or divination from this stone, whereby as Tzetzes in his *Chyliads* delivers, Helenus the Prophet foretold the destruction of Troy; and the Magick thereof, not safely to be beleaved, what was delivered by Orpheus, that sprinkled with water it will upon a question emit a voyce not much unlike an Infant. But surely the Loadstone of Laurentius Guascus the Physitian is never to be matched; wherewith as Cardane delivereth, whatsoever needles or bodies were touched, the wounds and punctures made thereby, were never felt at all. And yet as strange a vertue is that which is delivered by some that a Loadstone preserved in the salt of a Remora, acquires a power to attract gold out of the deepest Wells. Certainly a studied absurdity, not casually cast out, but plotted for a perpetuity: for the strangeness of the effect ever to be admired, and the difficulty of the tryall never to be convicted.

These conceits are of that monstrosity that they refute themselves in their recitements: there is another of better notice, and whispered thorow the world with some attention; credulous and vulgar auditors readily beleaving it, and more judicious and distinctive heads, not altogether

gether rejecting it. The conceit is excellent, and if the effect would follow somewhat divine, whereby we might communicate like spirits, and conferre on earth with Menippus in the Moone, which is pretended from the sympathy of two needles touched with the same Loadstone, and placed in the center of two Abecedary circles, or rings with letters described round about them; one friend keeping one, & another the other, and agreeing upon an hour wherein they wil communicate. For then saith tradition, at what distance of place soever, when one needle shall be removed unto any letter; the other by a wonderfull Sympathy will move unto the same. But herein I confesse my experience can finde no truth; for having expresly framed two circles of wood, and according to the number of the Latine letters divided each into twenty three parts, placing therein two stiles or needles composed of the same Steele, touched with the same Loadstone, and at the same point: yet of these two, whensoever I removed the one, although but at the distance of halfe a spanne, the other would stand like Hercules pillars, and if the earth stand still, have surely no motion at all. Now as it is not possible that any body should have no boundaryes, or as we terme it Sphere of its activity, so is it improbable it should effect that at distance, which nearer hand it cannot at all performe.

Againe, the conceit is ill contrived, and one effect inferred, whereas indeed the contrary will ensue. For if the removing of one of the needles from A to B should have any action or influence on the other, it would not intice it from A to B but repell it from A to Z: for needles excited by the same point of the stone, doe not attract, but avoyd each other, even as these also do, when their invigorated extrems approach unto one another.

Lastly, were this conceit assuredly true, yet were it not a conclusion at every distance to be tryed by every head: yet being no ordinary or Almanack businesse, but a probleme Mathematicall, to finde out the difference of houres in different places; nor doe the wisest exactly satisfie themselves in all. For the houres of severall places anticipate each other, according unto their Longitudes, which are not exactly discovered of every place, and therefore the triall hereof at a considerable intervall, is best performed at the distance of the Antæci; that is, such habitations as have the same Meridian and equall parallel, on different sides of the Equator; or more plainly have the same Longitude, and the same Latitude unto the South, which wee have in the North. For unto such Situations it is noone and midnight at the very same time.

And therefore the Sympathie of these needles is much of the same mould, with that intelligence which is pretended from the flesh of one body transmuted by incision into another. For if the Arte of *Taliacotius de Curtorum Chyrurgia per incisionem*, a permutation of flesh, or transmutation

transmutation be made from one mans body into another, as if a piece of flesh be exchanged from the bicipital muscle of either parties arme, and about them both, an Alphabet circumscribed; upon a time appointed as some conceptions affirme, they may communicate at what distance soever. For if the one shall prick himself in A, the other at the same time will have a sense thereof in the same part; and upon inspection of his arme, perceive what letters the other points out in his owne; which is a way of intelligence very strange, and would requite the Arte of Pythagoras, who could read a reverse in the Moone.

Now this Magneticall conceit how strange soever, might have some originall in reason; for men observing no solid body, whatsoever did interrupt its action, might be induced to beleve no distance would terminate the same, & most conceiving it pointed unto the pole of heaven, might also opinion that nothing between could restrain it. Whosoever was the Author, the Æolus that blew it about, was Famianus Strada, that elegant Jesuit in his Rhetoricall prolutions, who chose out of this subject to expresse the stile of Lucretius. But neither *Baptista Porta, de furtivis literarum notis*; Trithemius in his Steganography, Silenus in his Cryptography, or Nuncius *inanimatus* written of late yeers by Dr Godwin Bishop of Herford, make any consideration hereof: although they deliver many wayes to communicate our thoughts at distance. And this we will not deny may in some manner be effected by the Loadstone; that is, from one room into an other, by placing a table in the wall common unto both, and writing thereon the same letters one against another: for upon the approach of a vigorous Loadstone unto a letter on this side, the needle will move unto the same on the other: But this is a very different way from ours at present; and hereof there are many wayes delivered, and more may be discovered which contradict not the rule of its operations.

As for *unguentum Armarium*, called also *Magneticum*, it belongs not to this discourse, it neither having the Loadstone for its ingredient, nor any one of its actions: but supposeth other principles, as common and universall spirits, which convey the action of the remedy unto the part, and conjoyne the vertue of bodies far disjoyned. But perhaps the cures it doth, are not worth so mighty principles; it commonly healing but simple wounds, and such as mundified and kept cleane, doe need no other hand then that of Nature, and the Balsam of the proper part. Unto which effect, there being fields of Medicines sufficient, it may bee a hazardous curiositie to relie on this; and because men say the effect doth generally follow, it might be worth the experiment to try, if the same will not ensue upon the same method of cure, by ordinary Balsams, or common vulnerary plasters.

Other Discourses there might be made of the Loadstone, as Morall, Mysticall, Theologicall; and some have handlomly done them, as Ambrose,

brose, Austine, Gulielmus Parisiensis, and many more, but these fall under no rule, and are as boundles as mens inventions; and though honest minds do glorifie God hereby, yet do they most powerfully magnifie him, and are to be looked on with another eye, who demonstratively set forth its Magnalities, who not from postulated or precarious inferences, entreate a courteous assent, but from experiments and undeniable effects, enforce the wonder of its Maker.

CHAP. IV.

Of bodies Electricall.

HAVING thus spoake of the Loadstone and bodies magneticall, I shall in the next place deliver somewhat of Electricall, and such as may seeme to have attraction like the other; and hereof wee shall also deliver what particularly spoken or not generally knowne is manifestly or probable true, what generally beleev'd is also false or dubious. Now by Electricall bodies, I understand not such as are Metalllicall mentioned by Pliny, and the Ancients; for their Electrum was a mixture made of gold, with the addition of the fifth part of silver, a substance now as unknowne, as true Aurichalcum, or Corinthian brasse, and set downe among things lost by Pancirollus. Nor by Electric bodies do I conceive such onely as take up shavings, strawes, and light bodies, in which number the Ancients onely placed Jet and Amber; but such as conveniently placed unto their objects attract all bodies palpable whatsoever. I say, conveniently placed, that is, in regard of the object, that it be not too ponderous, or any way affixed in regard of the Agent, that it be not foule or sullied, but wiped, rubbed, and excited in regard of both, that they be conveniently distant, and no impediment interposed. I say all bodies palpable, thereby excluding fire, which indeed it will not attract, nor yet draw through it, for fire consumes its effluxions by which it should attract.

Now although in this ranke but two were commonly mentioned by the Ancients, Gilbertus discovereth many more, as Diamonds, Saphyres, Carbuncles, Iris, Opalls, Amethystes, Berill, Chrystall, Bristol stones, Sulphur, Mastick, hard Wax, hard Rosin, Arsenic, Sal gemme, roch Alume, common Glasse, Stibium, or glassee of Antimony; unto these Cabeus addeth white Wax, Gum Elemi, Gum Guaici, Pix Hispanica, and Gypsum. And unto these wee adde gum Anime, Benjamin, Talcum, Chyna dishes, Sandaraca, Turpentine, Styrax Liquida, and Caranna dryed into a hard consistence. And the same attraction wee finde not onely in simple bodies, but such as are much compounded, as the Oxicroceum plaster, and obscurely that *ad Herniam*, and *Gratia Dei*, all which smooth and rightly prepared, will discover

ver a sufficient power to stirre the needle settled freely upon a wel pointed pinne, and so as the Electric may be applyed unto it without all disadvantage.

But the attraction of these Electricks we observe to be very different. Resinous or unctuous bodies, and such as will flame, attract most vigorously and most thereof without friction, as Anime, Benjamin and most powerfully good hard wax, which will convert the needle almost as actively as the loadstone; and wee beleve that all or most of this substance if reduced to hardnesse translucency or cleerenesse, would have some attractive quality; but juyces concrete, or gums easily dissolving in water, draw not at all, as Aloe, Opium, Sanguis Draconis, Lacca, Galbanum, Sagapenum. Many stones also both precious and vulgar, although terse and smooth have not this power attractive; as Emeralds, Pearle, Jaspis, Corneleans, Agathe, Heliotropes, Marble, Alabaster, Touchstone, Flint and Bezoar. Glassee attracts but weakely though cleere, some slick stones and thick glasses indifferently: Arsenic but weakely, so likewise glassee of Antimony, but Crocus Metallorum not at all. Saltes generally but weakely, as Sal Gemma, Alum and also Talke; nor very discoverably by any friction: but if gently warmed at the fire, and wiped with a dry cloth, they will better discover their Electricities.

No mettall attracts, nor any concretian Animall wee know, although polite and smooth; as wee have made triall in Eikes hooves, Hawkes talons, the sword of a Sword fish, Tortoyse shels, Sea-horse and Elephants teeth, in bones, in Harts horne, and what is usually conceived Unicornes horne, no wood though never so hard and polished, although out of some Electricks proceed, as Ebony, Box, Lignum vitæ, Cedar, &c. And although Jet and Amber be reckoned among Bitumens, yet neither doe we finde Asphaltus, that is, Bitumen of Judea, nor Seacole, nor Camphire, nor Mummia to attract, although we have tried in large and polished pieces. Now this attraction have wee tried in strawes and paleous bodies, in needles of Iron equilibrated, powders of wood and Iron, in gold and silver foliate, and not onely in solid but fluent and liquid bodies, as oyles made both by expression and distillation, in water, in spirits of wine, vitrioll and Aqua fortis.

But how this attraction is made is not so easily determined; that tis performed by effluviū is plaine and granted by most; for Electricks will not commonly attract, except they grow hot or be perspicable. For if they be foule and obnubilated, it hinders their effluxion; nor if they be covered though but with Linnen or Sarsenet, or if a body be interposed, for that intercepts the effluviū. If also a powerfull and broad Electric of wax or Anime be held over fine powder, the Atomes or small particles will ascend most numerously unto it; and if the Electric be held unto the light, it may be observed that many thereof

thereof will flye, and be as it were discharged from the Electrick to the distance sometime of two or three inches, which motion is performed by the breath of the effluvium issuing with agility; for as the Electrick cooleth, the projection of the Atomes ceaseth.

The manner hereof Cabeus wittily attempteth, affirming that this effluvium attenuateth and impelleth the neighbour ayre, which returning home in a gyration, carrieth with it the obvious bodies unto the Electrick, and this he labours to confirme by experiments; for if the strawes be raised by a vigorous electrick, they doe appeare to wave and turne in their ascents; if likewise the Electrick be broad and the strawes light and chaffy, and held at a reasonable distance, they will not arise unto the middle, but rather adhere toward the verge or borders thereof. And lastly, if many strawes be laid together and a nimble Electrick approach, they will not all arise unto it, but some will commonly start aside and be whirled a reasonable distance from it. Now that the ayre impelled returnes unto its place in a gyration or whirling, is evident from the Atomes or moates in the Sun. For when the Sunne so enters a hole or window, that by its illumination the Atomes or moates become perceptible, if then by our breath the ayre bee gently impelled, it may be perceived that they will circularly returne, and in a gyration unto their places againe.

Another way of their attraction is also delivered, that it is made by a tenuous emanation or continued effluvium, which after some distance retracteth into it selfe, as is observable in drops of syrups, oyle and feminall viscosities, which spun at length retire into their former dimensions. Now these effluvia advancing from the body of the Electrick, in their returne doe carry back the bodies which they have laid hold within the spheare or circle of their continuities, and these they do not onely attract but with their viscous armes, hold fast a good while after. And if any shall wonder why these effluvia issuing forth impell and protrude not the straw before they can bring it back, it is because Effluvium passing out in a smaller thred and more enlengthened filament, it stirreth not the bodies interposed but returning unto its originall it falls into a closer substance, and carrieth them back unto it selfe. And this way of attraction is best received, embraced by Sir Kenelme Digby in his excellent Treaty of bodies, allowed by *Des Cartes* in his principles of Philosophy, as farre as concerneth fat and refinous bodies, and with exception of glasse, whose attraction he also deriveth from the recess of its effluxion. And this in some manner the words of Gilbertus will beare. *Effluvia illa tenuiora concipiunt & amplectuntur corpora, quibus uniuntur. & Electris tanquam extensis brachiis & ad fontem, propinquitate invalescentibus effluviis, deducuntur.* And if the ground were true that the earth were an Electrick body, and the ayre but the effluvium thereof, wee might perhaps beleieve that from this attraction

attraction and by this effluxion that bodies tended to the earth, and could not remaine about it.

Our other discourse of Electricks concerneth a generall opinion touching Jet and Amber, that they attract all light bodies, except O-cymum or Basil, and such as be dipped in oyle or oyled, and this is urged as high as Theophrastus: but Scaliger acquitteth him; And had this bin his assertion, Pliny would probably have taken it up, who herein stands out, and delivereth no more but what is vulgarly known. But Plutarch speakes positively in his Symposiacks, that Amber attracteth all bodies, excepting Basil and oyled substances. With Plutarch consent many Authors both ancient and moderne, but the most inexcusable are Lemnius, and Rueus, whereof the one delivering the nature of minerals, mentioned in Scripture the infallible fountaine of truth, confirmeth their vertues with erroneous traditions; the other undertaking the occult and hidden miracles of Nature, accepteth this for one, and endeavoureth to alledge a reason of that which is more then occult, that is not existent.

Now herein, omitting the Authority of others, as the doctrine of experiment hath informed us we first affirme, that Amber attracts not Basil, is wholly repugnant unto truth; for if the leaves thereof or dried stalkes be stripped into small strawes, they arise unto Amber, Wax, and other Electrics no otherwise then those of Wheate or Rye; nor is there any peculiar fatnesse or singular viscosity in that plant that might cause adhesion and so prevent its ascension. But that Jet and Amber attract not strawes oyled, is in part true and false, for if the strawes be much wet or drenched in oyle, true it is that Amber draweth them not, for then the oyle makes the straw to adhere unto the part whereon they are placed, so that they cannot rise unto the Attractor; and this is true not onely if they be soaked in oyle, but spirits of wine or water. But if we speake of strawes or festucous divisions lightly drawn over with oyle, and so that it causeth no adhesion, or if we conceive an antipathy betweene oyle and Amber, the doctrine is not true; for Amber will attract strawes thus oyled, it will attract or convert the Needls of Dials made either of Brasse or Iron, although they be much oyled; for in these Needls consisting free upon their center there can be no adhesion; it will likewise attract oyle it selfe, and if it approacheth unto a drop thereof, it becommeth conicall and ariseth up unto it, for oyle taketh not away his attraction, although it be rubbed over it. For if you touch a piece of wax already excited with common oyle, it will notwithstanding attract, though not so vigorously as before. But if you moysten the same with any chymicall oyle, water or spirits of wine, or onely breath upon it, it quite omits its Attraction, for either its effluences cannot get through or will not mingle with those substances.

It is likewise probable the Ancients were generally mistaken concerning its substance and generation, they conceiving it a vegetable concretion made of the gums of trees, especially, Pine and Poplar falling into the water, and after indurated or hardened, whereunto accordeth the fable of Phaetons sisters: but surely the concretion is minerrall, according as is delivered by Boetius; for either it is found in mountaines and mediterraneous parts, and so it is a fat and unctuous sublimation in the earth concreted and fixed by salt and nitrous spirits wherewith it meeteth; or else, which is most usuall, it is collected upon the sea shore, and so it is a fat and bituminous Juice coagulated by the saltneffe of the sea. Now that salt spirits have a power to congele and coagulate unctuous bodies, is evident in chymicall operations, in the distillations of Arsenick, sublimate and Antimony, in the mixture of oyle of Juniper, with the salt and acide spirit of Sulphur, for thereupon ensueth a concretion unto the consistence of Birdlime; as also in spirits of salt, or Aqua fortis powred upon oyle of Olive, or more plainly in the manufacture of Soape. And many bodies will coagulate upon commixture whose separated natures promise no concretion. Thus upon a solution of Tinne by Aqua fortis, there will ensue a coagulation, like that of whites of egges. Thus the volatile salt of urine will coagulate Aqua vitæ, or spirits of wine; and thus perhaps (as Helmont excellently declareth) the stones or calculous concretions in Kidney or bladder may be produced: the spirits or volatile salt of urine conjoyning with the Aqua vitæ potentially lying therein; as he illustrateth from the distillation of fermented urine. From whence ariseth an Aqua vitæ or spirit, which the volatile salt of the same urine will congele, and finding an earthy concurrence strike into a lapideous substance.

Lastly, we will not omit what Bellabonus upon his own experiment writ from Dantzieh unto Mellichius, as hee hath left recorded in his Chapter, *De succino*, that the bodies of Flies, Pismires, and the like, which are said oft times to be included in Amber, are not reall but apparent and representative, as he discovered in severall pieces broke for that purpose; if so, the two famous Epigrams hereof in Martiall are but posticall, the Pismire of Brassavolus Imaginary, and Cardans Mousoleum for a flye, a meere phancy. But hereunto we know not how to assent in the Generall, as having met with some whose Reals made good their representations.

CHAP.

CHAP. V.

Compendiously of sundry other common Tenents, concerning Minerall and Terreous bodies, which examined, prove either false or dubious.

1. **A**ND first we hear it in every mans mouth, and in many good Authors we read it, That a Diamond, which is the hardest of stones, and not yielding unto Steele, Emery, or any thing, but its own powder, is yet made soft, or broke by the bloud of a Goat; Thus much is affirmed by Pliny, Solinus, Albertus, Cyprian, Austin, Isidore, and many Christian Writers, alluding herein unto the heart of man, and the precious bloud of our Saviour, who was typified indeed by the Goat that was slaine, and the scape Goat in the wilderneffe; and at the effusion of whose bloud, not onely the hard hearts of his enemies relented, but the stony rocks and vaile of the Temple was shattered. But this I perceive is easier affirmed then proved. For Lapidaries, and such as professe the art of cutting this stone, doe generally deny it, and they that seem to countenance it, have in their deliveries so qualified it, that little from thence of moment can be inferred for it. For first, the holy Fathers, without a further enquiry did take it for granted, and rested upon the authority of the first deliverers. As for Albertus, he promiseth this effect but conditionally, that is not except the Goat drinke wine, and be fed with *Siler montanum, petroselinum*, and such hearbes as are conceived of power to breake the stone in the bladder. But the words of Pliny from whom most likely the rest at first derived it, if strictly considered, doe rather overthrow, then any way advantage this effect. His words are these: *Hircino rumpitur sanguine, nec aliter quam recenti, calidoque macerata, & sic quoque multis ictibus, tunc etiam praterquam eximias incudes malleosque ferreos frangens.* That is, it is broken with Goats blood, but not except it bee fresh and warme, and that not without many blows, and then also it will breake the best anvills and hammers of iron. And answerable hereto, is the assertion of Isidore and Solinus. By which account, a Diamond steeped in Goats blood, rather encreaseth in hardnesse, then acquireth any softnesse by the infusion; for the best we have are comminible without it, and are so far from breaking hammers, that they submit unto pistillation, and resist not an ordinary pestle.

Upon this conceit arose, perhaps the discovery of another; that is, that the bloud of a Goat, was soveraigne for the stone, as it stands commended by many good Writers, and brings up the composition in the Lithontripcticke powder of Nicolaus; or rather because it was found an excellent medicine for the stone, and its ability commended by some to dissolve the hardest thereof; it might be conceived by amplifying apprehensions, to be able to break a Diamond, and so it came to be

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ordered

ordered that the Goat should be fed with saxifragous herbes, and such as are conceived of power to breake the stone. However it were as the effect is false in the one, so is it surely very doubtfull in the other. For although inwardly received it may be very diuretick, and expulse the stone in the kidneys; yet how it should dissolve or breake that in the bladder, will require a further dispute, and perhaps would be more reasonably tryed by a warme injection thereof, then as it is commonly used. Wherein notwithstanding, we should rather relie upon the urine in a Castlings bladder, a resolution of Crabs eyes, or the second distillation of urine, as Helmont hath commended; or rather, if any such might be found a Chylifactory menstruum or digestive preparation drawne from species or individualls, whose stomacks peculiarly dissolve lapideous bodies.

2. *That glasse is poyson*, according unto common conceit, I know not how to grant not only from the innocency of its ingredients, that is fine sand, and the ashes of glasse-wort or fearn, which in themselves are harmelesse and usefull: or because I finde it by many commended for the stone, but also from experience, as having given unto dogs above a dram thereof, subtilly powdered in butter or paste, without any visible disturbance. And the tryall thereof we the rather did make in that animall, because Grevinus in his Treaty of poysons, affirmeth that dogges are inevitably destroyed thereby.

The conceit is surely grounded upon the visible mischief of glasse grossely or coarsely powdered; for that indeed is mortally noxious, and effectually used by some to destroy myce and rats; for that by reason of its acutenesse and angularity, commonly excoriates the parts through which it passeth, and sollicit them unto a continuall expulsion. Whereupon there ensues fearfull symptomes, not much unlike those which attend the action of poyson. From whence notwithstanding, we cannot with propriety impose upon it that name, either by occult or elementary quality, which he that concedeth will much enlarge the catalogue or listes of poysons; for many things, neither deleterious by substance or quality, are yet destructive by figure, or some occasionall activity. So are leeches destructive, and by some accounted poyson; not properly, that is by temperamentall contrariety, occult forme, or so much as elementall repugnancy; but because being inwardly taken they fasten upon the veines, and occasion an effusion of blood, which cannot be easily stanchd. So a sponge is mischievous, not in it selfe, for in its powder it is harmlesse, but because being received into the stomach it swelleth, and occasioning a continuall distension, induceth at last a strangulation. So pins, needles, eares of Rye or Barley, may be poyson. So Daniel destroyed the Dragon by a composition of three things, whereof neither was poyson alone, nor properly altogether, that is pitch, fat and haire, according as is expressed in

in the History. Then Daniel tooke pitch, and fat, and haire, and did seeth them together and made lumps thereof, these he put in the Dragons mouth, and so he burst asunder; that is the fat and pitch being cleaving bodies, and the haire continually extimulating the parts, by the action of the one, nature was provoked to expell, but by the tenacity of the other forced to retaine: so that there being left no passage in or out, the Dragon brake in peeces. It must therefore bee taken of grossely powdered glasse what is delivered by Grevinus, and from the same must that mortall dysentery proceed which is related by Sanctorius; and in the same sense shall we onely allow a Diamond to be poyson, and whereby as some relate Paracelsus himselfe was poysoned. And so also even the precious fragments and cordiall gems which are of frequent use in Physicke, and in themselves confessed of usefull faculties, received in grosse and angular powders, may so offend the bowells, as to procure desperate languors, or cause most dangerous fluxes.

3. That Gold inwardly taken, and that either in substance, infusion, decoction or extinction, is a speciall cordiall of great efficacy, in sundry medicall uses, although a practice much used is also much questioned, and by no man determined beyond dispute. There are hereof I perceive two extream opinions; some excessively magnifying it, and probably beyond its deserts; others extreamly vilifying it, and perhaps below its demerits. Some affirming it is a powerfull medicine in many diseases, others averring that so used it is effectually in none; and in this number are very eminent Physitians, Erasius, Duretus, Rondeletius, Bravavolus, and many other, who beside the strigments and sudorous adhesions from mens hands, acknowledge that nothing proceedeth from gold in the usuall decoction thereof. Now the capitall reason that led men unto this opinion was their observation of the inseparable nature of gold; it being excluded in the same quantity as it was received without alteration of parts, or diminution of its gravity.

Now herein to deliver somewhat which in a middle way may be entertained, we first affirm & few I beleeve will deny it, that the substance of gold is indeed invincible by the powerfulest action of naturall heat, and that not only alimentally in a substantiall mutation, but also medicamentally in any corporeall conversion; as is very evident, not only in the swallowing of golden bullets but in the lesser and foliate divisions thereof, passing the stomach and guts even as it doth the throat, that is without abatement of weight or consistence; so that it entereth not the veynes with those electuaries, wherein it is mixed, but taketh leave of the permeant parts, at the mouthes of the miseraicks, and accompanieth the inconvertible portion unto the siege; nor is its substantiall conversion expectible in any composition or aliment wherein it is taken. And therefore that was truly a starving absurdity, which befell the

the wishes of Midas. And little credit there is to be given to the golden Hen, related by Wendlerus. And so likewise in the extinction of gold, we must not conceive it parteth with any of its salt or dissoluble principle thereby, as we may affirme of Iron, for the parts thereof are fixed beyond division; nor will they separte upon the strongest test of fire. And this we affirme of pure gold, for that which is currant and passeth in stampe amongst us, by reason of its allay, which is a proportion of copper mixed therewith, it is actually dequantitated by fire, and possibly by frequent extinction.

Secondly, although the substance of gold be not sensibly immuted or its gravity at all decreased, yet that from thence some vertue may proceed either in substantiall reception or infusion, we cannot safely deny. For possible it is that bodies may emit a vertue and operation without abatement of weight, as is most evident in the Loadstone, whose effluencies are both continuall and communicable without a minoration of gravity. And the like is observable in bodies electricall, whose emissions are lesse subtile. So will a Diamond or Saphire emit an effluvium sufficient to move the needle or a straw without diminution of weight. Nor will polished amber although it send forth a grosse and corporall exhalament be found a long time defective upon the exactest scales.

Thirdly, if amulets doe worke by Aporrhoeas, or emanations from their bodies, upon those parts whereunto they are appended, and are not yet observed to abate their weight, if they produce visible and real effects by imponderous and invisible emissions, it may be unjust to deny all efficacy of gold in the non-omission of weight, or deperdition of any ponderous particles.

Lastly, since Stibium or glasse of Antimony, since also its Regulus will manifestly communicate unto water, or wine, a purging and vomitory operation; and yet the body it selfe, though after iterated infusions, cannot be found to abate either vertue or weight; I dare not deny but gold may doe the like; that is, impart some effluencies unto the infusion which carry with them the subtiler nature, and separable conditions of its body.

That therefore this metall thus received, hath any undeniable effect upon the body either from experience in others or my selfe, I cannot satisfactorily affirm. That possibly it may have I not wil at all deny. But from power unto act, from a possible unto an actual operation, the inference is not reasonable. And therefore since the point is dubious, and not yet authentically decided, it will be discretion not to depend on disputable remedies; but rather in cases of knowne danger, to have recourse unto medicines of knowne and approved activity; for beside the benefit accruing unto the sick, hereby may be avoyded a grosse and frequent error, commonly committed in the use of doubtful remedies,

medies, conjoynly with those which are of approved vertue. That is, to impute the cure unto the conceited remedy, or place it on that whereon they place their opinion, whose operation although it be nothing, or its concurrence not considerable, yet doth it obtaine the name of the whole cure, and carryeth often the honour of the capitall energie, which had no finger in it.

4. That a pot full of ashes, will still containe as much water as it would without them, although by Aristotle in his problems taken for granted, and so received by most, is surely very false, and not effectible upon the strictest experiment I could ever make. For when the ayery interstices are filled, and as much of the salt of the ashes as the water will imbibe is dissolved, there remaines a grosse and terreous portion at the bottome which will possesse a space by it selfe, according whereto there will remaine a quantity of water not receiveable, and so will it come to passe in a pot of salt, although decrepitated; and so also in a pot of snow. For so much it will want in reception, as its solution taketh up, according unto the bulke whereof, there will remaine a portion of water not to be admitted. So a glasse stuffed with peeces of sponge, will want about a sixt part of what it would receive without it. So suger will not dissolve beyond the capacity of the water, nor a mettall in Aqua-fortis bee corroded beyond its reception. And so a pint of salt of tartar exposed unto a moist aire untill it dissolve, will make far more liquor, or as some tearm it oyle, then the former measure will contain.

Nor is it only the exclusion of ayre by water, or repletion of cavities possessed thereby which causeth a pot of ashes to admit so great a quantity of water, but also the solution of the salt of the ashes into the body of the dissolvent; so a pot of ashes will receive somewhat more of hot water then of cold, for as much as the warme water imbibeth more of the salt, and a vessell of ashes more then one of pindust or filings of Iron, and a glasse full of water, will yet drinke in a proportion of salt or suger without overflowing.

5. Of white powder and such as is discharged without report, there is no small noise in the world: but how far agreeable unto truth, few I perceive are able to determine. Herein therefore to satisfie the doubts of some, and amuse the credulity of others, We first declare, that gunpowder consisteth of three ingredients, that is, Salt-peter, Smal-coale, and Brimstone. Salt-peter, although it be also naturall and found in severall places, yet is that of common use an artificiall salt, drawn from the infusion of salt earth, as that of Stals, Stables, Dovehouses, Cellars, and other covered places, where the raine can neither dissolve, nor the sunne approach to resolve it. Brimstone is a Minerall body of far and inflamable parts, and this is used crude, and called sulphur vive, and is of a sadder colour; or after depuration, such as we have in magdecons

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or rolls, of a lighter yellow: Small-coale is commonly known unto all, and for this use is made of Sallow, Willow, Alder, Hasell, and the like, which three proportionably mixed, tempered, and formed into granular bodies, doe make up that powder which is in use for gunnes.

Now all these although they bear a share in the discharge, yet have they distinct intentions, and different offices in the composition: from brimstone proceedeth the continued and durable firing, for Small coal and peter together will onely spit, nor easily continue the ignition. From Small-coale ensueth the black colour and quicke accension; for neither brimstone nor peter, although in powder, will take fire like Small-coale, nor will they easily kindle upon the sparks of a flint, as neither will Camphire a body very inflamable, but small-coal is equivalent to tinder, and serveth to light the sulphur: from salt-peter proceedeth the force and the report, for sulphur and small-coale mixed will not take fire with noise, or exultation, and powder which is made of impure, and greasie peter, hath but a weake emission, and giveth a faint report, and therefore in the three sorts of powder, the strongest containeth most salt-peter, and the proportion thereof is at the least ten parts of peter, unto one of coale and sulphur.

But the immediate cause of the report, is the vehement commotion of the ayre upon the sudden and violent eruption of the powder; for that being suddenly fired, and almost altogether, being thus ratified it requireth by many degrees a greater space then before its body occupied; but finding resistance, it actively forceth out his way, and by concussion of the aire, occasioneth the report. Now with what vigour and violence it forceth upon the aire, may easily be conceived, if wee admit what Cardan affirmeth, that the powder fired doth occupie a hundred times a greater space then its own bulke, or rather what Snellius more exactly accounteth, that it exceedeth its former space no lesse then 12000. and 500. times. And this is the reason not onely of this tonnitruous and fulminating report of gunnes, but may resolve the cause of those terrible cracks, and affrighting noise of heaven; that is, the nitrous and sulphureous exhalations, set on fire in the cloudes, whereupon requiring a larger place, they force out their way, not only with the breaking of the cloud, but the laceration of the ayre about it. When if the matter be spirituous, and the cloud compact, the noise is great and terrible: If the cloud be thinne, and the materials weake, the eruption is languide, and ending in corruscations without any noyse, although but at the distance of two miles, which is esteemed the remotest distance of clouds; and therefore such lightnings doe seldome any harme. And therefore also it is prodigious to have thunder in a cleare skye, as is observably recorded in some Histories.

Now therefore, he that would destroy the report of Powder, must worke upon the peter, he that would exchange the colour, must thinke how

how to alter the small coale. For the one, that is, to make white powder, it is surely many wayes feasible: The best I know is by the powder of rotten willowes, spunck, or touchwood prepared, might perhaps make it russet: and some as Beringuccio in his Pyrotechny affirmeth, have promised to make it red. All which notwithstanding doth little concerne the report: for that as wee have shewed depends on another ingredient; and therefore also under the colour of blacke, this principle is very variable, for it is made not onely by Willow, Aller, Hazell, &c. But some above all commend the coales of Flaxe and Rushes, and some also contend the same may bee effected with Tinder.

As for the other, that is, to destroy the Report, it is reasonably attempted but two wayes; that is, either by quite leaving out, or else by silencing the Salt-peter. How to abate the vigour thereof, or silence its bombulation, a way is promised by Porta, and that not onely in generall termes by some fat bodies, but in particular by Borax and Butter mixed in a due proportion; which sayeth he, will so goe off as scarce to be heard by the dischargers; and indeed plentifully mixed, it will almost take off the report, and also the force of the charge. That it may be thus made without Salt-peter, I have met with but one example, that is, of Alphonsus Duke of Ferrara, who in the relation of Brassavolus and Cardan invented such a Powder, as would discharge a bullet without report.

That therefore white Powder there may be, there is therein no absurdity, that also such a one as may give no report, wee will not deny a possibility. But this however, contrived either with or without Salt-peter, will surely be of little force, and the effects thereof no way to be feared: For as it omits of report, so will it of effectually exclusion; for seeing as we have delivered the strength and report, do necessarily depend upon the violent exclusion, where there is no report there will be no violent exclusion, and so the charge of no force which is excluded. For thus much is reported of that famous powder of Alphonsus, which was not of force enough to kill a chicken, according to the delivery of Brassavolus. *Iamq; pulvis inventus est qui glandem sine bombo projicit, nec tamen vehementer ut vel pullum interficere possit.*

It is very true and not to bee denyed, there are wayes to discharge a bullet, not only with powder that makes no noise, but without any powder at all, as is done by water and windgunnes; but these afford no fulminating report, and depend on single principles, and even in ordinary powder there are pretended other wayes, to alter the noise and strength of the discharge, and the best, if not onely way consists in the quality of the Nitre: for as for other wayes which make either additions or alterations in the powder, or charge, I finde therein no effect. That unto every pound of sulphur, an adjection of one ounce of

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Quicksilver, or unto every pound of peter, one ounce of Sal Armoniac will much intend the force, and consequently report, as Beringuccio hath delivered, I find no verity therein. That a piece of Opium will dead the force, and blow as some have promised, I finde herein no such peculiarity, no more then in any gumme or viscoſe body, and as much effect there is to be found from Scammonic. That a bullet dipped in oyle by preventing the transpiration of ayre, will carry farther, and pierce deeper, as Porta affirmeth, my experience cannot with satisfaction diſcerne. That Quicksilver is more destructive then shot is ſurely not to be made out, for it will ſcarce make any penetration, and diſcharged from a Piſtoll, will hardly pierce thorow a parchment. That vinegar, ſpirits of wine, or the diſtilled water of Orange pilles, wherewith the powder is tempored, are more effectually unto the report then common water, as ſome doe promiſe, I ſhall not affirme, but may aſſuredly be more conduceable unto the preſervation and durance of the powder, as Cataneo hath well obſerved.

But beſide the prevalent report from Salt-peter by ſome antipathy, or incummiſcibility therewith upon the approach of fire, Sulphur may hold a greater uſe in the compoſition and further activitie in the excluſion then is by moſt conceived, for ſulphur vive makes better powder then common ſulphur, which nevertheleſſe is of as quicke accenſion as the other, for Small-coale, Salt-peter and Camphire made into powder will bee of little force, wherein notwithstanding there wants not the accending ingredient, for Camphire though it flame well, yet will not ſuſh ſo lively, or defecate Salt-peter, if you inject it thereon like ſulphur, as in the preparation of *Sal prunella*. And laſtly, though many wayes may be found to light this powder, yet is there none I know to make a ſtrong and vigorous powder of Salt-peter, without the admixion of ſulphur. Arſenick red and yellow, that is, Orpement and Sandarach may perhaps doe ſomething, as being inflammable and containing ſulphur in them, but containing alſo a ſalt, and hydrargyrus mixtion, they will be of little effect, and white or Criſtalline arſenick of leſſe, for that being artificiall, and ſublimed with ſalt, will not endure flamation.

And this antipathy or contention between ſalt-peter and ſulphur upon an actuall fire, and in their compleat & diſtinct bodies, is alſo manifeſted in their preparations, and bodies which inviſibly containe them. Thus is the preparation of *Crocus Metallorum*, the matter kindleth and ſuſheth like Gunpowder, wherein notwithstanding, there is nothing but Antimony and Salt-peter, but this proceedeth from the ſulphur of Antimony, not enduring the ſociety of ſalt-peter, for after three or foure accenſions, through a freſh addition of peter, the powder will ſuſh no more, for the ſulphur of the Antimony is quite exhale. Thus Iron in *Aqua fortis* will fall into ebullition, with noiſe and

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emication, as alſo a craſſe and fumide exhalation, which are cauſed from this combat of the ſulphur of Iron, with the acide and nitrous ſpirits of *Aqua fortis*. So is it alſo in *Aurum fulminans*, or powder of gold diſſolved in *Aqua Regis*, and precipitated with oyle of Tartar, which will kindle without an actuall fire, and afford a report like Gunpowder, that is, not as Crollius affirmeth from any Antipathy betweene *Sal Armoniac* and Tartar, but rather betweene the nitrous ſpirits of *Aqua Regis*, commixed *per minima* with the ſulphur of gold, as in his laſt, *De conſenſu chymicorum* &c. Sennertus hath well obſerved.

6. That Corall (which is a Lithophyton or ſtone plant, and groweth at the bottome of the Sea) is ſoft under water, but waxeth hard as ſoone as it arriveth unto the ayre, although the aſſertion of Dioſcorides, Pliny, and conſequently Solinus, Iſidore, Rueus, and many others, and ſtands believed by moſt, we have ſome reaſon to doubt, not onely from ſo ſudden a petrification and ſtrange induration, not eaſily made out from the qualities of Ayre, but becauſe we finde it rejected by experimentall enquirers. Johannes Beguinus in his Chapter of the tincture of Corall, undertakes to cleere the world of this error, from the expreſſe experiment of *Iohn Baptiſta de Nicole*, who was Overſeer of the gathering of Coral upon the Kingdome of Thunis. This Gentleman, ſaith he, deſirous to finde the nature of Corall, and to be reſolved how it groweth at the bottome of the Sea, cauſed a man to goe downe no leſſe then a hundred fathom into the Sea, with expreſſe to take notice whether it were hard or ſoft in the place where it groweth, who returning brought in each hand a branch of Corall, affirming it was as hard at the bottome, as in the ayre where he delivered it. The ſame was alſo confirmed by a triall of his owne, handling it a fathome under water before it felt the ayre. *Boetius de Boete* in his accurate Tract *De Gemmis*, is of the ſame opinion, not aſcribing its concretion unto the ayre, but the coagulating ſpirits of ſalt, and lapidificall juyce of the ſea, which entring the parts of that plant, overcomes its vegetability, and converts it into a lapideous ſubſtance, and this, ſaith he, doth happen when the plant is ready to decay; for all Corall is not hard, and in many concreted plants ſome parts remaine unpetrified, that is, the quick and livelier parts remaine as wood, and were never yet converted. Now that plants and ligneous bodies may indurate under water without approachment of ayre, we have experiment in Coralline, with many Coralloidall concretions, and that little ſtony plant which Mr. Johaſon nameth, *Hippuris coralloides*, and *Gefner foliis manu Arenofis*; we have our ſelfe found in freſh water, which is the leſſe concrete portion of that element. We have alſo with us the viſible petrification of wood in many waters, whereof ſo much as is covered with water converteth into ſtone, as much as is above it and in the ayre retaineth the forme of wood, and continueth as before.

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7. We are not thorowly resolved concerning Porcellane or Chyna dishes, that according to common beliefe they are made of earth, which lyeth in preparation about an hundred yeares under ground, for the relations thereof are not onely divers, but contrary, and Authors agree not herein. Guido Pancirollus will have them made of Egge shells, Lobster shells, and Gypsum layed up in the earth the space of 80. yeeres: of the same affirmation is Scaliger, and the common opinion of most. Ramuzius in his Navigations is of a contrary assertion, that they are made out of earth, not laid under ground, but hardened in the Sunne and winde, the space of fourty yeeres. But Gonzales de Mendoza, a man employed into Chyna, and with an honourable present, sent from Phillip the second King of Spain, hath upon ocular experience, delivered a way different from al these. For enquiring into the artifice thereof, hee found they were made of a Chalky earth, which beaten and steeped in water, affoordeth a cream or fatnesse on the top, and a grosse subsidence at the bottome; out of the cream or superfluity, the finest dishes, saith he, are made; out of the residue thereof the courser, which being formed, they gild or paint, and not after an hundred yeares, but presently commit unto the furnace: And this, saith he, is knowne by experience, and more probable then what Odoardus Barbosa hath delivered, that they are made of shels, and buried under earth a hundred yeares: And answerable unto all points hereto, is the relation of Linschotten, a very diligent enquirer in his Orientall Navigations.

Now if any man enquire, why being so commonly made, and in so short a time, they are become so scarce, or not at all to be had, the answer is given by these last Relators, that under great penalties it is forbidden to carry the first sort out of the Countrey. And of those surely the properties must be verified, which by Scaliger and others are ascribed to China dishes, That they admit no poyson, That they strike fire, That they will grow hot no higher then the liquor in them ariseth. For such as passe amongst us, and under the name of the finest, will onely strike fire, but not discover Aconite Mercury, or Arsenick, but may be usefull in dissenteries, and fluxes beyond the other.

8. Lastly, he must have more heads then Janus, that makes out half of those vertues ascribed unto stones, and their not onely medicall, but Magicall proprieties, which are to be found in Authors of great name. In Psellus, Serapion, Evax, Albertus, Aleazar Marbodeus; in Maiolus, Rueus, Mylius, and many other.

That Lapis Lazuli hath in it a purgative faculty we know, that Bezoar is Antidotall, Lapis Judaicus diureticall, Corall Antipilepticall, we will not deny. That Cornelians, Jaspis, Heliotropes, and bloud-stones, may be of vertue to those intentions they are implied, experience and visible effects will make us doubt. But that an Amethist prevents

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vents inebriation, that an Emerald will breake if worne in copulation. That a Diamond laid under the pillow, will betray the incontinency of a wife. That a Saphyre is preservative against enchantments; that the fume of an Agath will avert a tempest, or the wearing of a Crysopease make one out of love with gold, as some have delivered, we are yet, I confesse to believe, and in that infidelity are likely to end our dayes. And therefore, they which in the explication of the two Beryls upon the Ephod, or the twelve stones in the Rationall or breast-plate of Aaron, or those twelve which garnished the wall of the holy City in the Apocalyps, have drawne their significations from such as these, or declared their symbollicall verities from such traditionall falsities, have surely corrupted the sincerity of their Analogies, or misunderstood the mystery of their intentions.

CHAP. VI.

Of sundry tenents concerning vegetables or Plants, which examined, prove either false or dubious.

1. **M**Any Mola's and false conceptions there are of Mandrakes, the first from great Antiquity, conceiveth the Roote thereof resembleth the shape of man, which is a conceit not to be made out by ordinary inspection, or any other eyes, then such as regarding the clouds, behold them in shapes conformable to preapprehensions.

Now what ever encouraged the first invention; there have not bin wanting many wayes of its promotion. The first a Catacresticall and farre derived similitude, it holds with man; that is, in a byfurcation or division of the roote into two parts, which some are content to call thighes, whereas notwithstanding they are oft times three, and when but two commonly so complicated and crossed, that men for this deceit, are faine to effect their designe into other plants; And as faire a resemblance is often found in Carrots, Parsenips, Bryony, and many others. There are, I confesse, divers plants which carry about them, not onely the shape of parts, but also of whole animals, but surely not all thereof, unto whom this conformity is imputed. Whoever shall peruse the signatures of Crollius, or rather the phytognomy of Porta, and strictly observes how vegetable realities, are commonly forced into Animall representations, may easily perceive in very many, the semblance is but postulatory, and must have a more assimilating phancy then mine to make good many thereof.

Illiterate heads have bin led on by the name, which in the first syllable expresth its representation; but others have better observed the laws of Etymology, and deduced it from a word of the same language, that is, *speculunca*, because it delighteth to grow in obscure and shady

shady places, which derivation, although we shall not stand to maintain, yet is the other openly absurd, answerable unto the Etymologies of many Authors, who often confound such nominall notations. Not to enquire beyond our owne profession, the Latine Physitians, which most adheered unto the Arabick way, have often failed herein, particularly Valescus de Taranta a received Physitian, in whose Philonium or medicall practice these may be observed; Diarrhæa saith he, *quia pluries venit in die. Herisepela, quasi herens pilis, emorrohois, ab emach sanguis & morrhois quod est cadere. Lithargia à Litos quod est oblitio & Targus morbus, Scotomia a Scotos quod est videre, & mias musca, Ophthalmia ab opus Græce quod est succus, & Talmon quod est oculus, Paralisis, quasi latio partis, Fistula à fos sonus & stolon quod est emissio, quasi emissio soni vel vocis*: which are derivations as strange indeed as the other, and hardly to be paralleled elsewhere, confirming not onely the words of one language with another, but creating such as were never yet in any.

The received distinction and common notation by sexes, hath also promoted the conceit; for true it is, that Herbalists from ancient times, have thus distinguished them; naming that the masse, whose leaves are lighter, and fruit and apples rounder, but this is properly no generative division, but rather some note of distinction in colour, figure or operation. For though Empedocles affirme, there is a mixt, and undivided sex in vegetables; and Scaliger upon Aristotle *de plantis*, doth favourably explain that opinion, yet will it not consist with the common and ordinary acception, nor yet with Aristotles definition: for if that be masse which generates in another, that female which procreates in it selfe; if it be understood of sexes conjoynded, all plants are female, and if of dis joyned, and congressive generation, there is no male or female in them at all.

But the Atlas or maine axis, which supported this opinion, was daily experience, and the visible testimony of sense; for many there are in severall parts of Europe who carry about, and sell rootes unto ignorant people, which handsomely make out the shape of man or woman, but these are not productions of Nature, but contrivances of Art, as divers have noted, and Mathiolus plainly detected, who learned this way of trumpery from a vagabond cheator lying under his cure for the French disease; his words are these, and may determine the point, *Sed profecto vanum & fabulosum, &c.* But that is vaine and fabulous which ignorant people, and simple women beleeve; for the roots which are carried about by impostors to deceive unfruitfull women, are made of the roots of Canes, Bryony, and other plants; for in these yet fresh and virent, they carve out the figures of men and women, first sticking therein the graines of barley or millet, where they intend the haire should grow, then bury them in sand, untill the grains shoot

shoot forth their roots, which at the longest will happen in twenty dayes; afterward clip and trim those tender strings in the fashion of beard and other hayrie regiments. All which like other impostures once discovered is easily effected, and in the root of white Bryony may be practised every spring.

What is there fore delivered in favour hereof, by Authors ancient or moderne, must have its root in tradition, imposture, or farre derived similitude; so may we admit of the epithyte of Pythagoras who calls it *δυσπρωκτοπος*, and that of Columella, who tearms it *semihomo*, otherwise Albertus magnus is not to be received when he affirmeth that Mandrakes so represent mankind, that distinction of sex and other accidents are manifest therein. And under these tearms may those Authors bee admitted, which for this opinion are introduced by Drusus, as David Camius, Moses filius Namanis, and Abenezra Hispanus.

The second assertion concerneth its production, That it naturally groweth under gallowses and places of execution, arising from fat or urine that drops from the body of the dead; a story somewhat agreeable unto the fable of the Serpents teeth sowed in the earth by Cadmus, or rather the birth of Orion from the urine of Jupiter, Mercurie, and Neptune. Now this opinion seems grounded on the former, that is a conceived similitude it hath with man, and therefore from him in some way they would make out its production. Which conceit is not only erroneous in the foundation, but injurious unto Philosophy in the superstruction, making putrifactive generations, correspondent unto seminall productions, and conceiving in equivocall effects and univocall conformity unto the efficient; which is so far from being verified of animals in their corruptive mutations into plants, that they maintain not this similitude in their nearer translation into animals. So when the Oxe corrupteth into Bees, or the Horses into hornets, they come not forth in the image of their originalls. So the corrupt and excrementous humors in man are animated into lyces, and we may observe that hogs, sheep, goats, hawkes, hens, and divers other, have one peculiar and proper kind of vermine, not resembling themselves according to seminall conditions, it carrying a settled and confined habitude unto their corruptive originalls; and therefore come not forth in generations erratically, or different from each other, but seem specifically and in regular shapes to attend the corruption of their bodyes, as doe more perfect conceptions, the rule of seminall productions.

The third affirmeth the roots of Mandrakes doe make a noyse or give a shreeke upon eradication, which is indeed ridiculous, and false below confute; arising perhaps from a small and stridulous noyse, which being firmly rooted, it maketh upon divulsion of parts. A slender foundation for such a vast conception: for such a noyse we sometime

time observe in other plants, in parsnips, liquorish, eringium, flags, and others.

The last concerneth the danger ensuing, that there followes an hazard of life to them that pull it up, that some evill fate pursues them, and they live not very long after; therefore the attempt hereof among the Ancients, was not in ordinary way, but as Pliny informeth, when they intended to take up the root of this plant, they tooke the wind thereof, and with a sword describing three circles about it they digged it up, looking toward the West, a conceit not only injurious unto truth, and confutable by dayly experience, but somewhat derogatory unto the providence of God, that is not only to impose so destructive a quality on any plant, but conceive a vegetable whose parts are usefull unto many, should in the only taking up prove mortall unto any. To think he suffereth the poyson of Nubia to be gathered, Napellus, Aconite and Thora to be eradicated, yet this not to be moved. That hee permitteth Arsenick and minerall poysons to be forced from the bowells of the earth, yet not this from the surface thereof. This were to introduce a second forbidden fruit, and inhance the first malediction; making it not only mortall for Adam to taste the one, but capitall unto his posterity to eradicate or dig up the other.

Now what begot, at least promoted so strange conceptions might be the magicall opinion hereof; this being conceived the plant so much in use with Circe, and therefore named Circea, as Dioscorides and Theophrastus have delivered; which being the eminent foceres of elder story, and by the magicke of simples beleeved to have wrought many wonders, some men were apt to invent, others to beleeve any tradition or magicall promise thereof.

Analogus relations concerning other plants, and such as are of neare affinity unto this, have made its currant smooth, and passe more easily among us; for the same effect is also delivered by Josephus, concerning the root Baaras, by Ælian of Cynospastus, and we read in Homer the very same opinion concerning Moly.

Μόλυ δὲ μὴν καλέουσι, θεοὶ καλεποῦσι τ' ὀρούσιν

Ἀνδράσι γὰρ θνητοῖσι θεοὶ δὲ τε πάντα δύνανται.

The Gods it Moly call, whose root to dig away,
Is dangerous unto man, but Gods they all things may.

Now parallels or like relations alternately releve each other, when neither will passe asunder, yet are they plausible together, and by their mutuall concurrences support their solitary instabilities.

Signaturists have somewhat advanced it, who seldome omitting what Ancients delivered, drawing into inference received distinctions of sex, not willing to examine its humane resemblance, and placing it in the forme of strange and magicall simples, have made men suspect there was more therein, then ordinary practice allowed, and so became

came apt to embrace what ever they heard or read conformable unto such conceptions.

Lastly, the conceit promoteth it selfe: for concerning an effect whose triall must cost so deare, it fortifies it selfe in that invention, and few there are whose experiment it need to feare. For (what is most contemptible) although not only the reason of any head, but experience of every hand may well convict it, yet will it not by divers bee rejected, for prepossessed heads will ever doubt it, and timorous beliefes will never dare to try it. So these traditions how low and ridiculous soever, will finde in some suspition, doubt in others, and serve as tests or trials of melancholy, and superstitious tempers for ever.

2. That Cinamon, Ginger, Clove, Mace and Nutmeg, are but the severall parts and fruits of the same tree, is the common belief of those which daily use them; whereof to speak distinctly, Ginger is the root of neither tree nor shrub, but of an herbaceous plant, resembling the water flower De luce, as Garcias first described, or rather the common reed, as Lobelius since affirmed, very common in many parts of India, growing either from root or seed, which in December and January they take up, and gently dried, role it up in earth, whereby occluding the pores, they conserve the naturall humidity, and so prevent corruption.

Cinnamon is the inward barke of a Cinnamon tree, whereof the best is brought from Zeilan; this freed from the outward barke, and exposed unto the Sun, contracts into those folds wherein we commonly receive it. If it have not a sufficient insolation it looketh pale, and attaines not its laudable colour, if it be sunned too long it suffereth a torrefaction, and descendeth somewhat below it.

Clove is the rudiment or beginning of a fruit growing upon the Clove tree, to be found but in few Countries. The most commendable is that of Isles of Molucca; it is first white, afterward green, which beaten downe, and dried in the Sun becommeth blacke, and in the complexion we receive it.

Nutmeg is the fruit of a tree differing from all these, and as Garcias describeth it, somewhat like a Peach, growing in divers places, but fructifying in the Isle of Banda. The fruit hereof, consisteth of foure parts; the first or outward part is a thick and carnos covering like that of a Walnut. The second a dry and flosculous coat, commonly called Mace. The third a harder tegument or shell, which lyeth under the Mace. The fourth a kernell included in the shell, which is the same we call Nutmeg; all which both in their parts and order of disposition, are easily discerned in those fruits, which are brought in preserves unto us.

Now if because Mace and Nutmegs proceed from one tree, the rest must beare them company, or because they are all from the East-Indies,

Indies, they are all from one plant, the Inference is precipitous, nor will there such a plant be found in the Herball of Nature.

3. That Viscus Arboreus or Mistletoe is bred upon trees, from seeds which birds, especially Thrushes and Ringdoves let fall thereon, was the creed of the Ancients, and is still believed among us, is the account of its production, set downe by Pliny, delivered by Virgil, and subscribed by many more. If so, some reason must be assigned, why it groweth onely upon certaine trees, and not upon many whereon these birds do light. For as Exotick observers deliver, it groweth upon Almond trees, Chesnut, Apples, Oakes, and Pine trees, as wee observe in England, very commonly upon Apple, Holly, Bayes, Crabs, and White thorne, sometimes upon Sallow, Hasell, and Oake, never upon Bayes, Holly, Ashes, Elmes, and many others. Why it groweth not in all countries and places where these birds are found, for so Brassavolus affirmeth, it is not to be found in the territorie of Ferrara, and was faine to supply himselfe from other parts of Italy. Why if it ariseth from a seed, if sowne it will not grow againe, as Pliny affirmeth, and as by setting the berries thereof, wee have in vaine attempted its production; why if it commeth from seed that falleth upon the tree, it groweth often downewards and puts forth under the bough, where seed can neither fall, nor yet remaine. Hereof beside some others, the Lord Verulam hath taken notice. And they surely speake probably who make it an arboreous excrescence, or rather superplant, bred of a viscous and superfluous sappe the tree it selfe cannot assimilate, and therefore sprouteth not forth in boughs and surcles of the same shape and similiary unto the tree that beareth it, but in a different forme, and secondary unto its specificall intention, wherein once failing, another forme succeedeth, and in the first place that of Mistletoe, in plants and trees disposed to its production. And therefore also where ever it groweth, it is of constant shape, and maintaines a regular figure like other supercrescences, and such as living upon the stock of others, are termed Parasiticall plants, as Polypody, Mosse, the smaller Capillaries, and many more.

Now what begot this conceit, might be the enlargement of that part of truth contained in its story. For certaine it is, that some birdes doe feed upon the berries of this vegetable, and we meet in Aristotle with one kind of thrush called *ἰσολόπος*, the missell thrush or feeder upon mistletoe. But that which hath most promoted it, is a received proverb. *Turdus sibi malum cecat*, Applicable unto such men as are authors of their owne misfortune: For according unto ancient tradition and Plinies relation, the bird not able to digest the fruit whereon shee feedeth, from her inconverted muting, ariseth this plant, of the berries whereof birdlime is made, wherewith she is after entangled. Now although proverbs bee popular principles, yet is not all true that is pro-

verbiall,

verbiall; and in many thereof there being one thing delivered, and another intended, though the verball expression be false, the proverbe is true enough in the veritie of its intention.

As for the Magicall vertues in this plant, and conceived efficacie unto veneficall intentions, it seemeth unto me a Pagan relique derived from the ancient Druides, the great admirers of the Oake, especially the Mistletoe that grew thereon; which according unto the particular of Plinie, they gathered with great solemnitie. For after sacrifices the priest in a white garment, ascended the tree, cut downe the Mistletoe with a golden hooke, and received it in a white coat, the vertue whereof was to resist all poysons, and make fruitfull any that used it. Vertues not expected from Classicall practise; And did they answer their promise which are so commended, in Epilepticall intentions, wee would abate these qualities. Countrey practise hath added another, to provoke the after-birth, and in that case the decoction is given unto Cowes. That the berries are poison as some conceive, we are so far from averring, that we have safely given them inwardly, and can confirme the experiment of Brassavolus, that they have some purgative quality.

4. The Rose of Jerico, that flourishes every yeer just upon Christmas Eve is famous in Christian reports, which notwithstanding wee have some reason to doubt; and we are plainly informed by Bellonius, it is but a Monasticall imposture, as hee hath delivered in his observations, concerning the plants in Jericho. That which promoted the conceit, or perhaps begot its continuance, was a proprietie in this plant. For though it bee dry, yet will it upon imbibition of moisture dilate its leaves, and explicate its flowers contracted, and seemingly dried up. And this is to bee effected not onely in the plant yet growing, but in some manner also in that which is brought exsuccous and dry unto us. Which quality being observed, the subtilty of contrivers did commonly play this shew upon the Eve of our Saviours Nativitie, and by drying the plant againe, it closed the next day, and so pretended a double mystery. That is the opening and closing of the wombe of Mary.

There wanted not a specious confirmation from a text in Ecclesiasticus, chap. 24. *Quasi palma exaltata sum in Cades. & quasi plantatio Rosa in Jericho*: I was exalted like a Palme tree in Engaddi, and as a Rose in Jericho. The sound whereof in common eares, begat an extraordinary opinion of the Rose of that denomination. But herein there seemeth a great mistake; for by the Rose in the text, is implied the true and proper Rose *ῥόδον ἰσίδιον* sayth the Greek, and ours accordingly rendreth it. But that which passeth under this name, and by us is commonly called the Rose of Jericho, is properly no Rose, but a small thorny shrub or kinde of heath, bearing little white flowers, far differing

differing from the Rose, whereof Bellonius a very inquisitive Herbalist could not finde any in his travells thorow Jericho. A plant so unlike a Rose, it hath been mistaken by some good Simplist for Amomum, which truly understood is so unlike a Rose, that as Dioscorides delivers, the flowers thereof, are like the white violet, and its leaves resemble Bryonie; sutable unto this relation almost in all points is that of the thorne at Glassenbury, and perhaps the daughter thereof; herein our endeavours as yet have not attained satisfaction, and cannot therefore enlarge. Thus much in generall we may observe, that strange effects, are naturally taken for miracles by weaker heads, and artificially improved to that apprehension by wiser.

5. That *ferrum Equinum*, or *Sferra Cavallo* hath a vertue attractive of Iron, a power to breake lockes, and draw off the shooes of a horse that passeth over it. Whether you take it for one kinde of Securidaca, or will also take in Lunaria, we know it to be false; and cannot but wonder at Mathiolus, who upon a parallell in Plinie was staggered into suspension; who notwithstanding in the imputed vertue to open things, close and shut up, could laugh himselfe at that promise from Æthiopis, and condemne the judgement of Scipio, who having such a picklock, would spend so many years in battering the gates of Carthage. Which strange and Magicall conceit, seemes unto me to have no deeper root in reason, then the figure of its seed; for therein indeed it somewhat resembles an horseshoe, which notwithstanding *Baptista Porta* hath thought too low a signation, and raised the same unto a Lunarie representation.

6. That Bayes will protect from the mischief of lightning and thunder, is a qualitie ascribed thereto, common with the figtree, Ægle, and skin of a Seale. Against so famous a quality, Vicomercatus produceth experiment of a Bay tree blasted in Italy, and therefore although Tiberius for this intent, did weare a Laurell about his temples. Yet did Augustus take a more probable course, who fled under arches and hollow vaultes for protection. And though *Porta* conceive, because in a streperous eruption, it riseth against fire, it doth therefore resist lightning, yet is that no emboldning Illation: And if wee consider the threefold effect of Jupiters Trisulke, to burne, discusse and terebrate; and if that be true which is commonly delivered, that it will melt the blade, yet passe the scabbard, kill the childe, yet spare the mother, dry up the wine, yet leave the hogshhead intire, though it favour the amulet it may not spare us; it will be unsure to rely on any preservative, 'tis no security to be dipped in Styx, or clad in the armour of Ceneus. Now that beer, wine, and other liquors, are spoyled with lightning and thunder, we conceive it proceeds not onely from noyle and concussion of the ayre, but also noxious spirits, which mingle therewith, and draw them to corruption, whereby they become not onely dead themselves,

but

but sometime deadly unto others, as that which Seneca mentioneth, whereof whosoever dranke, either lost his life, or else his wits upon it.

7. It hath much deceived the hopes of good fellowes, what is commonly expected of bitter Almonds, and though in Plutarch confirmed from the practise of Claudius his Physitian, that Antidote against ebriety hath commonly failed. Surely men much versed in the practice doe erre in the theory of inebriation, conceaving in that disturbance the braine doth onely suffer from exhalations and vaporious ascensions from the stomach, which fat and oylie substances may suppress, whereas the prevalent intoxication is from the spirits of drink dispersed into the veynes and arteries, from whence by common conveyances they creep into the braine, insinuate into its ventricles, and beget those vertigoes, accompanying that perversion. And therefore the same effect may be produced by a Glisten, the head may be intoxicated by a medicine at the heele. And so the poysonous bytes of Serpents, although on parts at distance from the head, yet having entered the veynes, disturbe the animall faculties, and produce the effects of drink, or poyson swallowed. And so as the head may bee disturbed by the skin, it may the same way be relieved, as is observable in balneations, washings, and fomentations, either of the whole body, or of that part alone.

8. That every plant might receive a name according unto the disease it cureth, was the wish of Paracelsus; a way more likely to multiply Empericks then Herbalists, yet what is practised by many is advantageous unto neither; that is, relinquishing their proper appellations, to re-baptise them by the name of Saints, Apostles, Patriarcks and Martyres, to call this the herbe of John, that of Peter, this of James or Joseph, that of Mary or Barbara, for hereby apprehensions are made additionall unto their proper natures; whereon superstitious practises ensue, and stories are framed accordingly to make good their foundations.

9. We cannot omit to declare the grosse mistake of many in the nominall apprehension of plants; to instance but in few. An herbe there is commonly called *Betonica Pauli*, or *Pauls Betony*, hereof the people have some conceit in reference to S. Paul, whereas indeed that name is derived from *Paulus Ægineta*, an ancient Physitian of Ægina, and is no more then speed well, or Fluellen. The like expectations are raised from *Herba Trinitatis*, which notwithstanding obtaineth that name onely from the figure of its leaves, and is one kinde of liverworte or Hepatica. In *Milium Solis*, the epithite of the Sun hath enlarged its opinion, which hath indeed no reference thereunto, it being no more then Lithospermon, or grummell, or rather *milium Soler*, which as Serapion from Aben Juliel hath taught us, because it grew plentifully in the mountaines of Solar, received that appellation. In Jews eares

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some thing is conceived extraordinary from the name, which is in propriety but *Fungus sambucinus*, or an excrescence about the roots of Elder, and concerneth not the Nation of the Jews, but Judas Iscariot, upon a conceit, he hanged on this tree, and is become a famous medicine in Quinsies, sore throats, and strangulations ever since. And so are they deceived in the name of Horse-raddish, Horse-mint, Bull-rush, and many more: conceiving therein some preminall consideration, whereas indeed that expression is but a Grecisme, by the prefix of Hippo and Bous, that is, Horse and Bull, intending no more then great. According whereto the great dock is called Hippolapathum; and hee that calls the horse of Alexander great head, expresseth the same which the Greeks do in Bucephalus.

10. Lastly, many things are delivered and believed of other plants, wherein at least we cannot but suspend. That there is a property in Basil to propagate Scorpions, and that by the smell thereof they are bred in the braines of men, is much advanced by Hollerius, who found this insect in the braines of a man that delighted much in this smell. Wherein beside that wee finde no way to conjoyne the effect unto the cause assigned; herein the Modernes speake but timorously, and some of the Ancients quite contrarily. For, according unto Oribasius, Physitian unto Julian, The Affricans, men best experienced in poysons, affirme whosoever hath eaten Basil, although hee be stung with a Scorpion, shall feelee no paine thereby: which is a very different effect, and rather antidotally destroying then feminally promoting its production.

That the leaves of Cataputia or spurge being plucked upward or downeward respectively performe their operations by purge or vomit, as some have written, and old wives still do preach, is a strange conceit, and indeed somewhat magneticall, ascribing unto plants positionall operations, and after the manner of the Loadstone, upon the pole whereof if a knife be drawne from the handle unto the poynt, it will take up a neele, but if drawne againe from the point to the handle, it will attract it no more.

That an Ivy cup will separate wine from water, if filled with both, the wine soaking through, but the water still remaining, as after Pliny many have averred wee know not how to affirme, who making tryall thereof, found both the liquors to soake indistinctly through the bowle.

That Ros solis which rotteth sheepe hath any such cordiall vertue upon us, we have some reason to doubt.

That Flos Affricanus is poyson, and destroyeth dogs, in two experiments we have not found.

That Yew and the berries thereof are harmelesse we know.

That a Snake will not endure the shade of an Ashe we can deny.

That Cats have such delight in the herbe Nepeta, called therefore Cattaria,

Cattaria, our experience cannot discover. Nor is it altogether considerable what is affirmed by Bellonius; for if his assertion bee true in the first of his observations, our apprehension is oftentimes wide in ordinary simples, and in common use wee mistake one for another. We know not the true thyme, the savory in our Gardens is not that commended of old, and that kinde of hyssop the Ancients used, is unknown unto us who make great use of another.

Wee omit to recite the many vertues, and endlesse faculties ascribed unto plants, which sometime occure in grave and serious Authors, and wee shall make a bad composition for truth to concede a verity in halfe. To reckon up all, it were imployment for Archimedes, who undertooke to write the number of the sands. Swarmes of others there are, some whereof our future endeavours may discover; common reason I hope will save us a labour in many, whose absurdities stand naked unto every eye, errours not able to deceive the Emblem of Justice, and need no Argos to descry them. Herein there surely wants expurgatory animadversions, whereby wee might strike out great numbers of hidden qualities, and having once a serious and conceded list, wee might with more encouragement and safety, attempt their Reasons.

THE



THE THIRD BOOK.

Of divers popular and received Tenents concerning Animals, which examined, prove either false or dubious.

CHAP. I.

Of the Elephant.



THE first shall be of the Elephant, whereof there generally passeth an opinion it hath no joynts; and this absurdity is seconded with another, that being unable to lye downe, it sleepeth against a tree, which the Hunters observing doe saw almost asunder; whereon the beast relying, by the fall of the tree falls also down it selfe, and is able to rise no more; which conceit is not the daughter of latter times, but an old and gray-headed error, even in the dayes of Aristotle, as he delivereth in his booke, *de incessu animalium*, and stands successively related by severall other Authors, by Diodorus Siculus, Strabo, Ambrose, Cassiodore, Solinus, and many more: Now herein me thinks men much forget themselves, not well considering the absurditie of such assertions.

For first, they affirme it hath no joynts, and yet concede it walks and moves about; whereby they conceive there may be a progression or advancement made in motion without the inflexion of parts: Now all progression or animall locomotion being (as Aristotle teacheth) performed *tractu & pulsū*; that is by drawing on, or impelling forward some part which was before in station, or at quiet; where there are no joynts or flexures, neither can there be these actions; and this is true, not only in Quadrupedes, Volatills and Fishes, which have distinct and prominent organs of motion, legs, wings, and fins; but in such also as performe their progression by the truncke, as serpents, wormes and leeches; whereof though some want bones, and all extended articulations, yet have they arthriticall analogies, and by the motion of fibrous and

and musculous parts, are able to make progression; which to conceive in bodies inflexible, and without all protrusion of parts, were to expect a race from Hercules his pillars, or hope to behold the effects of Orpheus his harpe, when Trees found legges, and danced after his musicke.

Againe, while men conceive they never lye downe, and enjoy not the position of rest, ordained unto all pedestrious animalls whatsoever, hereby they imagine (what reason cannot conceive) that an animall of the vastest dimension and longest duration should live in a continuall motion, without that alternity and vicissitude of rest whereby all others continue; and yet must thus much come to passe, if wee opinion they lye not downe and enjoy no decumbence at all; for station is properly no rest, but one kinde of motion, relating unto that which Physitians (from Galen) doe name extensive or tonicall, that is an extension of the muscles and organs of motion maintaining the body at length or in its proper figure, wherein although it seem to be immoved is nevertheless without all motion, for in this position the muscles are sensibly extended, and labour to support the body, which permitted unto its proper gravity would suddenly subside and fall unto the earth, as it happeneth in sleep, diseases and death; from which occult action and invisible motion of the muscles in station (as Galen declareth) proceed more offensive lassitudes then from ambulation; and therefore the Tyranny of some have tormented men, with long and enforced station, and though Ixion and Sisyphus which alwaies moved, doe seem to have the hardest measure, yet was not Titius favoured, that lay extended upon Caucasus, and Tantalus suffered somewhat more then thirst, that stood perpetually in hell; and thus Mercurialis in his Gymnasticks justly makes standing one kinde of exercise, and Galen when we lye downe, commends unto us middle figures; that is, not to lye directly, or at length, but somewhat inflected, that the muscles may be at rest; for such as he termeth Hypobolemaioi or figures of excessse, either shrinking up or stretching out, are wearisome positions, and such as perturb the quiet of those parts.

Moreover men herein doe strangely forget the obvious relations of history, affirming they have no joynts, whereas they dayly read of severall actions which are not performable without them. They forget what is delivered by Xiphilinus, and also by Suetonius in the lives of Nero and Galba, that Elephants have been instructed to walke on ropes, and that in publicke shews before the people; which is not easily performed by man, and requireth not only a broad foot, but a plyable flexure of joynts, and commandible dispose of all parts of progression; they passe by that memorable place in Curtius, concerning the Elephant of King Porus, *Indus qui Elephantem regibat, descendere eum ratus, more solito procumbere iussit in genua, ceteri quoque (ita enim instituti*

instituti erant) *demisere corpora in terram*; they remember not the expression of *Ofortus de rebus gestis Emanuelis*, when he speaks of the Elephant presented to Leo the tenth, *Pontificem ter genibus flexis, & demisso corporis habitu venerabilis salutavit*: But above all, they call not to minde that memorable shew of Germanicus, wherein twelve Elephants danced unto the sound of musick, and after laid them down in the Tricliniums, or places of festivall Recumbency.

Lastly, they forget or consult not experience, whereof not many yeares past, we have had the advantage in England, by an Elephant shewne in many parts thereof, not only in the posture of standing, but kneeling and lying downe; whereby although the opinion at present be reasonable well suppressed, yet from the strings of tradition and fruitfull recurrence of error, it is not improbable, it may revive in the next generation againe; for this was not the first that hath been seen in England, for (besides some others since) as Polydore Virgil relateth, Lewis the French King sent one to Henry the third; and Emanuel of Portugall another unto Leo the tenth into Italy, where notwithstanding the error is still alive and epidemicall, as with us.

The hint and ground of this opinion might be the grosse and somewhat Cylindricall compofure of the legs, the equality and lesse perceptible disposure of the joynts, especially in the fore legs of this Animal, they appearing when he standeth like pillars of flesh, without any evidence of articulation: the different flexure and order of the joynts might also countenance the same, being not disposed in the Elephant, as they are in other quadrupedes, but carry a nearer conformity into those of man, that is the bought of the fore legs not directly backward, but laterally and somewhat inward, but the hough or suffraginous flexure behinde rather outward, contrary unto many other Quadrupedes, and such as can scratch the eare with the hinder foot, as Horses, Camells, Deere, Sheep and Dogs, for their fore legs bend like our legs, and their hinder legs like our armes, when we move them to our shoulders; but quadrupedes oviparous, as Frogs, Lizards, Crocodiles, have their joynts and motive flexures more analogously framed unto ours; and some among viviparous, that is such thereof as can bring their forefeet and meat therein into their mouths, as most can doe that have the clavicles or collar-bones, whereby their breasts are broader, and their shoulders more asunder, as the Ape, the Monkey, the Squirrel, and some others: If therefore any shall affirme the joynts of Elephants are differently framed from most of other Quadrupedes, and more obscurely and grossely almost then any, he doth herein no injury unto truth; but if *à dicto secundum quid ad dictum simpliciter*, he affirmeth also they have no articulations at all, he incurs the controlment of reason, and cannot avoid the contradiction of sense.

As for the manner of their venation, if we consult historicall experience.

rience, we shall find it to be otherwise then as is commonly presumed, by sawing away of trees; the accounts whereof are to be seen at large in *Iohannes Hugo*, *Edwardus Lopez*, *Garcias ab Horto*, *Cadamustus*, and many more: other concernments there are of the Elephant, which might admit of discourse, and if we should question the teeth of Elephants, that is whether they be properly so termed, or might not rather be called hornes, it were no new enquiry of mine, but a paradox as old as Oppianus: whether as Pliny and divers since affirme, that Elephants are terrified, and make away upon the grunting of Swine, *Garcias ab Horto* may decide, who affirmeth upon experience they enter their stalles, and live promiscuously in the woods of Malavar; That the situation of the genitalls is averse, and their copulation like that of Camells, as Pliny hath also delivered, is neither to be received, for we have beheld that part in a different position, and their coition is made by supersaliency like that of horses, as we are informed by some who have beheld them in that act. That some Elephants have not only written whose sentences, as *Ælian* ocularly testifieth, but have also spoken, as Oppianus delivereth, and Christophorus a Costa particularly relateth, although it sound like that of Achilles horse in Homer, wee doe not conceive impossible; nor beside the affinity of reason in this Animal any such intolerable incapacity in the organs of divers other Quadrupedes, whereby they might not be taught to speake, or become imitators of speech like birds; and indeed strange it is how the curiosity of men that have been active in the instruction of beasts, have never fallen upon this artifice, and among those many paradoxicall and unheard of imitations, should not attempt to make one speake; the Serpent that spake unto Eve, the Dogs & Cats, that usually speake unto Witches, might afford some encouragement, and since broad and thick chops are required in birds that speake, since lips and teeth are also organs of speech; from these there is also an advantage in quadrupedes, and a proximity of reason in Elephants and Apes above them all.

CHAP. II.

Of the Horse.

THE second Assertion, that an Horse hath no gall, is very generall, nor onely swallowed by the people, and common Farriers, but also received by good Veterinarians, and some who have laudably discoursed upon Horses, it seemeth also very ancient; for it is plainly set downe by Aristotle, an Horse and all Solipeds have no gall; and the same is also delivered by Plinie, which notwithstanding we finde repugnant unto experience and reason; for first, it calls in question the providence or wise provision of nature, who not abounding in super-

fluities, is neither deficient in necessities, wherein nevertheless there would be a maine defect, and her improvision justly accusable, if such a feeding Animall, and so subject unto diseases from bilious causes, should want a proper conveyance for choler, or have no other receptacle for that humor, then the veynes, and generall masse of blood.

It is againe controulable by experience; for we have made some search and enquiry herein, encouraged by Absyrtus a Greek Author, in the time of Constantine, who in his Hippiatrics, obscurely assigneth the gall a place in the liver: but more especially by Ruino the Bononian, who in his *Anatomia del Cavallo*, hath more plainly described it, and in a manner as I found it, for in the dissections of Horses, and particular enquiry into that part, in the concave or sinuous part of the liver, whereabout the gall is usually seated in quadrupeds, I discover an hollow, long and membranous substance of a yellow colour without, and lined with choler and gall within; which part is by branches diffused into the lobes and severall parcells of the liver, from whence receiving the fire superfluity, or cholericke remainder, upon the second concoction by a manifest and open passage, it conveyeth it into the duodenum or upper gut, thence into the lower bowells, which is the manner of its derivation in man and other animalls; and therefore although there be no eminent and circular follicle, no round bagge or vesicle which long containeth this humor, yet is there a manifest receptacle and passage of choler, from the liver into the guts; which being not so shut up, or at least not so long detained, as it is in other animalls, procures that frequent excretion, and occasions the horse to dung more often then many other; for choler is the naturall glister, or one excretion whereby nature excludeth another, which descending daily into the bowells, extimulates those parts, and excites them unto expulsion; and so when this humor aboundeth or corrupteth, there succeeds oft-times a *cholericus passio*, that is a sudden and vehement purgation upward and downward; and so when the passage of gall becomes obstructed, the body grows costive, and the excrements of the belly white, as it happeneth oft-times in the Jaundice.

If any therefore affirme an horse hath no gall, that is, no receptacle, or part ordained for the separation of choller, or not that humour at all, he hath both sense and reason to oppose him; but if he saith it hath no bladder of gall, and such as is observed in many other animalls, we shall oppose our sense if we gaine say him; and thus must Aristotle be made out when he denyeth this part, and by this distinction wee may relieve Pliny of a contradiction; who in one place affirming an horse hath no gall, delivereth yet in another, that the gall of an horse was accounted poyson, and therefore at the sacrifices of horses in Rome, it was unlawfull for the Flamen but to touch it; but with more difficulty, or hardly at all is that reconcilable which is delivered by our Countreyman,

man, and received veterinarian, whose words in his master-piece, and Chapter of diseases from the gall, are somewhat too strict, and scarce admit a Reconciliation. The fallacy therefore of this conceit is not unlike the former, *A dicto secundum quid ad dictum simpliciter*, because they have not a bladder of gall, like those we usually observe in others, they have no gall at all; which is a Paralogisme not admittible, a fallacy that dwells not in a cloud, and needs not the Sun to scatter it.

CHAP. III.

Of the Dove.

THE third Assertion is somewhat like the second, That a Dove or Pigeon hath no gall, which is affirmed from very great Antiquity; for as Pierius observeth, from this consideration the Egyptians did make it the Hieroglyphick of meekenesse; it hath beene averred by many holy Writers, commonly delivered by Postillers and Commentators, who from the frequent mention of the Dove in the Canticles, the precept of our Saviour to bee wise as Serpents, and innocent as Doves, and especially the appearance of the holy Ghost in the similitude of this animall, have taken occasion to set downe many affecti- ons of the Dove, and what doth most commend it, is that it hath no Gall; and hereof have made use not onely inferiour and minor Divines, but Cyprian, Austin, Isidore, Beda, Rupertus, Jansenius, and many more.

Whereto notwithstanding we know not how to assent, it being repugnant unto the Authority and positive determination of ancient Philosophy; the affirmative of Aristotle in his history of Animals is very plaine, *Fel aliis ventri, aliis intestino jungitur*; Some have the Gall ad- joyned to the guts, as the Crow, the Swallow, Sparrow, and the Dove, the same is also attested by Pliny, and not without some passion by Galen, who in his booke *de Atra bile*, accounts him ridiculous that denies it.

It is not agreeable to the constitution of this Animall, nor can we so reasonably conceive there wants a gall; that is, the hot and fiery hu- mour in a body so hot of temper, which phlegme or melancholy could not effect: Now of what complexion it is, Julius Alexandrinus decla- reth, when he affirmeth, that some upon the use thereof, have fallen into Feavers and Quinsies; the temper also of their dung and intestinall excretions do also confirme the same, which Topically applyed be- come a Phænigmus or Rubifying medicine, and are of such fiery parts, that as we reade in Galen, they have of themselves conceived fire, and burnt a house about them, and therefore when in the famine of Sama- ria, (wherein the fourth part of a cab of Pigeons dung was sold for five pieces

pieces of silver) it is delivered by Josephus, that men made use hereof instead of common salt, although the exposition seeme strange, it is more probable then many other, for that it containeth very much salt; beside the effects before expressed, it is discernable by taste, and the earth of Columbaries or Dovehouses, so much desired in the artifice of Salt-peter; and to speake generally, the excrements of birds which want both bladder and kidneys, hath more of salt and acrimony, then that of other animals, who beside the guts have also those conveyances; for whereas in these, the salt and lixiviated serosity with some portion of choler, is divided betweene the guts and bladder, it remaines undivided in birds, and hath but a single descent, by the guts, with the exclusions of the belly. Now if because the Dove is of a milde and gentle nature, wee cannot conceive it should be of an hot temper; our apprehensions are not distinct in the measure of constitutions, and the severall parts which evidence such conditions: for the Irascible passions doe follow the temper of the heart, but the concupiscible distractions the crasis of the liver; now many have hot livers, which have but coole and temperate hearts, and this was probably the temper of Paris, a contrary constitution to that of Ajax, and in both but short of Medea, who seemed to exceed in either.

Lastly, it is repugnant to experience, for Anatomicall enquire discovereth in them a gall, and that according to the determination of Aristotle, not annexed unto the Liver, but adhering unto the guts; nor is the humour contained in smaller veines, or obscure capillations, but in a vesicle or little bladder, though some affirme it hath no cystis or bag at all, and therefore the Hieroglyphick of the Egyptians, though allowable in the sence, is weake in the foundation, who expressing meeknesse and lenity by the portraict of a Dove with the taile erected, affirmed it had no gall in the inward parts, but onely in the rumpe, and as it were out of the body, and therefore if they conceived their gods were pleased with the sacrifice of this Animall, as being without gall, the ancient Heathen were surely mistaken in the reason, and in the very oblation, whereas in the holocaust or burnt offerings of Moses the gall was cast away; for as Ben Maimon instructeth, the inwards whereto the gall adhereth were taken out with the crop, according unto the Law, Levit. 1. which the Priest did not burne, but cast unto the East; that is, behinde his back, and readiest place to be carried out of the Sanctuary. And if they also conceived that for this reason, they were the birds of Venus, and wanting the furious and discording part, were more acceptable unto the Deity of Love; they surely added unto the conceit, which was at first venereall, and in this animall may be sufficiently made out from that conception.

The ground of this conceit is partly like the former, that is, the obscure situation of the gall, and out of the Liver, wherein it is commonly

ly enquired, but this is a very unjust illation, not well considering with what variety this part is seated in birds; in some both at the stomach and the liver, as in the Capriceps, in some at the liver only, as in Cocks, Turkeys, and Phasians, in others at the guts and Liver, as in Hawkes and Kites; in some at the guts alone, as Crowes, Doves, and many more, and these perhaps may take up all the wayes of situation, not onely in birds, but also other animals, for what is said of the Anchony or *ἰννεγοῖνος*, that answerable unto its name, it carrieth the gall in the head, is further to be enquired; and though the discoloured particles in the skin of an Heron, be commonly termed Galls, yet is not this animall deficient in that part; and thus when it is conceived that the eyes of Tobias were cured by the gall of the fish Callyonimus or *Scorpius marinus*, commended to that effect by Dioscorides, although that part were not in the liver, were there reason to doubt that probability, and whatsoever animall it was, it may be received without exception when tis delivered, the married couple as a testimony of future concord, did cast the gall of the sacrifice behinde the Altar.

A strict and literall acception of a loose and tropicall expression was a second ground hereof; for while some affirmed it had no gall, intending onely thereby no evidence of anger or fury, others have construed it anatomically, and denied that part at all; by which illation we may inferre, and that from sacred Text, a Pigeon hath no heart, according to that expression, Hosea 7. *Factus est Ephraim sicut Columba seducta non habens cor*; and so from the letter of Scripture wee may conclude it is no milde, but a fiery and furious animall, according to that of Jeremy, chap. 25. *Facta est terra in desolationem a facie ira Columbae*; and againe, chap. 46. *Revertamur ad terram nativitatis nostrae a facie gladii columbae*, where notwithstanding the Dove is not literally intended, but thereby are implied the Babylonians whose Queene Semiramis was called by that name, and whose successors did beare the Dove in their standard: so is it proverbially said, *Formica sua bilis inest, habet & musca splenem*, whereas wee all know Philosophy denyeth these parts, nor hath Anatomy discovered them in insects.

If therefore any shall affirme a Pigeon hath no gall, implying no more thereby then the lenity of this animall, wee shall not controvert his affirmation; and thus may wee make out the assertions of ancient Writers, and safely receive the expressions of those great Divines and worthy Fathers; but if by a transition from Rhetorick to Logick, hee shall contend, it hath no such part, or humour, he committeth an open fallacy, and such as was probably first committed concerning Spanish Mares, whose swiftnesse tropically expressed from their generation by the wind, might after be grossly taken, and a reall truth conceived in that conception.

CHAP. IV.

Of the Bever.

That a Bever to escape the Hunter, bites off his testicles or stones, is a tenent very ancient, and hath had thereby advantage of propagation; for the same we finde in the Hieroglyphicks of the Egyptians, in the Apologue of Æsop, an Author of great antiquity, who lived in the beginning of the Persian Monarchy, and in the time of Cyrus, the same is touched by Aristotle in his Ethicks, but seriously delivered by Ælian, Plinie and Solinus, with the same we meet with in Juvenal, who by an handsome and metricall expression more welcomely engrafte it in our junior memories—*imitatus Castora, qui se*

Eunuchum ipse facit. cupiens evadere damno

Testiculorum, adeo medicatum intelligit inguen, it

hath been propagated by Emblems, and some have been so bad Gramarians, as to be deceived by the name, deriving *Castor à castrando*, whereas, the proper Latine word is *Fibor*, and *Castor*, but borrowed from the Greeke so called *quasi κάστωρ*, that is, *Animal ventricosum*, from his swaggy and prominent belly.

Herein therefore to speake compendiously, wee first presume to affirme, that from a strict enquiry, we cannot maintaine the evulsion or biting of any parts, and this is declareable from the best and most professed Writers, for though some have made use hereof in a Morall or Tropicall way, yet have the professed discoursers by silence deserted, or by experience rejected this assertion. Thus was it in ancient times discovered, and experimentally refuted by one Sestius a Physician, as it stands related by Plinie; by Dioscorides, who plainly affirms that this tradition is false, by the discoveries of moderne Authors, who have expressly discoursed hereon, as Aldrovandus, Mathiolus, Gesnerus, Bellonius; by Olaus Magnus, Peter Martyr and divers others, who have described the manner of their venations in America, they generally omitting this way of their escape, and have delivered severall other, by which they are daily taken.

The originall of the conceit was probably Hieroglyphicall, which after became Mythologicall unto the Greeks, & so set down by Æsop, and by proceffe of tradition, stole into a totall verity, which was but partially true, that is in its covert sense and morallity. Now why they placed this invention upon the Bever, (beside the Medicall and Merchantable commodity of *castoreum* or parts conceived to be bitten away) might be the sagacitie and wisdom of that animall, which indeed from the workes it performes, and especially its artifice in building is very strange, and surely not to be matched by any other, omitted

ted by Plutarch *de solertia animalium*, but might have much advantaged the drift of that discourse.

If therefore any affirme a wise man should demeane himselfe like the Bever, who to escape with his life, contemneth the losse of his genitals; that is, in case of extremity, not strictly to endeavour the preservation of all, but to sit downe in the enjoyment of the greater good, though with the detriment and hazzard of the lesser; wee may hereby apprehend a reall and usefull truth; and in this latitude of beliefe, wee are content to receive the fable of Hippomanes who redeemed his life, with the losse of a golden ball; and whether true or false, we reject not the tragedy of Absyrtus, and the dispersion of his members by Medea to perplex the pursuit of her father, but if he shall positively affirme this act, and cannot beleve the morall, unlesse hee also credit the fable, hee is surely greedy of delusion, and will hardly avoide deception in theories of this nature. The error therefore and Alogie in this opinion, is worse then in the last, that is not to receive figures for realities, but expect a verity in Apologues, and beleve, as serious affirmations, confessed and studied fables.

Againe, if this were true, and that the Bever in chase make some divulsion of parts, as that which we call *Castoreum*, yet are not these parts avelled to be termed Testicles or stones, for these cuds or follicles are found in both sexes, though somewhat more protuberant in the male; there is hereto no derivation of the seminall parts, nor any passage from hence, unto the vessels of ejaculations; some perforations onely in the part it selfe, through which the humor included doth exudate, as may be observed in such as are fresh, and not much dryed with age; and lastly, the Testicles properly so called, are of a lesser magnitude and seated inwardly upon the loynes; and therefore it were not only a fruitlesse attempt, but impossible act, to eunuchate or castrate themselves, and might bee an hazardous practise of Arte, if at all attempted by others.

Now all this is confirmed from the experimentall testimony of five very memorable Authors, Bellonius, Gesnerus, Amatus, Rondeletius, and Mathiolus, who receivng the hint hereof from Rondeletius in the Anatomie of two Bevers, did finde all true that had been delivered by him, whose words are these in his learned book *de Piscibus: Fibri in inguinibus geminos tumores habent utrinque unicum, ovi Anserini magnitudine, inter hos est mentula in maribus, in feminis pudendum, hi tumores testes non sunt, sed folliculi membrana connecti, in quorum medio singuli sunt meatus ex quibus exudat liquor pinguis & cerosus, quem ipse Castor saepe admoto ore lambit & exugit, postea veluti oleo, corporis partes oblinis; Hos tumores testes non esse hinc maxime colligitur, quod ab illis nulla est ad mentulam via neque ductus quo humor in mentula mentum derivetur & foras emittatur; praterea quod testes intus reperiuntur, eosdem tumores Moscho*

animali in esse puro, e quibus odoratum illud pus emanat; then which words there can be none plainer, nor more evidently discover the impropriety of this appellation: that which is included in the cod or visible bagge about the groine, being not the Testicle, or any spermaticall part, but rather a collection of some superfluous matter deflowing from the body, especially the parts of nutrition as unto their proper excretories, and as it doth in Musck and Civet cats, though in a different and offensive odour, proceeding partly from its food, that being especially fish, whereof this humor may be a garous excretion, or a raucide and olidous separation.

Most therefore of the Modernes before Rondeletius, and all the Antients excepting Sestius, have misunderstood this part, as conceiving *Castoreum* for the Testicles of the Bever, as Dioscorides, Galen, Aegineta, Aetius, and others have pleased to name it. The Egyptians also failed in the ground of their Hieroglyphick, when they expressed the punishment of adultery by the Bever depriving himself of his testicles, which was amongst them the penalty of such incontinencie. Nor is Aetius perhaps, too strictly to be observed, when he prescribeth the stones of the Otter, or River-dog, as succedaneous unto *Castoreum*: but most inexcusable of all is Plinie, who having before him in one place the experiment of Sestius against it, sets downe in another, that the Bevers of Pontus bite off their testicles, and in the same place affirmeth the like of the Hyena.

Now the ground of this mistake might be the resemblance and situation of these tumors about those parts, wherein we observe the testicles in other animalls; which notwithstanding is no well founded illation, for the testicles are defined by their office, and not determined by place or situation; they having one office in all, but different seats in many; for beside that no serpent or fishes oviparous, have any stones at all; that neither biped nor quadruped oviparous have any exteriorly, or prominent in the groine, some also that are viviparous contain these parts within, as beside this animall the Elephant, and the Hedge-hog.

If any therefore shall terme these, testicles, intending metaphorically, and in no strict acception, his language is tolerable and offends our ears no more then the Tropicall names of plants, when we read in Herballs in the severall kinds of Orchis of Dogs, Fox, and Goat-stones; but if he insist thereon, and maintaine a propriety in this language, our discourse hath overthrowne his assertion, nor will Logicke permit his illation, That is, from things alike, to conclude a thing the same, and from an accidentall convenience that is a similitude in place or figure, to infer a specificall congruity or substantiall concurrence in nature.

CHAP.

CHAP. V.

Of the Badger.

THat a Brock or Badger hath his legs of one side shorter then of the other, though an opinion perhaps not very ancient, is yet very generall, received not only by theorists and unexperienced beleivers, but assented unto by most who have the opportunity to behold and hunt them dayly; which notwithstanding upon enquiry I finde repugnant unto the three determinators of truth, Authority, Sense and Reason: For first, Albertus *magnus* speaks dubiously, confessing he could not confirme the verity hereof, but Aldrovand affirmeth plainly, there can be no such inequality observed; and for my own part, upon indifferent enquiry, I cannot discover this difference, although the regardible side be defined, and the brevity by most imputed unto the left.

Againe, it seems no easie affront unto reason, and generally repugnant unto the course of nature; for if we survey the totall set of animals, we may in their legs, or organs of progression, observe an equality of length, and parity of numeration; that is, not any to have an odde leg, or the supporters and movers of one side not exactly answered by the other, although the hinder may be unequall unto the fore and middle legs, as in Frogs, Locusts and Grasshoppers, or both unto the middle, as in some beetles, and spiders, as is determined by Aristotle *de incessu animalium*; perfect and viviparous quadrupeds, so standing in their position of proneness, that the opposite joynts of neighbour legs consist in the same plane, and a line descending from their navell intersects at right angles the axis of the earth: It happeneth often I confesse that a Lobster hath the chely or great claw of one side longer then the other, but this is not properly their leg, but a part of apprehension, and whereby they hold or seize upon their prey; for in them the legs and proper parts of progression are inverted backward, and stand in a position opposite unto these.

Lastly, the monstrosity is ill contrived, and with some disadvantage, the shortnesse being affixed unto the legs of one side, which might have been more tolerably placed upon the thwart or Diagonall movers; for the progression of quadrupeds being performed *per Diametrum*, that is the crosse legs moving or resting together, so that two are alwayes in motion, and two in station at the same time, the brevity had been more tolerable in the crosse legs; for then the motion and station had beene performed by equall legs, whereas herein they are both performed by unequall organs, and the imperfection becomes discoverable at every hand.

P 2

CHAP.

CHAP. VI.
Of the Beare.

THat a Bear brings forth her young informous and unshapen, which she fashio[n]eth after by licking them over, is an opinion not only vulgar, and common with us at present, but hath been of old delivered by ancient Writers upon this foundation, it was a Hieroglyphicke among the Egyptians; Aristotle seems to countenance it, Solinus, Plinie and Aelian directly affirme it, and Ovid smoothly delivereth it

*Nec catulus partu quem reddidit ursa recenti
Sed male viva caro est, lambendo mater in artus
Ducit & in formam qualem cupit ipsa reducit.*

Which opinion notwithstanding is not only repugnant unto the sense of every one that shall with diligence enquire into it, but the exact and deliberate experiment of three authentick Philosophers; the first of Mathiolus in his Comment on Dioscorides, whose words are to this effect. In the valley of Anania about Trent, in a Beare which the Hunters eventerated, I beheld the young ones with all their parts distinct, and not without shape, as many conceive, giving more credit unto Aristotle and Plinie, then experience and their proper senses. Of the same assurance was Julius Scaliger in his Exercitationes, *Ursam fetus informes potius ejicere, quam parere, si vera dicunt, quos postea linctu effingat; Quid hujusce fabule authoribus fidei habendum ex hac historia cognosces, In nostris Alpibus venatores fatam ursam cepere, dissecta ea fetus plane formatus intus inventus est*: and lastly, Aldrovandus who from the testimony of his owne eyes affirmeth, that in the cabinet of the Senate of Bononia, there was preserved in a glasse a Cub dissected out of a Beare perfectly formed, and compleat in every part.

It is moreover injurious unto reason, and much impugneth the course and providence of nature, to conceive a birth should be ordained before there is a formation; for the conformation of parts is necessarily required not only unto the prerequisites and previous conditions of birth, as motion and animation, but also unto the parturition or very birth it selfe; wherein not only the Dam, but the younglings play their parts, and the cause and act of exclusion proceedeth from them both: for the exclusion of animals is not meerly passive like that of egges, nor the totall action of delivery to be imputed unto the mother; but the first attempt beginneth from the Infant, which at the accomplished period attempteth to change his mansion, and struggling to come forth, dilacerates and breaks those parts which restrained him before.

Beside (what few take notice of) men hereby doe in a high measure vilifie the workes of God, imputing that unto the tongue of a beast, which is the strangest artifice in all the acts of nature, that is the formation

mation of the Infant in the womb, not only in mankind, but all viviparous animals whatsoever, wherein the plastick or formative faculty, from matter appearing homogeneous, and of a similiary substance erecteth bones, membranes, veynes and arteries, and out of these contriveth every part in number, place and figure, according to the law of its species, which is so far from being fashioned by any outward agent, that once omitted or perverted by a slip of the inward Phidias, it is not reducible by any other whatsoever; and therefore, *mire me plasmaverunt manus tue*, though it originally respected the generation of man, yet is it applicable unto that of other animalles, who entering the wombe in indistinct and simple materialles, returne with distinction of parts, and the perfect breath of life; he that shall consider these alterations without, must needs conceive there have been strange operations within, which to behold it were a spectacle almost worth ones being, a sight beyond all, except that man had been created first, and might have seen the shew of five dayes after.

Now as the opinion is repugnant both unto sense and reason, so hath it probably been occasioned from some slight ground in either; thus in regard the cub comes forth involved in the Chorion, a thick and tough membrane obscuring the formation, and which the Dam doth after bite, and teare asunder, the beholder at first sight conceives it a rude and informous lump of flesh, and imputes the ensuing shape unto the mouthing of the Dam; which addeth nothing thereunto, but onely drawes the curtaine, and takes away that vaile which conceded the piece before; and thus have some endeavoured to enforce the same from reason; that is, the small and slender time of the Beares gestation, or going with her young, which lasting but few dayes (a month some say) the exclusion becomes precipitous, and the young ones consequently informous; according to that of Solinus, *Trigesimus dies uterum liberat urse, unde evenit ut precipitata fecunditas informes creet parvulus*; but this will overthrow the generall method of nature, in the works of generation; for therein the conformation is not only antecedent, but proportionall unto the exclusion, and if the period of the birth be short, the terme of conformation will be as sudden also, there may I confesse from this narrow time of gestation ensue a minority or smallnesse in the exclusion, but this however inferreth no informity, and it still receiveth the name of a naturall and legitimate birth; whereas if we affirme a totall informity, it cannot admit so forward a terme as an Abortment; for that supposeth conformation, and so wee must call this constant and intended act of nature, a slip, an *expulsio* or effluxion, that is an exclusion before conformation, before the birth can beare the name of the parent, or be so much as properly called an Embryon.

CHAP. VII.
Of the Basilisk.

Many opinions are passant concerning the Basiliske or little king of Serpents, commonly called the Cockatrice, some affirming, others denying, most doubting the relations made hereof; what therefore in these incertainties we may more surely determine, that such an animall there is, if we evade not the testimony of Scripture, and humane Writers, we cannot safely deny: So is it said Psal. 91. *Super aspidem & Basiliscum ambulabis*, wherein the vulgar Translation retaineth the word of the Septuagint, using in other places the Latine expression *Regulus*, as Proverb. 23. *Mordebit ut coluber, & sicut Regulus venena diffundet*, and Jeremy 8. *Ecce ego mittam vobis serpentes Regulos, &c.* That is, as ours translate it, Behold I will send Serpents, Cockatrices among you which will not be charmed, and they shall bite you; and as for humane Authors, or such as have discoursed of animals, or poysons, it is to be found almost in all, as Dioscorides, Galen, Pliny, Solinus, Aelian, Aetius, Avicen, Ardoynus, Crevinus, and many more; In Aristotle I confesse we finde no mention, but Scaliger in his Comment and enumeration of Serpents, hath made supply, and in his Exercitations delivereth that a Basilisk was found in Rome, in the dayes of Leo the fourth, and the like is reported by Sigonius, and some are so farre from denying one, that they have made severall kinds thereof, for such is the Catoblepas of Pliny, conceived by some, and the Dryinus of Aetius by others.

But although we deny not the existence of the Basilisk, yet whether we do not commonly mistake in the conception hereof, and call that a Basilisk which is none at all, is surely to be questioned; for certainly that which from the conceit of its generation we vulgarly call a Cockatrice, and wherein (but under a different name) we intend a formall Identity and adequate conception with the Basilisk, is not the Basilisk of the Ancients, whereof such wonders are delivered. For this of ours is generally described with legs, wings, a serpentine and winding taile, and a crist or combe somewhat like a Cock; but the Basilisk of elder times was a proper kinde of Serpent, not above three palmes long, as some account, and differenced from other Serpents by advancing his head, and some white markes or coronary spots upon the crowne, as all authentick Writers have delivered.

Nor is this Cockatrice onely unlike the Basiliske, but of no reall shape in nature, and rather an Hieroglyphicall fancy, to expresse their different intentions, set forth in different fashions; sometimes with the head of a man, sometimes with the head of an Hawke, as Pierius hath delivered, and as with addition of legs the Heralds and Painters

still

still describe it; nor was it onely of old a symbollicall and allowable invention, but is now become a manuell contrivance of Art, and artificiall imposture, whereof besides others, Scaliger hath taken notice: *Basilisci formam mentiri sunt vulgo Gallinaceo similem, & pedibus binis, neque enim ab similes sunt ceteris serpentibus, nisi macula quasi in vertice candida, unde illi nomen Regium*, that is, men commonly counterfeit the forme of a Basilisk, with another like a Cock, and with two feet, whereas they differ not from other Serpents, but in a white speck upon their crowne; now although in some manner it might be counterfeited in Indian Cocks, and flying Serpents, yet is it commonly contrived out of the skins of Thornebacks, Scaites or Maids, as Aldrovand hath observed, and also graphically described in his excellent booke of Fishes.

Nor is onely the existency of this animall considerable, but many things delivered thereof, particularly its poyson, and its generation. Concerning the first, according to the doctrine of the Ancients, men still affirme, that it killeth at a distance, that it poysoneth by the eye, and that by priority of vision; now that deleterious it may bee at some distance and destructive without a corporall contaction, what uncertainty soever there be in the effect, there is no high improbability in the relation; for if plagues or pestilentiall Atomes have beene conveyed in the ayre from different Regions, if men at a distance have infected each other; if the shaddowes of some trees be noxious, if Torpedoes deliver their opium at a distance, and stupifie beyond themselves, we cannot reasonably deny, that, beside our grosse and restrained poysons requiring contiguity unto their actions, there may proceed from subtiler seeds, more agile emanations, which will contemne those Laws, and invade at distance unexpected.

That this venenation shooteth from the eye, and that this way a Basilisk may empoison, although thus much be not agreed upon by Authors, some imputing it unto the breath, others unto the bite, it is not a thing impossible; for eyes receive offensive impressions, from their objects, and may have influences destructive to each other; for the visible species of things strike not our senses immaterally, but streaming in corporall rayes, do carry with them the qualities of the object from whence they flow, and the medium through which they passe: Thus through a Greene or red glasse all things wee behold appeare of the same colours; thus fore eyes affect those which are sound, and themselves also by reflection, as will happen to an inflamed eye that beholds it selfe long in a glasse; thus is fascination made out, and thus also it is not impossible, what is affirmed of this animall, the visible rayes of their eyes carrying forth the subtilest portion of their poyson, which received by the eye of man, or beast, infecteth first the braine, and is from thence communicated unto the heart.

But

But lastly, that this destruction should be the effect of the first beholder, or depend upon priority of aspection, is a point not easily to be granted, and very hardly to be made out upon the principles of Aristotle, Alhazen, Vitello, and others; who hold that sight is made by Reception, and not by Extramission, by receiving the rayes of the object into the eye, and not by sending any out; for hereby although he behold a man first, the Basilisk should rather be destroyed, in regard he first receiveth the rayes of his Antipathy and venomous emissions which objectively move his sense; but how powerfull soever his owne poyson be, it invadeth not the sense of man, in regard he beholdeth him not: and therefore this conceit was probably first begot by such as held the contrary opinion of sight by extramission, as did Pythagoras, Plato, Empedocles, Hipparchus, Galen, Macrobius, Proclus, Simplicius, with most of the Ancients, and is the postulate of Euclide in his Opticks: and of this opinion might they be, who from this Antipathy of the Basilisk and man, expressed first the enmity of Christ and Sathan, and their mutuall destruction thereby; when Satan being elder then his humanity, beheld Christ first in the flesh, and so he was destroyed by the Serpent, but Elder then Sathan in his Divinity, and so beholding him first he destroyed the old Basilisk, and overcame the effects of his poyson, sin, death, and hell.

As for the generation of the Basilisk, that it proceedeth from a Cocks egge hatched under a Toad or Serpent, it is a conceit as monstrous as the brood it selfe: for if wee should grant that Cocks growing old, and unable for emission, amasse within themselves some seminall matter, which may after conglobate into the forme of an egge, yet will this substance be unfruitfull, as wanting one principle of generation, and a commixture of the seed of both sexes, which is required unto production, as may be observed in the egges of hens not trodden, and as we have made triall in some which are termed Cocks egges; It is not indeed impossible that from the sperme of a Cock, Hen, or other animall being once in putrescence, either from incubation, or otherwise, some generation may ensue, not univocall and of the same species, but some imperfect or monstrous production; even as in the body of man from putred humours, and peculiar wayes of corruption, there have succeeded strange and unseconded shapes of wormes, whereof we have beheld some our selves, and read of others in medicall observations: and so may strange and venomous Serpents be severall wayes engendered; but that this generation should be regular, and alway produce a Basilisk, is beyond our affirmation, and we have good reason to doubt.

Againe, it is unreasonable to ascribe the equivocacy of this forme unto the hatching of a Toade, or imagine that diversifies the production; for Incubation alters not the species, nor if wee observe it so much

much as concures either to the sex or colour, as evidently appears in the eggs of Ducks or Partridges hatched under a Hen, there being required unto their exclusion, onely a gentle and continued heate, and that not particular or confined unto the species or parent; so have I knowne the seed of filke-wormes hatched on the bodies of women, and so Pliny reports that Livia the wife of Augustus hatched an egge in her bosome; nor is onely an animall heate required hereto, but an elementall and artificiall warmth will suffice; for as Diodorus delivereth, the Egyptians were wont to hatch their eggs in ovens, and many eye witnesses confirme that practise unto this day: and therefore this generation of the Basilisk, seemes like that of Castor and Helena, he that can credit the one, may easily beleve the other; that is, that these two were hatched out of the egge, which Jupiter in the forme of a Swan, begat on his Mistris Leda.

The occasion of this conceit might be an Egyptian tradition concerning the bird Ibis, which after became transferred unto Cocks, for an old opinion it was of that Nation, that the Ibis feeding upon Serpents, that venomous food so inquinated their ovall conceptions, or egges within their bodies, that they sometimes came forth in Serpentine shapes; and therefore they alwayes brake their egges, nor would they endure the bird to sit upon them; but how causelesse their feare was herein, the daily Incubation of Ducks, Peahens, and many other testifie, and the Stoike might have informed them, which bird they honoured and cherished, to destroy their Serpents.

That which much promoted it, was a misapprehension in holy Scripture upon the Latine Translation in Esay 51. *Ova aspidum rupe-runt. & telas Araneorum texuerunt qui comedent de ovis eorum morietur, & quod confortum est erumpet in Regulum*, from whence notwithstanding, beside the generation of Serpents from egges there can be nothing concluded; but what kind of serpents are meant not easie to be determined, for translations are very different: Tremellius rendring the Asp Hamorrhous, & the Regulus or Basilisk a Viper, & our translation for the Aspe, sets down a Cockatrice in the text, and an Adder in the margine.

Another place of Esay doth also seeme to countenance it, chap. 14. *Ne Lateris Philistea quoniam diminuta est virga percussoris tui de radice enim colubri egredietur Regulus, & semen ejus absorbens volucrum*, which ours somewhat favourably rendreth, out of the Serpents Root shall come forth a Cockatrice, and his fruit shall be a fierie flying Serpent: But Tremellius, *de radice Serpentis prodit Hamorrhous, & fructus illius Praester volans*, wherein the words are different, but the sense is still the same; for therein are figuratively intended Vzziah and Ezechias, for though the Philistines had escaped the Minor Serpent Vzziah, yet from his stock, a fiercer Snake should arise, that would more terribly sting them, and that was Ezechias.

every September may be observed in this Animall, and is supposed to shorten the lives of Cocks, Partridges, and Sparrowes; certainly a confessed and undeniable enemy unto longevitie, and that not onely as a signe in the complexionall desire, and impetuositie, but also as a cause in the frequent act, or iterated performance thereof; For though we consent not with that Philosopher, who thinks a spermaticall emission unto the waight of one dragma, is equivalent unto the effusion of fixtie ounces of blood, yet considering the resolution and languor ensuing that act in some, the extenuation and marcor in others, and the visible acceleration it maketh of age in most, wee cannot but thinke it much abridgeth our dayes: although we also concede that this exclusion is naturall, that nature it selfe will finde a way hereto without either act or object; And although it be placed among the fixe non naturals, that is, such as neither naturally constitutive, nor meerly destructive, doe preserve or destroy according unto circumstance; yet do we sensibly observe an impotencie or totall privation thereof, prolongeth life, and they live longest in every kinde that exercise it not at all, and this is true not onely in Eunuches by nature, but spadoes by Art; For castrated animals in every species are longer lived then they which retaine their virilities: For the generation of bodies is not effected as some conceive, of soules, that is, by Irradiation, or answerably unto the propagation of light, without its proper diminution; but therein a transmission is made materially from some parts, and Ideally from every one, and the propagation of one, is in a strict acception, some minoration of another; and therefore also that axiome in Philosophy, that the generation of one thing, is the corruption of another, although it be substantially true concerning the forme and matter, is also dispositively verified in the efficient or producer.

As for more sensible arguments, and such as relate unto experiment, from these we have also reason to doubt its age, and presumed vivacity; for where long life is naturall, the markes of age are late, and when they appear, the journey unto death cannot be long. Now the age of a Deere (as Aristotle long agoe observed) is best conjectured, by the view or the hornes and teeth; from the hornes there is a particular and annuall account unto six yeares, they arising first plaine, and so successively branching, after which the judgement of their yeares by particular markes becomes uncertaine; but when they grow old, they grow lesse branched, and first doe lose their *apertures*, or *propugnacula*; that is, their brow Antlers, or lowest furcations next the head, which Aristotle saith the young ones use in fight, and the old as needles have them not at all. The same may be also collected from the losse of their Teeth, whereof in old age they have few or none before in either jaw. Now these are infallible markes of age, and when they appeare, wee must confesse a declination, which notwithstanding (as men informe us in England)

England) where observations may well be made, will happen between twenty and thirty: As for the bone or rather induration of the roots of the arteriall veyn, and great artery, which is thought to be found only in the heart of an old Deere, and therefore becomes more precious in its rarity, it is often found in Deere, much under thirty, and wee have knowne some affirme they have found it in one of halfe that age; and therefore in that account of Plinie of a Deere with a collar about his necke, put on by Alexander the Great, and taken alive a hundred years after, with other relations of this nature we much suspect imposture or mistake; and if we grant their verity, they are but single relations, and very rare contingencies in individualls, not affording a regular diduction upon the species: For though Ulysses his Dog lived unto twenty two, and the Athenian Mule unto fourscore, we doe not measure their dayes by those yeares, or usually say, they live thus long, nor can the three hundred years of John of times, or Nestor, overthrow the assertion of Moses, or afford a reasonable encouragement beyond his septuagenary determination.

The ground and authority of this conceit was first Hieroglyphicall, the Egyptians expressing longevitie by this animall, but upon what uncertainties, and also convincible falsities they often erected such emblems we have elsewhere delivered; and if that were true which Aristotle delivers of his time, and Plinie was not afraid to take up long after, the Egyptians could make but weake observations herein; for though it be said that Aeneas feasted his followers with Venison, yet Aristotle affirms that neither Deer nor Boar were to be found in Africa; and how far they miscounted the lives and duration of Animals, is evident from their conceit of the Crow, which they presume to live five hundred yeares, and from the lives of Hawkes which (as Aelian delivereth) the Egyptians doe reckon no lesse then at seven hundred.

The second which led the conceit unto the Grecians, and probably descended from the Egyptians, was Poeticall, and that was a passage of Hesiod, thus rendred by Ausonius,

Ter binos deciesq; novem super exit in annos

Iusta senes, centum quos implet vita virorum

Hos novies superat vivendo garrula cornix

Et quater egreditur cornicis secula cervus

Alpe dem cervum ter vincit corvus. —

To ninty six the life of man ascendeth,

Nine times as long that of the Chough extendeth,

Four times beyond, the life of Deere doth goe,

And thrice is that surpassed by the Crow. So that according to this account, allowing ninety six for the age of man, the life of a Deere amounts unto three thousand, foure hundred, fifty six; A conceit

ceit so hard to be made out, that many have deserted the common and literall construction. So Theon in Aratus would have the number of nine not taken strictly, but for many yeares: In other opinions the compute so farre exceeded truth, that they have thought it more probable to take the word *Genea*, that is a generation consisting of many yeares, but for one yeare, or a single revolution of the Sunne, which is the remarkable measure of time, and within the compasse whereof we receive our perfection in the wombe. So that by this construction, the yeares of a Deere should be but thirty six, as is discoursed at large in that Tract of Plutarch, concerning the cessation of Oracles, and whereto in his Discourse of the Crow, Aldrovandus also inclineth: others not able to make it out, have rejected the whole account, as may bee observed from the words of Plinie, *Hesiodus qui primus aliquid de longævitæ vitæ prodidit, fabulose (reor) multa de hominum ævo reference cornici novem nostras attribuit ætates quadruplum ejus cervis, id triplicatum corvis, & reliqua fabulosius de Phenice & nymphis*; and this how slender soever, was probably the strongest ground Antiquity had for this longævity of Animalls, that made Theophrastus expostulate with Nature concerning the long life of Crows, that begat that Epithite of Deer *παραπόρως*, in Oppianus, and that expression of Juvenal — *Longa & cervina senectus*.

The third ground was Philosophicall and founded upon a probable reason in nature, and that is the defect of a Gall, which part (in the opinion of Aristotle and Plinie) this animall wanted, and was conceived a cause and reason of their long life, according (say they) as it happeneth unto some few men, who have not this part at all, but this assertion is first defective in the verity concerning the animall alleadged: for though it be true, a Deere hath no gall in the liver like many other animalls, yet hath it that part in the guts as is discoverable by taste and colour: and therefore Plinie doth well correct himselfe, when having affirmed before, it had no gall, he afterward saith, some hold it to bee in the guts, and that for their bitternessse, dogs will refuse to eat them. It is also deficient in the verity of the Induction or connumeration of other animalls conjoynded herewith, as having also no gall; that is, as Plinie accounteth, *Equi, Muli, &c.* Horses, Mules, Asses, Deer, Goats, Boars, Camells, Dolphins, have no gall; concerning Horses, what truth there is herein we have declared before; as for Goats wee finde not them without it, what gall the Camell hath, Aristotle declareth, that Hogs also have it, we can affirm, and that not in any obscure place, but in the liver, even as it is seated in man.

That therefore the Deere is no short lived animall, we will acknowledge, that comparatively, and in some sense long lived wee will concede; and thus much we shall grant if we commonly account its dayes by thirty six or forty; for thereby it will exceed all other cornigerous animalls,

animalls, but that it attaineth unto hundreds, or the yeares delivered by Authors, since we have no authentick experience for it, since wee have reason and common experience against it, since the grounds are false and fabulous which doe establish it, wee know no ground to assent.

Concerning the Deere there also passeth another opinion, that the males thereof doe yearly lose their pizzell; for men observing the decidence of their hornes, doe fall upon the like conceit of this part that it annually rotteth away, and successively reneweth againe. Now the ground hereof, was surely the observation of this part in Deere after immoderate venery, and about the end of their Rutt, which sometimes becomes so relaxed and pendulous, it cannot be quite retracted; and being often beset with flies, it is conceived to rot, and at last to fall from the body; but herein experience will contradict us: for those Deere which either dye or are killed at that time, or any other, are alwayes found to have that part entire; and reason also will correct us, for spermatieall parts, or such as are framed from the seminall principles of parents, although homogeneous or similiary, will not admit a Regeneration, much lesse will they receive an integrall restauration, which being organieall and instrumentall members, consist of many of those. Now this part, or animall of Plato, containeth not only sanguineous and reparable particles, but is made up of veynes, nerves, arteries, and in some animalls of bones, whose reparation is beyond its owne fertility, and a fruit not to be expected from the fructifying part it selfe, which faculty were it communicated unto animalls, whose originalls are double, as well as unto plants, whose seed is within themselves, we might abate the Art of Taliacotius, and the new inarching of noses; and therefore the phancies of Poets have been so modest, as not to set downe such renovations, even from the powers of their dietes; for the mutilated shoulder of Pelops was pieced out with Ivory, and that the limbs of Hyppolitus were set together, not regenerated by Æsculapius, is the utmost assertion of Poetry.

CHAP. X.

Of the Kingfisher.

That a Kingfisher hanged by the bill, sheweth in what quarter the wind is, by an occult and secret propriety, converting the breast to that point of the Horizon from whence the wind doth blow, is a received opinion, and very strange; introducing naturall Weathercocks, and extending magneticall conditions as far as animall natures: A conceit supported chiefly by present practice, yet not made out by reason or experience.

For

For unto reason it seemeth very repugnant, that a carcasfe or body disanimated, should be so affected with every wind, as to carry a conformable respect and constant habitude thereto: For although in sundry animalls, we deny not a kinde of naturall Astrologie, or innate presentation both of wind and weather; yet that proceeding from sense receiving impressions from the first mutation of the ayre, they cannot in reason retain that apprehension after death, as being affections which depend on life, and depart upon disanimation, and therefore with more favourable reason may we draw the same effect, or sympathie upon the Hedgehog, whose presentation of winds is so exact, that it stoppeth the north or southerne hole of its nest, according to prenotation of these winds ensuing, which some men unexpectedly observing, have beene able to make predictions which way the wind would turne, and have been esteemed hereby wise men in point of weather. Now this proceeding from sense in the creature alive, it were not reasonable to hang up an Hedgehog dead, and to expect a conformable motion unto its living conversion: and though in sundry plants their vertues doe live after death, and we know that Scammonie, Rhubarbe, and Senna will purge without any vitall assistance; yet in animals or sensible creatures, many actions are mixt, and depend upon their living forme, as well as that of mistion, and though they wholly seeme to retaine unto the body depart upon disunion: Thus Glowewormes alive, project a lustre in the darke, which fulgour notwithstanding ceaseth after death; and thus the Torpedo which being alive stupifies at a distance, applied after death, produceth no such effect, which had they retained, in places where they abound, they might have supplied Opium, and served as frontalls in Phrensies.

As for experiment we cannot make it out by any we have attempted, for if a single Kingfisher be hanged up with untwisted silke in an open roome; and where the ayre is free, it observes not a constant respect unto the mouth of the wind, but variously converting doth seldome breast it right; if two be suspended in the same roome, they will not regularly conforme their breasts, but oft-times respect the opposite points of heaven; and if we conceive that for the exact exploration they should be suspended where the ayre is quiet and unmoved, that clear of impediments, they may more freely convert upon their naturall verticity, we have also made this way of inquisition in suspending them in large and capacious glasses closely stopped; wherein nevertheless we observed a casual station, and that they rested irregularly upon conversion, wheresoever they rested remaining inconverted, and possessing one point of the Compasse, whilst the wind perhaps hath passed the two and thirty.

The ground of this popular practice might be the common opinion concerning the vertue prognosticke of these birds, the naturall regard they

Commonly
mistaken for
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they have unto the winds, and they unto them againe, more especially remarkable in the time of their nidulation, and bringing forth their young; for at that time which happeneth about the brumall Solstice it hath beene observed even unto a proverbe, that the Sea is calme, and the winds do cease, till the young ones are excluded, and forsake their nest, which floateth upon the Sea, and by the roughnesse of winds might otherwise be overwhelmed; but how farre hereby to magnifie their prediction we have no certaine rule, for whether out of any particular prenotation they chuse to sit at this time, or whether it be thus contrived by concurrence of causes, and the providence of Nature, securing every species in their production, is not yet determined. Surely many things fall out by the Designe of the generall motor and undreamt of contrivance of Nature, which are not imputable unto the intention or knowledge of the particular Actor. So though the feminallity of Ivy be almost in every earth, yet that it ariseth and groweth not, but where it may be supported, we cannot ascribe unto the distinction of the seed, or conceive any science therein which suspends and conditionates its eruption. So if, as Pliny and Plutarch report, the Crocodils of Ægypt, so aptly lay their eggs, that the natives thereby are able to know how high the flood will attaine; yet is it hard to make out, how they should divine the extent of the inundation, depending on causes so many miles remote, that is, the measure of showers in Æthiopia; and whereof, as Athanasius in the life of Authony delivers, the Devill himselfe upon demand could make no cleere prediction; and so are there likewise many things in Nature, which are the fore-runners or signes of future effects, whereto they neither concur in causality or prenotation, but are secretly ordered by the providence of causes, and concurrence of actions collaterall to their signations.

CHAP. XI. Of Griffons.

That there are Griffons in Nature, that is a mixt and dubious animal, in the fore-part resembling an Eagle, and behinde the shape of a Lion, with erected eares, foure feet, and a long taile, many affirme, and most I perceive deny not; the same is averred by Ælian, Solinus, Mela, and Herodotus, countenanced by the name sometimes found in Scripture, and was an Hieroglyphick of the Egyptians.

Notwithstanding wee finde most diligent enquirers to be of a contrary assertion; for beside that Albertus and Pliny have disallowed it, the learned Aldrovand hath in a large discourse rejected it; Mathias Michovius who writ of those Northerne parts wherein men place these Griffins, hath positively concluded against it, and if examined by

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the doctrine of animals; the invention is monstrous, nor much inferior unto the figment of Sphynx, Chimæra, and Harpies: for though some species there be of a middle and participating natures, that is, of bird and beast, as we finde the Bat to be, yet are their parts so conformed and set together that we cannot define the beginning or end of either, there being a commixtion of both in the whole, rather than an adaptation, or cement of the one unto the other.

Now for the word *gryps*, or Gryps, sometimes mentioned in Scripture, and frequently in humane Authors, properly understood, it signifies some kinde of Eagle or Vulture, from whence the Epithite *Grypus* for an hooked or Aquiline nose. Thus when the Septuagint makes use of this word in the eleventh of Leviticus, Tremellius and our Translation hath rendred it the Ossifrage, which is one kinde of Eagle, although the Vulgar translation, and that annexed unto the Septuagint retain the word *Grips*, which in ordinary and schoole construction is commonly rendred a Griffin; yet cannot the Latin assume any other sence then the Greek, from whence it is borrowed; and though the Latine *Gryphes* be altered somewhat by the addition of an h, or aspiration of the letter *π*, yet is not this unusuall; so what the Greeks call *γρύπαιον*, the Latins will call *Trophæum*, and that person which in the Gospel is named *κλεόπας*, the Latins will render *Cleophas*, and therefore the quarrell of Origen was unjust and his conception erroneous, when he conceived the food of Griffins forbidden by the Law of Moses, that is, poeticall animals, and things of no existence: and therefore when in the Hecatombs and mighty oblations of the Gentiles, it is delivered they sacrificed Gryphes or Griffins, hereby we may understand some stronger sort of Eagles; and therefore also when it said in Virgil of an improper match, or Mopsus marrying Nyssa, *Iungentur jam gryhes equis*, we need not hunt after other sence, then that strange unions shall be made, and differing natures be conjoynd together.

As for the testimonies of ancient Writers, they are but derivative, and terminate all in one Aristeus a Poet of Proconesus; who affirmed that neere the Arimaspi, or one eyed Nation, Griffins defended the mines of gold: but this as Herodotus delivereth, he wrote by heresay; and Michovius who hath expressly written of those parts plainly affirmeth, there is neither gold nor Griffins in that countrey, nor any such animall extant, for so doth he conclude, *Ego vero contra veteres auctores, Gryphes nec in illa septentrionis, nec in aliis orbis partibus inveniri affirmarim.*

Lastly, concerning the Hieroglyphicall authority, although it neereft approacheth the truth, it doth not inferre its existency; the conceit of the Griffin properly taken being but a symbollicall phancy, in so intolerable a shape including allowable morality. So doth it well make

make out the properties of a Guardian, or any person entrusted; the eares implying attention, the wings celerity of execution, the Lion-like shape, courage and audacity, the hooked bill, reservance and tenacity. It is also an Embleme of valour and magnanimity, as being compounded of the Eagle and Lion, the noblest animals in their kinds; and so is it applyable unto Princes, Presidents, Generals, and all heroick Commanders, and so is it also borne in the Coat-arnes of many noble Families of Europe.

CHAP. XII.
Of the Phenix.

That there is but one Phænix in the world, which after many hundred yeares burneth it selfe, and from the ashes thereof ariseth up another, is a conceit not new or altogether popular, but of great Antiquity; not onely delivered by humane Authors, but frequently expressed by holy Writers, by Cyrill, Epiphanius, and others, by Ambrose in his Hexameron, and Tertul. in his Poem *de Iudicio Domini*, but more agreeably unto the present sence in his excellent Tract, *de Resur. carnis*, *Illam dico alitem orientis peculiarem, de singularitate famosum, de posteritate monstruosum, qui semetipsum libenter funerans renovat, natali sine decedens, atque succedens iterum Phænix, ubi jam nemo, iterum ipse, quia non jam alius idem.* The Scripture also seemes to favour it, particularly that of Job 21. in the Interpretation of Beda, *Dicebam in nidulo meo moriar & sicut Phænix multiplicabo dies*, and Psalme 91. *δικαιος ὡς περ φοῖνιξ ἀνθήσει, vir justus ut Phænix florebit*, as Tertullian renders it, and so also expounds it in his booke before alledged.

All which notwithstanding we cannot presume the existence of this animall, nor dare we affirme there is any Phænix in Nature. For, first there wants herein the definitive confirmator and test of things uncertaine, that is, the sence of man: for though many Writers have much enlarged hereon, there is not any ocular describer, or such as presumeth to confirme it upon aspection; and therefore Herodotus that led the story unto the Greeks, plainly saith, he never attained the sight of any, but onely in the picture.

Againe, primitive Authors, and from whom the streame of relations is derivative, deliver themselves very dubiously, and either by a doubtfull parenthesis, or a timorous conclusion overthrow the whole relation: Thus Herodotus in his Euterpe, delivering the story hereof, presently interposeth, *ἐμοὶ μὲν οὐ πείρα λέγοντες*, that is, which account seemes to me improbable; Tacitus in his Annals affordeth a larger story, how the Phænix was first seene at Heliopolis in the reigne of Sesostris, then in the reigne of Amasis, after in the dayes of Ptolomy, the third of the Macedonian rare; but at last thus determineth, *Sed Antiquitas*

tiquitas obscura, & nonnulli falsum esse hunc Phœnicē, neque Arabū à terris credidere. Pliny makes yet a fairer story, that the Phœnix flew into Ægypt in the Consulship of Quintus Plancius, that it was brought to Rome in the Censorship of Claudius, in the 800. yeare of the City, and testified also in their records; but after all concludeth, *Sed quæ falsa esse nemo dubitabit*, but that this is false no man will make doubt.

Moreover, such as have naturally discoursed hereon, have so diversly, contrarily, or contradictorily delivered themselves, that no affirmative from thence can reasonably be deduced; for most have positively denyed it, and they which affirme and beleeve it, assigne this name unto many, and mistake two or three in one. So hath that bird beene taken for the Phœnix which liveth in Arabia, and buildeth its nest with Cinnamon, by Herodotus called *Cinnamulgu*, and by Aristotle *Cinnamomus*, and as a fabulous conceit is censured by Scaliger; some have conceived that bird to be the Phœnix, which by a Persian name with the Greeks is called Rhyntace; but how they made this good we finde occasion of doubt, whilst we reade in the life of Artaxerxes, that this is a litle bird brought often to their tables, and where-with Parysatis cunningly poysoned the Queene. The Manucodiata or bird of Paradise, hath had the honour of this name, and their feathers brought from the Molucca's, doe passe for those of the Phœnix; which though promoted by rariety with us, the Easterne travellers will hardly admit, who know they are common in those parts, and the ordinary plume of Janizaries among the Turks. And lastly, the bird Semenda hath found the same appellation, for so hath Scaliger observed and refuted; nor will the solitude of the Phœnix allow this denomination, for many there are of that species, & whose trifistulary bill and crany we have beheld our selves; nor are men onely at variance in regard of the Phœnix it selfe, but very disagreeing in the accidents ascribed thereto: for some affirme it liveth three hundred, some five, others six, some a thousand, others no lesse then fiftene hundred yeares; some say it liveth in Æthiopia, others in Arabia, some in Ægypt, others in India, and some I thinke in Utopia, for such must that be which is described by Lactantius, that is, which neither was singed in the combustion of Phaeton, or overwhelmed by the inundation of Deucalion.

Lastly, many Authors who have made mention hereof, have so delivered themselves, and with such intentions we cannot from thence deduce a confirmation: For some have written Poetically as Ovid, Mantuan, Lactantius, Claudian, and others: Some have written mystically, as Paracelsus in his booke *de Azoth*, or *deligno & linea vita*; and as severall Hermeticall Philosophers, involving therein the secret of their Elixir, and enigmatically expressing the nature of their great worke: Some have written Rhetorically, and concessively not contro-

verting

verting but assuming the question, which taken as granted advantaged the illation: So have holy men made use hereof as farre as thereby to confirme the Resurrection; for discoursing with heathens who granted the story of the Phœnix, they induced the Resurrection from principles of their owne, and positions received among themselves. Others have spoken Emblematically and Hieroglyphically, and so did the Ægyptians, unto whom the Phœnix was the Hieroglyphick of the Sunne; and this was probably the ground of the whole relation, succeding ages adding fabulous accounts, which laid together built up this singularity, which every pen proclaimeth.

As for the Texts of Scripture, which seem to confirme the conceit duly perpended, they adde not thereunto; For whereas in that of Job, according to the Septuagint or Greeke Translation we finde the word Phœnix, yet can it have no animall signification; for therein it is not expressed *φοίνιξ* but *σέλινος πολύτροπος*, the truncke of the Palme tree, which is also called Phœnix, and therefore the construction will be very hard, if not applyed unto some vegetable nature; nor can we safely insist upon the Greek expression at all: for though the Vulgar translates it *Palma*, & som retain the Phœnix, others do render it by a word of a different sense; for so hath Tremellius delivered it: *Dicebam quod apud nidum meum expirabo, & sicut arena multiplicabo dies*; so hath the Geneva and ours translated it, I said I shall dye in my nest, and shall multiply my dayes, as the sand: as for that in the booke of Plalmes, *Vir justus ut Phœnix florebit*, as Epiphanius and Tertullian render it, it was only a mistake upon the homonymy of the Greeke word Phœnix, which signifies also a Palme tree, which is a fallacy of equivocation, from a community in name, inferring a common nature, and whereby we may as firmly conclude, that Diaphœnicon a purging electuary hath some part of the Phœnix for its ingredient, which receiveth that name from Dates, or the fruit of the Palme tree, from whence as Plinie delivers, the Phenix had its name.

Nor doe we only arraigne the existence of this animall, but many things are questionable which are ascribed thereto, especially its unity, long life, and generation: As for its unity or conceit there should bee but one in nature, it seemeth not onely repugnant unto Philosophy, but also the holy Scripture, which plainly affirms, there went of every sort two at least into the Arke of Noah, according to the text, Gen. 7. Every fowle after his kinde, every bird of every sort, they went into the Arke, two and two of all flesh, wherein there is the breath of life, and they that went in, went in both male and female of all flesh; it infringeth the Benediction of God concerning multiplication, Gen. 1. God blessed them saying, Be fruitfull and multiply, and fill the waters in the seas, and let fowl multiply in the earth; and again, Chap. 8. Bring forth with thee, every living thing that they may breed abundantly in the

the earth, and be fruitfull, and multiply upon the earth, which termes are not applyable unto the Phœnix, whereof there is but one in the world, and no more now living then at the first benediction, for the production of one, being the destruction of another, although they produce and generate, they encrease not, and must not be said to multiply, who doe not transcend an unity.

As for longevity, as that it liveth a thousand yeares, or more, beside that from imperfect observations and rarity of appearance, no confirmation can be made, there may be probably a mistake in the compute; for the tradition being very ancient and probably Egyptian, the Greeks who dispersed the fable, might summe up the account by their owne numeration of yeares, whereas the conceit might have its originall in times of shorter compute; for if we suppose our present calculation, the Phœnix now in nature will be the sixth from the Creation, but in the middle of its years, and if the Rabbines prophesie succeed shall conclude its dayes, not in its owne, but the last and generall flames, without all hope of Revivification.

*That the
world should
last but six
thousand
years.*

Concerning its generation, that without all conjunction, it begets and resembrates it selfe, hereby we introduce a vegetable production in animalls, and unto sensible natures, transerre the propriety of plants, that is to multiply among themselves, according to the law of the Creation, Gen. 1. Let the earth bring forth grasse, the herbe yeelding seed, and the tree yeelding fruit, whose seed is in it selfe; which way is indeed the naturall way of plants, who having no distinction of sex, and the power of the species contained in every *individuum*, beget and propagate themselves without commixtion, and therefore their fruits proceeding from simpler roots, are not so unlike, or distinguishable from each other, as are the off-springs of sensible creatures and proliferations descending from double originalls; but animall generation is accomplished by more, and the concurrence of two sexes is required to the constitution of one; and therefore such as have no distinction of sex, engender not at all, as Aristotle conceives of Eeles, and testaceous animalls; and though plant animalls doe multiply, they doe it not by copulation, but in a way analogous unto plants; so Hermaphrodites although they include the parts of both sexes, and may be sufficiently potent in either, yet unto a conception require a seperated sex, and cannot impregnate themselves; and so also though Adam included all humane nature, or was (as some opinion) an Hermaphrodite, yet had hee no power to propagate himselfe; and therefore God said, It is not good that man should be alone, let us make him an help meet for him, that is, an help unto generation; for as for any other help, it had been fitter to have made another man.

Now whereas some affirme that from one Phœnix there doth not immediatly proceed another, but the first corrupteth into a worme, which

which after becommeth a Phœnix, it will not make probable this production; For hereby they confound the generation of perfect animalls with imperfect, sanguineous, with exanguious, vermiparous, with oviparous, and erect Anomalies, disturbing the lawes of Nature; Nor will this corruptive production be easily made out, in most imperfect generations; for although we deny not that many animalls are vermiparous, begetting themselves at a distance, & as it were at the second hand, as generally insects, and more remarkably Butterflies and Silkwormes, yet proceeds not this generation from a corruption of themselves, but rather a specificall, and seminall diffusion, retaining still the Idea of themselves, though it act that part a while in other shapes: and this will also hold in generations equivocall, and such are not begotten from Parents like themselves; so from Frogs corrupting, proceed not Frogs againe; so if there be anatisferous trees, whose corruption breaks forth into Berpacles, yet if they corrupt, they degenerate into Maggots, which produce not themselves againe; for this were a confusion of corruptive and seminall production, and a frustration of that seminall power committed to animalls at the creation. The probleme might have beene spared, Why wee love not our Lice as well as our Children, Noahs Arke had beene needlesse, the graves of animalls would be the fruitfulest wombs; for death would not destroy, but empeople the world againe.

Since therefore we have so slender grounds to confirm the existence of the Phœnix, since there is no ocular witnesse of it, since as we have declared, by Authors from whom the Story is derived, it rather stands rejected, since they who have seriously discoursed hereof, have delivered themselves negatively, diversly or contrarily, since many others cannot be drawne into Argument as writing Poetically, Rhetorically, Enigmatically, Hieroglyphically, since holy Scripture alleadged for it duely prepeded, doth not advantage it, and lastly since so strange a generation, vnity and long life hath neither experience nor reason to confirme it, how farre to rely on this tradition, wee referre unto consideration.

But surely they were not wel-wishers unto *euangelium*, or remedies easily acquired, who derived medicines from the Phœnix, as some have done, and are justly condemned by Pliny, *Irridere est vita, remedia post mille finium annum reditura monstrare*; It is a folly to finde out remedies that are not recoverable under a thousand yeares, or propose the prolonging of life by that which the twentieth generation may never behold; more veniable is a dependance upon the Philosophers stone, potable gold, or any of those Arcana's, whereby Paracellus that dyed himselfe at 47. gloried that he could make other men immortall; which secrets, although extreemly difficult, and *tantum non* infesible, yet are they not impossible, nor do they (rightly understood) impose any

any violence on Nature, and therefore if strictly taken for the Phœnix very strange is that which is delivered by Plutarch, *De sanitate tuenda*, That the braine thereof is a pleasant bit, but that it causeth the head-ach; which notwithstanding the luxurious Emperour could never tast, though he had at his table many a Phœnicopterus, yet had he not one Phœnix; for though he expected and attempted it, wee reade not in Lampridius that he performed it; and considering the unity thereof it was a vaine designe, that is, to destroy any species, or mutilate the great accomplishment of six dayes; and although some conceive, and it may seeme true, that there is in man a naturall possibility to destroy the world in one generation, that is, by a generall conspire to know no woman themselves and disable all others also; yet will this never bee effected, and therefore Cain after he had killed Abel, were there no other woman living, could not have also destroyed Eve; which although he had a naturall power to effect, yet the execution thereof, the providence of God would have resisted, for that would have imposed another creation upon him, and to have animated a second rib of Adam.

C H A P. XIII.

Frogges, Toades, and Toad-stone.

Concerning the venemous urine of Toads, of the stone in a Toads head, and of the generation of Frogges, conceptions are entertained which require consideration; And first, that a Toad pisseth, and this way diffuseth its venome, is generally received, not onely with us, but also in other parts; for so hath Scaliger observed in his Comment, *Aversum urinam reddere ob oculos persecutoris perniciosam rusticis persuasum est*; and Mathiolus hath also a passage, that a Toad communicates its venom, not onely by urine, but by the humiditie and flaver of its mouth; which notwithstanding strictly understood, will not consist with truth; For to speak properly, a Toad pisseth not, nor doe they containe those urinary parts which are found in other animals, to avoid that serous excretion; as may appeare unto any that exenterats or dissects them; for therein will be found neither bladder, kidneyes, or ureters, any more then they are in birds, which although they eat & drink, yet for the moist and dry excretion, have but one vent and common place of exclusion; and with the same proprietic of language, we may ascribe that action unto Crowes and Kites; and this is verified not only in Frogs and Toades, but for ought I can discover, that may bee true which Aristotle affirmeth, that no oviparous animall, that is, which either spawn or lay egges doth urine, except the Tortois.

The ground or occasion of this expression might from hence arise, that

that Toades are sometimes observed to exclude or spirt out a dark and liquid matter behinde, which indeed we have observed to be true, and a venemous condition there may bee perhaps therein, but it cannot bee called their urine; not onely because they want those parts of secretion; but because it is emitted averfly or backward, by both sexes.

As for the stone commonly called a Toad-stone, which is presumed to be found in the head of that animall, we first conceive it not a thing impossible, nor is there any substantiall reason, why in a Toade, there may not be found such hard and lapideous concretions; for the like we daily observe in the heads of fishes, as Codds, Carpes, and Pearches, the like also in Snailles, a soft and exosseous animall, whereof in the naked and greater sort, as though she would requite the defect of a shell on their back, nature neere the head hath placed a flat white stone, or rather testaceous concretion, which though Aldrovand affirms, that after dissection of many, hee found but in some few, yet of the great gray Snailles, I have not met with any that wanted it, and the same is indeed so palpable, that without dissection it is discoverable by the hand.

Againe, though it be not impossible, yet is it surely very rare, as we are induced to beleve from some enquiry of our owne, from the triall of many who have beene deceived, and the frustated search of Porta, who upon the exploremment of many, could never finde one; Nor is it onely of rarity, but may be doubted whether it be of existency, or really any such stone in the head of a Toad at all: For although lapidaries, and questuary enquirers affirme it, yet the Writers of Mineralls and naturall speculators, are of another beliefe conceiving the stones which beare this name, to be a Minerall concretion, nor to be found in animalls, but in fields; and therefore Boetius de Boot referres it to *Asteria*, or some kinde of *Lapis stellaris*, and plainly concludeth, *Reperiuntur in agris, quos tamen alii in annosis, ac qui diu in Arundinetis, inter rubos sentesque delituerunt bufonis capitibus generari pertinaciter affirmant.*

Lastly, if any such thing there be, yet must it not for ought I see, be taken as we receive it, for a loose and moveable stone, but rather a concretion or induration of the crany it selfe; for being of an earthy temper living in the earth, & as some say feeding thereon, such indurations may sometimes happen; and thus when Brassavolus after a long search had discovered one, he affirms it was rather the forehead bone petrified, then a stone within the crany; and of this beleefe was Gesner. All which considered, wee must with circumspection receive those stones, which commonly beare this name, muchlesse beleve the traditions, that in envy to mankind they are cast out, or swallowed down by the Toad, which cannot consist with Anatomy, and with the rest, enforced this censure from Boetius, *Ab eo tempore pro nugis habui quod de Bufonio lapide, ejusq; origine traditur.*

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Concerning the generation of Froggs, wee shall briefly deliver that account which observation hath taught us. By Frogges I understand not such as arising from putrification, are bred without copulation, and because they subsist not long, are called *Temporaria*; nor doe I meane hereby the little Frogge of an excellent Parrat-green, that usually sits on trees and bushes, and is therefore called *Ranunculus viridis*, or *Arboreus*; but hereby I understand the aquatile or water Frogge whereof in ditches and standing plashes, wee may behold many millions every Spring in England; Now these doe not as Plinie conceiveth, exclude blacke pieces of flesh, which after become Frogges, but they let fall their spawne in the water, which is of excellent use in Physicke, and scarce unknowne unto any; in this spawne of a lentous and transparent body, are to be discerned many gray specks, or little conglobations, which in a little time become of deepe blacke; a substance more compacted and terrestrious then the other, for it riseth not in distillation, and affords a powder, when the white and aqueous part is exhaled. Now of this blacke or duskie substance is the Frogge at last formed, as we have beheld, including the spawne with water in a glasse, and exposing it unto the Sunne; for that blacke and round substance, in a few dayes began to dilate and grow ovall, after a while the head, the eyes, the taile to be discernable, and at last to become that which the Ancients called Gyrinus, wee a Porwige or Tadpole, and this in some weekes after, becomes a perfect Frogge, the legs growing out before, and the tayle wearing away, to supply the other behinde, as may bee observed in some, which have newly forsaken the water: for in such, some part of the tayle will be seen but curtal'd and short, not long and finny as before; a part provided them a while to swim and move in the water, that is, untill such time as nature excluded legs, whereby they might be provided not only to swim in the water, but move upon the land, according to the amphibious and mixt intention of nature, that is to live in both. And because many affirme, and some deliver, that in regard it hath lungs and breatheth a Frogge may bee easily drowned, though the reason be probable, I finde not the experiment answerable; for making triall, and fastning one about a span under water, it lived almost six dayes.

CHAP. XIV.

Of the Salamander.

THat a Salamander is able to live in flames, to endure and put out fire is an assertion, not only of great Antiquitie, but confirmed by frequent, and not contemptible testimonie; The Egyptians have drawne it into their Hieroglyphicks; Aristotle seemeth to embrace it, more

more plainly Nicander, Serenus, Sammonicus, Aelian, and Plinie, who assignes the cause of this effect. An animall (saith he) so cold that it extinguisheth the fire like Ice; all which notwithstanding, there is on the negative Authoritie and experience, Sextius a Physition, as Plinie delivereth, denied this effect, Dioscorides affirmed it a point of folly to believe it, Galen that it endureth the fire a while, but in continuance is consumed therein; For experimentall conviction Mathiolus affirmeth, he saw a Salamander burnt in a very short time; and of the like assertion is Amatus Lusitanus, and most plainly Pierius, whose words in his Hieroglyphicks are these; Whereas it is commonly said, that a Salamander extinguisheth fire, wee have found by experience, that 'tis so farre from quenching hot coales; that it dieth immediatly therein; As for the contrary assertion of Aristotle, it is but by hearesay, as common opinion beleeveth, *Hac enim (ut aiunt) ignem ingrediens cum extinguit*; and therefore there was no absurdity in Galen when as a Septicall medicine he commended the ashes of a Salamander, and Magicians in vaine from the power of this tradition, at the burning of towns or houses expect a reliefe from Salamanders.

The ground of this opinion might be some sensible resistance of fire observed in the Salamander, which being as Galen determineth, cold in the fourth, and moist in the third degree, and having also a nucus humidity above and under the skinn, by vertue thereof may a while endure the flame, which being consumed it can resist no more. Such an humidity there is observed in Newtes, or water-Lizards, especially if their skinn be prickt or perforated. Thus will Frogges and Snailles endure the flame, thus will whites of egges, vitreous or glassy flegme extinguish a coal, thus are unguents made which protect a while from the fire, and thus beside the Hirpini, there are later stories of men that have pass'd untoucht through fire, and therefore some trueth we allow in the tradition; truth according unto Galen, that it may for a time resist a flame, or as Scaliger avers, extinguish or put out a coale; for thus much will many humide bodies performe, but that it perseveres and lives in that destructive element, is a fallacious enlargement, nor doe we reasonably conclude, because for a time it endureth fire, it subdueth and extinguisheth the same, because by a cold and aluminous moisture, it is able a while to resist it, from a peculiarity of nature it subsisteth and liveth in it.

It hath beene much promoted by Stories of incombustible napkins and textures which endure the fire, whose materialls are call'd by the name of Salamanders wooll, which many too literally apprehending, conceive some investing part, or tegument of the Salamander, wherein beside that they mistake the condition of this animal, which is a kinde of Lizard, a quadruped corticated and depilous, that is without wooll, furre, or haire, they observe not the method and generall rule of nature,

ture, whereby all Quadrupeds oviparous, as Lizards, Froggs, Tortois, Chameleons, Crocodiles, are without any haire, and have no covering part or hairy investment at all; and if they conceive that from the skin of the Salamander, these incremable pieces are composed, beside the experiments made upon the living, that of Brassavolus will step in, who in the search of this truth, did burne the skin of one dead.

Nor is this Salamanders wooll defumed from any animal, but a Minerall substance Metaphorically so called from this received opinion; For beside Germanicus his heart, and Pyrrhus his great Toe, there are in the number of Mineralls, some bodies incombustible, more remarkably that which the Ancients named Asbeston, and Pancirollus treats of in the chapter of *Linum vivum*: whereof by Art were weaved napkins, shirts, and coats inconsumable by fire, and wherein in ancient times, to preserve their ashes pure, and without commixture, they burnt the bodies of Kings; a napkin hereof Plinie reports that Nero had, & the like saith Paulus Venetus, the Emperour of Tartarie sent unto Pope Alexander; and affirms that in some parts of Tartarie, there were Mines of Iron whose filaments were weaved into incombustible cloth, which rare manufacture, although delivered for lost by Pancirollus, yet Salmuth delivereth in his comment that one Podocaterus a Cyprian, had shewed the same at Venice, and his materialls were from Cyprus, where indeed Dioscorides placeth them; the same is also ocularly confirmed by Vives upon Austin and Maiolus in his colloquies, and thus in our daies do men practise to make long lasting Snafes or Elychinons parts for lampes, out of Alumen plumosum; and by the same wee read in Pausanias, that there alwayes burnt a Lampe before the Image of Minerva.

CHAP. XV.

Of the Amphibæna.

THat the Amphibæna, that is, a smaller kinde of Serpent, which moveth forward and backward, hath two heads, or one at either extreame, was affirmed first by Nicander, and after by many others, by the Author of the book *de Theriaca ad Pisonem*, ascribed unto Galen, more plainly Pliny, *Geminum habet caput, tanquam parum esset uno ore effundi venenum*: but Ælian most confidently, who referring the conceit of Chimera and Hydra unto fables, hath set downe this as an undeniable truth.

Whereunto while men assent, and can beleieve a bicapitous conformation in any continued species, they admit a gemination of principall parts, which is not naturally discovered in any animall; true it is that other parts in animals are not equall, for some make their progression with

with many legs, even to the number of an hundred, as Juli Scolopendra, or such as are termed centipedes; some flye with two wings, as birds and many insects, some with foure, as all farinaceous or mealy winged animals, as Butter-flies, and Moths, all vaginipennous or sheathwinged insects, as Beetles and Dorrs; some have three Testicles, as Aristotle speakes of the Buzzard, and some have foure stomachs, as horned and ruminating animals; but for the principall parts, the liver, heart, and especially the braine, regularly it is but one in any kinde or species whatsoever.

And were there any such species or naturall kinde of animall, it would be hard to make good those six positions of body, which according to the three dimensions are ascribed unto every animall, that is, *infra, supra, ante, retro, dextrorsum, sinistrorsum*; for if (as it is determined) that be the anterior and upper part wherein the senses are placed, and that the posterior and lower part which is opposite thereunto, there is no inferiour or former part in this animall, for the senses being placed at both extreames, doe make both ends anteriour, which is impossible, the termes being Relative, which mutually subsist, and are not without each other, and therefore this duplicity was ill contrived to place one head at both extreames, and had beene more tolerable to have settled three or foure at one, and therefore also Poets have been more reasonable then Philosophers, and Geryon or Cerberus, lesse monstrous then Amphibæna.

Againe, if any such thing there were, it were not to be obtruded by the name of Amphibæna, or as an animall of one denomination; for properly that animall is not one, but multiplicitous or many, which hath a duplicity or gemination of principle parts; and this doth Aristotle define, when he affirmeth a monster is to be esteemed one or many, according to its principle, which he conceived the heart, whence he derived the originall of Nerves, and thereto ascribe many acts which Physitians assigne unto the braine; and therefore if it cannot be called one, which hath a duplicity of hearts in his sence, it cannot receive that appellation with a plurality of heads in ours; And this the practise of Christians hath acknowledged, who have baptized these geminous births, and double connascencies with severall names, as conceiving in them a distinction of soules, upon the divided execution of their functions; that is, while one wept, the other laughing, while one was silent, the other speaking, while one awaked, the other sleeping, as is declared by three remarkable examples in Petrarch, Vincentius, and the Scottish history of Buchanan.

It is not denied there have beene bicapitous Serpents with the head at each extreme, for an example hereof we finde in Aristotle, and in the like forme in Aldrovand wee meet with the Icon of a Lizzard; which double formations do often happen unto multiparous generations

ons, more especially that of Serpents, whose conceptions being numerous, and their Eggs in chaines or links together, (which sometime conjoyne and inoculate into each other) they may unite into various shapes, and come out in mixed formations; but these are monstrous productions, and beside the intention of Nature, and the statutes of generation, neither begotten of like parents, nor begetting the like againe, but irregularly produced do stand as Anomalies, and make up the *Que genus*, in the generall booke of Nature; which being the shifts and forced pieces, rather then the genuine and proper effects, they afford us no illation, nor is it reasonable to conclude, from a monstrosity unto a species, or from accidentall effects, unto the regular workes of Nature.

Lastly, the ground of the conceit was the figure of this animall, and motion oft times both wayes; for described it is to bee like a worme, and so equally framed at both extremes, that at an ordinary distance it is no easie matter, to determine which is the head; and therefore some observing them to move both wayes, have given the appellation of heads unto both extreames, which is no proper and warrantable denomination, for many animals with one head do ordinarily performe both different and contrary motions; Crabs move sideling, Lobsters will swim swiftly backward, Wormes and Leeches wil move both wayes; and so will most of those animals, whose bodies consist of round and annulary fibers, and move by undulation, that is, like the waves of the Sea, the one protruding the other, by inversion whereof they make a backward motion.

Upon the same ground hath arisen the same mistake concerning the Scolopendra or hundred footed insect, as is delivered by Rhodiginus from the scholiast of Nicander: *Dicitur à Nicandro, ἀπομαρτῆς, id est dicepalus aut biceps fictum vero quoniam retrorsum (ut scribit Aristoteles) arreptis*, observed by Aldrovandus, but most plainly by Muffetus, who thus concludeth upon the text of Nicander: *Tamen pace tanti authoris dixerim, unicum illi dumtaxat caput licet pari facilitate, prorsum capite, retrorsum ducente cauda, incedat, quod Nicandro aliisque imposuisse dubito*: that is, under favour of so great an Author, the Scolopendra hath but one head, although with equall facility it moveth forward and backward, which I suspect deceived Nicander and others.

CHAP. XVI.

Of the Viper.

THat the young Vipers force their way through the bowels of their Dam, or that the female Viper in the act of generation bites off the head of the male, in revenge whereof the young ones eat through the womb

womb and belly of the female is a very ancient tradition; in this sence entertained in the Hieroglyphicks of the Egyptians, affirmed by Herodotus, Nicander, Pliny, Plutarch, Ælian, Jerome, Basil, Isidore, and seems to be countenanced by Aristotle, and his scholler Theophrastus; from hence is commonly assigned the reason why the Romans punished parricides by drowning them in a sack with a Viper; and so perhaps upon the same opinion the men of Melita when they saw a viper upon the hand of Paul, said presently without conceit of any other sin, No doubt this man is a murtherer, whom though he have escaped the Sea, yet vengeance suffereth him not to live; that is, he is now paid in his own way, the parricidous animall and punishment of Murtherers is upon him; and though the Tradition were currant among the Greekes to confirme the same the Latine name is introduced, *Vipera quasi vipariat*; That passage also in the Gospell, O yee generation of Vipers, hath found expositions which countenance this conceit; notwithstanding which authorities, transcribed relations and conjectures, upon enquiry we finde the same repugnant unto experience and reason.

And first it seemes not only injurious unto the providence of Nature, to ordaine a way of production which should destroy the producer, or contrive the continuation of the species by the destruction of the continuator; but it overthrowes and frustrates the great Benediction of God, which is expressed Gen. 1. God blessed them saying, Be fruitfull and multiply. Now if it be so ordained that some must regularly perish by multiplication, and these be the fruits of fructifying in the Viper, it cannot be said that God did blesse, but curse this animall; upon thy belly shalt thou goe, and dust shalt thou eat all thy life, was not so great a punishment unto the Serpent after the fall, as encrease, be fruitfull and multiply, was before. This were to confound the maledictions of God, and translate the curse of the Woman upon the Serpent; that is, *in dolore paries*, in sorrow shalt thou bring forth; which being proper unto the women, is verified best in the Viper, whose delivery is not only accompanied with paine, but also with death it self. And lastly, it overthrowes the carefull course, and parentall provision of nature, whereby the young ones newly excluded are sustained by the Dam, and protected untill they grow up to a sufficiencie for themselves; all which is perverted in this eruptive generation, for the Dam being destroyed, the younglings are left to their owne protection, which is not conceivable they can at all performe, and whereof they afford us a remarkable confirmance many dayes after birth; for the young ones supposed to breake through the belly of the Dam, will upon any fright for protection run into it; for then the old one receives them in at her mouth, which way the fright being past they will returne againe; which is a peculiar way of refuge; and though it seem strange is avowed by frequent experience, and undeniable testimony.

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As for the experiment although we have thrice attempted it, it hath not well succeeded; for though wee fed them with milke, branne, cheese, &c. the females alwayes dyed before the young ones were mature for this eruption, but rest sufficiently confirmed in the experiments of worthy enquirers: Wherein to omit the ancient conviction of Apollonius, we shall set downe some few of moderne Writers: The first, of Amatus Lusitanus in his Comment upon Dioscorides, *Vidimus nos vipers prægnantes inclusas pyxidibus parere, quæ inde ex partu nec mortuæ, nec visceribus perforatæ manserunt*: The second is that of Scaliger, *Vipers ab impatientibus moræ fatibus numerosissimis rumpi atque interire falsum esse scimus, qui in Vincentii Camerini circulatoris lignea thesa vidimus enatas viperellas, parente salva*: The last and most plaine of Franciscus Bustamantinus, a Spanish Physitian of Alcala de Henares, whose words in his third *de Animalibus Scriptura*, are these: *Cum vero per me & per alios hæc ipsa disquisissem servata Viperina progenie &c.* that is, when by my selfe and others I had enquired the truth hereof, including Vipers in a glasse, and feeding them with cheese and branne, I undoubtedly found that the Viper was not delivered by the tearing of her bowels, but I beheld them excluded by the passage of generation neare the orifice of the seidge.

Now although the Tradition be untrue, there wanted not many grounds which made it plausibly received. The first was a favourable indulgence and speciall contrivance of nature, which was the conceit of Herodotus who thus delivereth himselfe: Fearfull animalls, and such as serve for food, nature hath made more fruitfull, but upon the offensive and noxious kinde, she hath not conferred fertility: So the Hare that becommeth a prey unto man, unto beasts, and fowles of the ayre, is fruitfull even to superfatation, but the Lyon a fierce and ferocious animall hath young ones but seldome, and also but one at a time; Vipers indeed, although destructive, are fruitfull; but lest their number should encrease, providence hath contrived another way to abate it, for in copulation the female bites off the head of the male, and the young ones destroy the mother; but this will not consist with reason, as wee have declared before: And if wee more nearly consider the condition of Vipers and noxious animalls, we shall discover another provision of nature; how although in their paucity shee hath not abridged their malignity, yet hath she notoriously effected it by their secession or latitancy; for not only offensive insects as Hornets, waspes, and the like; but sanguineous corticated animals, as Serpents, Toads and Lizards, do lye hid and betake themselves to coverts in the Winter; whereby most Countries enjoying the immunity of Ireland and Candie, there ariseth a temporall security, from their venome, and an intermission of their mischiefs, mercifully requiting the time of their activities.

A second ground of this effect, was conceived the justice of Nature,

ture, whereby she compensates the death of the father by the matricide or murder of the mother, and this was the expression of Nicander; but the cause hereof is as improbable as the effect, and were indeed an improvident revenge in the young ones, whereby in consequence, and upon defect of provision they must destroy themselves; and whereas he expresseth this decollation of the male by so full a terme as ἀποκόψαν, that is, to cut or lop off, the act is hardly conceiveable; for the female Viper hath but foure considerable teeth, and those so disposed so slender and needle pointed, that they are apter for puncture then any act of incision; and if any like action there be, it may be onely some fast retention or sudden compression in the Orgasmus or fury of their lust, according as that expression of Horace is construed concerning Lydia and Telephus—

Sive puer furens,

Impressit memorem dente labris notam.

Others ascribe this effect unto the numerous conception of the Viper, and this was the opinion of Theophrastus, who though he denieth the extension or forcing through the belly, conceiveth nevertheless that upon a full and plentiful impletion there may perhaps succeed a disruption of the matrix, as it happeneth sometimes in the long and slender fish Acus: Now although in hot Countries, and very numerous conceptions in the Viper or other animalls, there may sometimes ensue a dilaceration of the genitall parts, yet is this a rare and contingent effect, and not a naturall and constant way of exclusion; for the wise Creator hath formed the organs of animalls unto their operations, and in whom hee ordaineth a numerous conception, in them he hath prepared convenient receptacles, and a sutable way of exclusion.

Others doe ground this disruption upon their continued or protracted time of delivery, presumed to last twenty dayes, whereat, excluding but one a day, the latter brood impatient, by a forcible prorupcion anticipate their period of exclusion, and this was the assertion of Plinie, *Cæri tarditatis impatientes prorumpunt latera, occisâ parente*, which was occasioned upon a mistake of the Greek text in Aristotle, *πύλεις δὲ ἐν μίᾳ ἡμέρᾳ καὶ ἐν πύλεις δὲ πλείω ἢ ἑκοστί*, which are literally thus translated, *Parit autem una die secundum unum, parit autem plures quam viginti*, and may be thus Englished, She bringeth forth in one day one by one and sometimes more then twenty; and so hath Scaliger rendred it, *sigillatim parit, absolvit una die interdum plures quam viginti*: But Pliny whom Gaza followeth hath differently translated it, *singulos diebus singulis parit, numero fere viginti*, whereby he extends the exclusion unto twenty dayes, which in the textuary sense is fully accomplished in one.

But what hath most advanced it, is a mistake in another text of Aristotle, which seemeth directly to determine this disruption, *πύλεις μὲν δὲ ἐξ ἑνὸς ἐν ὅλῳ τῷ χρόνῳ, ἃ δὲ πλείονος ἢ πεντάοι, ἐνίοτε δὲ καὶ ὅσων διαφύγοντα αὐτὰ ἐξέρχεται*, which Gaza hath thus translated, *Parit catulos obvolutos membranis quæ*

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tertio die rumpuntur, evenit interdum ut qui in utero adhuc sunt abrosis membranis prorumpant. Now herein very probably Pliny, and many since have been mistaken, for the disruption of the membranes or skins, which include the young ones, conceiving a dilaceration of the matrix and belly of the viper, and concluding from a casual dilaceration, a regular and constant disruption.

As for the Latin word *Vipera*, which in the Etymologie of Isidore promoteth this conceit, more properly it may imply *vivipera*; for whereas other Serpents lay egges, the Viper excludeth living animalls, and though the Ceraustes be also viviparous, and we have found formed Snakes in the belly of the Cecilia or slow-worme, yet may the Viper emphatically beare that name; for the notation or Etymologie is not of necessity adequate unto the name; and therefore though animall be deduced from *anima*, yet are there many animations beside, and plants will challenge a right therein as well as sensible creatures.

As touching the Text of Scripture, and compellation of the Pharisees, by generation of Vipers, although constructions bee made hereof conformable to this Tradition, and it may be plausibly expounded, that out of a viperous condition, they conspired against their Prophets, and destroyed their spirituall parents; yet (as Jansenius observeth) Gregory and Jerome, doe make another construction, apprehending thereby what is usually implied by that Proverb, *Mali corvi malum ovum*; that is, of evill parents, an evill generation, a posterity not unlike their majority, of mischievous progenitors, a venomous and destructive progenie.

And lastly, concerning the Hieroglyphicall account, according to the Vulgar conception set downe by Orus Apollo, the authority thereof is only Emblematicall, for were the conception true or false, to their apprehensions, it expressed filiall impiety; which strictly taken, and totally received for truth, might perhaps begin, but surely promote this conception.

CHAP. XVII.

Of Hares.

THat Hares are both male and female, beside the Vulgar opinion, was the affirmative of Archelaus, of Plutarch, Philostratus, and many more; nor are there hardly any who either treat of mutation or mixtion of sexes, who have not left some mention of this point, some speaking positively, others dubiously, and most resigning it unto the enquiry of the Reader: now hereof to speake distinctly, they must be male and female by mutation and succession of sexes, or else by composition, by mixture or union thereof.

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As for the mutation of sexes, or transition into one another, we cannot deny it in Hares, it being observable in man: for hereof beside Empedocles or Tiresias, there are not a few examples; and though very few, or rather none which have emasculated or turned women, yet very many who from an esteem or reality of being women have infallibly proved men: some at the first point of their menstruous eruptions, some in the day of their marriage, others many yeares after, which occasioned disputes at Law, and contestations concerning a restore of the dowry; and that not only mankind, but many other animalls, may suffer this transxion, we will not deny, or hold it at all impossible; although I confesse by reason of the posticke and backward position of the feminine parts in quadrupeds, they can hardly admit the substitution of a protrusion effectually unto masculine generation, except it be in Retromingents, and such as couple backward.

Nor shall we only concede the succession of sexes in some, but shall not dispute the transition of reputed species in others; that is, a transmutation, or (as Paracelsians terme it) the Transplantation of one into another; hereof in perfect animalls of a congenerous seed, or neare affinity of natures, examples are not unfrequent, as Horses, Asses, Dogs, Foxes, Phaisants, Cocks, &c. but in imperfect kindes, and such where the discrimination of sexes is obscure, these transformations are more common: and in some within themselves without commixtion, as particularly in Caterpillers or Silk-wormes, wherein there is visible and triple transfiguration: but in Plants wherein there is no distinction of sex, these transplantations are yet more obvious then any; as that of barley into oates, of wheat into darnell, and those graines which generally arise among corne, as cockle, Aracus, Ægilops, and other degenerations which come up in unexpected shapes, when they want the support and maintenance of the primary and master-formes: And the same do some affirm concerning other plants in lesse analogy of figures, as the mutation of Mint into Cresses, Basil into Serpoile, and Turneps into Radishes; in all which as Severinus conceiveth there may be equivocal seeds and Hermaphroditicall principles, which contain the radicality and power of different formes; thus in the seed of wheat there lyeth obscurely the feminality of Darnell, although in a secondary or inferiour way, and at some distance of production; which neverthelesse if it meet with convenient promotion, or a conflux and conspiracy of causes more powerfull then the other, it then beginneth to edifie in chiefe, and contemning the superintendent forme, produceth the signatures of its selfe.

Now therefore although we deny not these severall mutations, and doe allow that Hares may exchange their sex, yet this we conceive doth come to passe but sometimes, and not in that vicissitude or annuall alternation as is presumed; that is, from imperfection to perfection, from

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perfection to imperfection, from female unto male, from male to female againe, and so in a circle to both without a permanſion in either; for beſide the inconceivable mutation of temper, which ſhould yearly alternate the ſex, this is injurious unto the order of nature, whoſe operations doe reſt in the perfection of their intents; which having once attained, they maintaine their accompliſhed ends, and relapſe not againe into their progreſſionall imperfections: ſo if in the minority of naturall vigor, the parts of feminality take place, when upon the encrease or growth thereof the masculine appeare, the firſt deſigne of nature is atchieved, and thoſe parts are after maintained.

But ſurely it much impeacheth this iterated tranſexion of Hares, if that be true which Cardan and other Phyſicians affirm, that Tranſmutation of ſex is only ſo in opinion, and that theſe tranſfeminated perſons were really men at firſt, although ſucceeding yeares produced the manifeſto or evidence of their virilities; which although intended and formed, was not at firſt excluded, and that the examples hereof have undergone no reall or new tranſexion, but were Androgynally borne, and under ſome kind of Hermaphrodites: for though Galen do favour the opinion, that the diſtinctive parts of ſexes are onely different in poſition, that is inverſion or protrufion, yet will this hardly be made out from the Anatomy of thoſe parts, the teſticles being ſo ſeated in the female that they admit not of protrufion, and the necke of the matrix wanting thoſe parts which are diſcoverable in the organ of virility.

The ſecond and moſt received acception, is, that Hares are male and female by conjunction of both ſexes, and ſuch are found in mankind, Poetically called Hermaphrodites, ſuppoſed to be formed from the equality, or *non-victorie* of either ſeed, carrying about them the parts of man and woman; although with great variety in perfection, ſite and ability; not only as Aristotle conceived, with a conſtant impotencie in one; but as latter Obſervers affirme, ſometimes with ability of either venery: and therefore the providence of ſome Laws have thought good, that at the yeares of maturity, they ſhould elect one ſex, and the errors in the other ſhould ſuffer a ſeverer puniſhment; whereby endeavouring to prevent incontinencie, they unawares enjoyed perpetuall chaſtity; for being executive in both parts, and confined unto one, they reſtrained a naturall power, and ordained a partiall virginity. Plato and ſome of the Rabbines proceeded higher, who conceived the firſt man an Hermaphrodite; and Marcus Leo the learned Jew, in ſome ſenſe hath allowed it, affirming that Adam in one ſuppoſitum without diviſion, contained both male and female; and therefore whereas it is ſaid in the Text, that God created man in his owne Image, in the Image of God created he him, male and female created he them, applying the ſingular and plurall unto Adam, it might denote that in one ſubſtance, and in himſelfe he included both ſexes which was after divided, and the

the female called Woman. The opinion of Aristotle extendeth farther, from whoſe aſſertion all men ſhould be Hermaphrodites; for affirming that women do not ſpermatize, and conferre a place or receptacle rather then eſſentiall principles of generation, he deductively includes both ſexes in mankind; for from the father proceed not only males and females, but from him alſo muſt Hermaphroditicall and maſculo-feminine generations be derived, and a commixtion of both ſexes ariſe from the ſeed of one: But the Schoolmen have dealt with that ſex more hardly then any other, who though they have not much diſputed their generation, yet have they controverted their Reſurrection, and rayſed a query whether any at the laſt day ſhould ariſe in the ſex of women, as may be obſerved in the ſupplement of Aquinas.

Now as we muſt acknowledge this Androgynall condition in man, ſo can we not deny the like doth happen in beaſts. Thus doe we read in Plinie that Neroes Chariot was drawne by foure Hermaphroditicall Mares, and Cardan affirme he alſo beheld one at Antwerpe; and thus may we alſo concede, that Hares have been of both ſexes, and ſome have ocularly confirmed it; but that the whole ſpecies or kinde ſhould be biſexous we cannot affirme, who have found the parts of male and female reſpectively diſtinct and ſingle in any wherein we have enquired; and whereas it is conceived, that being an harmleſſe animall and delectable food unto man, nature hath made them with double ſexes, and that actively and paſſively performing they might more numerously encrease; we forget an higher providence of nature whereby ſhee eſpecially promotes the multiplication of Hares, which is by ſuperfetation; that is, a conception upon a conception, or an improvement of a ſecond fruit before the firſt be excluded, preventing hereby the uſuall intermiſſion and vacant time of generation, which is very common and frequently obſervable in Hares, mentioned long agoe by Aristotle, Herodotus, and Pliny; and we have often obſerved that after the firſt caſt, there remaine ſucceſſive conceptions, and other younglings very immature, and far from their terme of excluſion.

Nor need any man to queſtion this in Hares, for the ſame wee obſerve doth ſometime happen in women; for although it be true that upon conception, the inward oriſice of the matrix exactly cloſeth, ſo that it commonly admitteth nothing after, yet falleth it out ſometime, that in the act of coition, the avidity of that part dilateth it ſelfe, and receiveth a ſecond burden, which if it happen to be neare in time unto the firſt, they commonly doe both proceed unto perfection, and have legitimate excluſions, and periodically ſucceed each other: but if the ſuperfetation be made with conſiderable intermiſſion, the latter moſt commonly proves abortive; for the firſt being confirmed, engroſſeth the aliment from the other: However therefore the project of Julia ſeem very plauſible, and that way infallible when ſhe received not her

passengers, before she had taken in her lading, there was a fallibility therein, nor indeed any absolute securitie in the policy of adultery after conception; for the Matrix (which some have called another animall within us, and which is not subjected unto the law of our will) after reception of its proper Tenant, may yet receive a strange and spurious inmate, as is confirmable by many examples in Plinie, by Larissæa in Hippocrates, and that merry one in Plautus urged also by Aristotle, that is of Iphicles and Hercules, the one begat by Jupiter, the other by Amphitryon upon Alcmena; as also in those superconceptions where one childe was like the father, the other like the adulterer, the one favoured the servant, the other resembled the master.

Now the grounds that begat, or much promoted the opinion of a double sex in hares might be some little bags or tumors, at first glance representing stones or Testicles, to be found in both sexes about the parts of generation; which men observing in either sex, were induced to beleeve a masculine sex in both; but to speak properly these are no Testicles or parts officiall unto generation, but glandulous substances that seeme to hold the nature of Emunctories; for herein may be perceived slender perforations, at which may be expressed a blacke and soeculent matter; if therefore from these we shall conceive a mixtion of sexes in Hares, with fairer reason we may conclude it in Bevers, whereof both sexes containe a double bagge or tumor in the groine, commonly called the Cod of Castor, as we have delivered before.

Another ground were certaine holes or cavities observable about the sledge; which being perceived in males, made some conceive there might be also a fæminine nature in them, and upon this very ground, the same opinion hath passed upon the Hyæna, as is declared by Aristotle, and thus translated by Scaliger; *Quod autem aiunt utriusque sexus habere genitalia falsum est, quod videtur esse fæmininum sub cauda, est simile figura fæminino verum per vinum non est*; and thus is it also in Hares, in whom these holes, although they seeme to make a deepe cavity, yet doe they not perforate the skin, nor hold a community with any part of generation, but were (as Plinie delivereth) esteemed the marks of their age, the number of those decyding their number of yeares; what verity there is herein, we shall not contend; for if in other animals there be authentick notations, if the characters of yeares be found in the hornes of Cowes, or in the Antlers of Deere, if we conjecture the age of Horses from joynts in their dockes, and undeniably presume it from their teeth, we cannot affirme, there is in their conceit, any affront unto nature, although, who ever enquireth shall finde no assurance therein.

The last foundation was Retromingency or pissing backward, for men observing both sexes to urine backward, or averfly between their legges, they might conceive there was a fæminine part in both; wherein

wherein they are deceived by the ignorance of the just and proper site of the Pizell or part designed unto the Excretion of urine, which in the Hare holds not the common position, but is averfly seated, and in its distention enclines unto the coccix or scut. Now from the nature of this position, there ensueth a necessitie of Letrocoputation, which also promoteth the conceit; for some observing them to couple without ascension, have not beene able to judge of male or female, or to determine the proper sex in either, and to speake generally this way of copulation, is not appropriate unto Hares, nor is there one, but many wayes of Coition, according to divers shapes and different conformations; for some couple laterally or sidewise as wormes, some circularly or by complication as Serpents, some pronely, that is by contaction of prone parts in both, as Apes, Porcupines, Hedgehogges, and such as are termed Mollia, as the Cuttlefish and the Purple; some mixtly, that is, the male ascending the female, or by application of the prone parts of the one, unto the postick parts of the other, as most Quadrupes; Some averfly, as all Crustaceous animals, Lobsters, Shrimps, and Crevises, and also Retromingents, as Panthers, Tigers, and Hares: This is the constant Law of their Coition, this they observe and transgresse not: onely the vitiositie of man hath acted the varieties hereof, nor content with a digression from sex or species, hath in his own kinde runne thorow the Anomalies of venery, and been so bold, not onely to act, but represent to view, the Irregular wayes of lust.

CHAP. XVIII.

Of Molls.

THat Molls are blinde and have no eyes, though a common opinion is received with much variety; some affirming onely they have no sight, as Oppianus, the Proverbe Talpa Cæcior, and the word *αἰνία*, or Talpitas, which in Hesichius is made the same with Cæcias: some that they have eyes, but no sight, as the text of Aristotle seems to imply, some neither eyes nor sight, as Albertus, Plinie, and the vulgar opinion; some both eyes & sight as Scaliger, Aldrovandus, & some others. Of which opinions the last with some restriction, is most consonant unto truth: for that they have eyes in their head is manifest unto any, that wants them not in his own, and are discoverable, not onely in old ones, but as we have observed in yong and naked conceptions, taken out of the belly of the dam; and he that exactly enquires into the cavities of their cranies, may discover some propagation of nerves communicated unto these parts; but that the humors together with their coats are also distinct, (though Galen seeme to affirme it) transcendeth our discovery; for separating these little Orbes, and including them in

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magnifying glasses, we discern no more then Aristotle mentions, that is, *ὁφθαλμὸς μέλανα*, that is, *humorem nigrum*, nor any more if they bee broken: that therefore they have eyes we must of necessity affirme, but that they be comparatively incomplete we need not to deny: So Galen affirms the parts of generation in women are imperfect, in respect of those of men, as the eyes of Molls in regard of other animals; So Aristotle termes them *πνευμαίτες*, which Gaza translates *oblasos*, and Scaliger by a word of Imperfection, *inchoatos*.

Now as that they have eyes is manifest unto sense, so that they have sight not incongruous unto reason, if we call not in question the providence of this provision, that is, to assigne the organs, and yet deny the office, to grant them eyes and withhold all manner of vision: for as the inference is faire, affirmatively deduced from the action to the organ, that they have eyes because they see, so is it also from the organ to the action, that they have eyes, therefore some sight designed; if we take the intention of Nature in every species, and except the casual impediments, or morbosities in individuals; but as their eyes are more imperfect then others, so do we conceive of their sight, or act of vision; for they will runne against things, and hudling forwards fall from high places; so that they are not blinde, nor yet distinctly see, there is in them no cecity, yet more then a cecutiency; they have sight enough to discern the light, though not perhaps to distinguish of objects or colours; so are they not exactly blinde, for light is one object of vision; and this (as Scaliger observeth) might be as full a sight as Nature first intended; for living in darknesse under the earth, they had no further need of eyes then to avoid the light, and to be sensible when ever they lost that darknesse of earth, which was their naturall confinement; and therefore however Translators doe render the word of Aristotle, or Galen, that is, *imperfectos*, *oblasos*, or *inchoatos*, it is not much considerable; for their eyes are sufficiently begun to finish this action and competently perfect, for this imperfect Vision.

And lastly, although they had neither eyes nor sight, yet could they not be termed blinde; for blindenesse being a privative terme unto sight, this appellation is not admittible in propriety of speech, and will overthrow the doctrine of privations, which presuppose positive formes or habits, and are not indefinite negations, denying in all subjects but such alone wherein the positive habits are in their proper nature, and placed without repugnancy. So do we improperly say a Moll is blinde, if we deny it the organs or a capacity of vision from its created nature; so when the Text of John had said, that man was blinde from his nativity, whose cecity our Saviour cured, it was not warrantable in Nonnus to say he had no eyes at all, as he describeth in his paraphrase, and as some ancient Fathers affirme, that by this miracle they were created in him; and so though the sence may be accepted, that

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proverb must be candidly interpreted which maketh fishes mute, and call them silent which have no voyce in Nature.

Now this conceit is erected upon a misapprehension or mistake in the symptomes of vision, men confounding abolishment, diminution and depravement, and naming that an abolition of sight, which indeed is but an abatement. For if vision be abolished, it is called *cecitas*, or blindnesse, if depraved and receive its objects erroneously, Hallucination, if diminished, *hebetudo visus*, *caligatio*, or dimnesse; now instead of a diminution or imperfect vision in the Moll, we affirme an abolition or totall privation, in stead of caligation or dimnesse, we conclude a cecity or blindnesse, which hath beene frequently committed concerning other animals; so some affirme the water Rat is blinde, so Sammonicus and Nicander do call the Mus-Araneus the shrew or Ranny, blinde; And because darkenesse was before light, the Egyptians worshipped the same: So are slow-Wormies accounted blinde, and the like we affirme proverbially of the Beetle, although their eyes be evident, and they will flye against lights, like many other insects, and though also Aristotle determines, that the eyes are apparent in all flying insects, though other senses be obscure, and not perceptible at all; and if from a diminution we may inferre a totall privation, or affirme that other animals are blinde which doe not acutely see or comparatively unto others, we shall condemne unto blindenesse many not so esteemed; for such as have corneous or horney eyes, as Lobsters and crustaceous animals, are generally dim sighted, all insects that have *antennæ*, or long hornes to feele out their way, as Butter-flies and Locusts, or their fore legs so disposed, that they much advance before their heads, as may be observed in Spiders; and if the Ægle were judge, we might be blinde our selves; the expression therefore of Scripture in the story of Jacob is surely with circumspection, And it came to passe when Jacob was old, and his eyes were dimme, *quando caligarunt oculi*, saith Jerom and Tremellius, which are expressions of diminution, and not of absolute privation.

CHAP. XIX.

Of Lampries.

Whether Lampries have nine eyes, as is received, we durst refer it unto Polyphemus, who had but one to judge it: an error concerning eyes, occasioned by the error of eyes, deduced from the appearance of divers cavities or holes on either side, which some call eyes that carelessly behold them, and is not onely refutable by experience, but also repugnant unto reason; for beside the monstrosity they fasten unto Nature, in contriving many eyes, who hath made but two unto any

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any animall, that is, one of each side, according to the division of the braine, it were a superfluous and inartificiall act to place and settle so many in one place; for the two extremes would sufficiently performe the office of sight without the help of the intermediate eyes, and behold as much as all seven joyned together; for the visible base of the object would be defined by these two, and the middle eyes although they behold the same thing, yet could they not behold so much thereof as these; so were it no advantage unto man to have a third eye betwene those two he hath already; and the fiction of Argus seemes more reasonable then this; for though he had many eyes, yet were they placed in circumference and positions of advantage.

Againe, these cavities which men call eyes are seated out of the head, and where the Gills of other fish are placed, containing no organs of sight, nor having any communication with the braine; now all sense proceeding from the braine, and that being placed (as Galen observeth) in the upper part of the body, for the fitter situation of the eyes, and conveniency required unto sight, it is not reasonable to imagine that they are any where else, or deserve that name which are seated in other parts; and therefore we relinquish as fabulous what is delivered of Sternophthalmi, or men with eyes in their breast; and when it is said by Solomon, A wise mans eyes are in his head, it is to be taken in second sence, and affordeth no objection: True it is that the eyes of animals are seated with some difference, but all whatsoever in the head, and that more forward then the eare or hole of hearing. In quadrupedes, in regard of the figure of their heads, they are placed at some distance, in latirostrous and flat-bild birds they are more laterally seated; and therefore when they looke intently they turne one eye upon the object, and can convert their heads to see before and behinde, and to behold two opposite points at once; but at a more easie distance are they situated in man, and in the same circumference with the eare, for if one foote of the compasse be placed upon the Crowne, a circle described thereby will intersect, or passe over both the eares.

The error in this conceit consists in the ignorance of these cavities, and their proper use in nature; for this is a particular disposure of parts, and a peculiar conformation whereby these holes and fluces supply the defect of Gills, and are assisted by the conduit in the head; for like cetaceous animals and Whales, the Lamprey hath a fistula spout or pipe at the back part of the head, whereat they spirt out water: Nor is it onely singular in this formation, but also in many other, as in defect of bones, whereof it hath not one, and for the spine or back-bone, a cartilagineous substance without any spondyles, processes, or protuberance whatsoever; as also in the provision which Nature hath made for the heart, which in this animall is very strangely secured, and lyes immured in a cartilage or gristly substance; and lastly, in the colour

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of the liver, which is in the male of an excellent grasse greene, but of a deeper colour in the female, and will communicate a fresh and durable verdure.

CHAP. XX.

Of Snayles.

THat Snayles have two eyes, and at the end of their hornes, beside the assertion of the people, is the opinion of some learned men; which notwithstanding Scaliger teatmes but imitation of eyes, which Pliny contradicts, and Aristotle upon consequence denyes, when he affirmes that testaceous animals have no eyes at all; And for my owne part after much inquiry, I am not satisfied that these are eyes, or that those black and atramentous spots which seeme to represent them are any ocular realities; for if any object be presented unto them, they will sometime seeme to decline it, and sometime run against it; if also these black extremities, or presumed eyes be clipped off, they will notwithstanding make use of their protrusions or hornes, and poke out their way as before: Againe, if they were eyes or instruments of vision, they would have their originals in the head, and from thence derive their motive and optick organs, but their roots and first extremities are seated low upon the sides of the back, as may be perceived in the whiter sort of Snayles when they retract them: And lastly, if wee concede they have two eyes, wee must also grant, they have no lesse then foure, for not onely the two greater extensions above have these imitations of eyes, but also the two lesser below, as is evident unto any, and if they be dextrously dissected, there will be found on either side two black filaments or membranous strings which extend into the long and shorter cornicle upon protrusion; and therefore if they have two eyes, they have also foure, which will be monstrous, and beyond the affirmation of any.

Now the reason why we name these black strings eyes, is because we know not what to call them else, and understand not the proper use of that part, which indeed is very obscure, and not delivered by any, but may probably be said to assist the protrusion, and retraction of their hornes, which being a weake and hollow body, require some inward establishment, to confirme the length of their advancement, which we observe they cannot extend without the concurrence hereof; for if with your finger you apprehend the top of the horne, and draw out this black, and membranous emission, the horne will be excluded no more; but if you clip off the extremity, or onely singe the top thereof with *Aqua fortis*, or other corrosive water, leaving a considerable part behinde, they will neverthelesse exclude their hornes,

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and therewith explore their way as before; and indeed the exact sense of these extremities is very remarkable; for if you dip a pen in *Aqua fortis*, oyle of vitriol, or Turpentine, and present it towards these points, they will at a reasonable distance, decline the acrimony thereof, retyring or distorting them to avoid it; and this they will nimbly performe if objected to the extremes, but slowly or not at all, if approached unto their rootes.

What hath beene therefore delivered concerning the plurality, paucity, or anomalous situation of eyes; is either monstrous, fabulous, or under things never seene includes good sense or meaning: and so may we receive the figment of Argus, who was an Hieroglyphick of heaven, in those centuries of eyes expressing the stars; and their alternate wakings, the vicissitude of day and night; which strictly taken cannot be admitted, for the subject of sleep is not the eye, but the common sense, which once asleep, all eyes must be at rest: And therefore what is delivered as an Embleme of vigilancy, that the Hare and Lion doe sleep with one eye open, doth not evince they are any more awake then if they were both closed; for the open eye beholds in sleepe no more then that which is closed, and no more one eye in them then two in other animals that sleep with both open, as some by disease, and others naturally which have no eye lids at all.

As for Polyphemus although his story be fabulous, the monstrosity is not impossible; for the act of Vision may be performed with one eye, and in the deception and fallacy of sight, hath this advantage of two, that it beholds not objects double, or sees two things for one; for this doth happen when the axis of the visive coves, diffused from the object, fall not upon the same plane, but that which is conveyed into one eye, is more depressed or elevated then that which enters the other. So if beholding a candle we protrude either upward or downward the pupill of one eye, the object will appeare double; but if wee shut the other eye, and behold it but with one, it will then appeare but single, and if we abduce the eye unto either corner, the object will not duplicate, for in that position the axes of the coves remaine in the same plane, as is demonstrated in the opticks, and delivered by Galen, in his tenth *De usu partium*.

Relations also there are of men that could make themselves invisable, which belongs not to this discourse, but may serve as notable expressions of wise and prudent men, who so contrive their affaires, that although their actions be manifest, their designs are not discoverable: in this acception there is nothing left of doubt, and Giges ring remaineth still among us; for vulgar eyes behold no more of wise men then doth the Sun, they may discover their exterior and outward wayes, but their interior and inward pieces he onely sees, that sees beyond their beings.

CHAP.

CHAP. XXI.

Of the Chameleon.

Concerning the Chameleon there generally passeth an opinion that it liveth onely upon ayre, and is sustained by no other aliment; Thus much is in plaine termes affirmed by Solinus, Pliny, and divers other, and by this periphrasis is the same described by Ovid; All which notwithstanding upon enquiry, I finde the assertion mainly controvertible, and very much to faile in the three inducements of beliefe.

And first for its verity, although asserted by some, and traditionally delivered by others, yet is it very questionable. For beside *Ælian*, who is seldome defective in these accounts; Aristotle distinctly treating hereof, hath made no mention of this remarkeable propriety; which either suspecting its verity, or presuming its falsity hee surely omitted; for that he remained ignorant of this account it is not easily conceivable, it being the common opinion, and generally received by all men: Some have positively denyed it, as *Augustinus*, *Niphus*, *Stobæus*, *Daleschampsius*, *Fortunius*, *Licetus*, with many more; others have experimentally refuted it, as namely *Johannes Landius*, who in the relation of *Scaliger*, observed a Chameleon to lick up a flye from his breast; But *Bellonius* hath beene more satisfactorily experimentall, not onely affirming they feede on Flyes, Caterpillers, Beetles, and other insects, but upon exenteration he found these animals in their bellies; and although we have not had the advantage of our owne observation, yet have we received the like confirmation from many ocular spectators.

As touching the verisimilitude or probable truth of this relation, severall reasons there are which seeme to overthrow it; For first, there are found in this animall, the guts, the stomach, and other parts official unto nutrition, which were its aliment the empty reception of ayre, their provisions had beene superfluous; Now the wisdom of Nature abhorring superfluities, and effecting nothing in vaine, unto the intention of these operations, respectively contriveth the organs; and therefore where we finde such Instruments, wee may with strictnesse expect their actions, and where we discover them not, wee may with safety conclude the non-intention of their operations: So when we observe that oviporous animals, as Lizards, Frogs, Birds, and most Fishes have neither bladder nor kidnies, we may with reason inferre they do not urine at all: But whereas in this same kinde we discover these parts in the Tortoys beyond any other, wee cannot deny he exerciseth that excretion; Nor was there any absurdity in Pliny, when for medicinall uses he commended the urine of a Tortoise: so when we perceive that Bats have teats, it is not unreasonable to infer they suckle their younglings

lings with milke; but whereas no other flying animall hath these parts, we cannot from them expect a viviparous exclusion, but either a generation of egges, or some vermiparous separation, whose navell is within it selfe at first, and its nutrition after not inwardly dependent of its originall.

Againe, nature is so farre from leaving any one part without its proper action, that she oft-times imposeth two or three labours upon one; so the pizell in animals is both officiall unto urine and to generation, but the first and primary use is generation; for many creatures enjoy that part which urine not, as fishes, birds, and quadrupeds oviparous; but not on the contrary, for the secondary action subsisteth not alone, but in concomitancie with the other; so the nostrills are usefull both for respiration and smelling, but the principall use is smelling; for many have nostrills which have no lungs, as fishes, but none have lungs or respiration, which have not some shew, or some analogy of nostrills: And thus we perceive the providence of nature, that is the wisdom of God, which disposeth of no part in vaine, and some parts unto two or three uses, will not provide any without the execution of its proper office, nor where there is no digestion to be made, make any parts intervient to that intention.

Beside the teeth, the tongue of this animall is a second argument to overthrow this ayrie nutrition, and that not only in its proper nature, but also in its peculiar figure; for indeed of this part properly taken there are two ends; that is, the formation of the voice, and the execution of taste; for the voice, it can have no office in Camelions, for they are mute animals, as, beside fishes, are most other sort of Lizards: As for their taste, if their nutriment be ayre, neither can it be an instrument thereof; for the body of that element is ingustible, void of all sapidit, and without any action of the tongue, is by the rough artery or weazon conducted into the lungs: and therefore Plinie much forgets the strictnesse of his assertion, when he alloweth excrements unto that animall, that feedeth only upon ayre, which notwithstanding with the urine of an Asse, hee commends as a magicall medicine upon our enemies.

The figure of the tongue seems also to overthrow the presumption of this aliment, which according to the exact delineation of Aldrovand, is in this animall peculiar, and seemeth contrived for prey; for in so little a creature it is at the least halfe a palme long, and being it self very slow of motion, hath in this part a very great agility, withall its food being flies and such as suddenly escape, it hath in the tongue a spongy and mucous extremity, whereby upon a sudden emission, it inviscates and tangleth those insects: And therefore some have thought its name not unsutable unto its nature; the nomination is Greek, *καυαλιον*, that is a little Lion, not so much for the resemblance of shape, but affinity of con-

condition, that is for the vigilancy in its prey and sudden rapacity thereof, which it performeth not like the Lion with its teeth, but a sudden and unexpected ejaculation of the tongue. This exposition is favoured by some, especially the old glosse upon Leviticus, whereby in the Translation of Jerome and the Septuagint, this animall is forbidden; what ever it be, it seems more reasonable then that of Isidore, who derives this name, a *Camelo & Leone*, as presuming herein some resemblance with a Camell; for this derivation offendeth the rules of Etymology, wherein indeed the notation of names should be Orthographicall, not exchanging diphthongs for vowels, or converting consonants into each other.

As for the possibility hereof, it is not also unquestionable, and many wise men are of opinion, the bodies of animals cannot receive a proper aliment from ayre: for beside that taste being (as Aristotle termes it) a kinde of touch, it is required the aliment should be tangible, and fall under the palpable affections of touch; beside also that there is some sapor in all aliments, as being to be distinguished and judged by the gulle, which cannot be admitted in ayre; Beside these, I say, if wee consider the nature of aliment, and the proper use of ayre in respiration, it will very hardly fall under the name hereof, or properly attaine the act of nutrition.

And first concerning its nature, to make a perfect nutrition into the body nourished, there is required a transmutation of the nutriment; now where this conversion or aggeneration is made, there is also required in the aliment a familiarity of matter, and such a community or vicinity unto a living nature, as by one act of the soule may be converted into the body of the living, and enjoy one common soule; which indeed cannot be effected by the ayre, it concurring only with our flesh in common principles, which are at the largest distance from life, and common also unto inanimated constitutions; and therefore when it is said by Fernelius, and asserted by divers others, that we are only nourished by living bodies, and such as are some way proceeding from them, that is the fruits, effects, parts, or seeds thereof, they have laid out an object very agreeable unto assimilation; for these indeed are fit to receive a quick and immediate conversion, as holding some community with our selves, and containing approximate disposition unto animation.

Secondly (as is argued by Aristotle against the Pythagoreans) whatsoever properly nourisheth, before its assimilation, by the action of naturall heat it receiveth a compulency or incrassation progressionall unto its conversion, which notwithstanding it cannot be effected upon the ayre, for the action of heat doth not condense but rarifie that body, and by attenuation, rather then for nutrition, disposeth it for expulsion.

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Thirdly (which is the argument of Hippocrates) all aliment received into the body, must be therein a considerable space retained, and not immediatly expelled: now ayre but momentarily remaining in our bodies, it hath no proportionable space for its conversion, that being only of length enough to refrigerate the heart, which having once performed, lest being it selfe heated againe, it should suffocate that part, it maketh no stay, but hasteth backe the same way it passed in.

Fourthly, the proper use of ayre attracted by the lungs, and without which there is no durable continuation in life, is not the nutrition of parts, but the contemperation of that fervour in the heart, and the ventilation of that fire alwayes maintained in the forge of life, whereby although in some manner it concurrerth unto nutrition, yet can it not receive the proper name of nutriment; and therefore by Hippocrates *de alimento*, it is termed *Alimentum non Alimentum*, a nourishment and no nourishment; that is in a large acception, but not in propriety of language conserving the body, not nourishing the same, not repairing it by assimilation, but preserving it by ventilation; for thereby the naturall flame is preserved from extinction, and so the individuum supported in some way like nutrition: And so when it is said by the same Author, *Pulmo contrarium corpori alimentum trahit, reliqua omnia idem*, it is not to be taken in a strict and proper sense, but the quality in the one, the substance is meant in the other; for ayre in regard of our naturall heat is cold, and in that quality contrary unto it, but what is properly aliment, of what quality soever, is potentially the same, and in a substantiall identity unto it.

And although the ayre attracted may be conceived to nourish that invisible flame of life, in as much as common and culinary flames are nourished by the ayre about them; I confesse wee doubt the common conceit, which affirmeth that aire is the pabulous supply of fire, much lesse that flame is properly aire kindled: And the same before us, hath been denyed by the Lord of Verulam, in his Tract of life and death, & also by Dr. Jorden in his book of Minerall waters: For that which substantially maintaineth the fire, is the combustible matter in the kindled body, and not the ambient ayre, which affordeth exhalation to its fuliginous atomes, nor that which causeth the flame properly to be termed ayre, but rather as he expresth it, the accention of fuliginous exhalations, which containe an unctuosity in them, and arise from the matter of fuell; which opinion is very probable, and will salve many doubts, whereof the common conceit affordeth no solution.

As first, how fire is stricke out of flints, that is not by kindling the aire from the collision of two hard bodies; for then Diamonds and glasse should doe the like as well as flint, but rather from the sulphur and inflammable effluvijs contained in them. The like saith Jorden we observe in canes and woods, that are unctuous and full of oyle, which

will yeeld fire by frication, or collision, not by kindling the ayre about them, but the inflammable oyle with them: why the fire goes out without ayre? that is because the fuliginous exhalations wanting evaporation recoyle upon the flame and choake it, as is evident in cupping glasses, and the artifice of charcoals, where if the ayre be altogether excluded, the fire goes out, why some lampes included in close bodies, have burned many hundred yeares, as that discovered in the sepulchre of Tullia the sister of Cicero, and that of Olibius many yeares after, neare Padua; because what ever was their matter, either a preparation gold, or Naptha, the duration proceeded from the puritie of their oyle which yeelded no fuliginous exhalations to suffocate the fire; For if ayre had nourished the flame, it had not continued many minutes, for it would have been spent and wasted by the fire: Why a piece of flaxe will kindle, although it touch not the flame? because the fire extendeth further, then indeed it is visible, being at some distance from the wecke a pellucide and transparent body, and thinner then the ayre it self: why mettals in their liquation, although they intently heat the aire above their surface, arise not yet into a flame, nor kindle the aire about them? because their sulphur is more fixed, and they emit not inflammable exhalations: And lastly, why a lampe or candle burneth onely in the ayre about it, and inflameth not the ayre at a distance from it? because the flame extendeth not beyond the inflammable effluence, but closely adheres unto the originall of its inflammation, and therefore it onely warmeth, not kindleth the aire about it, which notwithstanding it will doe, if the ambient aire be impregnate with subtile inflammabilities, and such as are of quick accension, as experiment is made in a close roome, upon an evaporation of spirits of wine and Camphir; as subterraneous fires doe sometimes happen, and as Creusa and Alexanders boy in the bath were set on fire by Naptha.

Lastly, the Element of aire is so far from nourishing the bodie, that some have questioned the power of water; many conceiving it enters not the body in the power of aliment, or that from thence, there proceeds a substantiall supply: For beside that some creatures drinke not at all, unto others it performs the common office of ayre, and serves for refrigeration of the heart, as unto fishes, who receive it, and expell it by the gills; even unto our selves, and more perfect animals, though many wayes assistent thereto; it performes no substantiall nutrition, in serving for refrigeration, dilution of solid aliment, and its elixation in the stomacke, which from thence as a vehicle it conveighs through lesse accessible cavities into the liver; from thence into the veines, and so in a roride substance through the capillarie cavities into every part; which having performed, it is afterward excluded by urine, sweat and serous separations. And this opinion surely possessed the Ancients, for when they so highly commended that water which is suddenly hot and cold,

Epistles pleadeth experiment for it, the common picture also confirmeth it which usually describeth this animall, with an horschoe in its mouth; notwithstanding upon enquiry we finde it very questionable, and the negative seemes most reasonably entertained; whose verity indeed wee doe the rather desire, because hereby wee shall relieve our ignorance of one occult quality; for in the list thereof it is accounted, and in that notion imperiously obtruded upon us: For my owne part, although I have had the sight of this animall, I have not had the opportunity of its experiment, but have received great occasions of doubt, from learned discoursers thereon.

For Aristotle and Oppianus who have particularly treated hereof are silent in this singularity, either omitting it as dubious, or as the Comment saith, rejecting it as fabulous; Pliny speaketh generally, affirming onely, the digestion is wonderfull in this animall; Ælian delivereth, that it digesteth stones, without any mention of Iron; Leo Africanus, who lived in those Countries wherein they most abound, speaketh diminutively, and but halfe way into this assertion, *Sursum ac simplex animal est, quicquid invenit, absque delectu, usque ad ferrum devorat*: Fernelius in his second booke *De abditis rerum causis*, extenuates it, and Riolanus in his Comment thereof positively denyes it: Some have experimentally refuted it, as *Albertus Magnus*, and most plainly of all other *Vlysses Aldrovandus*, whose words are these, *Ego ferri frustra devorare, dum Tridenti essem, observavi, sed quæ in coctura rursus excerneret*, that is, at my being at Trent, I observed the Oestridge to swallow Iron, but yet to exclude it undigested againe.

Now beside experiment, it is in vaine to attempt against it by Philosophicall argument, it being an occult quality, which contemnes the law of Reason, and defends it selfe by admitting no reason at all; As for its possibility, we shall not at present dispute, nor will we affirme that Iron ingested, receiveth in the stomach of the Oestridge no alteration whatsoever; but if any such there be, we suspect this effect rather from some way of corrosion, then any of digestion; not any liquid reduction or tendance to chilification by the power of naturall heate, but rather some attrition from an acide and vitriolous humidity in the stomach, which may absterse, and shave the scorious parts thereof; so rusty Iron crammed downe the throate of a Cock, will become terse and cleare againe in its gizzard: So the Counter, which according to the relation of *Amatus*, remained a whole yeare in the body of a youth, and came out much consumed at last; might suffer this diminution, rather from sharpe and acide humours, then the strength of naturall heate, as he supposeth. So silver swallowed and retained some time in the body will turne black, as if it had beene dipped in *Aqua fortis*, or some corrosive water; but Lead will remaine unaltered, for that mettall containeth in it a sweet salt and manifest sugar, whereby it resisteth ordinary

ordinary corrosion, and will not easily dissolve even in *Aqua fortis*: So when for medicall uses, wee take downe the filings of Iron or Steele we must not conceive it passeth unaltered from us; for though the grosser parts be excluded againe, yet are the volatile and dissoluble parts extracted, whereby it becomes effectually in deopilations; and therefore for speedier operation we make extinctions, infusions, and the like, whereby we extract the salt and active parts of the medicine, which being in solution, more easily enter the veynes. And this is that the Chymists mainly drive at in the attempt of their *Aurum potabile*, that is, to reduce that indigestible substance into such a forme as may not be ejected by seidge, but enter the cavities, and lesse accessible parts of the body, without corrosion.

The ground of this conceit is its swallowing downe fragments of Iron, which men observing, by a forward illation, have therefore conceived it digesteth them, which is an inference not to be admitted, as being a fallacy of the consequent, that is, concluding a position of the consequent, from the position of the antecedent: For many things are swallowed by animals, rather for condiment, gust, or medicament, then any substantiall nutriment. So Poultreys, and especially the Turkey, do of themselves take downe stones, and wee have found at one time in the gizzard of a Turkey no lesse then seven hundred: Now these rather concur unto digestion, then are themselves digested, for we have found them also in the guts, and excrements, but their discent is very slow, for we have given them in paste, stones and smal pieces of Iron, which eightene dayes after we have found remaining in the gizzard; and therefore the experiment of Langius and others might bee mistaken, whilst after the taking they expected it should come downe within a day or two after: Thus also we swallow cherry-stones, but void them unconcocted, and we usually say they preserve us from surfeit, for being hard bodies they conceive a strong and durable heate in the stomach, and so prevent the crudities of their fruit; And upon the like reason do culinary operators observe that flesh boyles best, when the bones are boyled with it: Thus dogs will eat grasse, which they digest not: Thus Camels to make the water sapide do raise the mud with their feet: thus horses will knabble at walls, Pigeons delight in salt stones, Rats will gnaw Iron, and Aristotle saith the Elephant swalloweth stones; and thus may also the Oestridge swallow Iron, not as his proper aliment, but for the ends above expressed, and even as we observe the like in other animals.

What effect therefore may bee expected from the stomach of an Oestridge by application alone to further digestion in ours, beside the experimentall refute of Galen, wee referre it unto the considerations above alledged; or whether there be any more credit to be given unto the medicine of Ælian, who affirms the stones they swallow have

a peculiar vertue for the eyes, then that of Hermolaus and Pliny drawne from the urine of this animall, let them determine who can swallow so strange a transmission of qualities, or beleeve that any Bird or flying animall doth urine beside the Bat.

CHAP. XXIII.
Of Unicornes hornes.

Great account and much profit is made of Unicornes horne, at least of that which beareth the name thereof; wherein notwithstanding, many I perceive suspect an Imposture, and some conceive there is no such animall extant: herein therefore to draw up our determinations, beside the severall places of Scripture mentioning this animall (which some perhaps may contend to be onely meant of the Rhinoceros) wee are so farre from denying there is any Unicorne at all, that wee affirme there are many kinds thereof, in the number of Quadrupedes, wee will concede no lesse then five; that is, the Indian Oxe, the Indian Asse, the Rhinoceros, the Oryx, and that which is more eminently termed *Monoceros*, or *Vnicornis*: Some in the list of fishes, as that described by Olaus, Albertus, and many other: and some Unicornes wee will allow even among insects, as those foure kinds of nasicornous Beetles described by Muffetus.

More especially.

Secondly, although we concede there be many Unicornes, yet are we still to seeke; for whereunto to affixe this horne in question, or to determine from which thereof we receive this magnified medicine, we have no assurance, or any satisfactory decision: for although we single out one, and Antonomastically thereto assigne the name of the Unicorne, yet can we not be secure what creature is meant thereby, what constant shape it holdeth, or in what number to be received: For as far as our endeavours discover, this animall is not uniformly described, but differently set forth by those that undertake it: Pliny affirmeth it is a fierce and terrible creature, *Vartomannus* a tame and mansuete animall: those which *Garcias ab Horto* described about the cape of good hope, were beheld with heads like horses; those which *Vartomannus* beheld, he described with the head of a Deere; Pliny, *Ælian* Solinus, and after these from ocular assurance *Paulus Venetus* affirmeth the feet of the Unicorne are undivided, and like the Elephants: But those two which *Vartomannus* beheld at Mecha, were as he describeth footed like a Goate: As *Ælian* describeth, it is in the bignesse of an horse, as *Vartomannus* of a Colt; That which *Thevet* speaketh of was not so big as an Heifer; But *Paulus Venetus* affirmeth, they are but little lesse then Elephants; which are discriminations very materiall, and plainly declare, that under the same name Authors describe not the same

same animall: So that the Unicornes horne of the one, is not that of another, although we proclaime an equall vertue in either.

Thirdly, although we were agreed what animall this was, or differed not in its description, yet would this also afford but little satisfaction, for the horne we commonly extoll, is not the same with that of the Ancients; For that in the description of *Ælian* and Pliny was blacke, this which is shewed amongst us is commonly white, none black; and of those five which Scaliger beheld, though one spadiceous, or of a light red, and two inclining to red, yet was there not any of this complexion among them.

Fourthly, what hornes soever they be which passe amongst us, they are not surely the hornes of any one kinde of animall, but must proceed from severall sorts of Unicornes; for some are wreathed, some not: That famous one which is preserved at S. Dennis neere Paris, hath awfractuous spires, and chockleary turnings about it, which agreeth with the description of the Unicornes horne in *Ælian*; Those two in the treasure of S. Mark are plaine, and best accord with those of the Indian Asse; or the descriptions of other Unicornes: *Albertus Magnus* describeth one ten foote long, and at the base about thirteene inches compass; And that of Antwerpe which *Goropius Becanus* describeth, is not much inferiour unto it; which best agree unto the descriptions of the Sea-Unicornes, for these, as Olaus affirmeth, are of that strength and bignesse, as able to penetrate the ribs of ships; the same is more probable, in that it was brought from Island, from whence, as *Becanus* affirmeth, three other were brought in his dayes; And we have heard of some which have beene found by the sea side, and brought unto us from America: So that while we commend the Unicornes horne, and conceive it peculiar but unto one animall, under apprehension of the same vertue, wee use very many, and commend that effect from all, which every one confineth unto some one, hee hath either scene or described.

Fifthly, although there be many Unicornes, and consequently many hornes, yet many there are which beare that name, and currantly passe among us, which are no hornes at all; and such are those fragments, and pieces of *Lapis Ceratites*, commonly termed *Cornufofile*, whereof *Boetius* had no lesse then twenty severall sorts presented him for Unicorn horn: hereof in subterraneous cavities, & under the earth there are many to be found in severall parts of Germany, which are but the Lapidescencies, and petrifactive mutations of hard bodies, sometime of horne, of teeth, of bones, and branches of trees, whereof there are some so imperfectly converted, as to retaine the odor and qualities of their originals, as he relateth of pieces of Ashe and Walnut. Again, in most if not all which passe amongst us, and are extolled for precious hornes, wee discover not one affection common unto other hornes.

horne, that is, they mollifie not with fire, they soften not upon decoction, or infusion, nor will they afford a jelly, or mucilaginous concretion in either; which notwithstanding wee may effect in Goates hornes, Sheepes, Cows, and Harts horne, in the horne of the Rhinoceros, the horne of the Pristis or Sword-fish. Briefly that which is commonly received, and whereof there be so many fragments preserved in England, is not onely no horne, but a substance harder then a bone, that is, the tooth of a Morfe or Sea-horse, in the midst of the solid part containing a curdled graine, which is not to be found in Ivory; this in Northerne regions is of frequent use for hafts of knives, or hilts of swords, and being burnt becomes a good remedy for fluxes: but antidotically used, and exposed for Unicorne's horne, it is an insufferable delusion, and with more veniable deceit, it might have been practised in Harts horne.

Sixtly, although we were satisfied we had the Unicorne's horne, yet were it no injury unto reason to question the efficacy thereof, or whether those virtues which are pretended do properly belong unto it; for what we observe (and it escaped not the observation of *Paulus Iovius* many years past) none of the Ancients ascribed any medicinall or antidotall virtue unto the Unicorne's horne; and that which *Ælian* extollet, who was the first and onely man of the Ancients who spake of the medicinall virtue of any Unicorne, was the horne of the Indian Asse, whereof, saith he, the Princes of those parts make boales and drinke therein, as preservatives against poyson, Convulsions, and the Falling-sicknesse; Now the description of that horne is not agreeable unto that we commend; for that (saith he) is red above, white below, and black in the middle, which is very different from ours, or any to be seene amongst us; And thus, though the description of the Unicorne be very ancient, yet was there of old no virtue ascribed unto it, and although this amongst us receive the opinion of the same virtue, yet is it not the same horne whereunto the Ancients ascribed it.

Lastly, although we allow it an Antidotall efficacy, and such as the Ancients commended, yet are there some virtues ascribed thereto by Modernes not easily to be received; and it hath surely falne out in this as other magnified medicines, whose operations effectuall in some diseases, are presently extended unto all: That some antidotall quality it may have wee have no reason to deny; for since Elkes hooves and hornes are magnified for Epilepsies, since not onely the bone in the heart, but the horne of a Deere is Alexipharmacall, and ingredient into the confection of Hyacinth, and the Electuary of Maximilian, wee cannot without prejudice except against the efficacy of this: But when we affirme it is not onely Antidotall to proper venomes, and substances destructive by qualities, we cannot expresse; but that it resisteth also Sublimate, Arsenick, and poysons which kill by second qualities, that

is, by corrosion of parts, I doubt we exceed the properties of its nature, and the promises of experiment will not secure the adventure: And therefore in such extremities, whether there be not more probable reliefe from fat and oylie substances, which are the open tyrants of salt and corrosive bodies, then precious and cordiall medicines which operate by secret and disputable proprieties; or whether he that swallowed Lime, and dranke downe Mercury water, did not more reasonably place his cure in milke, butter, or oyle, then if he had recurred unto Pearle and Bezoar, common reason at all times, and necessity in the like case would easily determine.

Since therefore there be many Unicorne's, since that whereto wee appropriate a horne is so variously described, that it seemeth either never to have beene seene by two persons, or not to have beene one animall; Since though they agreed in the description of the animall, yet is not the horne wee extoll the same with that of the Ancients; Since what hornes soever they be that passe among us, they are not the hornes of one but severall animals: Since many in common use and high esteeme are no hornes at all: Since if they were true hornes, yet might their virtues be questioned: Since though we allowed some virtues, yet were not others to be received, with what security a man may rely on this remedy, the mistresse of fooles hath already instructed some, and to wisdom (which is never too wise to learne) it is not too late to consider.

CHAP. XXIV.

That all Animals of the Land, are in their kinde in the Sea.

THat all Animals of the Land, are in their kinde in the Sea, although received as a principle, is a tenent very questionable, and will admit of restraint; for some in the Sea are not to be matcht by any enquiry at Land; and hold those shapes which terrestrious formes approach not, as may be observed in the Moone fish, or *Orthorogiscus*, the severall sorts of Raia's, Torpedo's, Oysters, and many more; and some there are in the Land which were never maintained to be in the Sea, as Panthers, Hyæna's, Camels, Sheep, Molls, and others which carry no name in Ichthyologic, nor are to be found in the exact descriptions of *Rondeletius*, *Gesner*, or *Aldrovandus*.

Againe, though many there be which make out their nominations, as the Hedge-hog, Sea-serpents, and others; yet are there also very many that beare the name of animals at Land, which hold no resemblance in corporall configuration; in which account we compute *Vulpes*, *Canis*, *Rana*, *Passer*, *Cuculus*, *Asellus*, *Turdus*, *Lepus*, &c. wherein while some are called the Fox, the Dog, the Sparrow, or Frog-fish,

and are knowne by common names with those at land; as their describers attest, they receive not these appellations, as we conceive, from a totall similitude in figure, but any concurrence in common accidents, in colour, condition, or single conformation: as for Sea-horses which much confirme this assertion, in their common descriptions, they are but Crotelco deliniations which fill up empty spaces in Maps, and meere pictoriall inventions, not any Physicall shapes: sutable unto those which (as Plinie delivereth) Praxiteles long agoe set out in the Temple of Domitius: for that which is commonly called a Sea-horse is properly called a Morfe, and makes not out that shape: That which the Ancients named Hippocampus is a little animall about six inches long, and not preferred beyond the classis of Insects: that they tearmed Hippopotamus an amphibious animall, about the River Nile, so little resembleth an horse, that as Mathiolus observeth in all, except the feet, it better makes out a swine: that which they tearmed a Lion, was but a kinde of Lobster: and that they called the Beare, was but one kinde of Crab, and that which they named Bos marinus, was not as we conceive a fish resembling an Oxe, but a Skaite or Thornbacke, so named from its bignesse, expressed by the Greek word *Bous*, which is a prefixe of augmentation to many words in that language.

And therefore although it be not denied that some in the water doe carry a justifiable resemblance to some at the Land, yet are the major part which beare their names unlike, nor doe they otherwise resemble the creatures on earth, then they on earth the constellations which passe under animall names in heaven: nor the Dog-fish at sea much more make out the Dog of the land, then that his cognominall or name-fake in the heavens. Now if from a similitude in some, it bee reasonable to infer a correspondency in all, we may draw this analogie of animalls upon plants; for vegetables there are which carry a neare and allowable similitude unto animals, as we elswhere declare: wee might also presume to conclude that animall shapes were generally made out in mineralls: for severall stones there are that beare their names in relation to animals parts, as Lapis anguinus, Conchites, Echinites, Eucephalites, Agopthalmus, and many more, as will appeare in the writers of Mineralls, and especially in Boetius.

Moreover if we concede, that the animalls of one Element, might beare the names of those in the other, yet in strict reason the watery productions should have the prenomination: and they of the land rather derive their names, then nominate those of the sea: for the watery plantations were first existent, and as they enjoyed a priority in forme, had also in nature precedent denominations: but falling not under that nomenclature of Adam, which unto terrestrious animalls assigned a name appropriate unto their natures, from succeeding spectators they received arbitrary appellations, and were respectively denominat unto

unto creatures knowne at land, which in themselves had independent names, and not to bee called after them, which were created before them.

Lastly, by this assertion wee restraine the hand of God, and abridge the variety of the creation; making the creatures of one Element, but an acting over those of an other, and conjoyning as it were the species of things which stood at distance in the intellect of God, and though united in the Chaos, had severall seeds of their creation: for although in that indistinguisht masse, all things seemed one, yet separated by the voyce of God, according to their species they came out in incommunicated varieties, and irrelative feminalities, as well as divided places; and so although we say the world was made in fixe dayes, yet was there as it were a world in every one, that is, a distinct creation of distinguisht creatures, a distinction in time of creatures divided in nature, and a severall approbation, and survey in every one.

CHAP. XXV.

Compendiously of sundry Tenents concerning other Animals, which examined prove either false or dubious.

I. **A**Nd first from times of great Antiquity, and before the Melodie of Syrens, the Musicall notes of Swans hath been commended, and that they sing most sweetly before their death. For thus we read in Plato de *Legibus*, that from the opinion of Melempsuchosis, or transmigration of the soules of men into the bodies of beasts most sutable unto their humane condition, after his death, Orpheus the Musician became a Swan. Thus was it the bird of Apollo the god of Musicke by the Greekes, and a Hieroglyphick of Musick among the Egyptians, from whom the Greeks derived the conception, hath been the affirmation of many Latines, and hath not wanted assertors almost from every Nation.

All which notwithstanding we find this relation doubtfully received by *Ælian*, as an hearsay account by *Bellonius*, as a false one by *Pliny*, expressly refuted by *Myndius* in *Athenæus*, & severely rejected by *Scaliger*, whose words unto *Cardan* are these. *De Cygni vero cantu suavissimo quem cum parente mendaciorum Græcia jactare ausus es, ad Luciani tribunal, apud quem novit aliquid dicas, statuo.* Authors also that countenance it, speak not satisfactorily of it. Some affirming they sing not till they die; some that they sing, yet die not; some speake generally, as though this note were in all; some but particularly, as though it were only in some; some in places remote, and where we can have no trial of it; others in places where every experience can refute it, as *Aldrovand* upon relation, delivered, concerning the Musicke of the Swans on the river of the Thames neer London.

This figurati-
on to be found
in Elkes, and
not in com-
mon Swans.

Now that which countenanceth, and probably confirmeth this opinion, is the strange and unusuall conformation of the winde pipe, or vocall organ in this animall: observed first by Aldrovandus, and conceived by some contrived for this intention: for in its length it far exceedeth the gullet, and hath in the chest a sinuous revolution, that is, when it ariseth from the lunges, it ascendeth not directly unto the throat, but ascending first into a capsulary reception of the breast bone, by a Serpentine and Trumpet recurvation it ascendeth againe into the neck, and so by the length thereof a great quantity of ayre is received, and by the figure thereof a musicall modulation effected. But to speak indifferently (what Aldrovand himself acknowledgeth) this formation of the Weazon, is not peculiar unto the Swan but common also, unto the Platea or Shovelard, a bird of no Musicall throat; And as himselfe confesseth may thus be contrived in the Swan to contain a larger stock of ayre, whereby being to feed on weeds at the bottom, they might the longer space detain their heads under water. And indeed were this formation peculiar, or had they unto this effect an advantage from this part: yet have they a knowne and open disadvantage from an other, which is not common unto any singing bird wee know, that is a flat bill: For no Latiostrous animal (whereof neverthelesse there are no slender numbers) were ever commended for their note, or accounted among those animals which have been instructed to speake.

When therefore we consider the dissention of Authors, the falsity of relations, the indisposition of the Organs, and the immusicall note of all we ever beheld or heard of, if generally taken and comprehending all Swans, or of all places, we cannot assent thereto. Surely he that is bit with a Tarantula, shall never be cured by this Musicke, and with the same hopes we expect to hear the harmony of the Spheres.

2. That there is a speciall proprietic in the flesh of Peacocks rost or boiled, to preserve a long time incorrupted, hath been the assertion of many, stands yet confirmed by Austine, *De Civitate Dei*, by Gygas Sempronius, in Aldrovand, and the same experiment we can confirme our selves, in the brawne or fleshy parts of Peacocks so hanged up with thred, that they touch no place whereby to contract a moisture; and hereof we have made triall both in the summer and winter. The reason some I perceive, attempt to make out from the siccity and drines of its flesh, and some are content to rest in a secret propriety thereof. As for the siccity of the flesh, it is more remarkable in other animals, as Eagles, Hawkes, and birds of prey; And that it is a propriety, or agreeable unto none other, we cannot with reason admit: for the same preservation, or rather incorruption we have observed in the flesh of Turkeys, Capons, Hares, Partridge, Venison, suspended freely in the ayre, and after a yeare and a halfe, dogs have not refused to eat them.

As for the other conceit that a Peacocke is ashamed when he looks on

on his legges, as is commonly held, and also delivered by Cardan, beside what hath been said against it by Scaliger, let them beleve that hold specificall deformities, or that any part can seeme unhanfome to their eyes, which hath appeared good and beautifull unto their makers. The occasion of this conceit, might first arise from a common observation, that when they are in their pride, that is, advance their traine, if they decline their necke to the ground, they presently demit and let fall the same: which indeed they cannot otherwise doe, for contracting their body, and being forced to draw in their foreparts, to establish the hinder in the elevation of the traine, if the foreparts depart and incline to the ground, the hinder grow too weake, and suffer the traine to fall. And the same in some degree is also observeable in Turkeys.

3. That Storkes are to be found and will onely live in Republickes or free States, is a pretty conceit to advance the opinion of popular policies, and from Antipathies in nature, to disparage Monarchicall government. But how far agreeable unto truth, let them consider who read in Plinie, that among the Thessalians who were governed by Kings, and much abounded with Serpents, it was no lesse then capitall to kill a Storke. That the ancient Egyptians honoured them, whose government was from all times Monarchicall. That Bellonius affirmeth, men make them nests in France. And lastly, how Jeremy the Prophet delivered himselfe unto his countrey men, whose government was at that time Monarchicall. *Milvus in Caelo cognovit tempus suum. Turtur Hirundo & Ciconia custodierunt tempus adventus sui.* Wherein to exprobrate their Stupiditie, he induceth the providence of Storkes. Now if the bird had been unknown, the illustration had been obscure, and the exprobatation but improper.

4. That a Bittor maketh that mugient noyse, or as we terme it Bumping by putting its bill into a reed as most beleve, or as Bellonius and Aldrovand conceive, by putting the same in water or mud, and after a while retaining the ayre by suddenly excluding it againe, is not so easily made out. For my own part though after diligent enquiry, I could never behold them in this motion; Notwithstanding by others whose observations we have expresly requested, we are informed, that some have beheld them making this noise on the Shore, their bills being far enough removed from reed or water; that is, first strongly attracting the aire, and unto a manifest distention of the neck, and presently after with great Contention and violence excluding the same againe. As for what others affirme of putting their bill in water or mud, it is also hard to make out. For what may bee observed from any that walketh the Fennes, there is little intermission, nor any observable pawse, between the drawing in and sending forth of their breath. And the expiration or breathing forth doth not onely produce a noise, but the inspiration

ration or haling in of the ayre, affordeth a sound that may bee heard almost a flight shoot.

Now the reason of this strange and peculiar noise, is well deduced from the conformation of the windepipe, which in this birde is different from other volatiles. For at the upper extreame it hath no Larinx, or throttle to qualifie the sound, and at the other end, by two branches deriveth it selfe into the Lungen. Which division consisteth onely of Semicircular fibers, and such as attaine but half way round the part; By which formation they are dilatible into larger capacities, and are able to containe a fuller proportion of ayre, which being with violence sent up the weazon, and finding no resistance by the Larinx, it issueth forth in a sound like that from cavernes, and such as sometimes subterraneous eruptions, from hollow rocks afford; As Aristotle observeth in a Problem of the 25. Section, and is observable in pichards, bottles, and that instrument which Aponensis upon that probleme describeth, wherewith in Aristotles time Gardiners affrighted birdes.

5. That whelps are blinde nine dayes and then begin to see, is the common opinion of all, and some will be apt enough to descend unto oathes upon it. But this I finde not answerable unto experience; for upon a strict observation of many, I have not found any that see the ninth day, few before the twelfth, and the eyes of some will not open before the fourteenth day. And this is agreeable unto the determination of Aristotle: who computeth the time of their anopsie or invision by that of their gestation; for some saith he do go with their yong, the sixt part of a yeer, a day or two over or under, that is, about sixty dayes or nine weekes, and the whelps of these see not till twelve dayes; some goe the fifth part of a yeer, that is, 71. dayes, and these saith he see not before the fourteenth day. Others doe goe the fourth part of a yeer, that is, three whole months, and these saith hee are without sight no lesse then seventeen dayes: wherein although the accounts be different, yet doth the least thereof exceed the terme of nine dayes which is so generally received. And this compute of Aristotle doth generally overthrow, the common cause alleadged for this effect, that is, a precipitation or over hasty exclusion before the birth be perfect, according unto the vulgar Adage. *Festinus canis cecos parit catulos*: for herein the whelps of longest gestation, are also the latest in vision. The manner hereof is this. At the first littering their eyes are fastly closed, that is, by coalition or joyning together of the eyelids, and so continue untill about the twelfth day, at which time they begin to separate, and may be easily divelled or parted asunder; they open at the inward canthis, or greater angle of the eye, and so by degrees dilate themselves quite open. An effect very strange, and the cause of much obscurity, wherein as yet mens enquiries are blinde, and satisfaction acquirable from no man. What ever it be, thus much we may observe, those animals

mallis are onely excluded without sight, which are multiparous and multifidous, that is, which have many at a litter, and have also their feet divided into many portions; for the Swine although multiparous, yet being bisulcous, and onely cloven hoofed, is not excluded in this manner, but farrowed with open eyes, as other bisulcous animals.

6. The Antipathy between a Toad and a Spider, and that they poisonously destroy each other is very famous, and solemne Stories have been written of their combats, wherein most commonly the victory is given unto the Spider. Of what Toades and Spiders it is to be understood, would be considered. For the Phalangium, and deadly Spiders, are different from those we generally behold in England. How ever the verity hereof, as also of many others, wee cannot but desire; for hereby wee might be surely provided of proper Antidotes in cases which require them; But what we have observed herein, wee cannot in reason conceale, who having in a glasse included a Toad with severall Spiders, wee beheld the Spiders without resistance to sit upon his head, and passe over all his body, which at last upon advantage hee swallowed down, and that in few houres to the number of seven. And in the like manner will Toades also serve Bees, and are accounted an enemy unto their Hives.

7. Whether a Lyon be also afraid of a Cock, as is related by many, and beleaved by most, were very easie in some places to make tryall. Although how far they stand in feare of that animal, we may sufficiently understand, from what is delivered by Camerarius, whose words in his Symbola are these. *Nostris temporibus in Aula serenissimi Principis Bavariae, unus ex Leonibus miris saltibus in vicinam cujusdam domus aream sese dimisit, ubi Gallinaciorum cantum aut clamores nihil reformidans ipso una cum plurimis gallinis devoravit.* That is, in our time in the court of the Prince of Bavaria, one of the Lyons leaped downe into a neighbours yard, where nothing regarding the crowing or noise of the Cocks, hee eat them up with many other Hens. And therefore a very unsafe defensative it is against the fury of this animal, and surely no better then Virginity, or blood Royall, which Pliny doth place in Cock broth: For herewith, saith he, who ever is anoynted (especially if Garlick be boiled therein) no Lyon or Panther will touch him.

8. It is generally conceived, an earewigge hath no wings, and is reckoned amongst impennous insects by many, but hee that shall narrowly observe them, or shall with a needle put aside the short and sheathie cases on their backe, may extend and draw forth two winges of a proportionable length for flight, and larger then many flies. The experiment of Pennius is yet more perfect, who with a rush or bristle so pricked them as to make them flie.

9. That wormes are exanguious animals, and such as have no blood at all, is the determination of Philosophy, the generall opinion of Schollers,

lers, and I know not well to dissent from thence my selfe: if so, surely wee want a proper terme whereby to expresse that humor in them which so stricktly resembleth blood: and we refer it unto the discernment of others what to determine of that red and sanguineous humor, found more plentifully about the Torquis or carneous circle of great wormes in the spring, affording in linnen or paper an indiscernable tincture from blood; or wherein that differeth from a *veyne*, which in an apparent blew runneth along the body, and if dexterously pricked with a lancet emitteth a red drop, which pricked on either side it will not readily afford.

In the upper parts of wormes, there are likewise found certaine white and ovall glandulofities which Authors terme eggs, and in magnifying glasses, they also represent them: how properly may also bee enquired; since if in them there be distinction of sexes, these eggs are to be found in both. For in that which is presumed to bee their coition that is their usuall complication, or rather laterall adhesion above the ground, dividing suddenly with two knives the adhering parts of both, I have found these egges in either.

10. That Flyes, Bees, &c. doe make that noise or humming sound by their mouth, or as many beleve with their wings only, would be more warily asserted, if we consulted the determination of Aristotle, who as in sundry other places, so more expressely, in his booke of respiration, affirmeth this sound to be made, by the allision of an inward spirit upon a pellicle, or little membrane about the precinct or pectorall division of their body. If we also consider that a Bee or Flye, so it be able to move the body, will buz though its head be off; that it will do the like if deprived of wings reserving the head whereby the body may be the better moved. And that some also which are big and lively will humme without either head or wing.

Nor is it only the beating upon this little membrane, by the inward and connaturall spirit as Aristotle determines, or the outward ayre as Scaliger conceiveth which affordeth this humming noise, but perhaps most of the other parts may also concur here to, as will be manifest if while they humme we lay our finger on the backe or other parts, for thereupon will be felt a ferrous or jarring motion like that which happeneth while we blow on the teeth of a combe through paper; and so if the head or other parts of the trunk be touched with oyle, the sound will be much impaired, if not destroyed: for those being also dry and membranous parts, by attrition of the spirit doe helpe to advance the noyse: And therefore also the sound is strongest in dry weather, and very weake in rainy season, and toward winter; for then the ayre is moyst, and the inward spirit growing weake, makes a languid and dumbe allision upon the parts.

11. There is found in the Summer a kind of spider called a Taint of a red

red colour, and so little of body that ten of the largest will hardly out-way a graine; this by Country people is accounted a deadly poyson unto cowes and horses, who, if they suddenly dye, and swell thereon, ascribe their death hereto, and will commonly say, they have licked a Taint. Now to satisfie the doubts of men, we have called this tradition unto experiment; we have given hereof unto dogs, chickens, calves and horses, and not in the singular number, yet never could finde the least disturbance ensue. There must be therefore other causes enquired of the sudden death, and swelling of cattell, and perhaps this insect is mistaken, and unjustly accused for some other; for some there are which from elder times, have been observed pernicious unto cattell, as the Buprestis or burst-cow, the Pityocampe or cruce Pinuum, by Dioscorides, Galen and Aërius, the Staphilinus described by Aristotle and others, or those red Phalangious spiders like Cantharides mentioned by Muffetus. Now although the animall may be mistaken and the opinion also false, yet in the ground and reason which makes men most to doubt the verity hereof there may be truth enough, that is the small inconsiderable quantity of this insect. For that a poyson cannot destroy in so small a bulke, we have no reason to affirme. For if as Leo Africanus reporteth, the tenth part of a graine of the poyson of Nubia will dispatch a man in two houres, if the bite of a Viper and sting of a Scorpion, is not conceived to impart so much, if the bite of an Aspe will kill within an houre, yet the impression scarce visible, and the poyson communicated not ponderable, we cannot as impossible reject this way of destruction; or deny the power of death in so narrow a circumscription.

12. Wondrous things are promised from the Glow-worme, thereof perpetuall lights are pretended, and waters said to be distilled which afford a lustre in the night; and this is asserted by Cardan, Albertus, Gaudentius, Mizaldus and many others. But hereto we cannot with reason assent: for the light made by this animall depends upon a living spirit, and seems by some vitall irradiation to be actuated into this lustre. For when they are dead they shine not, nor alwayes while they live, but are obscure or light according to the diffusion of this spirit, and the protrusion of their luminous parts, as observation will instruct us; for this flammeous light is not over all the body, but only visible on the inward side, in a small white part neare the tayle. When this is full and seemeth protruded, there ariseth a double flame of a circular figure and Emerald green colour, which is discernable in any darke place in the day; but when it falleth and seemeth contracted, the light disappeareth, and the colour of the part only remaineth. Now this light, as it appeareth and disappeareth in their life, so doth it goe quite out at their death. As we have observed in some, which preserved in fresh grasse have lived and shined eighteen dayes, but as they declined their light

grew languid, and at last went out with their lives. Thus also the Torpedo which alive hath a power to stupifie at a distance, hath none upon contaction being dead, as Galen and Rondoletius particularly experimented. And this hath also disappointed the mischief of those intentions, which study the advancement of poysons, and fancie destructive compositions from Aspes or Vipers teeth, from Scorpions or Horner stings; for these omit their efficacy in the death of the individual, and act but dependantly on their formes. And thus far also those Philosophers concur with us which held the Sun and Stars were living creatures, for they conceived their lustre depended on their lives; but if they ever dyed their light must perish also.

True it is, and we have observed it, that a Glow-worme will afford a faint light, almost a dayes space when many will conceive it dead, but this is a mistake in the compute of death, and terme of disanimation; for indeed, it is not then dead, but if it be distended will slowly contract it selfe againe, which when it cannot doe it ceaseth to shine any more. And to speak strictly it is no easie matter to determine the point of death in insects and creatures who have not their vitalities radically confined unto one part, for these are not dead when they cease to move or afford the visible evidencies of life, as may be manifestly observed in flies, who when they appear even desperate and quite forsaken of their formes, by vertue of the sun or warme ashes will be revoked unto life, and performe its functions againe.

13. The wisdom of the Pismire is magnified by all, and in the Panegyricks of their providence we alwayes meet with this, that to prevent the growth of corne which they store up they bite off the end thereof: And some have conceived that from hence they have their name in Hebrew: From whence ariseth a conceit that corne will not grow if the extreame be cut or broken. What other provision they make for this intention we know not, but herein we finde no security to prevent its germination, as having made tryall in graines whose ends cut off have notwithstanding suddenly sprouted, and according to the law of their kindes, that is the roots of barley and oates at contrary ends, of wheat and rye at the same. And therefore some have delivered that after rainy weather they dry these graines in the Sun, which if effectually, we must conceive to be made in a high degree and above the progression of Malt, for that Malt will grow this yeare hath informed us, and that unto a perfect ear.

THE



THE FOVRTH BOOK.

Of many popular and received Tenents concerning Man, which examined, prove either false or dubious.

CHAP. I.

Of the erectnesse of Man.



That onely Man hath an erect figure, and that for to behold and looke up toward heaven, according to that of the Poet—

*Pronaque cum spectant animalia caetera terram
Os homini sublime dedit, calumque tueri
Iussit, & erectos ad sydera tollere vultus,*

is a double assertion, whose first part may be true, if we take erectnesse strictly, and so as Galen hath defined it; for they onely, saith he, have an erect figure, whose spine and thigh bone are carried in right lines, and so indeed of any we yet know, Man only is erect; for the thighes of other animals doe stand at angles with their spine, and have rectangular positions in birds, and perfect Quadrupedes; nor doth the Frog, though stretched out, or swimming, attaine the rectitude of man, or carry its thigh without all angularity: and thus is it also true that man onely sitteth, if we define sitting to be a firmation of the body upon the Ischias; wherein if the position be just and naturall the thigh bone lyeth at right angles to the spine, and the leg bone or tibia to the thigh; for others when they seeme to sit, as Dogs, Cats, or Lions, doe make unto their spine acute angles with their thigh, and acute to the thigh with their shanke: Thus is it likewise true, what Aristotle alledgeth in that Probleme; why man alone is *εὐσταθής* or suffereth pollutions in the night; that is, because man onely lyeth upon his back, if we define not the same by every supine position, but when the spine is in rectitude with the thigh, and both with the armes lye parallell to the Horizon, that a line through their navel will passe through the Zenith and centre of the earth, and so cannot other animals

animals lye upon their backs; for though the spine lye parallel with the Horizon, yet will their legs incline, and lye at angles unto it; And upon these three divers positions in man wherein the spine can only be at right lines with the thigh, arise those remarkable postures, prone, supine, and erect, which are but differenced in sight, or in angular postures upon the back, the belly and the feet.

But if erectnesse be popularly taken, and as it is largely opposed unto pronenesse, or the posture of animals looking downwards, carrying their venters or opposite part to the spine directly towards the earth, it must not be strictly taken; for though in Serpents and Lizards we may truly allow a pronenesse, yet Galen acknowledgeth that perfect Quadrupedes, as Horses, Oxen, and Camels, are but partly prone, and have some part of erectnesse; and birds or flying animals, are so farre from this kinde of pronenesse, that they are almost erect, advancing the head and breast in their progression, and onely prone in the act of their volitation; and if that be true which is delivered of the Penguin or *Anser Magellanicus*, and often described in Maps about those Straits, that they goe erect like men, and with their breast and belly do make one line perpendicular unto the axis of the earth; it will make up the exact erectnesse of man; nor will that insect come very short which we have often beheld, that is, one kinde of Locust which stands not prone, or a little inclining upward, but in a large erectnesse, elevating alwayes the two fore legs, and sustaining it selfe in the middle of the other foure; by Zoographers called *mantis*, and by the Common people of Province, *Priga Dio*, that is, the Prophet and praying Locust, as being generally found in the posture of supplication, or such as resembleth ours, when we lift up our hands to heaven.

As for the end of this erection, to looke up toward heaven, though confirmed by severall testimonies, and the Greek Etymology of man, it is not so readily to be admitted; and as a popular and vaine conceit was anciently rejected by Galen; who in his third, *De usu partium*, determines, that man is erect because he was made with hands, and was therewith to exercise all Arts which in any other figure he could not have performed, as he excellently declareth in that place where he also proves that man could have beene made neither Quadruped, nor Centaur.

The ground and occasion of this conceit was a literall apprehension of a figurative expression in Plato; as Galen plainly delivers, the effect of whose words is this: To opinion that man is erect to looke up and behold the heavens, is a conceit onely fit for those that never saw the fish *Uranoscopus*, that is, the Beholder of heaven; which hath its eyes so placed, that it lookes up directly to heaven, which man doth not, except he recline, or bend his head backward; and thus to looke up to heaven agreeth not onely unto men, but Asses; to omit birds with long

necks,

necks, which looke not onely upwards, but round about at pleasure; and therefore men of this opinion understood not Plato when he said that man doth *Sursum aspicere*, for thereby was not meant to gape or looke upward with the eye, but to have his thoughts sublime, and not onely to behold, but speculate their nature with the eye of the understanding.

Now although Galen in this place makes instance but in one, yet are there other fishes, whose eyes regard the heavens, as Plane, and cartilaginous fishes as pectinals, or such as have the Apophyses of their spine made laterally like a combe, for when they apply themselves to sleepe or rest upon the white side, their eyes on the other side looke upward toward heaven: for birds, they generally carry their heads erectly like man, and some have advantage in that they move not their upper eyelid; and many that have long necks, and bear their heads somewhat backward, behold farre more of the heavens, and seeme to look above the æquinoxiall circle; and so also in many Quadrupeds, although their progression be partly prone, yet is the sight of their eye direct, not respecting the earth but heaven, and makes an higher arch of altitude then our owne. The position of a Frogge with his head above water exceedeth these; for therein hee seemes to behold a large part of the heavens, and the acies of his eye to ascend as high as the Tropick; but he that hath beheld the posture of a Bitour, will not deny that it beholds almost the very Zenith.

CHAP. II.

Of the heart.

That the heart of man is seated in the left side, is an asseveration which strictly taken, is refutable by inspection; whereby it appeares the base and centre thereof is in the midst of the chest; true it is that the Mucro or point thereof inclineth unto the left, for by this position it giveth way unto the ascension of the midriffe, and by reason of the hollow veine could not commodiously deflect unto the right; from which diversion, nevertheless wee cannot so properly say tis placed in the left, as that it consisteth in the middle, that is, where its centre resteth; for so doe we usually say a Gnomon or needle is in the middle of a Diall, although the extreame may respect the North or South and approach the circumference thereof.

The ground of this mistake is a generall observation from the pulse or motion of the heart, which is more sensible on this side; but the reason hereof is not to be drawne from the situation of the heart, but the site of the left ventricle wherein the vitall spirits are laboured, and also the great Artery that conveyeth them out, both which are situated on the

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the left, and upon this reason epithems or cordial applications are justly applyed unto the left brest, and the wounds under the fifth rib may bee more suddenly destructive if made on the sinister side; and the speare of the souldier that pierced our Saviour, is not improperly described when Painters direct it a little towards the left.

The other ground is more particular and upon inspection; for in dead bodies especially lying upon the spine, the heart doth seem to incline unto the left, which happeneth not from its proper site, but because its sinistrous gravity is drawne that way by the great arterie, which then subsideth & haleth the heart unto it. And therefore strictly taken, the heart is seated in the middle of the chest; but after a careless and inconsiderate aspection, or according to the readiest sense of pulsation, wee shall not quarrell if any affirme it is seated toward the left; and in these considerations must Aristotle be salved, when hee affirmeth the heart of man is placed in the left side, and thus in a popular acception may wee receive the periphrasis of Persius when hee taketh the part under the left pappe for the heart; and if rightly apprehended, it concerneth not this controversie, when it is said in Ecclesiastes, The heart of a wiseman is in the right side, but that of a fool in the left.

That assertion also that man proportionally hath the largest brain, I did I confesse somewhat doubt, and conceived it might have failed in birds, especially such as having little bodies, have yet large cranies, and seeme to containe much brain, as Snipes, Woodcocks, &c. but upon triall I finde it very true. The braines of a man Archangelus and Bauhinus, observe to weigh four pound, and sometime five and an half, if therefore a man weigh one hundred and forty pounds, and his braine but five, his waight is 27. times as much as his braine, deducting the waight of that five pound which is allowed for it; now in a Snipe which waighed foure ounces two dragmes, I find the braine to waigh but half dragme, so that the weight of the body (allowing for the brain) exceeded the waight of the brain, sixtie seven times and an half.

CHAP. III.

Of Pleurifies.

THat Pleurifies are onely on the left side, is a popular Tenent, not onely absurde but dangerous. From the misapprehension hereof, men omitting the opportunity of those remedies, which otherwise they would not neglect; chiefly occasioned by the ignorance of Anatomie, & the extent of the part affected, which in an exquisite Pleurisie is determined to be the skin or membrane which investeth the ribbes, for so it is defined, *Inflammatio membrane costae succingentis*; An Inflammation either simple consisting onely of an hot and sanguineous afflux-

— *Levâ in
parte ma-
milla.*

ion, or els Oedematous, Schirrous, Erisipelatous according to the predominancy of melancholy, flegme, or choler; The vessells whereby the morbificall matter is derived unto this membrane, are either the ascending branches of the hollow veine, which disperse themselves into the foure upper ribbes, or else the Azygos, or *vena sine pari*, whose furcles are disposed unto the other lower; The membrane thus inflamed, is properly called *Pleura*, from whence the disease hath its name, and this investeth not onely one side, but overspreadeth the cavities of the chest, and affordeth a common coat unto the parts contained therein.

Now therefore the *Pleura* being common unto both sides, it is not reasonable to confine the inflammation unto one, nor strictly to determine it is alwayes in the side, but sometimes before and behinde, that is, inclining to the spine or brestbone, for thither this coat extendeth; and therefore with equall propriety we may affirme, that ulcers of the lungs, or Apostems of the braine doe happen onely in the left side, or that Ruptures are confineable unto one side, whereas the peritoneum or rimme of the belly may be broke, or its perforations relaxed in either.

CHAP. IV.

Of the Ring finger.

AN opinion there is, which magnifies the condition of the fourth finger of the left hand, presuming therein a cordiall relation, that a particular vessell, nerve, veine, or arterie is conferred thereto from the heart, and therefore that especially hath the honour to beare our rings; which was not only the Christian practise in Nuptiall contracts, but observed by the heathens, as Alexander *ab Alexandro*, Gellius. Macrobius, and Pierius have delivered, as lately Levinus Lemnius hath confirmed, who affirmes this peculiar vessell to bee an Arterie, and not a nerve, as antiquitie conceived it; adding moreover that rings hereon peculiarly affect the heart; that in Liporhymies or swooundings he used the friction of this finger with saffron and gold; that the ancient Physitians mixed up their Medicines herewith; that this is seldome or last of all affected with the Gout, and when that becommeth nodous, men continue not long after: notwithstanding all which we remaine unsatisfied, nor can we thinke the reasons alledged sufficiently establish the priviledge of this finger.

For first, concerning the practise of antiquity the custome was not generall to weare their rings either on this hand or finger; for it is said, and that emphatically in Jeremiah, *Si fuerit Ieconias filius Joachim regis Iudæ annulus in manu dextrâ meâ, inde evellam eum*: Though Coeniah the son of Joachim King of Judah were the signet on my right hand,

hand, yet would I pluck thee thence : So is it observed by Pliny that in the portraits of their Gods the rings were worn on the finger next the thumb, that the Romans wore them also upon their little finger, as Nero is described in Petronius : some wore them on the middle finger as the ancient Gauls and Britans, and some upon the forefinger, as is deducible from Julius Pollux, who names that ring Corionos.

Again, that the practice of the Ancients had any such respect of cordiality or reference unto the heart will much be doubted if we consider their rings were made of Iron; such was that of Prometheus who is conceived the first that brought them in use; so, as Pliny affirmeth, for many yeares the Senators of Rome did not wear any rings of Gold : but the slaves wore generally Iron rings untill their manumission or preferment to some dignity; That the Lacedemonians continued their Iron rings unto his dayes, Pliny also delivereth; and surely they used few of Gold, for beside that Lycurgus prohibited that metall, we read in Athenæus that having a desire to guild the face of Apollo, they enquired of the oracle where they might purchase so much gold, and were directed unto Cræsus King of Lydia.

Moreover whether the Ancients had any such intention, the grounds which they conceived in veyne, nerve, or artery, are not to be justified, nor will inspection confirm a peculiar vessel in this finger : for as Anatomy informeth, the Basilica veyne dividing into two branches below the cubit, the outward sendeth two surcles unto the thumb, two unto the forefinger, and one unto the middlefinger in the inward side; the other branch of the Basilica sendeth one surcle unto the outside of the middlefinger, two unto the Ring, and as many unto the littlefingers; so that they all proceed from the Basilica, and are in equall numbers derived unto every one : In the same manner are the branches of the axillary artery distributed into the hand, for below the cubit it divideth into two parts, the one running along the Radius, and passing by the wrist or place of the pulse, is at the fingers subdivided into three branches, whereof the first conveyeth two surcles unto the thumb, the second as many to the forefinger, and the third one unto the middlefinger; the other or lower division of the artery descendeth by the ulna, and furnisheth the other fingers, that is the middle with one surcle, and the ring and little fingers with two; as for the nerves they are disposed much after the same maner, and have their originall from the brain, and not the heart, as many of the Ancients conceived; which is so farre from affording nerves unto other parts, that it receiveth very few it self from the sixth conjugation, or paire of nerves in the brain.

Lastly, these propagations being communicated unto both hands, we have no greater reason to wear our rings on the left, then on the right, nor are there cordiall considerations in the one, more then the other; and therefore when Forestus for the stanching of blood makes

use

use of Topical applications unto the fourth finger, he confines not that practice unto the left, but varieth the side according to the nostrill bleeding : and so in fevers, where the heart primarily suffereth, we apply medicines unto the wrists of either arme; and so we touch the pulse of both, and judge of the affections of the heart by the one as well as the other : and although in indispositions of liver or spleene considerations are made in Phlebotomy respectively to their situation; yet when the heart is affected men have thought it as effectually to bleed on the right as the left; and although also it may be thought, a nearer respect is to be had of the left, because the great artery proceeds from the left ventricle, and so is nearer that arme, it admits not that consideration; for under the channell bones the artery divideth into two great branches, from which trunk or point of division the distance unto either hand is equall, and the consideration answerable.

And therefore Macrobius discussing the point, hath alleadged another reason, affirming that the gestation of rings upon this hand and finger, might rather be used for their conveniency and preservation then any cordiall relation; for at first (saith he) it was both free and usuall to wear rings on either hand, but after that luxury encreased, when pretious gems and rich insculptures were added, the custome of wearing them on the right hand was translated unto the left, for that hand being lesse employed, thereby they were best preserved; and for the same reason they placed them on this finger, for the thumb was too active a finger, and is commonly employed with either of the rest : the Index or forefinger was too naked whereto to commit their pretiosities and hath the tuition of the thumb scarce unto the second joynt : the middle and little finger they rejected as extremes, and too big or too little for their rings, and of all chose out the fourth as being least used of any, as being guarded on either side, and having in most this peculiar condition that it cannot be extended alone and by it selfe, but will be accompanied by some finger on either side : and to this opinion assenteth Alexander *ab Alexandro, Annulum nuptialem prior atas in sinistra ferebat, crediderim ne attereretur.*

Now that which begat or promoted the common opinion, was the common conceit that the heart was seated on the left side, but how far this is verified, we have before declared. The Egyptian practice hath much advanced the same, who unto this finger derived a nerve from the heart, and therefore the Priest anointed the same with pretious oyls before the altar; but how weake Anatomists they were, which were so good Embalmers we have already shewed; and though this reason tooke most place, yet had they another which more commended that practice, and that was the number whereof this finger was an Hieroglyphick : for by holding downe the fourth finger of the left hand, while the rest were extended, they signified the perfect and magnified

A a

number

number of six; for as Pierius hath graphically declared, Antiquity expressed numbers by the fingers of either hand, on the left they accounted their digits and articulate numbers unto an hundred, on the right hand hundreds & thousands; the depressing this finger which in the left hand implied but six, in the right indigitated six hundred: In this way of numeration may we construe that of Juvenal concerning Nestor.

mortem

Distulit, atq; suos jam dextrâ computat annos.

And how ever it were intended, and in this sense it will be very elegant what is delivered of Wisdom, Prov. 3. Length of dayes is in her right hand, and in her left hand riches and honour.

As for the observation of Lemnius an eminent Physitian, concerning the gowt, how ever it happened in his country, wee may observe it otherwise in ours; that is, that chiragrical persons doe suffer in this finger as well as in the rest, and sometimes first of all, and sometimes no where else; and for the mixing up medicines herewith, it is rather an argument of opinion then any considerable effect, and we as highly conceive of the practice in Diapalma, that is in the making of that plaster, to stirre it with the stick of a Palme.

CHAP. V.

Of the right and left Hand.

IT is also suspicious, and not with that certainty to be received, what is generally believed concerning the right and left hand, that men naturally make use of the right, and that the use of the other is a digression or aberration from that way which nature generally intendeth; and truly we do not deny that almost all Nations have used this hand, and ascribed a preheminance thereto: hereof a remarkable passage there is in the 48. of Genesis, And Joseph tooke them both, Ephraim in his right hand towards Israels left hand, and Manasses in his left hand towards Israels right hand, and Israel stretched out his right hand and laid it upon Ephraims head, who was the younger, and his left hand upon Manasses head guiding his hands wittingly, for Manasses was the first borne; and when Joseph saw that his father laid his right hand upon the head of Ephraim, it displeased him, and he held up his fathers hand to remove it from Ephraims head unto Manasses head, and Joseph said not so my father, for this is thy first borne, put thy right hand upon his head: And the like appeareth from the ordinance of Moses in the consecration of their Priests, Then shalt thou kill the Ram, and take of his blood, and put it upon the tip of the right eare of Aaron, and upon the tip of the right eare of his sonnes, and upon the thumb of the right hand, and upon the great toe of the right foot, and

sprinkle

sprinkle the blood on the Altar round about: That the Persians were wont herewith to plight their faith, is testified by Diodorus: That the Greeks and Romans made use hereof, beside the testimony of divers Authors, is evident from their custome of discumbency at their meales, which was upon their left side, for so their right hand was free, and ready for all service; nor was this onely in use with divers Nations of men, but was the custome of whole Nations of women, as is deduceable from the Amazones in the amputation of their right breast, whereby they had the freer use of their bow: all which doe declare a naturall prehemency and preferment of the one unto motion before the other, wherein notwithstanding in submission to future information, we are unsatisfied unto great dubitation.

For first, if there were a determinate prepotency in the right, and such as ariseth from a constant roote in nature, wee might expect the same in other animals, whose parts are also differenced by dextrality, wherein notwithstanding we cannot discover a distinct and complying account, for we finde not that Horses, Bulls, or Mules, are generally stronger on this side; and as for animals whose forelegs more sensibly supply the use of armes, they hold if not an equality in both, a prevalency oft times in the other, as Squirrels, Apes, and Monkeys, and the same is also discernible in Parrets, and men observe that the eye of a Tumbler is biggest not constantly in one, but in the bearing side.

That there is also in men a naturall prepotency in the right we cannot with constancy affirme, if we make observation in children, who permitted the freedome of both, do oft times confine unto the left, and are not without great difficulty restrained from it: and therefore this prevalency is either uncertainly placed in the laterality, or custome determines its indifferency: which is the resolution of Aristotle in that Probleme, which enquires why the right side being better then the left, is equall in the senses? because, saith he, the right and left do differ by use and custome which have no place in the senses: and the reason is allowable; for right and left as parts inservient unto the motive faculty are differenced by degrees from use and assuefaction, according whereto the one grows stronger, and oft times bigger then the other; but in the senses it is otherwise; for they acquire not their perfection by use or custome, but at the first we equally heare and see with one eye, as well as with another: and therefore, were this indifferency permitted, or did not institution, but Nature determine dextrality, there would be many more Scevolae then are delivered in story; nor should we wonder at seven thousand in one Army, as wee reade concerning the Benjamites. True it is, that although there be an indifferency in either, or a prevalency indifferent in one, yet is it most reasonable for uniformity, and sundry respective uses, that men should apply themselves to the constant use of one, for there will otherwise arise anomalous

lous disturbances in manuell actions, not only in Civill and artificiaall, but also in Military affaires, and the severall actions of warre.

Secondly, the grounds and reasons alleadged for the right are not satisfactory, and afford no rest in their decision: Scaliger finding a defect in the reason of Aristotle, introduceth one of no lesse deficiency himselve, *Ratio materialis* (saith he) *sanguinis crassitudo simul & multitudo*, that is, the reason of the vigour of this side is the crassitude and plenty of bloud; but this is no way sufficient, for the crassitude or thicknesse of bloud, affordeth no reason why one arme should be enabled before the other, and the plenty thereof, why both not enabled equally: Fallopius is of another conceit, deducing the reason from the Azygos or *vena sine pari*, a large and considerable veine arising out of the cava or hallow veine, before it enters the right ventricle of the heart, and placed onely in the right side; but neither is this perswasory, for the Azygos communicates no branches unto the armes or legs on either side, but disperseth into the ribs on both, and in its descent doth furnish the left Emulgent with one veyne, and the first veyne of the loynes on the right side with another; which manner of derivation doth not conferre a peculiar addition unto either, *Calius Rodiginus* undertaking to give a reason of Ambidexters and left handed men, delivereth a third opinion: Men, saith he, are Ambidexters, and use both hands alike, when the heat of the heart doth plentifully disperse into the left side, and that of the Liver into the right, and the spleene be also much dilated; but men are left handed when ever it happeneth that the heart and Liver are seated on the left side, or when the Liver is on the right side, yet so obducted and covered with thick skins, that it cannot diffuse its virtue into the right: which reasons are no way satisfactory; for herein the spleene is unjustly introduced to invigorate the sinister side, which being dilated it would rather infirme and debilitate; as for any tunicles or skins which should hinder the Liver from enabling the deutrall parts, we must not conceive it diffuseth its virtue by meere irradiation, but by its veines and proper vessels, which common skins and teguments cannot impede, and as for the seate of the heart and Liver in one side whereby men become left handed, it happeneth too rarely to countenance an effect so common; for the seat of the Liver on the left side is very monstrous, and scarce at all to be met with in the observations of Physitians. Others not considering ambidextrous and left handed men, doe totally submit unto the efficacy of the Liver, which though it be seated on the right side, yet by the subclavian division doth equidistantly communicate its activity unto either arme, nor will it salve the doubts of observation, for many are right handed whose Livers are weakely constituted, and many use the left, in whom that part is strongest; and we observe in Apes and other animals, whose Liver is in the right, no regular prevalence therein, and there-

therefore the Braine, especially the spinall marrow, which is but the braine prolonged, hath a fairer plea hereto, for these are the principles of motion wherein dextrality consists, and are bipartited within and without the Crany; by which division transmitting nerves respectively unto either side, according to the indifferency or originall and native prepotency, there ariseth an equality in both, or prevalency in either side; and so may it be made out, what many may wonder at, why some most actively use the contrary arme and leg, for the vigour of the one dependeth upon the upper part of the spine, but the other upon the lower.

And therefore many things are Philosophically delivered concerning right and left, which admit of some suspension; that a woman upon a masculine conception advanceth her right leg, will not be found to answer strict observation; That males are conceived in the right side of the wombe, females in the left, though generally delivered, and supported by ancient testimony, will make no infallible account; it happening oft times that males and females doe lye upon both sides, and Hermaphrodites for ought we know on either: It is also suspicious what is delivered concerning the right and left testicle, that males are begotten from the one, and females from the other; for though the left seminall veine proceedeth from the Emulgent, and is therefore conceived to carry downe a serous and feminine matter, yet the seminall Arteries which send forth the active materials, are both derived from the great Artery: Beside this originall of the left veine was thus contrived, to avoid the pulsation of the great Arterie over which it must have passed to attaine unto the Testicle: Nor can we easily inferre such different effects from the divers situation of parts which have one end and office; for in the kidneys which have one office, the right is seated lower then the left, whereby it lyeth free, and giveth way unto the Liver, and therefore also that way which is delivered for masculine generation, to make a strait ligature about the left Testicle, thereby to intercept the evacuation of that part, deserveth consideration; for one sufficeth unto generation, as hath beene observed in semicastration, and oft times in carnos ruptures: beside the seminall ejaculation proceeds not immediately from the Testicle, but from the spermatick glandules; and therefore Aristotle affirms, (and reason cannot deny) that although there be nothing diffused from the Testicles, an Horse or Bull may generate after castration; that is, from the stock and remainder of seminall matter, already prepared and stored up in the Prostates or glandules of generation.

Thirdly, although wee should concede a right and left in Nature, yet in this common and received accout we may aberrer from the proper acception, mistaking one side for another, calling that in man and other animals the right which is the left, and that the left which is the right,

right, and that in some things right and left, which is not properly either.

For first the right and left, are nor defined by Philosophers according to common acception, that is, respectively from one man unto another, or any constant site in each; as though that should bee the right in one, which upon confront or facing stands a thwart or diagonally unto the other, but were distinguished according to the activitie and predominant locomotion upon either side: Thus Aristotle in his excellent *Traët de Incessu animalium*, ascribeth fix positions unto animals, answering the three dimensions; which he determineth not by site or position unto the heavens, but by their faculties and functions, and these are *Imum summum, Ante Retro, Dextra & Sinistra*: that is, the superiour part where the aliment is received, that the lower extreme where it is last expelled; so hee termeth a man a plant inverted; for hee supposeth the root of a tree the head or upper part thereof, whereby it receiveth its aliment, although therewith it respects the Center of the earth, but with the other the Zenith; and this position is answerable unto longitude: Those parts are anterior and measure profunditie wherethe senses, especially the eyes are placed, and those posterior which are opposite hereunto; The dextrous and sinistrous parts of the body make up the Latitude, and are not certain and inalterable like the other; for that saith hee, is the right side from whence the motion of the body beginneth, that is, the active or moving side, but that the sinister which is the weaker or more quiescent part: of the same determination were the Platonicks and Pythagorians before him, who conceiving the heavens an animated body, named the East the right or dextrous part, from whence began their motion: and thus the Greeks from whence the Latines have borrowed their appellation, have named this hand *Δεξια* denominating it not from the site, but office from *δεξιόμαχιο*, that is, the hand w^{ch} receiveth, or is usually implied in that action.

Now upon these grounds we are most commonly mistaken, defining that by situation which they determined by motion, and give the terme of right hand to that which doth not properly admit it: For first, many in their infancy are sinistrously disposed, and divers continue all their life *Αεστερ* that is left handed, and have but weak and imperfect use of the right; now unto these that hand is properly the right, and not the other esteemed so by situation: Thus may Aristotle bee made out, when hee affirmeth the right claw of Crabbes and Lobsters is biggest, if we take the right for the most vigorous side, and not regard the relative situation; for the one is generally bigger then the other, yet not alwayes upon the same side: so may it bee verified what is delivered by Scaliger in his Comment, that Palsies do oftneft happen upon the left side if understood in this sense, the most vigorous part protecting it selfe, and protruding the matter upon the weaker and

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lesse resistive side: and thus the Law of Common-Weales, that cut off the right hand of Malefactors, if Philosophically executed, is impartiall, otherwise the amputation not equally punisheth all.

Some are *Αμφοτεροι*, that is, ambidexterous or right-handed on both sides, which happeneth only unto strong and Athletically bodies, whose heat and spirits are able to afford an ability unto both; and therefore Hippocrates saith, that women are not ambidexterous, that is, not so often as men, for some are found, which indifferently make use of both; and so may Aristotle say, that only man is Ambidexter; of this constitution was Asteropæus in Homer, and Parthenopeus the Theban Captaine in Statius; and of the same doe some conceive our Father Adam to have been, as being perfectly framed, and in a constitution admitting least defect: Now in these men the right hand is on both sides, and that which is the opposite to the one, is not the left unto the other.

Again, some are *Αμφοτεροι* as Galen hath expressed: that is, Ambilevous or left handed on both sides; such as with agility and vigour have not the use of either, who are not gymnastically composed; nor actively use those parts; now in these there is no right hand: of this constitution are many women, and some men; who though they accustom themselves unto either hand, do dextrously make use of neither; and therefore although the Politicall advise of Aristotle bee very good, that men should accustom themselves to the command of either hand, yet cannot the execution or performance thereof be generall, for though there bee many found that can use both, yet will there divers remaine that can strenuously make use of neither.

Lastly, these lateralities in man are not onely fallible, if relatively determined unto each others, but made in reference unto the heavens, and quarters of the Globe: for those parts are not capable of these conditions in themselves, nor with any certainty respectively derived from us, nor we from them againe. And first in regard of their proper nature, the heavens admit not these sinister and dexter respects, there being in them no diversitie or difference, but a simplicity of parts, and equiformity in motion continually succeeding each other; so that from what point soever we compute, the account will be common unto the whole circularity, and therefore though it be plausible, it is not fundamentall what is delivered by Solinus, That man was therefore a Microcosme or little world, because the dimensions of his positions were answerable unto the greater; for as in the heavens the distance of the North and Southerne pole, which are esteemed the superiour and inferiour poynts, is equall unto the space between the East and West, accounted the dextrous and sinistrous parts thereof; so is it also in man: for the extent of his fathome, or distance betwixt the extremity of the fingers of either hand upon expansion, is equall unto the space between the soale of the foot and the crowne; but this doth but petitionarily in-

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terre a dextrality in the heavens, and we may as reasonably conclude a right and left laterality in the Ark or navall edifice of Noah : for the length thereof was thirty cubits, the bredth fifty, and the heighth or profundity thirty, which well agreeth unto the proportion of man, whose length that is a perpendicular from the vertix unto the soal of the foot is sextuple unto his breadth, or a right line drawne from the ribs of one side to another, and decuple unto his profundity, that is a direct line between the breast bone and the spine.

Againe, they receive not these conditions with any assurance or stability from our selves; for the relative foundations and points of denomination, are not fixed and certaine, but variously designed according to imagination. The Philosopher accounts that East from whence the heavens begin their motion. The Astronomer regarding the South and Meridian Sun, calls that the dextrous part of heaven which respecteth his right hand, and that is the West. Poets respecting the West assign the name of right unto the North which regardeth their right hand, and so must that of Ovid be explained, *utq; dux dextrâ zone totidemq; sinistra*: But Augurs or Southlayers turning their face to the East, did make the right in the South, which was also observed by the Hebrews and Chaldeans. Now if we name the quarters of heaven respectively unto our sides, it will be no certaine or invariable denomination; for if we call that the right side of heaven which is seated Easterly unto us, when we regard the meridian Sun, the inhabitants beyond the equator and Southerne Tropick when they face us regarding the meridian will contrarily define it; for unto them, the opposite part of heaven will respect the left, and the Sun arise to their right.

And thus have we at large declared that although the right be most commonly used, yet hath it no regular or certaine root in nature: Since it is most confirmable from other animalls: Since in children it seemes either indifferent or more favourable in the other, but more reasonable for uniformity in action that men accustome unto one: Since the grounds and reasons urged for it doe no way support it: Since if there be a right and stronger side in nature, yet may we mistake in its denomination, calling that the right which is the left, and the left which is the right: Since some have one right, some both, some neither: and lastly, Since these affections in man are not only fallible in relation unto one another, but made also in reference unto the heavens, they being not capable of these conditions in themselves, nor with any certainty from us, nor we from them againe.

And therefore what admission we owe unto many conceptions concerning right and left requireth circumspection; that is, how far wee ought to relye upon the remedy of Kiramides, that is the left eye of an Hedgehog fryed in oyle to procure sleep, and the right foot of a frog in a Deers skin for the gowt; or that to dream of the losse of right

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or left tooth presageth the death of male or female kindred, according to the doctrine of Metrodorus; what verity there is in that numerall conceit in the laterall division of man by even and odde, ascribing the odde unto the right side, and even unto the left; and so by parity or imparity of letters in mens names determine misfortunes on either side of their bodyes; by which account in Greek numeration Hephæstus or Vulcane was lame in the right foot, and Anniball lost his right eye: And lastly, what substance there is in that Auspiciall principle; and fundamentall doctrine of Ariolation that the left hand is ominous, and that good things do passe sinistrously upon us, because the left hand of man respected the right hand of the Gods, which handed their favours unto us.

CHAP. VI.

Of Swimming.

THat men swim naturally, if not disturbed by feare; that men being drowned and sunke, doe float the ninth day when their gall breaketh; that women drowned swim prone but men supine, or upon their backs, are popular affirmations, whereto we cannot assent: And first, that man should swim naturally, because we observe it is no lesson unto others we cannot well conclude; for other animalls swim in the same manner as they goe, and need no other way of motion, for natation in the water, then for progreffion upon the land; and this is true whether they move *per latera*, that is two legs of one side together, which is Tollutation or ambling, or *per diametrum*, which is most generall, lifting one foot before, and the crosse foot behinde, which is succussion or trotting, or whether *per frontem* or *quadratum*, as Scaliger tearmes it, upon a square base of the legs of both sides moving together as frogs, and salient animalls, which is properly called leaping; for by these motions they are able to support and impell themselves in the water, without addition or alteration in the stroake of their legs, or position of their bodies.

But with man it is performed otherwise; for in regard of site he alters his naturall posture and swimmeth prone, whereas hee walketh erect; againe in progreffion the armes move parallell to the legs and the armes and legs unto each other, but in natation they intersect and make all sorts of Angles: and lastly, in progressive motion, the armes and legs doe move successively, but in natation both together; all which aptly to performe, and so as to support and advance the body, is a point of art, and such as some in their young and docile yeares could never attaine. But although it be acquired by art, yet is there somewhat more of nature in it then we observe in other habits, nor will it strictly fall

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under that definition, for once obtained it is not to be removed; nor is there any who from disuse did ever yet forget it.

Secondly, that persons drowned arise and float the ninth day when their gall breaketh, is a questionable determination both in the time and cause, for the time of floating it is uncertain according to the time of putrefaction, which will retard or accelerate according to the subject and season of the year; for as we have observed cats and mice will arise unequally and at different times, though drowned at the same; such as are fatted doe commonly float soonest, for their bodies soonest ferment, and that substance approacheth nearest unto ayre: and this is one of Aristotles reasons why dead Bees will not float, because saith he, they have but slender bellies, and little fat.

As for the cause it is not so reasonably imputed unto the breaking of the gall as the putrefaction of the body, whereby the unnaturall heat prevailing the putrifying parts do suffer a turgescence and inflation, and becomming airy and spumous affect to approach the ayre, and ascend unto the surface of the matter: and this is also evidenced in egges wherof the sound ones sink, & such as are addled swim, as do also those which are termed hypenemia or wind-egges, and this is also a way to separate seeds, wherof such as are corrupted and sterill swim; and this agreeth not only unto the seed of plants lockt up and capsulated in their husks, but also unto the sperme and seminall humor of man, for such a passage hath Aristotle upon the Inquisition and test of its fertility.

That the breaking of the gall is not the cause hereof experience hath informed us, for opening the abdomen, and taking out the gall in cats and mice, they did notwithstanding arise: and because wee had read in Rhodiginus of a Tyrant, who to prevent the emergencie of murdered bodies did use to cut off their lungs, and found mens minds possessed with this reason, we committed some unto the water without lungs, which notwithstanding floated with the others: and to compleat the experiment, although we tooke out the guts and bladder, and also perforated the Cranium, yet would they arise, though in a longer time: from these observations in other animalls, it may not be unreasonable to conclude the same in man, who is too noble a subject on whom to make them expressly, and the casuall opportunity too rare almost to make any. Now if any shall ground this effect from gall or choler, because it is the highest humor and will be above the rest; or being the fiery humor will readiest surmount the water, wee must confesse in the common putrescence it may promote elevation, which the breaking of the bladder of gall so small a part in man, cannot considerably advantage.

Lastly, that women drowned float prone, that is with their bellies downward, but men supine or upward is an assertion wherein the *hott* or point

point it selfe is dubious; and were it true the reason alleadged for it, is of no validity. The reason yet currant was first expressed by Pliny; *veluti pudori defunctorum parcente natura*, nature modestly ordaining this position to conceale the shame of the dead, which hath been taken up by Solinus, Rhodiginus, and many more: This indeed (as Scaliger termeth it) is *ratio civilis non philosophica*, strong enough for morality or Rhetoricks, not for Philosophy or Physicks: for first, in nature the concealment of secret parts is the same in both sexes and the shame of their reveale equall: so Adam upon the taste of the fruit was ashamed of his nakednesse as well as Eve: and so likewise in America and countries unacquainted with habits, where modesty conceales these parts in one sex, it doth it also in the other; and therefore had this been the intention of nature, not only women, but men also had swimm'd downwards, the posture in reason being common unto both where the intent is also common.

Againe, while herein we commend the modesty, we condemne the wisdom of nature: for that prone position we make her contrive unto the woman, were best agreeable unto the man in whom the secret parts are very anterior and more discoverable in a supine and upward posture: and therefore Scaliger declining this reason hath recurred unto another from the difference of parts in both sexes, *Quod ventre vasto sunt mulieres plenas, intestinis, itaq; minus impletur & subsidet, in minor maribus quibus nates preponderant*: If so, then men with great bellies will float downward, and only Callipygæ and women largely compos'd behinde, upward. But Anatomists observe that to make the larger cavity for the Infant, the hanch bones in women, and consequently the parts appendant are more protuberant then they are in men: They who ascribe the cause unto the breasts of women, take not away the doubt, for they resolve not why children float downward who are included in that sex, though not in the reason alleadged: but hereof we cease to discourse lest we undertake to afford a reason of the * golden tooth, that is to invent or assigne a cause, when we remaine unsatisfied or unassured of the effect.

* Of the cause whereof much dispute was made, and at last proved an imposture.

CHAP. VII.

Concerning Weight.

THat men weigh heavier dead then alive, if experiment hath not failed us, we cannot reasonably grant; for though the triall hereof cannot so well be made on the body of man, nor will the difference be sensible in the abate of scruples or dragmes, yet can we not confirme the same in lesser animalls from whence the inference is good; and the affirmative of Pliny saith that it is true in all: for exactly weighing

and strangling a chicken in the Scales, upon an immediate ponderation, we could discover no sensible difference in weight, but suffering it to lye eight or ten howres, untill it grew perfectly cold, it weighed most sensibly lighter, the like we attempted, and verified in mice, and performed their trials in Scales that would turne upon the eighth or tenth part of a graine.

Now whereas some alledge that spirits are light substances, and naturally ascending do elevate and waite the body upward, whereof dead bodies being destitute contract a greater gravity; although we concede that spirits are light, comparatively unto the body, yet that they are absolutely so, or have no weight at all, wee cannot readily allow; for since Philosophy affirmeth that spirits are middle substances betwene the soule and body, they must admit of some corporiety which supposeth weight or gravity. Beside, in carcasses warme, and bodies newly disanimated while transpiration remaineth, there doe exhale and breathe out vaporous and fluid parts, which carry away some power of gravitation; which though we must allow, we do not make answerable unto living expiration, and therefore the Chicken or Mice were not so light being dead, as they would have beene after ten houres kept alive, for in that space a man abateth many ounces; nor if it had slept, for in that space of sleepe, a man will sometimes abate forty ounces, nor if it had beene in the middle of summer, for then a man weigheth some pounds lesse then in the heighth of winter, according to experience, and the statick aphorismes of Sanctorius.

Again, whereas men affirme they perceave an addition of ponderosity in dead bodies, comparing them usually unto blocks and stones, whensoever they lift or carry them, this accessionall preponderancy is rather in appearance then reality; for being destitute of any motion, they conferre no reliefe unto the Agents or Elevators, which makes us meet with the same complaints of gravity in animated and living bodier, where the nerves subside, and the faculty locomotive seemes abolished, as may be observed in the lifting or supporting of persons inebriated, Apoplecticall, or in Lipothymies and swoondings.

Many are also of opinion, and some learned men maintaine, that men are lighter after meales then before, and that by a supply and addition of spirits obscuring the grosse ponderosity of the aliment ingested; but the contrary hereof we have found in the triall of sundry persons in different sex, and ages; and we conceave men may mistake if they distinguish not the sense of levity unto themselves, and in regard of the scale or decision of trutination; for after a draught of wine a man may seeme lighter in himselfe from sudden refection, although he be heavier in the balance, from a corporall and ponderous addition; but a man in the morning is lighter in the scale, because in sleepe some pounds have perspired, and is also lighter unto himselfe, because he is relected. And

And to speake strictly, a man that holds his breath is weightier while his lungs are full, then upon expiration; for a bladder blowne is weightier then one empty, and if it containe a quart, expressed and emptied it will abate about halfe a graine; and we somewhat mistrust the experiment of a pumice-stone taken up by Montanus, in his Comment upon Avicenna, where declaring how the rarity of parts, and numerosity of pores, occasioneth a lightnesse in bodies, he affirmes that a pumice-stone powdered, is lighter then one entire, which is an experiment beyond our satisfaction; for beside that abatement can hardly be avoyded in the Trituration; if a bladder of good capacity will scarce include a graine of ayre, a pumice of three or foure dragmes, cannot be presumed to containe the hundreth part thereof, which will not be sensible upon the exactest beames we use: Nor is it to be taken strictly what is delivered by the learned Lord Verulam, and referred unto further experiment; That a dissolution of Iron in *Aqua fortis*, will beare as good weight as their bodies did before, notwithstanding a great deale of waste by a thick vapour that issueth during the working; for we cannot finde it to hold neither in Iron, nor Copper, which is dissolved with lesse ebullition; and hereof we made triall in Scales of good exactnesse, wherein if there be a defect, or such as will not turne upon quarter graines, there may be frequent mistakes in experiments of this nature: but stranger is that, and by the favourablest way of triall we cannot make out what is delivered by *Hamerus Poppius*, that Antimony calcin'd or reduced to ashes by a burning glasse, although it emitte a grosse and ponderous exhalation, doth rather exceed then abate its former gravity: whose words are these in his *Basilica Antimonii*, *Si speculum incensorium soli exponatur, ita ut pyramidis luminose apex Antimonium pulverisatum feriat, cum multo summi profusione ad nivis albedinem calcinabitur, & quod mirabile est Antimonii pondus post calcinationem auctum potius quam diminutum deprehenditur*, Mistake may be made in this way of triall, when the Antimony is not weighed immediately upon the calcination, but permitted the ayre it imbibeth the humidity thereof, and so repayreth its gravity.

CHAP. VIII.

Of the passage of meate and drinke.

THat there are different passages for meate and drinke, the meate or dry aliment descending by the one, the drink or moistning vehicle by the other, is a popular Tenent in our dayes, but was the assertion of learned men of old, for the same was affirmed by Plato, maintained by Eustathius in Macrobius, and is deducible from Eratoſthenes, Eupolis and Euripides: now herein men contradict experience, not well understanding

standing Anatomy, and the use of parts; for at the throat there are two cavities or conducting parts, the one the Oesophagus or gullet, seated next the spine, a part official unto nutrition, and whereby the aliment both wet and dry is conveyed unto the stomach; the other (by which tis conceived the drink doth passe) is the weazon, rough artery, or winde-pipe, a part inservient to voyce and respiration, for thereby the ayre descendeth into the lungs, and is communicated unto the heart; and therefore all animals that breath or have lungs, have also the weazon, but many have the gullet or feeding channell, which have no lungs or winde-pipe; as fishes which have gills, whereby the heart is refrigerated, for such thereof as have lungs and respiration, are not without the weazon, as Whales and cetaceous animals.

Againe, beside these parts destin'd to divers offices, there is a peculiar provision for the winde-pipe, that is, a cartilagineous flap upon the opening of the Larinx or throttle, which hath an open cavity for the admission of the ayre; but lest thereby either meate or drinke should descend, Providence hath placed the *Epiglottis Ligula*, or flap like an Ivy leafe, which alwayes closeth when we swallow, or that the meate and drinke passeth over it into the gullet, which part although all have not that breathe, as all cetaceous and oviparous animals, yet is the weazon secured some other way; and therefore in Whales that breathe, lest the water should get into the lungs, an ejection thereof is contrived by a Fistula or spout at the head; and therefore also though birds have no Epiglottis, yet can they so contract the rime or chinck of their Larinx, as to prevent the admission of wet or dry ingested, either whereof getting in occasioneth a cough, untill it be ejected; and this is the reason why a man cannot drink and breathe at the same time; why if we laugh while we drinke, the drinke flies out at the nostrils, why when the water enters the weazon, men are suddenly drowned; and thus must it be understood, when wee reade of one that dyed by the seed of a Grape, and another by an hayre in milke.

Now if any shall still affirme, that some truth there is in the assertion, upon the experiment of Hippocrates, who killing an Hog after a red potion, found the tincture thereof in the Larinx; if any will urge the same from medecall practise, because in affections both of Lungs and weazon, Physitians make use of syrups, and lambitive medicines; we are not averse to acknowledge, that some may distill and insinuate into the wind-pipe, and medicines may creep downe, as well as the rheume before them; yet to conclude from hence, that ayre and water have both one common passage, were to state the question upon the weaker side of the distinction, and from a partiall or guttulous irrigation, to conclude a full and totall descension.

CHAP.

CHAP. IX.

Of Sneezing.

Concerning Sternutation or Sneezing, and the custome of saluting or blessing upon that motion, it is pretended, and generally believed to derive its originall from a disease, wherein Sternutation proved mortall, and such as Sneezed dyed: and this may seeme to be proved from Carolus Sigonius, who in his History of Italy, makes mention of a Pestilence in the time of Gregorie the Great, that proved pernicious and deadly to those that Sneezed; which notwithstanding will not sufficiently determine the grounds hereof, and it will evidently appeare, that custome hath an elder Æra then this Chronologic affordeth.

For although the age of Gregorie extend above a thousand, yet is this custome mentioned by Apuleius in the fable of the Fullers wife, who lived three hundred yeers before; by Pliny likewise in that Probleme of his, our *Sternutantes saluantur*, and there are also reports that Tiberius the Emperour otherwise a very fowre man, would performe this rite most punctually unto others, and expect the same from others, unto himselfe, Petronius Arbiter, who lived before them both, and was Proconsul of Bythinia in the raigne of Nero, hath mentioned it in these words, *Gyton collectione spiritus plenus, ter continuo ita sternutavit ut grabatum concuteret, ad quem motum Eumolpus conversus, Salvere Gytona jubet*. Cælius Rhodiginus hath an example hereof among the Greeks, far antienter then these, that is, in the time of Cyrus the younger, when consulting about their retreat, it chanced that one among them sneezed, at the noyse whereof, the rest of the souldiers called upon Jupiter Soter; There is also in the Greeke Authologie a remarkeable mention hereof, in an Epigram upon one Proclus, the Latine whereof we shall deliver, as we finde it often translated.

Non potis est Proclus digitis emungere nasum

namq; est pro nasi mole pusilla manus,

Non vocat ille Iovem sternutans, quippe nec audit

Se sternutantem, tam procul aure sonas.

Proclus with's hand his nose can never wipe,

His hand too little is his nose to grype;

He sneezing calls not Iove, for why? he heares

himself not sneeze, the sound's so far from's ears: Nor was this onely an ancient custome among the Greeks and Romanes, and is still in force with us, but is received at this day in remotest parts of Africa; for so we read in Codignus, that upon a sneeze of the Emperour of Monomotapa, there passed acclamations successively through the city.

Now

Now the ground of this ancient custome was probably the opinion the ancients held of Sternutation: which they generally conceived to be a good signe or a bad, and so upon this motion accordingly used, a Salve or *ἑὸν σπέρμα*, as a gratulation for the one, and a deprecation from the other: Now of the wayes whereby they enquired and determined its signality; the first was naturall arising from Physicall causes, and consequences of times naturally succeeding this motion; and so it might be justly esteemed a good signe; for sneezing being properly a motion of the braine, suddenly expelling through the nostrils what is offensive unto it, it cannot but afford some evidence of its vigour; and therefore saith Aristotle in his Problems, they that heare it *ἡ ἀκούσις* they honour it as somewhat Sacred, and a signe of Sanity in the diviner part; and this he illustrates from the practice of Physitians, who in persons neere death doe use Sternutatories, or such as provoke unto sneezing; when if the facultie arise and Sternutation ensue, they conceive hopes of life, and with gratulation receive the signes of safetie; and so is it also of good signality in lesser considerations, according to that of Hippocrates, that sneezing cureth the hickett, and is profitable unto women in hard labour; and so is it of good signality in Lethargies, Apoplexies, Catalepsies, and Coma's: and in this naturall way it is sometime likewise of bad effects or signes, and may give hints of deprecation; as in diseases of the chest, for therein Hippocrates condemneth it as too much exagitating in the beginning of Catarrhs according unto Avicenna as hindering concoction, in new and tender conceptions, (as Pliny observeth) for then it endangers abortion.

The second way was superstitious and Augurial, as Cælius Rhodiginus hath illustrated in testimonies, as ancient as Theocritus and Homer; as appears from the Athenian master, who would have retired, because a boatman sneezed, and the testimony of Austine, that the Ancients were wont to goe to bed againe if they sneezed while they put on their shooe; and in this way it was also of good and bad signification; so Aristotle hath a Probleme, why sneezing from noone unto midnight was good, but from night to noon unlucky? So Eustathius upon Homer observes, that sneezing to the left hand was unlucky, but prosperous unto the right; and so as Plutarch relateth, when Themistocles sacrificed in his galley before the battell of Xerxes, and one of the assistants upon the right hand sneezed, Euphrantides the Southsayer presaged the victorie of the Greekes, and the overthrow of the Persians.

And thus wee may perceive the custome is more ancient then commonly is conceived, and these opinions hereof in all ages, not any one disease to have been the occasion of this salute and deprecation; arising at first from this vehement and affrighting motion of the braine, inevitably observable unto the standers by; from whence some finding de-

pendent

pendent effects to ensue, others ascribing hereto as a cause what perhaps but casually or inconexedly succeeded, they might proceed unto forms of speeches, felicitating the good, or deprecating the evil to follow.

CHAP. X.

Of the Jewes.

THat Jews stinck naturally, that is, that in their race and nation there is *δυσωδία* or evil savour, is a received opinion, wee know not how to admit; although we concede many questionable points, and dispute not the verity of sundry opinions which are of affinity hereto: we will acknowledge that certaine odours attend on animalls, no lesse then certaine colours; that pleasant smels are not confined unto vegetables, but found in divers animalls, and some more richly then in plants: and though the Probleme of Aristotle enquire why none smells sweet beside the parde: yet later discoveries adde divers sorts of Monkeys, the Civet cat, and Gazela, from which our muske proceedeth: we confesse that beside the smell of the species, there may be Individuall odours, and every man may have a proper and peculiar savour; which although not perceptible unto man, who hath this sense, but weake, yet sensible unto dogges, who hereby can single out their Masters in the dark: wee will not deny that particular men have sent forth a pleasant savour, as Theophrastus and Plutarch report of Alexander the great, and Tzetzes and Cardan doe testifie of themselves; That some may also emit an unfavoury odour, we have no reason to deny, for this may happen from the qualitie of what they have taken, the Factor whereof may discover it self by sweat and urine, as being unmasterable by the naturall heat of man, nor to be dulcified by concoction beyond an unfavoury condition: the like may come to passe from putrid humors, as is often discoverable in putrid & malignant fevers; and sometime also in grosse and humide bodies even in the latitude of sanity; the naturall heat of the parts being insufficient for a perfect and through digestion, and the errors of one concoction not rectifiable by another: but that an unfavoury odour is gentilitious or national unto the Jewes, if rightly understood, we cannot well concede, nor will the information of reason or sense induce it.

For first upon consult of reason, there will bee found no easie assurance for to fasten a materiall or temperamentall propriety upon any nation; there being scarce any condition (but what depends upon climate) which is not exhausted or obscured from the commixture of introvenient nations either by commerce or conquest; much more will it be difficult to make out this affection in the Jewes, whose race how ever pretended to be pure, must needs have suffered inseparable commixtures with nations of all sorts, not onely in regard of their profelytes, but their universall dispersion; some being posted from severall parts of the earth, others quite lost, and swallowed up in those nations where they planted: for the tribes of Ruben, Gad, part of Manasses

Cc

and

and Naphthali, which were taken by Assur, and the rest at the sack-
ing of Samaria which were led away by Salmanasser, into Assy-
ria, and after a yeare and half, and arived at Arfereth as is delivered in
Esd ras, these I say never returned, and are by the Jewes as vainly ex-
pected as their Messias: of those of the tribe of Juda and Benjamin,
which were led captive into Babylon by Nebuchadnezzar many re-
turned under Zorobabel, the rest remained, and from thence long af-
ter upon invasion of the Saracens, fled as far as India; where yet they
are said to remaine, but with little difference from the Gentiles.

The tribes that returned to India, were afterward widely dispersed;
for beside sixteene thousand which Titus sent to Rome unto the tri-
umph of his father Vespasian, hee sold no lesse then an hundred thou-
sand for slaves; not many yeeres after Adrian the Emperour, who rui-
ned the whole Countrey, transplanted many thousands into Spaine,
from whence they dispersed into divers Countreys, as into France, and
England, but were banished after from both: from Spaine they disper-
sed into Africa, Italy, Constantinople, and the dominions of the Turke,
where they remaine as yet in very great numbers, and if (according to
good relations) where they may freely speake it, they forbear not to
boast that there are at present many thousand Jewes in Spaine, France,
and England, and some dispensed withall, even to the degree of Priest-
hood; it is a matter very considerable, and could they be smelled out,
would much advantage, not onely the Church of Christ, but also the
coffers of Princes.

Now having thus lived in severall Countreyes, and alwayes in sub-
jection, they must needs have suffered many commixtures, and wee are
sure they are not exempted from the common contagion of Venerie
contracted first from Christians; nor are fornications unfrequent be-
tween them both, there commonly passing opinions of invitement, that
their women desire copulation with them, rather then their owne
nation, and affect Christian carnality above circumcised venery. It be-
ing therefore acknowledged, that some are lost, evident that others
are mixed, and scarce probable that any are distinct, it will be hard to
establish this quality upon the Jewes, unlessse we also transerre the same,
unto those whose generations are mixed, whose genealogies are Jew-
ish, and naturally derived from them.

Againe, if we concede a nationall unfavourineffe in any people, yet
shall we finde the Jewes lesse subject hereto then any, and that in those
regards which most powerfully concurre to such effects, that is, their
diet and generation; As for their diet, whether in obedience unto the
precepts of reason, or the Injunctions of parsimony, therein they are ve-
ry temperate, seldome offending inebriety or excessse of drink, nor er-
ring in gulosity or superfluity of meats; whereby they prevent indige-
stion and crudities, and consequently putrescence of humors; they have

have in abomination all flesh maymed, or the inwards any way vicia-
ted, and therefore eate no meate but of their owne killing. They ob-
serve not onely fasts at certaine times, but are restrained unto very few
dishes at all times; so few, that whereas S. Peters sheet will hardly
cover our tables, their Law doth scarce permit them to set forth a
Lordly feast, nor any way to answer the luxurie of our times, or those
of our forefathers; for of flesh their Law restraines them many sorts,
and such as compleate our feasts: That animal, *Propter convulsanatum*,
they touch not, nor any of its preparations, or parts so much in request
at Roman tables; nor admit they unto their board, Hares; Conies,
Herons, Plovers, or Swans: Of Fishes, they onely taste of such as
have both finnes and scales, which are comparatively but few in num-
ber, such onely, saith Aristotle, whose egge or spawne is arenaceous
and friable, whereby are excluded all cetaceous and cartilagineous
fishes, many pectinall, whose ribs are rectilineall, many costall, which
have their ribs embowed, all spinall, or such as have no ribs, but onely
a back bone, or somewhat analogous thereto, as Eeles, Congers, Lam-
pries; all that are testaceous, as Oysters, Cocles, Wilks, Schollops,
Muscles, and likewise all crustaceous, as Crabs, Shrimps, and Lob-
sters; So that observing a spare and simple dyet, whereby they prevent
the generation of crudities, and fasting often, whereby they might al-
so digest them, they must be lesse inclinable unto this infirmity then
any other Nation, whose proceedings are not so reasonable to avoid it.

As for their generations and conceptions, (which are the purer from
good dyet) they become more pure and perfect by the strict observa-
tion of their Law; upon the injunctions whereof, they severely observe
the times of Purification, and avoid all copulation, either in the un-
cleannesse of themselves, or impurity of their women; A rule, I feare
not so well observed by Christians, whereby not onely conceptions
are prevented, but if they proceed, so vitiated and defiled, that durable
inquinations, remaine upon the birth, which when the conception
meets with these impurities, must needs be very potent, since in the
purest and most faire conceptions, learned men derive the cause of Pox
and Meazels, from principles of that nature, that is, the menstruous
impurities in the mothers blood, and the virulent tinctures contracted
by the Infant, in the nutriment of the wombe.

Lastly, experience will convict it, for this offensive odor is no way
discoverable in their Synagogues where many are, and by reason of
their number could not be concealed; nor is the same discernible in
commerce or conversation with such as are cleanly in apparell, and de-
cent in their houses; surely the Viziers and Turkish Basha's are not of
this opinion, who as Sir Henry Blunt informeth, doe generally keepe
a Jew of their private Counsell; and were this true, the Jewes them-
selves do not strictly make out the intention of their Law, for in vaine
do

do they scruple to approach the dead, who livingly are cadaverous, or feare any outward pollution, whose temper pollutes themselves. And lastly, were this true, our opinion is not impartiall, for unto converted Jews who are of the same seed, no man imputeth this unfavoury odor; as though Aromatized by their conversion, they admitted their sent with their Religion, and they smelt no longer then they favoured of the Jew.

Now the ground that begat or propagated this assertion might be the distastfull averfeness of the Christian from the Jew, from their corruptnesse, and the villany of that fact, which made them abominable and stinck in the nostrils of all men; which reall practise, and metaphorical expression, did after proceed into a literal construction; but was a fraudulent illation; for such an evill favour their father Jacob acknowledged in himselfe, when he said, his sons had made him stinke in the land, that is, to be abominable unto the inhabitants thereof: Now how dangerous it is in sensible things to use metaphorical expressions unto the people, and what absurd conceits they will swallow in their literals, an impatient example wee have in our owne profession, who having called an eating Ulcer by the name of a Wolfe, common apprehension conceives a reality therein, and against our selves ocular affirmations are pretended to confirme it.

The nastinesse of that Nation, and sluttish course of life hath much promoted the opinion, occasioned by their servile condition at first, and inferiour wayes of parsimony ever since; as is delivered by Mr. Sandys, They are generally fat, saith he, and ranck of the favours which attend upon sluttish corpulency: The Epithites assigned them by ancient times have also advanced the same; for Ammianus Marcellinus describeth them in such language, and Martiall more ancient, in such a relative expression sets forth unfavoury Bassa,

Quod jejunia Sabbatariorum

Mallet, quam quod oles, oler Bassa.

From whence notwithstanding wee cannot inferre an inward imperfection in the temper of that Nation, which was but an effect in the breath from outward observation, in their strict and tedious fasting; and was a common effect in the breaths of other Nations, became a proverbe among the Greeks, and the reason thereof occasioned a Probleme in Aristotle.

Lastly, if all were true, and were this favour conceded, yet are the reasons alleadged for it no way satisfactory: Huchorius in his Tract de sterilitate, and after him Alfarius Crucius in his medical Epistles, imputes this effect unto their abstinence from salt or salt meats; which how to make good in the present dyet of the Jews we know not, nor shall we conceive it was observed of old, if we consider they seasoned every sacrifice, and all oblations whatsoever, whereof we cannot deny a great part was eaten by the Priests; and if the offering were of flesh it was

*Negat igitur
Jejunia
oler.*

was salted no lesse then thrice, that is, once in the common chamber of salt, at the footstep of the Altar, and upon the top thereof, as is at large delivered by Maimonides: nor if they refrained all salt, is the illation very urgent; for many there are not noted for ill odors, which eate no salt at all, as all carnivorous animals, most children, many whole Nations, and probably our Fathers after the Creation; there being indeed in every thing we eate, a naturall and concealed salt, which is separated by digestions, as doth appeare in our teares, sweat and urines, although we refraine all salt, or what doth seeme to containe it.

Another cause is urged by Campegius, and much received by Christians, that this ill favour is a curse derived upon them by Christ, and stands as a badge or brand of a generation that crucified their *Salvator*; but this is a conceit without all warrant, and an easie way to take off dispute in what point of obscurity soever: a method of many Writers, which much depreciates the esteeme and value of miracles, that is, therewith to salve not onely reall verities, but also non-existences: Thus have elder times, not onely ascribed the immunitie of Ireland from any venomous beast, unto the staffe or rod of Patrick, but the long tayles of Kent unto the malediction of Austin.

Thus therefore, although we concede that many opinions are true which hold some conformity unto this, yet in assenting hereto, many difficulties must arise, it being a dangerous point to annex a constant property unto any Nation, and much more this unto the Jew; since 'tis not verifiable by observation, since the grounds are feeble that should establish it, and lastly, since if all were true, yet are the reasons alleadged for it, of no sufficiency to maintaine it.

CHAP. XI.

Of Pigmies.

BY Pigmies we understand a dwarfish race of people, or lowest diminution of mankind, comprehended in one cubit, or as some will have it, in two foot, or three spans; not taking them single, but nationally considering them, and as they make up an aggregated habitation, whereof although affirmations be many, and testimonies more frequent then in any other point which wise men have cast into the list of fables, yet that there is, or ever was such a race or Nation, upon exact and confirmed testimonies, our strictest enquiry receaves no satisfaction.

I say, exact testimonies, first, in regard of the Authors from whom we derive the account, for though wee meet herewith in Herodotus, Philostratus, Mela, Pliny, Solinus, and many more; yet were they derivative Relators, and the primitive Author was Homer; who, not only

onely intending profit but pleasure, and using often similies, as well to delight the eare, as to illustrate his matter, in the third of his Iliads, compareth the Trojanes unto the Cranes, when they discend against the Pigmies; which was more largely set out by Oppian, Juvenall, Mantuan, and many Poets since; and being onely a pleasant similitude in the fountains, became a solemne story in the streame, and current still among us.

Againe, many professed enquirers have rejected it; Strabo an exact and judicious Geographer, hath largely condemned it as a fabulous story in the first of his Geographie. Julius Scaliger a diligent enquirer, accounts thereof, but as a Poeticall fiction; Vlysses Aldrovandus a most exact Zoographer in an expresse discourse hereon, concludes the story fabulous, and a poetical account of Homer; and the same was formerly conceived by Eustathius his excellent commentator, *Albertus Magnus* a man oftentimes too credulous, herein was more then dubious, for he affirmeth, if any such dwarfs were ever extant, they were surely some kinde of Apes; which is a conceit allowed by Cardan, and not esteemed improbable by many others.

There are I confesse two testimonies, which from their authority admit of consideration. The first of Aristotle, whose words are these, in the eighth of his History of animals, *ἡ δὲ ὀρέη &c.* That is, *Hic locus est quem incolunt Pygmei, non enim id fabula est sed pusillum genus, ut aiunt.* Wherein indeed Aristotle playes the Aristotle, that is, the wary and evading assertor; For though with *non est in fabula*, he seem at first to confirme it, yet at the last he claps in, *Sicut aiunt*, and shakes the beliefe he put before upon it; and therefore I observe Scaliger hath not translated the first, perhaps supposing it surreptitious, or unworthy so great an assertor: and truly for those bookes of animals, or worke of eight hundred talents, as Athenus termes it, although it bee ever to bee admired, and containe most excellent truths, yet are many things therein delivered upon relation, and some things repugnant unto the history of our senses; as wee are able to make out in some, and Scaliger hath observed in many more, as he hath freely declared himselfe in his Comment upon that peece.

The second testimony is deduced from holy Canonickall Scripture; that is, Ezech. 27. verse 11. thus rendred in the vulgar translation, *Sed & Pygmaei qui erant in turribus tuis pharetras suas suspenderunt in muris tuis per gyrum*: from whence notwithstanding we cannot inferre this assertion; for first the Translatours accord not, and the Hebrew word *Gamadim* is very variously rendred; Though Aquila, Vatablus and Lyra will have it *Pygmaei*, yet in the Septuagint, it is no more then Watchmen; in the Chaldie, Cappadocians; in Symmachus, Medes; Theodotion of old, and Tremellius of late, have retained the Textuall word, and so have the Italian, French, and English Translatours, that

that is, the men of Arvad were upon thy walles round about, and the Gammadims were in thy towers.

Nor doe men onely dissent in the Translation of the word, but in the exposition of the sense and meaning thereof, for some by Gammadims understand a people of Syria, so called from the city Gamala; some hereby understand the Cappadocians, many the Medes, and hereof Forerius hath a singular exposition, conceiving the watchmen of Tyre, who might well bee called Pigmies, the towers of that City being so high, that unto men below they appeared in a cubitall stature; others expounded it quite contrary to common acception that is not men of the least, but of the largest size; so doth Cornelius construe *Pygmaei* or *viri cubitales*, that is not men of a cubit high, but of the largest stature, whose height like that of Giants is rather to be taken by the cubit then the foot; in which phrase we read the measure of Goliath whose height is said to be six cubits and a span: of affinity hereto is also the exposition of Jerom, not taking Pigmies for Dwarfes, but stout and valiant Champions; not taking that sense of *πυγμαί*, which signifies the cubit measure, but that which expresseth pugills, that is, men fit for combat and the exercise of the fist: Thus can there bee no satisfying illation from this text, the diversity or rather contrariety of Expositions and Interpretations, distracting more then confirming the truth of the story.

Againe, I say exact testimonies in reference unto its circumstantiall relations so diversly or contrarily delivered; thus the relation of Aristotle placeth above Egypt towards the head of Nyle in Africa; Philostratus affirms they are about Ganges in Asia, and Pliny in a third place, that is Geravia in Scythia: some write they fight with Cranes, but Meneclis in Athenus affirms they fight with Partridges, some say they ride on Partridges, and some on the backs of Rams.

Lastly, I say confirmed testimonies; for though *Paulus Iovius* delivers there are Pigmies beyond Japan, Pigafeta, about the Molucca's, and Olaus Magnus placeth them in Greenland; yet wanting frequent confirmation in a matter so confirmable, their affirmation carrieth but slow perswasion; and wise men may thinke there is as much reallity in the Pigmies of Paracelsus; that is, his non-Adamicall men, or middle natures betwixt men and spirits.

There being thus no sufficient confirmation of their verity, some doubt may arise concerning their possibility; wherein, since it is not defined in what dimensions the soule may exercise her faculties, wee shall not conclude impossibility, or that there might not be a race of Pigmies, as there is sometimes of Giants; and so may we take in the opinion of Austine, and his Comment Ludovicus; but to beleieve they should be in the stature of a foot or span, requires the preaspection of such a one as Philetas the Poet in Athenæus, who was faine to fasten lead

lead unto his feet lest the wind should blow him away, or that other in the same Author, who was so little *ut ad obolum accederet*, a story so strange that we might herein accuse the Printer, did not the account of *Ælian* accord unto it, as *Causabone* hath observed in his learned *Animadversions*.

Lastly, if any such Nation there were, yet is it ridiculous what men have delivered of them; that they fight with Cranes upon the backs of Rams or Partridges: or what is delivered by *Ctesias* that they are Negroes in the middest of India, whereof the King of that Country entertaineth three thousand Archers for his guard; which is a relation below the tale of *Oberon*, nor could they better defend him, then the Emblem saith they offended *Hercules* whilest he slept, that is to wound him no deeper, then to awake him.

CHAP. XII.

Of the great Climactericall yeare, that is sixty three.

Certainly the eyes of the understanding, and those of sense are differently deceived in their greatest objects; the sense apprehending them in lesser magnitudes then their dimensions require; so it beholdeth the Sunne, the Starres, and the Earth it selfe; but the understanding quite otherwise, for that ascribeth unto many things far larger horizons then their due circumscriptions require, and receiveth them with amplifications which their reallity will not admit: thus hath it fared with many Heroes and most worthy persons, who being sufficiently commendable from true and unquestionable merits, have received advancement from falshood and the fruitfull stocke of fables: Thus hath it happened unto the stars and luminaries of heaven, who being sufficiently admirable in themselves have been set out by effects no way dependent on their efficiencies, and advanced by amplifications to the questioning of their true endowments: Thus is it not improbable it hath also fared with number, which though wonderfull in it selfe, and sufficiently magnifyable from its demonstrable affections, hath yet received adjections of admiration from the multiplying conceits of men, and stands laden with additions which its equity will not admit.

And so perhaps hath it happened unto the number 7. and 9. which multiplyed into themselves doe make up 63. commonly esteemed the great Climactericall of our lives; for the dayes of men are usually cast up by septenaries, and every seventh yeare conceived to carry some altering character with it, either in the temper of body, minde, or both; but among all other, three are most remarkable, that is 7. times 7. or forty nine, 9. times 9. or eighty one, and 7. times 9. or the yeare of
sixty

sixty three; which is conceived to carry with it, the most considerable fatality, and consisting of both the other numbers was apprehended to comprise the vertue of either, is therefore expected and entertained with feare, and esteemed a favour of fate to passe it over; which notwithstanding many suspect to be but a Panick terrour, and men to feare they justly know not what; and for my owne part, to speake indifferently, I finde no satisfaction, nor any sufficiency in the received grounds to establish a ratioll feare.

Now herein to omit Astrologicall considerations (which are but rarely introduced) the popular foundation whereby it hath continued is first, the extraordinary power and secret vertue conceived to attend these numbers, whereof we must confesse there have not wanted not onely especiall commendations, but very singular conceptions. Among Philosophers, *Pythagoras* seemes to have played the leading part, which was long after continued by his disciples, and the Italicke Schoole, the Philosophy of *Plato*, and most of the Platonists abound in numerall considerations; above all *Philo* the learned Jew, hath acted this part even to superstition, bestowing divers pages in summing up every thing which might advantage this number: All which notwithstanding when a serious Reader shall perpend, hee will hardly finde any thing that may convince his judgement or any further perswade, then the lenity of his belief, or prejudgement of reason inclineth.

For first, not only the number of 7 and 9 from considerations abstruse have been extolled by most, but all or most of the other digits have been as mystically applauded by many; for the number of one and three have not been only admired by the heathens, but from adorable grounds, the unity of God, and mystery of the Trinity admired by many Christians. The number of foure stands much admired not only in the quaternity of the Elements, which are the principles of bodies, but in the letters of the name of God, which in the Greeke, Arabian, Persian, Hebrew, and Egyptian, consisteth of that number, and was so venerable among the *Pythagoreans*, that they swore by the number foure. That of six hath found many leaves in its favour, not only for the dayes of the Creation, but its naturall consideration, as being a perfect number, and the first that is compleated by its parts; that is, the sixt, the half, and the third, 1. 2. 3. which drawne into a sum make six: The number of ten hath been as highly extolled, as containing even, odde, long and plaine, quadrate and cubicall numbers; and *Aristotle* observed with admiration, that Barbarians as well as Greeks, did use a numeration unto Ten, which being so generall was not to be judged casual, but to have a foundation in nature: So that only 7 and 9, but all the rest have had their Elogies, as may be observed at large in *Rhodiginus*, and in severall Writers since: every one extolling number, according to his subject, & as it advantaged the present discourse in hand.

Again, they have been commended not only from pretended grounds in nature, but from artificiall, casual, or fabulous foundations; so have some endeavoured to advance their admiration, from the 9 Muses, from the 7 Wonders of the World, and from the 7 gates of Thebes, in that 7 Cities contended for Homer, in that there are 7 stars in Urfa minor, and 7 in Charles wayne or Plaustrum of Urfa major; wherein indeed although the ground be naturall, yet either from constellations or their remarkable parts, there is the like occasion to commend any other number; the number 5 from the starres in Sagitta, 3 from the girdle of Orion, and 4 from Equiculus, Crusero, or the feet of the Centaure; yet are such as these clapt in by very good Authors, and some not omitted by Philo.

Nor are they only extolled from Arbitrary and Poeticall grounds, but from foundations and principles either false or dubious: That women are menstruant and men pubescent at the year of twice seven, is accounted a punctuall truth; which period neverthelesse we dare not precisely determine, as having observed a variation and latitude in most, agreeably unto the heat of clime or temper; men arising variously unto virility, according to the activity of caules that promote it, *Sanguis mensruus ad diem, ut plurimum, septimum durat*, saith Philo; which notwithstanding is repugnant unto experience, and the doctrine of Hippocrates, who in his booke, *de diata* plainly affirmeth, it is thus but with few women, and onley such as abound with pituitous and watery humors.

It is further conceived to receive addition, in that there are 7 heads of Nyle, but we have made manifest elsewhere that by the description of Geographers they have beene sometime more, and are at present fewer.

In that there were 7 wise men of Greece; which though it be generally received, yet having enquired into the verity thereof, we cannot so readily determine it; for in the life of Thales who was accounted in that number, Diogenes Laertius plainly saith *Magna de eorum numero discordia est*, some holding but foure, some ten, others twelve, and none agreeing in their names, though according in their number.

In that there are just seven Planets or errant Starres in the lower orbs of heaven; but it is now demonstrable unto sense, that there are many more, as Galileo hath declared in his *Nuncius Sydereus*; that is two more in the orbe of Saturne, and no lesse then foure more in the sphere of Jupiter: and the like may be said of the Pleiades or 7 Starres, which are also introduced to magnifie this number; for whereas scarce discerning six, we account them 7, by his relation in the same booke, there are no lesse then forty.

That the heavens are encompassed with 7 circles, is also the allegation of Philo; which are in his account, The Artick, Antartick, the Summer

Summer and Winter Tropicks, the Æquator, Zodiack and the milky circle, whereas by Astronomers they are received in greater number; for though we leave out the Lacteous circle (which Aratus, Geminus, and Proclus out of him hath numbred among the rest) yet are there more by foure then Philo mentions, that is, the Horizon, Meridian and both the Colures; circles very considerable and generally delivered, not only by Prolomie and the Astronomers since his time, but such as flourished long before, as Hipparchus and Eudoxus: So that for ought I know, if it make for our purpose, or advance the theme in hand, with equall liberty, we may affirme there were 7 Sybills, or but 7 signes in the Zodiack circle of heaven.

That verse in Virgill translated out of Homer, *O terq; quaterq; beati*; that is, as men will have it 7 times happy hath much advanced this number in criticall apprehensions; yet is not this construction so indubitably to be received, as not at all to be questioned: for though Rhodiginus, Beroaldus & others from the authority of Macrobius so interpret it, yet Servius the best of his Comments conceives no more thereby then a finite number for indefinite, and that no more is implied then often happy. Strabo the ancientest of them all, in the first of his Geography conceives no more by this expression in Homer, then a full and excessive expression; whereas in common phraze and received language hee should have termed them thrice happy, herein exceeding that number he called them foure times happy that is more then thrice; and this he illustrates by the like expression of Homer in the speech of Circe, who to expresse the dread and terrour of the Ocean, sticks not unto the common forme of speech in the strict account of its reciprocations, but largely speaking saith, it ebbes and flows no lesse then thrice a day, *terq; die revomit fluctus, iterumq; resorbet*; and so when 'tis said by Horace, *salices ter & amplius*, the exposition is sufficient, if we conceive no more then the letter fairely beareth, that is, foure times, or indefinitely more then thrice.

But the maine considerations which most set of this number are observations drawne from the motions of the Moone, supposed to be measured by sevens; and the criticall or decretory dayes dependent on that number. As for the motion of the Moon, though we grant it to be measured by sevens, yet will not this advance the same before its fellow numbers; for hereby the motion of others are not measured, the fixed Starres by many thousand yeares, the Sunne by 365. dayes, the superiour Planets by more, the inferiour by somewhat lesse: and if we consider the revolution of the first Moveable, & the daily motion from East to West, common unto all the orbs, we shall find it measured by another number; for being performed in four & twenty hours, it is made up of 4 times 6: and this is the measure and standard of other parts of time, of months, of years, Olympiades, Lustres, Indictions, Cycles, Jubilies, &c.

fed, Mat. 1. So all the generations from Abraham to David are foure-
teene generations, and from David unto the carrying away into Baby-
lon, are foureteene generations, and from the carrying away into Ba-
bylon unto Christ, are foureteene generations, which neverthelesse
must not be strictly understood as numerall relations require; for from
David unto Jeconiah are accounted by Matthew but 14. generations,
whereas according to the exact account in the history of Kings, there
were at least 17. and 3. in this account, that is, Ahazias, Joas, and A-
mazias are left out: for so it is delivered by the Evangelist; And Jo-
ram begat Ozias, whereas in the Regall genealogy there are 3. succes-
sions betweene, for Ozias or Uziah, was the son of Amazias, Ama-
zias of Joas, Joas of Azariah, and Azariah of Joram, so that in strict
account Joram was the Abavus or grandfather twice removed, and
not the father of Ozias, and these omitted descents made a very con-
siderable measure of time, in the Royall chronology of Judah; for
though Azariah reigned but one yeare, yet Joas reigned forty, and
Amazias no lesse then nine and twenty: However therefore these were
delivered by the Evangelist, and carry no doubt an incontrollable
conformity unto the intention of his delivery, yet are they not appli-
able unto precise numerality, nor strictly to be drawne unto the rigid
test of numbers.

Lastly, though many things have beene delivered by Authors con-
cerning number, and they transferred unto the advantage of their na-
ture, yet are they oftentimes otherwise to be understood, then as they are
vulgarly received in active and causall considerations; they being ma-
ny times delivered Hieroglyphically, metaphorically, illustratively,
and not with reference unto action, or causality. True it is, that God
made all things in number, weight, and measure, yet nothing by them
or through the efficacy of either; Indeed our dayes, actions, and mo-
tions being measured by time (which is but motion measured) what
ever is observable in any, falls under the account of some number;
which notwithstanding cannot be denominated the cause of those
events; and so doe we unjustly assigne the power of Action even unto
Time it self, nor doe they speake properly who say that Time consu-
meth all things; for Time is not effective, nor are bodies destroyed by
it, but from the action and passion of their Elements in it, whose account
it onely affordeth, and measuring out their motion, informes us in their
periods and termes of their duration, rather then effecteth, or phys-
ically produceth the same.

A second consideration which promoteth this opinion, are confir-
mations drawne from Writers, who have made observations or set
downe favourable reasons for this climactericall yeare; so have *Henri-*
cus Ranzovius, *Baptista Codronchus*, and *Levinus Lemnius* much con-
firmed the same; but above all, that memorable Letter of Augustus
sent

sent unto his Nephew Caius, wherein he encourageth him to celebrate
his nativitie, for he had now escaped 63. the great Climactericall and
dangerous yeare unto man; which notwithstanding rightly perpended,
it can be no singularity to question it, nor any new Paradox to deny it.

For first it is implicitly, and upon consequence denyed by Aristotle
in his Politicks, in that discourse against Plato, who measured the vi-
cissitude and mutation of States, by a periodical fatality of number:
Ptolomie that famous Mathematician plainly saith, he will not deliver
his doctrines by parts and numbers which are ineffectuall, and have not
the nature of causes; now by these numbers saith Rhodiginus and Mi-
randula, he implyeth Climactericall yeares, that is, septenaries, and no-
venaries set downe by the bare observation of numbers: Censorinus an
Author of great authority, and sufficient antiquitie, speakes yet more
amply in his booke *De die Natali*, wherein expressly treating of Cli-
mactericall dayes, hee thus delivereth himselfe: Some maintaine that
7. times 7. that is, 49. is most dangerous of any other, and this is the
most generall opinion, others unto 7. times 7. adde 9. times 9. that is,
the yeare of 81. both which consisting of square and quadrate num-
bers, were thought by Plato and others to bee of great consideration;
as for this yeare of 63. or 7. times 9. though some esteeme it of most
danger, yet do I conceive it lesse dangerous then the other; for though
it containeth both numbers above named, that is, 7. and 9. yet neither
of them square or quadrate, and as it is different from them both, so is it
not potent in either: Nor is this yeare remarkable in the death of ma-
ny famous men. I finde indeed that Aristotle dyed this yeare, but hee
by the vigour of his minde, a long time sustained a naturall infirmitie
of stomach, that it was a greater wonder he attained unto 63. then that
he lived no longer: The Psalme of Moses hath mentioned a yeare of
danger differing from all these: and that is tentimes 7. or seventie; for
so it is said, The dayes of Man are threescore and ten; and the very
same is affirmed by Solon, as Herodotus relates in a speech of his unto
Craesus, *Ego annis septuaginta humana vita modum desinio*: and surely
that yeare must be of greatest danger, which is the Period of all the
rest, and fewest safely passe thorow that, which is set as a bound for
few or none to passe; and therefore the consent of elder times, setting
their conceits upon Climacters, not onely differing from this of ours,
but on another, though severall nations and ages do fancy unto them-
selves different yeares of danger, yet every one expects the same event,
and constant veritie in either.

Againe, though Varro divided the dayes of man into five portions,
Hippocrates into 7. and Solon into ten; yet probably their divisions
were to be received with latitude, and their considerations not strictly
to be confined unto their last unities: So when Varro extendeth *Pue-*
ritia unto 15. *Adolescentia* unto 30. *Inventus* unto 35. there is a large
latitude

latitude between the termes or Periods of compute, and the veritie holds good in the accidents of any yeeres between them: So when Hippocrates divideth our life into 7. degrees or stages, and maketh the end of the first 7. of the second 14. of the third 28. of the fourth 35. of the fift 47. of the sixt 56. and of the seventh, the last yeare when ever it happeneth; herein we may observe he maketh not his divisions precisely by 7. and 9. and omits the great Climactericall; beside there is between every one at least the latitude of 7. yeares, in which space or intervall, that is either in the third or fourth yeere, what ever falleth out is equally verified of the whole degree, as though it had happened in the seventh. Solon divided it into ten Septenaries, because in every one thereof, a man received some sensible mutation, in the first is Dedentition or falling of teeth: in the second Pubescence, in the third the beard groweth, in the fourth strength prevails, in the fift maturitie for issue; in the sixt Moderation of appetite, in the seventh, Prudence, &c. Now herein there is a tolerable latitude, and though the division proceed by 7 yet is not the totall veritie to be restrained unto the last year, nor constantly to be expected the beard should be compleat at 21. or wisdom acquired just in 49. and thus also though 7. times 9. containe one of those septenaries, and doth also happen in our declining yeares, yet might the events thereof be imputed unto the whole septenarie; and be more reasonably entertained with some latitude, then strictly reduced unto the last number, or all the accidents from 56. imputed unto 63.

Thirdly, although this opinion may seeme confirmed by observation, and men may say it hath been so observed, yet we speake also upon experience, and doe beleve that men from observation will collect no satisfaction: that other yeares may be taken against it, especially if they have the advantage to precede it, as sixty againe 63. and 63. againe 66. for fewer attaine to the latter then the former; and so surely in the first septenarie doe most die, and probably also in the very first yeare, for all that ever lived were in the account of that yeare, beside the infirmities that attend it are so many, and the body that receives them so confirmed, we scarce count any alive that is not past it.

Franciscus Paduanus in his worke *De catena temporis*, discoursing of the great Climactericall, attempts a numeration of eminent men, who dyed in that yeare; but in so small a number, as not sufficient to make a considerable Induction; he mentioneth but foure, Diogenes Cynicus, Dionysius Heracleoticus, Xenocrates Platonius, and Plato: as for Dionysius, as Censorinus witnesseth, hee famished himselfe in the 82. yeare of his life; Xenocrates by the testimony of Laertius fell into a cauldron, and dyed the same yeare; and Diogenes the Cynicke by the same testimony lived almost unto ninetie: The date of Platoes death is not exactly agreed on, but all dissent from this

this which he determineth; Neantes in Laertius extendeth his dayes unto 84. Suidas unto 82. but Hermippus defineth his death in 81. and this account seemeth most exact; for if, as hee delivereth, Plato was borne in the 88. Olympiade, and dyed in the first yeare of the 108. the account will not surpasse the year of 81. and so in his death he verified the opinion of his life, and of the life of man, whose Period, as Censorinus recordeth, he placed in the Quadrate of 9. or 9. times 9. that is, 81. and therefore as Seneca delivereth, the Magicians at Athens did sacrifice unto him, as declaring in his death somewhat above humanity, because he dyed in the day of his nativity, and without deduction justly accomplished the year of eighty one. Bodine I confesse delivers a larger list of men that died in this yeare, whose words in his methode of History are these, *Moriantur innumerabiles anno sexagesimo tertio*, Aristoteles, Chrysippus, Bocatius, Bernardus, Erasmus, Lutherus, Melancthon, Sylvius, Alexander, Jacobus Sturmius, Nicolaus Cusanus, Thomas Linacer, *eodem anno Cicero casus est*: wherein beside that it were no difficult point to make a larger Catalogue of memorable persons that dyed in other yeares, wee cannot but doubt the verity of his Induction: as for Silvius and Alexander, which of that name he meaneth I know not; but for Chrysippus by the testimony of Laertius, hee dyed in the 73. year, Bocatius in the 62. Linacer the 64. and Erasmus exceeded 70. as Paulus Jovius hath delivered in his Elogie of learned men; and as for Cicero, as Plutarch in his life affirmeth, he was slain in the year of 64. and therefore sure the question is hard set, and we have no easie reason to doubt, when great and entire Authors shall introduce unjustifiable examples, and authorize their assertions by what is not authenticall.

Fourthly, they which proceed upon strict numerations, and will by such regular and determined wayes measure out the lives of men, and periodically define the alterations of their tempers; conceive a regularity in mutations, with an equalitie in constitutions, and forget that variety which Physitians therein discover: For seeing we affirm that women doe naturally grow old before men, that the cholerick fall short in longevitie of the sanguine, that there is *senium ante senectutem*, and many grow old before they arrive at age; we cannot so reasonably affixe unto them all one common point of danger, but should rather assigne a respective fatality unto each: which is concordant unto the doctrine of the numerists; and such as maintaine this opinion: for they affirme that one number respecteth men, another women, as Bodin explaining that of Seneca, *Septimus quisque annus etati signum imprimit*. subjoynes, *hoc de maribus dictum oportuit, hoc primum intueri licet, perfectum numerum, id est sextum feminas, septenarium mores immutare.*

Fifthly, since we esteeme this opinion to have some ground in nature, and that nine times seven revolutions of the Sunne, imprints a dangerous

rous Character on such as arise unto it; it will leave some doubt behinde, in what subjection hereunto were the lives of our forefathers presently after the flood, and more especially before it, who attaining unto 8. or 900. yeares, had not their Climacters computable by digits, or as we doe account them; for the great Climactericall was past unto them before they begat children, or gave any Testimony of their virilitie; for we read not that any begat children before the age of fixtie five; and this may also afford a hint to enquire, what are the Climacters of other animated creatures, whereof the lives of some attaine not so farre as this of ours, and that of others extends a considerable space beyond.

Lastly, the imperfect accounts that men have kept of time, and the difference thereof both in the same and divers common wealths, will much distract the certainty of this assertion; for though there were a fatality in this yeare, yet divers were, and others might bee out in their account, aberring severall wayes from the true and just compute, and calling that one yeare, which perhaps might be another.

For first they might be out in the commencement or beginning of their account, for every man is many moneths elder then he computeth; for although we begin the same from our nativitie, and conceive that no arbitrary, but naturall terme of compute, yet for the duration of life, or existence, wee participate in the wombe the usuall distinctions of time, and are not to bee exempted from the account of age and life, where we are subject to diseases, and often suffer death; and therefore Pythagoras, Hippocrates, Diocles, Avicenna and others, have set upon us, numerall relations and temporall considerations in the wombe, not only affirming the birth of the seventh moneth to be vitall, that of the eighth mortall, but the progression thereto to be measured by rule, and to hold a proportion unto motion and formation; as what receiveth motion in the seventh, is perfected in the Triplicities; that is the time of conformation unto motion is double, and that from motion unto the birth, treble; So what is formed the 35. day is moved the seaventy, and borne the 210. day; and therefore if any invisible causalitie there be, that after so many yeares doth evidence it selfe at 63. it will be questionable whether its activitie onely set out at our nativitie, and begin not rather in the womb, wherein we place the like considerations, which doth not only entangle this assertion, but hath already embroiled the endeavours of Astrology in the erection of Schemes, and the judgement of death, or diseases; for being not incontrollably determined, at what time to begin, whether at conception, animation, or exclusion, (it being indifferent unto the influence of heaven to begin at either) they have invented another way, that is, to beginne *ab Hora quastronit*, as Haly, Messahallach, Ganivetus, and Guido Bonatus have delivered.

Againe,

Againe, in regard of the measure of time by months and years, there will be no small difficulty, and if we shall strictly consider it, many have been and still may bee mistaken; for neither the motion of the Moone, whereby months are computed, nor of the Sunne whereby yeares are accounted consisteth of whole numbers, but admits of fractions, and broken parts, as we have declared of the Moone. That of the Sunne consisteth of 365. dayes, and almost 6 houres, that is wanting eleven minutes; which 6 houres omitted, or not taken notice of, will in proceffe of time largely deprave the compute; and this is the occasion of the Bissextile or leap-yeare, which was not observed in all times, nor punctually in all Common-wealths; so that in 63. yeares there may be lost almost 18. dayes, omitting the intercalation of one day every fourth yeare, allowed for this quadrant, or 6 houres supernumerary: and though the same were observed, yet to speake strictly a man may be somewhat out in the account of his age at 63. for although every fourth yeare we insert one day, and so fetch up the quadrant, yet those eleven minutes whereby the yeare comes short of perfect 6 houres, will in the circuit of those yeares arise unto certaine houres, and in a larger progression of time unto certaine dayes, whereof at present wee finde experience in the Calender we observe; for the Julian yeare of 365. dayes being eleven minutes larger then the annuall revolution of the Sunne, there will arise an anticipation in the Equinoxes, and as Junctinus computeth in every 136. yeare they will anticipate almost one day; and therefore those ancient men and Nestors of old times, which yearly observed their nativities, might be mistaken in the day, nor that to be construed without a graine of Salt, which is delivered by Moses in the Booke of Exodus, At the end of foure hundred yeares, even the selfe same day, all the hoast of Israell went out of the land of Egypt; for in that space of time the Equinoxes had anticipated, and the eleven minutes had amounted far above a day; and this compute rightly considered will fall fouler on them who cast up the lives of Kingdomes, and summe up their duration by particular numbers as Plato first began, and some have endeavoured since by perfect and sphericall numbers by the square and cube of 7 and 9 and 12, the great number of Plato: wherein indeed Bodine hath attempted a particular enumeration, whereby notwithstanding beside the mistakes committible in the solary compute of yeares, the difference of Chronologie disturbs the satisfaction and quiet of his computes, some adding, others detracting, and few punctually according in any one yeare, whereby indeed such accounts should be made up, for the variation in one unity destroyes the totall illation.

Thirdly, the compute may be unjust not only in a strict acception, or few dayes or houres, but in the latitude also of some yeares, and this may happen from the different compute of yeares in divers Nations,

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and

and even such as did maintaine the most probable way of account, their yeare being not only different from one another, but the civill and common account disagreeing much from the naturall yeare, whereon the consideration is founded: Thus from the testimony of Herodotus, Censorinus and others, the Greeks observed the Lunary yeare, that is, twelve revolutions of the Moone 354. dayes, but the Egyptians, and many others adhered unto the Solary account, that is, 365. dayes, that is eleven dayes longer; now hereby the account of the one would very much exceed the other: A man in the one would account himselfe 63. when one in the other would thinke himselfe but 61. and so although their nativities were under the same houre, yet did they at different yeares believe the verity of that which both esteemed affixed and certaine unto one: The like mistake there is in a tradition of our dayes; men conceiving a peculiar danger in the beginning dayes of May, which are set out as a fatall period unto consumptions and Cronicall diseases; wherein notwithstanding we compute by Calenders, not only different from our ancestors, but one another, the compute of the one anticipating that of the other; so that while wee are in Aprill, others begin May, and the danger is past unto one, while it beginneth with another.

Fourthly, men were not only out in the number of some dayes, the latitude of a few yeares, but might be wide by whole Olympiades and divers Decades of yeares; for as Censorinus relateth, the ancient Arcadians observed a yeare of three months, the Carians of six, the Iberians of foure; and as Diodorus and Xenophon, *de Aequivocis* alleadgeth, the ancient Egyptians have used a yeare of three, two, and one month, so that the Climactericall was not only different unto those Nations, but unreasonably distant from ours; for 63. will passe in their account, before they arrive so high as ten in ours.

Nor if we survey the account of Rome it selfe, may we doubt they were mistaken, and if they feared climactericall yeares might erre in their numeration; for the civill yeare whereof the people took notice, did sometime come short, and sometimes exceed the naturall; for as it appeares by Varro, Suetonius, and Censorinus, their yeare consisted first of ten months which comprehended but 304. dayes, that is 61. lesse then ours containeth; after by Numa or Tarquine from a superstitious conceit of impariety were added 51. dayes, which made 355. one day more then twelve revolutions of the Moone; and thus a long time it continued, the civill compute exceeding the naturall; the correction whereof, and the due ordering of the leap-yeare was referred unto the Pontifices, who either upon favour or malice, that some might continue their offices a longer or shorter time, or from the magnitude of the yeare that men might bee advantaged or endamaged in their contracts, by arbitrary intercalations they depraved the whole account;

account; of this abuse Cicero accused Verres, which at last proceeded so farre that when Julius Caesar came unto that office before the redresse hereof he was faine to insert two intercalary months unto November and December, when he had already inserted 23. dayes unto February; so that that year consisted of 445. dayes; a quarter of a year longer then that we observe, and though at the last the year was reformed, yet in the meane time they might be out, wherein notwithstanding they summed up Climactericall observations.

Lastly, one way more there may be of mistake, and that not unusuall among us, grounded upon a double compute of the yeare; the one beginning from the 25. of March, the other from the day of our birth unto the same againe, which is the naturall account: Now hereupon many men doe frequently miscast their dayes; for in their age they deduce the account not from the day of their birth, but the yeare of our Lord, wherein they were borne; so a man that was borne in January, 1582. if hee live to fall sicke in the latter end of March, 1645. will summe up his age, and say I am now 63. and in my Climactericall and dangerous yeare, for I was borne in the yeare 1582. and now it is 1645. whereas indeed he wanteth many months of that yeare, considering the true and naturall account unto his birth, and accounteth two months for a year: and though the length of time and accumulation of yeares doe render the mistake insensible, yet is it all one, as if one borne in January 1644. should be accounted a yeare old the 25. of March, 1645.

All which perpended, it may be easily perceived with what insecurity of truth we adhere unto this opinion, ascribing not only effects depending on the naturall period of time unto arbitrary calculations, and such as vary at pleasure, but confirming our tenents by the uncertaine account of others and our selves; there being no positive or indisputable ground where to begin our compute, that if there were, men might and have been severall wayes mistaken, the best in some latitude, others in greater, according to the different compute of divers states, the short and irreconcilable yeares of some, the exceeding error in the naturall frame of others, and the lapses and false deductions of ordinary accountants in most.

CHAP. XIII.

Of the Canicular or Dogdayes.

VHereof to speake distinctly: among the Southerne Constellations two there are which beare the name of the Dog; the one in 16. degrees of latitude, containing on the left thigh a Star of the first magnitude, usually called Procyon or Anticanis, because say some it riseth

*Iam Procy-
on fuerit &
vesani Leo-
nis.*

riseth before the other; which if truly understood, must be restrained unto those habitations, who have elevation of pole above thirty two degrees; mention thereof there is in Horace, who seemes to mistake or confound the one with the other; and after him in Galen, who is willing the remarkablest starre of the other should be called by this name, because it is the first that ariseth in the constellation; which notwithstanding, to speake strictly, it is not, unlesse we except one of the third magnitude in the right paw in his owne and our elevation, and two more on his head in and beyond the degree of fix'y; it is also called *Canis minor*, though not *canicula*, by which diminutive is meant the greater Dog-star: A second and more considerable one there is, and neighbour unto the other in 40. degrees of Latitude, containing 18. starres, whereof that in his mouth of the first magnitude the Greeks call *Σείας*, the Latines *Canis major*, and wee emphatically the Dog-Starre.

Now from the rising of this starre not cosmically, that is with the Sun, but Heliacally, that is, its emerfion from the rayes of the Sunne, the Ancients computed their canicular dayes; concerning which there generally passeth an opinion, that during those dayes, all medication or use of Physick is to be declined, and the cure committed unto Nature, and therefore as though there were any feriacion in nature or iustitiums imaginable in professions, whose subject is naturall, and under no intermissive, but constant way of mutation; this season is commonly termed the Physitians vacation, and stands so received by most men: which conceit however generall, is not onely erroneous, but unnaturall, and subsisting upon foundations either false, uncertaine, mistaken, or misapplied, deserves not of mankind that indubitable assent it findeth.

For first, which seemes to be the ground of this assertion, and not to be drawne into question, that is, the magnified quality of this Starre conceived to cause or intend the heat of this season, whereby these dayes become more observable then the rest, we finde that wiser Antiquity was not of this opinion, which seven hundred yeares agoe was as a vulgar error rejected by Geminus, a learned Mathematician in his Elements of Astronomy, wherein he plainly affirmeth, that common opinion made that a cause, which was at first observed but as a sign. The rising & setting both of this Star & others being observed by the Ancients, to denote & testifie certain points of mutation, rather then conceived to induce or effect the same. For our forefathers, saith he, observing the course of the Sun, and marking certaine mutations to happen in his progresse through particular parts of the Zodiack, they registred and set them downe in their Parapegmies, that is, certaine Astronomical Canons, as Rhodiginus out of Vitruvius interprets it; and being not able to designe these times by dayes, months, or yeares, (the compute thereof

thereof, and the beginning of the yeare being different, according unto different Nations) they thought best to settle a generall account unto all, and to determine these alterations by some known and invariable signes; and such did they conceive the rising and setting of the fixed Stars; not ascribing thereto any part of causality, but notice and signification; and thus much seemes implied in that expression of Homer, when speakeing of the Dog-star, he concludeth—*καὶ δὲ τοῦ σκύλακος ἄλμα*, *Malum autem signum est*; the same as Petavius observeth, is implied in the word of Ptolomy, and the Ancients, *καὶ ἐμπροσθεν*, that is, of the signification of starres. The terme of Scripture also favours it, as that of Ilaiah, *Nolite timere à signis celi*, and that in Genesis, *Et sint in signa & tempora*: Let there be lights in the firmament, and let them be for signes and for seasons.

But if all were silent, Galen hath explained this point unto the life, who expounding the reason why Hippocrates declared the affections of the yeare by the rising and setting of stars, it was saith he, because he would proceed on signes and principles best knowne unto all Nations; and upon his words, in the first of the Epidemicks, *In Thaso Autumno circa Equinoxium & subvirgiliis pluvia erant multa*, he thus enlargeth: If (saith he) the same compute of times and months were observed by all Nations, Hippocrates had never made any mention either of Arcturus, Pleiades, or the Dog-star, but would have plainly said, In Macedonia, in the month Dion, thus or thus was the ayre disposed; but for as much as the month Dion is onely knowne unto the Macedonians, but obscure unto the Athenians, and other Nations, he found more generall distinctions of time, and instead of naming months, would usually say, at the Equinox, the rising of the Pleiades, or the Dog-star: And by this way did the Ancients devide the seasons of the yeare, the Autumne, Winter, Spring, and Summer, by the rising of the Pleiades, denoting the beginning of Summer, and by that of the Dog-star, the declination thereof; by this way Aristotle through all his bookes of Animals, distinguisheth their times of generation, Latency, migration, sanity and venation; and this were an allowable and generall way of compute, and still to be retained, were the site of the stars as inalterable, and their ascents as invariable as primitive Astronomy conceived them: And therefore though Aristotle frequently mentioneth this starre, and particularly affirmeth that fishes in the Bosphorus are best to be caught from the arise of the Dog-starre, must we conceive the same a meere effect thereof? Nor though Scaliger from hence be willing to inferre the efficacy of this starre, are wee induced hereto; except because the same Philosopher affirmeth, that Tunny is fat about the rising of the Pleiades, and departs upon Arcturus, or that most insects are latent, from the setting of the 7. starres; except, I say, he give us also leave to inferre that these particular effects and

and alterations proceed from those stars, which were indeed but designations of such quarters and portions of the yeare, wherein the same were observed: Now what Pliny affirmeth of the Orix, that it seemeth to adore this star, and taketh notice thereof by voyce and sternutation, untill wee be better assured of its verity, wee shall not salve the sympathy.

Secondly, what slender opinion the Ancients held of the efficacy of this starre is declarable from their compute; for as Geminus affirmeth, and Petavius his learned Comment proveth, they began their account from its Heliacall emerfion, and not its cosmicall ascent; The cosmicall ascention of a starre we terme that, when it ariseth together with the Sun, or the same degree of the Ecliptick wherein the Sun abideth, and that the Heliacall, when a starre which before for the vicinity of the Sun was not visible, being further removed beginneth to appeare: for the annuall motion of the Snn from West to East being far swifter then that of the fixed stars, he must of necessity leave them on the East whilst he hastneth forward, and obscureth others to the West: and so the Moone who performes its motion swifter then the Sun, (as may be observed in their Conjunctions and Eclipses) gets Eastward out of his rayes, and appeares when the Sun is set; if therefore the Dog-star had this effectuall heat which is ascribed unto it, it would afford best evidence thereof, and the season would be most fervent, when it ariseth in the probablest place of its activity, that is, the cosmicall ascent, for therein it ariseth with the Sun, and is included in the same irradiation: but the time observed by the Ancients was long after this ascent, and in the Heliacall emerfion, when it becomes at greatest distance from the Sun, neither rising with it nor neere it; and therefore, had they conceived any more then a bare signality in this Star, or ascribed the heat of the season thereunto, they would not have computed from its Heliacall ascent which was of inferiour efficacy, nor imputed the vehemency of heat unto those points wherein it was more remisse, and where with lesse probability they might make out its action.

Thirdly, although we derive the authority of these dayes from observations of the Ancients, yet are our computes very different, and such as confirme not each other, for whereas they observed it Heliacally, we observe it Cosmically; for before it ariseth Heliacally unto our latitude, the Summer is even at an end: Again, we compute not onely from different ascents, but also from divers starres; they from the greater Dog-star, we from the lesser; they from Orions, we from Cephalus his dog; they from Scirius, we from Procyon: for the beginning of the Dog-dayes with us is set downe the 19. of July, at which time the lesser Dog-star ariseth with the Sun, whereas the starre of the greater Dog ascendeth not untill about the 31. of July, in the 18. degree of Leo; and the joynt compute by both is onely justifiable in the latitude

latitude of 30. degrees where both these starres arise together. So that their observations confirme not ours, nor ours theirs, but rather confute each other, computing from different foundations, and translating at pleasure the effects and power of one starre unto another.

Fourthly, (which is the Argument of Geminus) were there any such effectuall heat in this starre, yet could it but weakly evidence the same in Summer, it being about 40. degrees distant from the Sun, and should rather manifest its warming power in the winter, when it remaines conjoynd with the Sun in its Hybernall conversion; for about the 29. of October, and in the 16. of Scorpius, and so againe in January the Sunne performes his revolution in the same parallell with the Dogge-starre; Again, if wee should impute the heat of this season, unto the cooperation of any starres with the Sunne, it seemes more favourable for our times, to ascribe the same unto the constellation of Leo; where besides that the Sunne is in his proper house, it is conjoynd with many starres, whereof two of the first magnitude, and in the 8th of August is corporally conjoynd with Basiliscus, a starre of eminent name in Astrologic, and seated in the very Eclipticke.

Fifthly, if all were granted, that observation and reason were also for it, and were it an undeniable truth that an effectuall fervour proceeded from this starre, yet would not the same determine the opinion now in question, it necessarily suffering such restrictions as take of generall illations; for first in regard of different latitudes unto some, the canicular dayes are in the winter, as unto such as have no latitude, but live in a right Sphere that is under the Equinoctiall line; for unto them it ariseth with the Sunne about the Tropicks of Cancer, which season unto them is winter, and the Sunne remotest from them: nor hath the same position in the summer, that is, in the Equinoctiall points any advantage from it; for in the one point the Sunne is at the Meridian, before the Dogge-starre ariseth, in the other the starre is at the Meridian before the Sunne ascendeth.

Some latitudes have no canicular dayes at all; as namely all those which have more then 73. degrees of northerne Elevation, as the territory of *Nova Zembla*, part of Greenland and Tartarie; for unto that habitation the Dogge-starre is invisible, and appeareth not above the Horizon.

Unto such Latitudes as it ariseth, it carrieth a various and a very different respect, unto some it ascendeth when Summer is over, whether we compute Heliacally or Cosmically; for though unto Alexandria it ariseth in Cancer, it ariseth not unto Biarmia Cosmically before it bee in Virgo, and Heliacally about the Autumnall equinox; even unto the Latitude of 52. the efficacy thereof is not much considerable, whether we consider its ascent, Meridian altitude, or abode above the Horizon; for it ariseth very late in the yeere, about the eighteenth

teenth of Leo, that is, the 31. of Iuly; Of Meridian Altitude it hath but 23. degrees, so that it playes but obliquely upon us, and as the Sun doth about the 23. of January, and lastly his abode above the Horizon is not great; for in the eighteenth of Leo, the 31. of Iuly, although they arise together, yet doth it set above 5. houres before the Sun, that is, before two of the clock, after which time we are more sensible of heat, then all the day before.

Sccondly, in regard of the variation of the longitude of the starres, we are to consider (what the Ancients observed not) that the site of the fixed starres is alterable, and that since elder times they have suffered a large and considerable variation of their longitudes; the longitude of a starre to speake plainly, is its distance from the first point of numeration toward the East, which first point unto the Ancients was the vernal æquinox; Now by reason of their motion from West to East, they have very much varied from this point: The first starre of Aries in the time of Meton the Athenian was placed in the very intersection, which is now elongated and removed Eastward 28. degrees; insomuch that now the signe of Aries possesseth the place of Taurus, and Taurus that of Gemini; which variation of longitude must very much distract the opinion of the Dogge-starre, not onely in our dayes, but in times before and after; for since the world began it hath arisen in Taurus, and before it end may have its ascent in Virgo; so that wee must place the canicular dayes, that is the hottest time of the year in the spring in the first Age, and in the Autumne in the ages to come.

Thirdly, the starres have not onely varied their longitudes, whereby their ascents have altered; but have also changed their declinations, whereby their rising at all, that is, their appearing hath varied. The longitude of a starre wee call its shortest distance from the Æquator. Now though the poles of the world and the Æquator be immoveable, yet because the starres in their proper motions, from West to East doe move upon the poles of the Eclipticke distant 23. degrees and an half from the poles of the Æquator, and describe circles parallell not unto the Æquator, but the Eclipticke, they must be therefore sometimes nearer, sometimes removed further from the Æquator: All starres that have their distance from the Eclipticke Northward not more then 23. degrees and an halfe, which is the greatest distance of the Eclipticke from the Æquator, may in progression of time have declination Southward, and move beyond the Æquator: but if any starre hath just this distance of 23. and an halfe, as hath Cappella on the backe of Eridanionius, it may hereafter move under the Æquinoctiall, and the same will happen respectively unto starres which have declination Southward: and therefore many starres may be visible in our Hemisphere, which are not so at present, and many which are at present, shall take leave of our Horizon, and appeare unto Southerne habitations; and therefore the

the time may come that the Dogge-starre may not be visible in our Horizon, and the time hath beene, when it hath not shewed it selfe unto our neighbour latitudes; so that canicular dayes there have beene none nor shall be, yet certainly in all times some season of the yeare more notable hot then other.

Lastly, wee multiply causes in vaine, for the reason hereof wee need not have recourse unto any starre but the Sunne and the continuitie of its action: For the Sunne ascending into the Northerne signes, begetteth first a temperate heat in the ayre, which by his approach unto the solstice he intendeth, and by continuation increaseth the same even upon declination; for running over the same degrees again, that is in Leo, which hee hath done in Taurus, in Iuly which he did in May, he augmenteth the heat in the later which he began in the first, and easily intendeth the same by continuation which was well promoted before: So is it observed that they which dwell between the Tropicks and the Æquator, have their second summer hotter and more maturative of fruits then the former: so we observe in the day (which is a short year) the greatest heat about two in the afternoone, when the Sunne is past the Meridian (which is his diurnall Solstice) and the same is evident from the Thermometer or observations of the weather-glasse; so are the colds of the night sharper in the summer about two or three after midnight, and the frosts in winter stronger about those houres: so likewise in the yeare we observe the cold to augment, when the dayes begin to increase, though the Sunne be then ascensive, and returning from the winter Tropicke, and therefore if wee rest not in this reason for the heat in the declining part of summer, we must discover freezing stars that may resolve the latter colds of winter, which who ever desires to invent, let him studie the starres of Andromeda, or the nearer constellation of Pegasus, which are about that time ascendent.

It cannot therefore unto reasonable constructions seeme strange, or favour of singularity that we have examined this point, since the same hath beene already denied by some, since the authoritie and observations of the Ancients rightly understood doe not confirme it, since our present computes are different from those of the Ancients, whereon notwithstanding they depend; since there is reason against it, and if all were granted, yet must it be maintained with manifold restraints, farre otherwise then is received; and lastly since from plaine and naturall principles, the doubt may be fairely salved, and not clapt up from petitionary foundations and principles unestablished.

But that which chiefly promoted the consideration of these dayes, and medically advanced the same, was the doctrine of Hippocrates a Physicion of such repute, that he received a testimony from a Christian, that might have beene given unto Christ: The first in his booke *de Aere, Aquis, & locis, Syderum ortus, &c.* That is, wee are to observe

the rising of Starres, especially the Dogge-starre, Arcturus, and the setting of the Pleiades or seven Starres; from whence notwithstanding wee cannot in generall inferre the efficacie of these Stars, or coëfficacie particular in medications: probably expressing no more hereby then if hee should have plainly said, especiall notice wee are to take of the hottest time in Summer, of the beginning of Autumne and winter, for by the rising and setting of those starres were these times and seasons defined; and therefore subjoynes this reason, *Quoniam his temporibus morbi finiuntur*, because at these times diseases have their ends, as Physitions well know, and hee else where affirmeth, that seasons determine diseases, beginning in their contraries, as the spring the diseases of Autumne, and the summer those of winter; now (what is very remarkable) whereas in the same place he adviseth to observe the times of notable mutations, as the Æquinoxes, and the Solstices, and to decline Medication tenne dayes before and after, how precisely soever canicular cautions be considered, this is not observed by Physitions, nor taken notice of by the people. And indeed should we blindly obey the restraints both of Physitions and Astrologers, we should contract the liberty of our prescriptions, and confine the utility of Physicke unto a very few dayes; for observing the Dogdayes, and as is expressed some dayes before, and likewise tenne dayes before, and after the Æquinoctiall and Solsticiall points, by this observation alone are exempted above an hundred dayes; whereunto if we adde the two Egyptian dayes in every moneth, the interlunary and plenilunary exemptions, the Eclipses of Sunne and Moone, conjunctions and oppositions Planeticall, the houses of Planets, and the site of the Luminaries under the signes, (wherein some would induce a restraint of Purgation or Phlebotomy) there would arise above an hundred more; so that of the whole year the use of Physicke would not be secure much above a quarter; now as we doe not strictly observe these dayes, so need we not the other, and although consideration bee made hereof, yet might wee preserve the nearer Indications, before those which are drawn from the time of the year, or other celestiall relation.

The second Testimony is taken out of the last peece of his Age, and after the experience (as some thinke) of no lesse then an hundred years, and that is his booke of Aphorismes, or short and definitive determinations in Physicke; the Aphorisme alleadged is this, *sub Cane & ante Canem difficiles sunt purgationes*, *sub Cane & Anticane*, say some, including both the Dogstarres, but that cannot consist with the Greek *ὑπὸ κυνῶν καὶ ἀντικυνῶν*, nor had that Criticisme been ever omitted by Galen; now how true this sentence was in the mouth of Hippocrates, and with what restraint it must be understood, will readily appear from the difference between us in circumstantiall relations.

And first, concerning his time and Chronologie, he lived in the

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reigne of Artaxerxes Longimanus about the 82. Olympiade, 450. yeares before Christ, and from our times above two thousand. Now since that time (as we have already declared) the Starres have varied their longitudes, and having made large progressions from West to East, the time of the Dogstars ascent must also very much alter; for it ariseth later now in the yeare, then it formerly did in the same latitude, and far later unto us who have a greater elevation; for in the dayes of Hippocrates this Starre ascended in Cancer which now ariseth in Leo, and will in progression of time arise in Virgo; and therefore in regard of the time wherein he lived, the Aphorisme was more considerable in his dayes then it is to us, or unto his country in ours.

The place of his nativity was Coos, an Island in the Myrtoan Sea, not far from Rhodes, described in Mappes by the name of Lango, and called by the Turkes who are masters thereof Stancora, according unto Ptolomie of Northerne latitude 36. degrees; that he lived and writ in these parts, is not improbably collected from the Epistles that passed betwixt him and Artaxerxes, as also between the Citizens of Abdera, and Coos, in the behalfe of Democritus; which place being seated from our latitude of 52, 16 degrees Southward, there will arise a different consideration, and we may much deceive our selves if we conforme the ascent of Starres in one place unto another, or conceive they arise the same day of the moneth in Coos and in England; for as Petavius computes in the first Julian yeare, at Alexandria of latitude 31. the Starre arose cosmically in the twelfth degree of Cancer, Heliacally the 26. by the compute of Geminus about this time at Rhodes of latitude 37. it ascended cosmically the 16 of Cancer, Heliacally the first of Leo; and about that time at Rome of latitude 42. cosmically the 22. of Cancer and Heliacally the first of Leo, for unto places of greater latitude it ariseth ever later, so that in some latitudes the cosmicall ascent happeneth not before the twentieth degree of Virgo, ten dayes before the Autumnall Æquinox, and if they compute Heliacally after it in Libra.

Again, should we allow all, and only compute unto the latitude of Coos, yet would it not impose a totall omission of Physicke; for if in the hottest season of that clime, all Physicke were to be declined, then surely in many other, none were to be used at any time whatsoever, for unto many parts, not only in the Spring and Autumne, but also in the Winter the Sun is nearer, then unto the clime of Coos in the Summer.

The third consideration concerneth purging medicines, which are at present far different from those implied in this Aphorisme, and such as were commonly used by Hippocrates; for three degrees wee make of purgative medicines: The first thereof is very benigne, nor far removed from the nature of Aliment, into which upon defect of working, it is oft times converted, and in this forme do we account Manna, Cassia,

Cassia, Tamarindes and many more, whereof we finde no mention in Hippocrates: the second is also gentle, having a familiarity with some humor, into which it is but converted if it faile of its operation; of this sort are Aloe, Rhabarbe, Senna, &c. whereof also few or none were knowne unto Hippocrates: The third is of a violent and venemous quality, which frustrate of its action, assumes as it were the nature of poyson, such as are Scammonium, Colocynthis, Elaterium, Euphorbium, Tithymallus, Laureola, Peplum, &c. of this sort it is manifest Hippocrates made use, even in Fevers, Pleurifies and Quinsies; and that composition is very remarkable which is ascribed unto Diogenes in Aëtius, that is of Pepper, Sal Armoniac, Euphorbium, of each an ounce, the Dosis whereof foure scruples and an half, which whosoever should take, would finde in his bowells more then a canicular heat though in the depth of Winter; many of the like nature may be observed in Aëtius Tetrab. 1. Serm. 3. or in the book *De Dinamidiis*, ascribed unto Galen, which is the same *verbatim* with the other.

Now in regard of the second, and especially the first degree of Purgatives, the Aphorisme is not of force, but we may safely use them, they being benigne and of innoxious qualities; and therefore Lucas Gauricus, who hath endeavoured with many testimonies to advance this consideration, at length concedeth that lenitive Physicke may bee used, especially when the Moone is well affected in Cancer or in the watery signes; but in regard of the third degree the Aphorisme is considerable; purgations may be dangerous, and a memorable example there is in the medecall Epistles of Crucius, of a Roman Prince that dyed upon an ounce of Diaphanicon, taken in this season; from the use whereof we refraine not only in hot seasons, but warily exhibit it at all times in hot diseases, which when necessity requires we can performe more safely then the Ancients, as having better wayes of preparation and correction; that is, not onely by addition of other bodyes, but separation of noxious parts from their own.

But beside these differences between Hippocrates and us, the Physicians of these times and those of Antiquity, the condition of the disease, and the intention of the Physician, holds a maine consideration in what time and place soever: for Physicke is either curative or preventive; Preventive we call that which by purging noxious humors, and the causes of diseases preventeth sicknesse in the healthy, or the recourse thereof in the valetudinary; and this is of common use both at the Spring and Fall, and we commend not the same at this season: Therapeutick or curative Physicke, we teame that which restoreth the Patient unto sanity, and taketh away diseases actually affecting; now of diseases some are cronicall and of long duration, as quartane Agues, Scurvy, &c. wherein because they admit of delay we deferre the cure to more advantageous seasons: others wee teame acute, that is of short

short duration and danger, as Fevers, Pleurifies, &c. in which, because delay is dangerous, and they arise unto their state before the Dog-dayes determine, we apply present remedies according unto Indications, respecting rather the acutenesse of the disease, and precipitancy of occasion, then the rising or setting of Stars, the effects of the one being disputable, of the other assured and inevitable.

And although Astrologie may here put in, and plead the secret influence of this Starre; yet Galen I perceive in his Comment, makes no such consideration, confirming the truth of the Aphorisme from the heat of the yeare, and the operation of Medicines exhibited, in regard that bodies being heated by the Summer, cannot so well endure the acrimony of purging Medicines, and because upon purgations contrary motions ensue, the heat of the Ayre attracting the humours outward, and the action of the Medicine retracting the same inward: but these are readily salved in the distinctions before alleadged, and particularly in the constitution of our climate and divers others, wherein the Ayre makes no such exhaustion of spirits; and in the benignity of our Medicines, whereof some in their owne natures, others well prepared, agitate not the humours, or make a sensible perturbation.

Nor do we hereby reject or condemne a sober and regulated Astrology; we hold there is more truth therein then in Astrologers, in some more then many allow, yet in none so much as some pretend; we deny not the influence of the Stars, but often suspect the due application thereof; for though we should affirme that all things were in all things, that heaven were but earth celestified, and earth but heaven terrestri-fied, or that each part above had an influence upon its devided affinity below; yet how to single out these relations, and duely to apply their actions is a worke oft times to be effected by some revelation, and Cabala from above, rather then any Philosophy, or speculation here below; what power soever they have upon our bodies, it is not requisite they should destroy our reasons, that is, to make us rely on the strength of Nature, when she is least able to relieve us, and when we conceive the heaven against us, to refuse the assistance of the earth created for us; this were to suffer from the mouth of the Dog above, what others doe from the teeth of Dogs below; that is, to be afraid of their proper remedy, and refuse to approach any water, though that hath often proved a cure unto their disease. There is in wise men a power beyond the stars; and Ptolomy encourageth us, that by fore-knowledge, wee may evade their actions; for, being but universall causes, they are determined by particular agents, which being inclined not constrained, containe within themselves the casting act, and a power to command the conclusion.

Lastly, if all be conceded, and were there in this Aphorisme an unrestrained

Upon the biting of a mad dog there ensues an hydrophobia or fear of water.

restrained truth, yet were it not reasonable to inferre from a caution a non-usance or abolition, from a thing to bee used with discretion, not to be used at all; because the Apostle bids us beware of Philosophy, heads of extremity will have none at all; an usuall fallacie in vulgar and lesse distinctive braines, who having once overshot the mean, run violently on, and finde no rest but in the extreame.

And hereon we have the longer insisted, because the error is materiall, and concernes oftentimes the life of man: an error to bee taken notice of by State, and provided against by Princes, who are of the opinion of Salomon, that their riches consist in the multitude of their Subjects: an error worse then some reputed Heresies, and of greater danger to the body, then they unto the soul, which whosoever is able to reclaime, he shall save more in one Summer, then Themison destroyed in any Autumne; he shall introduce a new way of cure, preserving by Theoric, as well as practice, and men not onely from death, but from destroying themselves.

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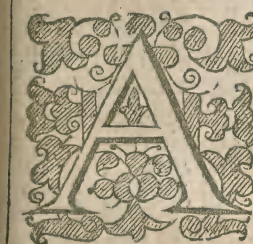


THE FIFTH BOOK.

Of many things questionable as they are commonly described in Pictures.

CHAP. I.

Of the picture of the Pelecan.



And first in every place we meet with the picture of the Pelecan, opening her breast with her bill, and feeding her young ones with the blood distilling from her: Thus is it set forth not onely in common signes, but in the Crest and Scutcheon of many Noble families, hath been asserted by many holy Writers, and was an Hieroglyphicke of pittie and pittie among the Egyptians, on which consideration, they spared them at their tables.

Notwithstanding upon enquire we finde no mention hereof in Ancient Zoographers, and such as have particularly discoursed upon Animals, as Aristotle, Aelian, Plinie, Solinus and many more, who seldom forget proprieties of such a nature, and have beene very punctuall in lesse considerable Records: Some ground hereof I confesse wee may allow, nor need wee deny a remarkable affection in Pelecans toward their young, for Aelian discoursing of Storkes, and their affection toward their brood whom they instruct to flie, and unto whom they redeliver up the provision of their bellies, concludeth at last, that Herons and Pelecans do the like.

As for the testimonies of ancient Fathers, and Ecclesiasticall writers, we may more safely conceive therein some Emblematicall then any reall Storie: so doth Eucherius confesse it to bee the Embleme of Christ; and wee are unwilling literally to receive that account of Jerome, that perceiving her young ones destroyed by Serpents, she openeth her side with her bill, by the blood whereof they revive and return unto life againe; by which relation they might indeed illustrate the destruction

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struction of man by the old Serpent, and his restorement by the blood of Christ; and in this sense we shall not dispute the like relations of Augustine, Isidore, Albertus, and many more, and under an Emblematicall intention, we accept it in coat armour.

As for the Hieroglyphick of the Egyptians, they erected the same upon another Story, that is, from earnestly protecting her young, when her nest was set on fire; for as for letting out her blood, it was not the assertion of the Egyptians, but seemes translated unto the Pelecan from the Vulture, as Pierius hath most plainly delivered. *Sed quod Pelicanum (ut etiam alijs plerisque persuasum est) rostro pectus dissecantem pingunt, ita ut suo sanguine filios alat, ab Egyptiorum historia valde alienum est, illi enim vulturem tantum id facere tradiderunt.*

And lastly, as concerning the picture, if naturally examined, and not Hieroglyphically conceived, it containeth many improprieties, disagreeing almost in all things from the true and proper description: for first, whereas it is commonly set forth green or yellow, in its proper colour, it is inclining to white, excepting the extremities or tops of the wing feathers, which are black: It is described in the bignesse of a Henne, whereas it approacheth and sometimes exceedeth the magnitude of a Swanne; it is commonly painted with a short bill, whereas that of the Pelecan attaineth sometimes the length of two spannes. The bill is made acute or pointed at the end, whereas indeed it is flat and broad, and somewhat inverted at the extreame. It is described like fissipedes, or birdes which have their feet or clawes divided; whereas it is palmipedous, or fin-footed like Swannes and Geese, according to the Methode of nature, in latirostrous or flat billed birdes, which being generally swimmers, the organ is wisely contriv'd unto the action, and they are framed with fins or oares upon their feet; and therefore they neither light, nor build on trees, if we except Cormorants, who make their nests like Herons. Lastly, there is one part omitted more remarkeable then any other, and that is the chowle or croppe adhering unto the lower side of the bill, and so descending by the throat, a bagge or sachell very observable, and of capacity almost beyond credit, which notwithstanding, this animall could not want; for therein (as Aristotle, Ælian, and Bellonius since averreth) it receiveth Oysters, Cochles, Sckollops, and other testaceous animals, which being not able to breake, it retaines them untill they open, and vomiting them up, takes out the meat contained. This is that part preserved for a rarity, and wherein (as Sanctius delivers) in one dissected, a Negro childe was found.

CHAP. II.

Of the picture of Dolphins.

THat Dolphins are crooked, is not onely affirmed by the hand of the Painter, but commonly conceived their naturall and proper figure; which is not onely the opinion of our times, but seemes the belief of elder times before us: for beside the expressions of Ovid and Pliny, their Pourtraicts in some ancient Coynes are framed in this figure, as will appeare in some thereof in Gesner, others in Goltzius, and Lævinus Hulsius in his description of Coynes, from Julius Cæsar unto Rhodolphus the second.

Notwithstanding, to speake strictly in their naturall figure they are straight, nor have they their spine connexed, or more considerably embowed, then Sharkes, Porposes, Whales, and other Cetaceous animalls, as Scaliger plainly affirmeth; *Corpus habet non magis curvum quam reliqui pisces*; as ocular enquiry informeth, and as unto such as have not had the opportunitie to behold them, their proper pourtraicts will discover in Rondeletius, Gesner, and Aldrovandus, and as indeed is deducible from pictures themselves; for though they be drawne repandous, or connexedly crooked in one piece, yet the Dolphin that carrieth Arion is concavously inverted, and hath its spine depressed in another.

And therefore what is delivered of their incurvitie, must either be taken Emphatically, that is not really but in appearance; which happeneth, when they leap above water, and suddenly shoot downe againe; which is a fallacy in vision, whereby straight bodies in a sudden motion protruded obliquely downeward, appear unto the eye crooked, and this is the construction of Bellonius: or if it be taken really, it must not universally and perpetually, that is, not when they swimme and remaine in their proper figures, but onely when they leape, or impetuously whirle their bodies any way, and this is the opinion of Gesnerus. Or lastly, it must be taken neither really, nor Emphatically, but onely Emblematically; for being the Hieroglyphick of celerity, and swifter then other animals, men best expressed their velocity by incurvity, and under some figure of a bowe, and in this sense probably doe Heralds also receive it; when from a Dolphin extended, they distinguish a Dolphin imbowed.

And thus also must that picture be taken of a Dolphin clasping an Anchor; that is not really, as is by most conceived out of affection unto man, conveying the Anchor unto the ground, but Emblematically, according as Pierius hath expressed it, The swiftest animall conjoyned with that heavey body; implying that common morall, *Festina lente*, and that celerity should always be tempered with cunctation.

CHAP. III.

Of the Picture of a Grasshopper.

There is also among us a common description and picture of a Grasshopper, as may be observed in the pictures of Emblematists in the coats of severall families, and as the word *Cicada* is usually translated in Dictionaries; wherein to speake strictly, if by this word Grasshopper, we understand that animall which is implied by *τέρας* with the Greeks, and by *Cicada* with the Latines, we may with safety affirme the Picture is widely mistaken, and that for ought enquiry can informe, there is no such insect in England, which how paradoxicall soever, upon a strict enquiry, will prove undeniable truth.

For first, that animall the French tearme *Sauterelle*, we a Grasshopper, and which under this name is commonly described by us, is named *Αχρίς* by the Greekes, by the Latines *Locusta*, and by our selves in proper speech a Locust; as in the dyet of John Baptist, and in our Translation, Prov. 30. The Locusts have no King, yet goe they forth all of them by bands. Againe, between the *Cicada* and that wee call a Grasshopper, the differences are very many, as may bee observed in themselves, or their descriptions in Mathiolus, Aldrovandus, and Mussetus: for first, they are differently cucullated or capuched upon the head and backe, and in the *Cicada* the eyes are more prominent, the Locusts have *Antennae* or long hornes before, with a long falcation or forcipated tayle behinde, and being ordained for saltation, their hinder legs doe far exceed the other. The Locust or our Grasshopper hath teeth, the *Cicada* none at all, nor any mouth according unto Aristotle, the *Cicada* is most upon trees; and lastly, the note or fritiniacy thereof is far more shrill then that of the Locust, and its life so short in Summer, that for provision it needs not recourse unto the providence of the Pismire in Winter.

And therefore where the *Cicada* must be understod, the pictures of Heralds and Emblematists are not exact, nor is it safe to adhere unto the interpretation of Dictionaries, and we must with candour make out our owne Translations: for in the plague of Egypt, Exodus 10. the word *Αχρίς* is translated a Locust, but in the same sense and subject, Wisdome 16. it is translated a Grasshopper, For them the bitings of Grasshoppers and flies killed: whereas we have declared before the *Cicada* hath no teeth, but is conceived to live upon dew, and the possibility of its subsistence is disputed by Licetus. Hereof I perceive Mussetus hath taken notice, and dissenteth from Langius and Lycostenes, while they deliver, the *cicada*'s destroyed the fruits in Germany, where indeed that insect is not found; and therefore concludeth, *Tam ipsos*

quam

quam alios deceptos fuisse autumno, dum locustas cicadas esse vulgari errore crederent.

And hereby there may be some mistake in the due dispensation of medicines desumed from this animall, particularly of Diatettigon commended by Aëtius in the affections of the kidneys: It must be likewise understood with some restriction what hath been affirmed by Isidore, which is yet delivered by many, that Cicades are bred out of Cuccow spittle, or Woodseare; that is, that spumous frothy dew or exudation or both, found upon Plants, especially about the joynts of Lavender and Rosemary, and observable with us about the latter end of May; for here the true cicada is not bred, but certaine it is, that out of this, some kinde of locust doth proceed; for herein may be discovered a little insect of a festucine or pale green, resembling in all parts a Locust, or what we call a Grasshopper.

Lastly, the word it selfe is improper, and the tearme of Grasshopper not appliable unto the Cicada; for therein the organs of motion are not contrived for saltation, nor are the hinder legges of such extension, as is observable in salient animalls, and such as move by leaping; whereto the Locust is very well conformed; for therein the legs behinde are longer then all the body, and make at the second joynt acute angles, at a considerable advancement above their backs.

The mistake therefore with us might have its originall from a defect in our language; for having not the insect with us, we have not fallen upon its proper name, and so make use of a tearme common unto it and the Locust, whereas other countries have proper expressions for it; so the Italian calls it *cicada*, the Spaniard *cigarra*, and the French *cigale*; all which appellations conforme unto the originall, and properly expresse this animall.

CHAP. IV.

Of the picture of the Serpent tempting Eve.

IN the picture of Paradice, and delusion of our first Parents, the Serpent is often described with humane visage, and not unlike unto Cadmus, or his wife, in the act of their Metamorphosis, which is not meerly a pictoriall contrivance or invention of the Painter, but an ancient tradition and conceived reallity, as it stands delivered by Beda and Authors of some Antiquity; that is, that Sathan appeared not unto Eve in the naked forme of a Serpent, but with a Virgins head, that thereby he might become more acceptable, and his temptation finde the easier entertain; which neverthelesse is a conceit not to bee admitted, and the plaine and received figure, is with better reason embraced.

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For first, as Pierius observeth from Barcephas, the assumption of humane shape, had proved a disadvantage unto Sathan; affording not only a suspicious amazement in Eve, before the fact, in beholding a third humanity beside her self and Adam; but leaving some excuse unto the woman, which afterward the man tooke up with lesser reason; that is, to have been deceived by another like her selfe.

Againe, there was no inconvenience in the shape assumed, or any considerable impediment that might disturbe that performance in the common forme of a Serpent: for whereas it is conceived the woman must needs be afraid thereof, and rather flye then approach it, it was not agreeable unto the condition of Paradise and state of innocencie therein; if in that place as most determine, no creature was hurtfull or terrible unto man, and those destructive effects they now discover succeeded the curse, and came in with them is chiefe of thornes and briars, and therefore Eugubinus (who affirmeth this Serpent was a Basiliske) incurreth no absurdity, nor need we inferre that Eve should bee destroyed immediatly upon that Vision; for noxious animalls could offend them no more in the Garden, then Noah in the Arke: as they peaceably received their names, so they friendly possessed their natures: and were their conditions destructive unto each other, they were not so unto man, whose constitutions were antidotes, and needed not feare poysons; who had not incurred mortality. And if (as most conceive) there were but two created of every kinde, they could not at that time destroy either man or themselves; for this had frustrated the command of multiplication, destroyed a species, and imperfected the Creation: and therefore also if Cain were the first man borne, with him entred not only the act, but the first power of murther; for before that time neither could the Serpent nor Adam destroy Eve, nor Adam and Eve each other, for that had overthrowne the intention of the world, and put its Creator to act the sixt day over againe.

Moreover, whereas in regard of speech, and vocall conference with Eve, it may be thought he would rather assume an humane shape and organs, then the improper forme of a Serpent, it implyes no materiall impediment; nor need we to wonder how he contrived a voice out of the mouth of a Serpent, who hath done the like out of the belly of a Pythonissa, and the trunk of an Oake, as he did for many yeares at Dodona.

Lastly, whereas it might be conceived that an humane shape was fitter for this enterprise, it being more then probable she would be amazed to heare a Serpent speak; some conceive she might not yet be certaine that onely man was priviledged with speech, and being in the novelty of the Creation, and inexperience of all things, might not bee affrighted to hear a Serpent speak. Beside she might be ignorant of their natures

natures who was not versed in their names, as being not present at the generall survey of Animalls, when Adam assigned unto every one a name concordant unto its nature; nor is this only my opinion, but the determination of Lombard and Tostatus, and also the reply of Cyrill unto the objection of Julian, who compared this story unto the fables of the Greekes.

CHAP. V.

Of the Picture of Adam and Eve with Navells.

ANother mistake there may be in the picture of our first Parents, who after the manner of their posterity are both delineated with a Navell: and this is observable not only in ordinary and stayned pcees, but in the Authenticke draughts of Urbin, Angelo, and others; which notwithstanding cannot be allowed, except we impute that unto the first cause, which we impose not on the second, or what we deny unto nature, we impute unto Naturity it selfe; that is, that in the first and most accomplished peece, the Creator affected superfluities, or ordained parts without all use or office.

For the use of the Navell is to continue the infant unto the Mother, and by the vessells thereof to convey its aliment and sustentation: the vessells whereof it consisteth, are the umbilicall veyne, which is a branch of the Porta, and implanted in the liver of the Infant; two Arteries likewise arising from the Iliacall branches, by which the Infant receiveth the purer portion of bloud and spirits from the mother; and lastly, the Urachos or ligamentall passage derived from the bottome of the bladder, whereby it dischargeth the waterish and urinary part of its aliment: now upon the birth when the Infant forsaketh the wombe although it dilacerate, and breake the involving membranes, yet doe these vessells hold, and by the mediation thereof the Infant is connected unto the wombe not only before, but a while also after the birth: these therefore the midwife cutteth off, contriving them into a knot close unto the body of the Infant, from whence ensueth that tortuosity or complicated nodosity we usually call the Navell, occasioned by the colligation of vessells before mentioned: now the Navell or vessells whereof it is constituted, being a part precedent, and not subservient unto generation, nativity, or parturition, it cannot be well imagined at the creation or extraordinary formation of Adam, who immediately issued from the Artifice of God; nor also that of Eve, who was not solemnly begotten, but suddenly framed, and anomalously proceeded from Adam.

And if we be led into conclusions that Adam had also this part, because we behold the same in our selves, the inference is not reasonable; for

for it we conceive the way of his formation, or of the first animalls did carry in all points a strict conformity unto succeeding productions, we might fall into imaginations that Adam was made without teeth, or that hee ran through those notable alterations in the vessells of the heart, which the Infant suffereth after birth: we need not dispute whether the egge or bird were first, and might conceive that dogges were created blind, because we observe they are littered so with us; which to affirm, is to confound, at least to regulate creation unto generation, the first acts of God, unto the second of Nature, which were determined in that generall indulgence, Encrease and multiply, produce or propagate each other; that is, not answerably in all points, but in a prolonged method according to seminall progression: for the formation of things at first was different from their generation after; and although it had no thing to precede, it was aptly contrived for that which should succeed it: and therefore though Adam were framed without this part, as having no other wombe then that of his proper principles, yet was not his posterity without the same: for the feminallty of his fabricke contained the power thereof, and was endued with the science of those parts whose predestinations upon succession it did accomplish.

All the Navell therefore and conjunctive part we can suppose in Adam, was his dependency on his Maker, and the connexion he must needs have unto heaven, who was the Son of God, for holding no dependence on any preceding efficient but God, in the act of his production there may bee conceived some connexion, and Adam to have been in a momentall Navell with his Maker: and although from his carnality and corporall existence the conjunction seemeth no nearer then of causality and effect, yet in his immortall and diviner part hee seemed to hold a nearer coherence, and an umbilicality even with God himselfe: and so indeed although the propriety of this part bee found but in some animalls, and many species there are which have no navell at all, yet is there one linke and common connexion, one generall ligament, and necessary obligation of all whatever unto God; whereby although they act themselves at distance, and seem to be at loose, yet doe they hold a continuity with their Maker; which catenation or conserving union when ever his pleasure shall divide, let goe, or separate, they shall fall from their existence, essence, and operations; in briebe, they must retire unto their primitive nothing, and shrinke in to their Chaos againe.

CHAP. VI.

Of the Pictures of Easterne Nations, and the Jews at their feasts, especially our Saviour at the Passeeover.

Concerning the pictures of the Jews, and Easterne Nations at their feasts, concerning the gesture of our Saviour at the Passeeover, who

is usually described sitting upon a stoole or bench at a square table, in the midst of the twelve, many make great doubt; and though they concede a table gesture will hardly allow this usuall way of Session.

Wherein restraining no mans enquiry, it will appeare that accubation, or lying downe at meales was a gesture used by very many nations. That the Parthians used it, is evident from Athenæus, who delivereth out of Possidonius, that their King lay downe at meales, on an higher bed then others. That Cleopatra thus entertained Anthonie, the same Author manifesteth when he saith, shee prepared twelve Tricliniums. That it was in use among the Greeks, the word Triclinium implyeth, and the same is also declareable from many places in the Symposiacks of Plutarke. That it was not out of fashion in the dayes of Aristotle, hee declareth in his Politicks, when among the Institutionary rules of youth, he adviseth they might not be permitted to heare Iambicks and Tragedies before they were admitted unto discumbency or lying along with others at their meales. That the Romanes used this gesture at repast, beside many more is evident from Lipsius, Mercurialis, Salmasius, and Ciaconius who have expressly and distinctly treated hereof.

Now of their accumbing places, the one was called Stibadion and Sigma, carrying the figure of an halfe Moone, and of an uncertaine capacity, whereafter it received the name of Hexaclinon, Octoclinon, according unto that of Martial,

Accipe Lunata scriptum testudine Sigma

Octo capit, veniat quisquis amicus erit.

Here at the left wing was the principall place, and the most honourable person, if hee were not master of the feast possessed that roome. The other was termed Triclinium, that is, Three beds encompassing a table, as may be seen in the figures thereof, and particularly in the Rhamnusian Triclinium, set down by Mercurialis. The customary use hereof was probably deduced from the frequent use of bathing, after which they commonly retired to bed, and relected themselves with repast; and so that custome by degrees changed their cubicular beds into discubitory, and introduced a fashion to goe from the bathes unto these.

As for their gesture or position, the men lay downe leaning on their left elbow, their backe being advanced by some pillow or soft substance; the second lay so with his backe towards the first, that his head attained about his bosome; and the rest in the same order: For women, they sat sometimes distinctly with their sexe, sometime promiscuously with men, according to affection or favour, as is delivered by Juvenal — *Gremio jacuit nova nupta mariti* — and by Suetonius of Caligula, that at his feasts he placed his sisters, with whom hee had beene incontinent, successively in order below him.

Again, as their beds were three, so the guests did not usually exceed that

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Euripides, Sophocles, and all humane Authors; and the like we meete with in the paraphrasticall expression of Nonnus.

And thus may it properly be made out; what is delivered John 13. *Erat recumbens unus ex Discipulis ejus in sinu Iesu quem diligebat*; Now there was leaning on Jesus bolome one of his Disciples whom Jesus loved; which gesture will not so well agree unto the position of sitting, but is naturall, and cannot be avoyded in the Laws of accubation; and the very same expression is to be found in Pliny, concerning the Emperour Nerva and Veiento whom he favoured, *Canabat Nerva cum paucis, Veiento recumbebat propius atq; etiam in sinu*; and from this custome arose the word *ἑταῖρος*, that is, a neere and bolome friend: and therefore Causabon justly rejecteth Theophylact, who not considering the ancient manner of decumbency, imputed this gesture of the beloved Disciple unto Rusticity, or an act of incivility; And thus also have some conceived; it may be more plainly made out what is delivered of Mary Magdalen, Luke 7. That she stood at Christs feet behinde him weeping, and began to wash his feet with teares, and did wipe them with the haire of her head; which actions, if our Saviour sate, she could not performe standing, and had rather stood behinde his back, then at his feet; and thus it cannot be reconciled what is observable in many pieces, and even of Raphaell Urbin, wherein Mary Magdalen is pictured before our Saviour, washing his feet on her knees, which will not consist with the strict description and letter of the Text.

Now whereas this position may seeme to be discountenanced by our Translation, which usually renders it sitting, it cannot have that illation; for the French and Italian translations expressing neither position of session or recubation, do onely say that he placed himselfe at the table, and when ours expresseth the same by sitting, it is in relation unto our custome, time, and apprehension; and the like upon occasion is not unusuall in our translation; so when it is said Luke 4. *πῶς το ἐκλείον*, and the Vulgar renders it, *Cum plicasset librum*, ours translateth it, he shut or closed the booke, which is an expression proper unto the paginall books of our times, but not so agreeable unto volumes or rolling bookes in use among the Jews, not onely in elder times, but even unto this day. So when it is said, the Samaritan delivered unto the host two pence for the provision of the Levite; and when our Saviour agreed with the Labourers for a penny a day, in strict translation it should be seven pence halfe penny, and is not to be conceived our common penny, the sixtieth part of an ounce; for the word in the Originall is *δηνάριον*, in Latine, *Denarius*, and with the Romans did valew the eight part of an ounce, which after five shillings the ounce amounteth unto seven pence halfe penny of our money.

Lastly, whereas it might be conceived that they ate the Passeeover standing

standing rather then sitting, or lying downe, according to the Institution, Exod. 12. Thus shall you eat with your loynes girded, your shooes on your feet, and your staffe in your hand; the Jews themselves reply, this was not required of succeeding generations, and was not observed, but in the Passeeover of Ægypt, and so also many other injunctions were afterward omitted, as the taking up of the Paschall Lambe, from the tenth day, the eating of it in their houses dispersed, the striking of the bloud on the dore posts, and the eating thereof in haste; solemnities and Ceremonies primitively enjoined, afterward omitted, as was also this of station, for the occasion ceasing, and being in security, they applyed themselves unto gestures in use among them.

CHAP. VII.

Of the picture of our Saviour with long hayre.

ANother picture there is of our Saviour described with long haire, according to the custome of the Jews, and his description sent by Lentulus unto the Senate; wherein indeed the hand of the Painter is not accusable, but the judgement of the common Spectator, conceaving he observed this fashion of his hayre, because he was a Nazarite, and confounding a Nazarite by vow, with those by birth or education.

The Nazarite by vow is declared Numb. 6. and was to refraine three things, drinking of Wine, cutting the hayre, and approaching unto the dead, and such a one was Sampson: Now that our Saviour was a Nazarite after this kinde, we have no reason to determine, for he dranke wine, and was therefore called by the Pharisees *δινωπότης*, a Wine bibber; he approached also the dead, as when he raised from death Lazarus, and the daughter of Jairus.

The other Nazarite was a Topicall appellation, and applyable unto such as were borne in Nazareth, a City of Galilee, and in the Tribe of Napthali; neither if strictly taken, was our Saviour in this sense a Nazarite; for he was borne in Bethleem in the Tribe of Judah; but might receave that name, because he abode in that City, and was not onely conceived therein, but there also passed the silent part of his life, after his returne from Ægypt, as is delivered by Matthew, And he came and dwelt in a City called Nazareth, that it might be fulfilled which was spoken by the Prophet, he shall be called a Nazarene; both which kindes of Nazarites, as they are distinguishable by Zain, and Tsade in the Hebrew, so in the Greeke, by Alpha and Omega; for as Jansenius observeth, where the votary Nazarite is mentioned, it is written *Ναζαρείτης*, as Levit. 6. and Lamentations the fourth, where it is spoken of our Saviour, we reade it *Ναζαρεν*, as in Matthew, Luke, and

and John, onely Marke who writ his Gospell at Rome did Latinize and wrote it *Nazareth*.

CHAP. VIII.

Of the picture of Abraham sacrificing Isaac.

IN the picture of the Immolation of Isaac, or Abraham sacrificing his son, Isaac is described as a little boy, which notwithstanding is not consentaneous unto the authority of Expositors, or the circumstance of the Text; for therein it is delivered that Isaac carried on his back the wood for the sacrifice, which being an holocaust or burnt offering to be consumed unto ashes, we cannot well conceive the wood a burthen for a boy, but such a one unto Isaac, as that which it typified was unto Christ, that is, the wood or crosse whereon he suffered, which was too heavy a load for his shoulders, and was faine to be relieved therein by Simon of Cyrene.

Again, he was so farre from a boy, that he was a man growne, and at his full stature, if we beleve Josephus, who placeth him in the last of Adolescence, and makes him twenty five yeares old; and whereas in the vulgar Translation he is termed *puer*, it must not be strictly apprehended, (for that age properly endeth in puberty, and extendeth but unto fourteen) but respectively unto Abraham, who was at that time above sixscore: And therefore also herein he was not unlike unto him who was after led dumbe unto the slaughter, and commanded by others, who had legions at command, that is in meeknesse and humble submission; for had he resisted, it had not been in the power of his aged parent to have inforced; and many at his yeares, have performed such acts, as few besides at any: David was too strong for a Lion and a Beare, Pompey had deserved the name of Great, Alexander of the same cognomination was Generalissimo of Greece, and Anniball but one yeare after succeeded Asdruball in that memorable Warre against the Romanes.

CHAP. IX.

Of the Picture of Moses with Hornes.

IN many peeces, and some of ancient Bibles, Moses is described with Hornes; whereof the ground was surely the Hebrew text, in the History of Moses, when he descended from the mount; for therein the originall word being *Æquivocall*, and signifying horned as well as shining, the Vulgar Translation hath retained the former. *Qui videbant faciem egredientis Moses esse cornutam*. But the word in the Sepuagint is *ἀνδρὶ ὁμοιωμένῳ*.

ἐδόξασθαι, that is his face was glorified, and this passage of the Old Testament is well explained by another of the New, that is Corinth. 3. wherein it is delivered that they could not stedfastly behold the face of Moses, *ὅτι τὴν δόξαν τοῦ προσώπου*, that is, for the glory of his face. And surely the exposition of one Text is best performed by another, men vainly interposing their constructions, where the Scripture decideth the controversie; and therefore some have seemed too active in their expositions, who in the story of Rahab the harlot, have given notice that the word also signifieth an Hostesse; for in the Epistle to the Hebrewes, she is plainly tearmed *πόρνη*, which signifies not an Hostesse, but a pecuniary and prostituting Harlot, a tearme applyed unto Lais by the Greeks, and distinguished from *ἐμίση*, or *amica*, as may appeare in the thirteenth of Athenæus.

And therefore more allowable is the Translation of Tremellius, then that of the Vulgar, *Quod splendida facta esset cubæ faciei ejus*; or rather as Estius hath interpreted it, *facies ejus erat radiosa*, his face was radiant, and dispersing beames like many hornes and cones about his head; which is also consonant unto the original signification, and yet observed in the peeces of our Saviour, and the Virgin Mary, who are commonly drawne with scintillations, or radiant Halo's about their head; which after the French expression are usually tearmed, the Glory.

Now if besides this occasionall mistake, any man shall contend a propriety in this picture, and that no injury is done unto Truth by this description, because an horn is the hieroglyphick of authority, power & dignity, and in this Metaphor is often used in Scripture, the peece I confesse in this acception is harmelesse and agreeable unto Moses. But if from the common mistake, or any solary consideration we persist in this description, we vilifie the mystery of the irradiation, and authorise a dangerous peece conformable unto that of Jupiter Hammon, which was the Sunne, and therefore described with hornes; as is delivered by Macrobius; *Hammonem quem Deum solem occidentem Lybæ existimant, arietinis cornibus fingunt, quibus id animal valet, sicut radius Sol*: we herein also imitate the picture of Pan, and Pagan emblem of Nature; and if (as Macrobius and very good Authors concede) Bacchus (who is also described with hornes) be the same Diety with the Sunne, and if (as Vossius well contendeth) Moses and Bacchus were the same person, their descriptions must be relative, or the Tauricornous picture of the one, perhaps the same with the other.

CHAP. X.

Of the Scutcheons of the Tribes of Israel.

WE will not passe over the Scutcheons of the tribes of Israel, as they are usually described in the Mappes of Canaan and severall

Gen. 49.

all other peeces; generally conceived to be the proper coats, and distinctive badges of their severall tribes. So Ruben is conceived to bear three Barres wave, Judah a Lion Rampant, Dan a Serpent nowed, Simeon a Sword in pale the point erected, &c. the ground whereof is the last Benediction of Jacob, wherein he respectively draweth comparisons from things here represented.

Now herein although we allow a considerable measure of truth, yet whether as they are usually described, these were the proper cognizances, and coat armes of the Tribes, whether in this manner applyed, and upon the grounds presumed, materiall doubts remaine.

Deut. 33.

For first, they are not strictly made out, from the Propheticall blessing of Jacob; for Simeon and Levi have distinct coats, that is a Sword, and the two tables, yet are they by Jacob included in one Prophecie, Simeon and Levi are brethren, Instruments of cruelties are in their habitations. So Joseph beareth an Oxe, whereof notwithstanding there is no mention in this Prophecie; for therein it is said Joseph is a fruitfull bough, even a fruitfull bough by a well; by which repetition are intimated the two Tribes descending from him Ephraim and Manasse; whereof notwithstanding Ephraim beareth an Oxe: True it is, that many yeares after in the benediction of Moses, it is said of Joseph, His glory is like the firstlings of his Bullocke; and so wee may concede, what Vossius learnedly declarerh, that the Egyptians represented Joseph in the symbole of an Oxe, for thereby was best implied the dreame of Pharaoh, which he interpreted, the benefit by Agriculture, and provident provision of corne which he performed, and therefore did Serapis beare a bushell upon his head.

Againe, if we take these two benedictions together, the resemblances are not appropriate, and Moses therein conformes not unto Jacob, for that which in the Prophecie of Jacob is appropriated unto one, is in the blessing of Moses made common unto others: So whereas Judah is compared unto a Lion by Jacob, Judah is a Lions whelpe; the same is applyed unto Dan by Moses, Dan is a Lions whelpe, he shall leape from Bashan: and also unto Gad, he dwelleth as a Lion, and tearerh the arme with the Crowne of the head.

Numb. 2.

Thirdly, if a Lyon were the proper coat of Judah, yet were it not probably a Lyon Rampant, as it is commonly described, but rather couchant or dormant, as some Heralds and Rabins doe determine, according to the letter of the Text, *Recumbens dormit in Leo*, He coucheth as a Lyon, and as a young Lyon, who shall rouse him?

Lastly, when it is said, Every man of the children of Israel shall pitch by his owne standard with the Ensigne of their fathers house; upon enquiry what these standards and ensignes were there is no small incertainty, and men conforme not unto the Prophecie of Jacob. Christian Expositors are sayne herein to relye upon the Rabbins, who notwithstanding

standing are various in their traditions, and confirme not these common descriptions; for as for inferiour Ensignes either of particular bands or houses they determine nothing at all, and of the foure principle or Legionary standards, that is of Judah, Ruben, Ephraim, and Dan, (under every one whereof marched three tribes) they explaine them very variously. Jonathan who compiled the Thargum, conceives the colours of these banners to answer the precious stones in the breastplate, and upon which the names of the Tribes were engraven. So the standard for the campe of Judah, was of three colours according unto the stones, Chalcedony, Saphir, and Sardonyx; and therein were expressed the names of the three tribes, Judah, Issachar, and Zabulon, and in the middest thereof was witten, Rise up Lord, and let thy enemies be scattered, and let them that hate thee flye before thee; in it was also the pourtrait of a Lyon: The standard of Ruben was also of three colours, Sardine, Topaz, and Amethyst, therein were expressed the names of Ruben, Simeon, and Gad, in the middest was witten, Heare, O Israel, the Lord our God, the Lord is one: Therein was also the pourtraiture of a Hart. But Abenezra and others beside the colours of the field, do set downe other charges, in Rubens the forme of a man or mandrake, in that of Judah a Lyon, in Ephraims an Oxe, in Dan's the figure of an Agle.

Numb. 10.

Deut. 6.

Ezek. 1.

And thus indeed the foure figures in the banners of the principall squadrons of Israel are answerable unto the Cherubins in the vision of Ezechiel, every one carrying the forme of all these: As for the likeness of their faces, they foure had the likeness of the face of a Man; they foure had also the face of an Agle, and the face of a Lyon on the right side, and they foure had the face of an Oxe on the left side, they foure had also the face of an Agle; and conformable hereunto the pictures of the Evangelists (whose Gospells are the Christian banners) are set forth with the addition of a Man or Angell, an Oxe, a Lyon, and an Agle; and these symbolically represent the office of Angells, and Ministers of Gods will; in whom is required understanding as in a Man, courage and vivacity as in the Lyon, service and ministeriall officiousnesse, as in the Oxe, expedition or celerity of execution, as in the Agle.

From hence therefore we may observe that these descriptions the most authenticke of any, are neither agreeable unto one another, nor unto the Scuchions in question; for though they agree in Ephraim and Judah, that is the Oxe and the Lyon, yet doe they differ in those of Dan, and Ruben, as farre as an Agle is different from a Serpent, and the figure of a Man, Hart, or Mandrake, from three Barres wave, wherein notwithstanding we rather declare the incertainty of Armes in this particular, then any way question their antiquity; for hereof more ancient examples there are, then the Scuchions of the Tribes, if Osyris, Mizraim

Mizraim or Jupiter the Just, were the son of Cham; for of his two sons, as Diodorus delivereth, the one for his Device gave a Dogge, the other a Wolfe; and beside the shield of Achilles, and many ancient Greeks, if we receive the conjecture of Vossius, that the Crow upon Corvinus his head, was but the figure of that Animall upon his helmet, it is an example of Antiquity among the Romans.

CHAP. XI.

Of the Pictures of the Sibylls.

THE Pictures of the Sibylls are very common, and for their Prophecies of Christ in high esteem with Christians, described commonly with youthfull faces, and in a defined number; common peeces making twelve, and many precisely ten, observing therein the account of learned Varro; that is, Sibylla Delphica, Erythraea, Samia, Cumana, Cumæa, or Cimmeria, Hellespontica, Lybica, Phrygia, Tiburtina, Persica. In which enumeration I perceive learned men are not satisfied, and many conclude an irreconcilable incertainty; some making more, others fewer, and not this certaine number; for Suidas though he affirme that in divers ages there were ten, yet the same denomination he affordeth unto more; Boysardus in his Tract of Divination hath set forth the Icons of these Ten, yet addeth two others, Epirotica, and Ægyptia, and some affirme that Prophesying women were generally named Sibylls.

Others make them fewer: Martianus Capella two, Pliny and Solinus three, Ælian foure, and Salmasius in effect but seven; for discoursing hereof in his Plinian Exercitations, he thus determineth; *Ridere licet hodiernos Pictores, qui tabulas proponunt Cumana, Cumæa, & Erythraea, quasi trium diversarum Sibyllarum; cum una eademque fuerit Cumana, Cumæa, & Erythraea, ex plurium & doctissimorum Auctorum sententia*: Boysardus gives us leave to opinion there was no more then one; for so doth he conclude, *In tantâ Scriptorum varietate liberum relinquimus Lectori credere, an una & eadem in diversis regionibus peregrinata, cognomen sortita sit ab iis locis ubi oracula reddidisse comperitur, an plures extiterint*: And therefore not discovering a resolution of their number from the pens of the best Writers, we have no reason to determine the same from the hand and pencill of Painters.

As touching their age, that they are generally described as young women, History will not allow; for the Sibyll whereof Virgill speaketh is tearmed by him *longæva sacerdos*, and Servius in his Comment amplifieth the same. The other that sold the bookes unto Tarquine, and whose History is plainer then any, by Livie and Gellius is tearmed *Anus*, that is properly no woman of ordinary age, but full of yeares, and

Anus, quasi
Avis, sine mēte

and in the dayes of doteage, according to the Etymology of Festus, and consonant unto the History; wherein it is said, that Tarquine thought she doted with old age; which duly perpended, the *Licentia pictoria* is very large, and with the same reason they may delineate old Nestor like Adonis, Hecuba with Helens face, and Time with Absalons head.

CHAP. XII.

Of the Picture describing the death of Cleopatra.

THE Picture concerning the death of Cleopatra with two Aspes or venomous Serpents unto her armes, or breasts, or both, requires consideration: for therein (beside that this variety is not excusable) the thing it selfe is questionable; nor is it indisputably certaine what manner of death she dyed. Plutarch in the life of Antonie plainly delivereth, that no man knew the manner of her death; for some affirmed she perished by poyson, which she alwayes carried in a little hollow combe, and wore it in her hayre; beside there were never any Aspes discovered in the place of her death, although two of her maids perished also with her, only it was said two small and almost insensible prickes were found upon her arme, which was all the ground that Cæsar had to presume the manner of her death. Galen who was contemporary unto Plutarch, delivereth two wayes of her death: that is, that shee killed her selfe by the bite of an Aspe, or bit an hole in her arme, and powred poyson therein. Strabo that lived before them both, hath also two opinions, that she dyed by the byte of an Aspe, or else a poysonous oyntment.

We might question the length of the Aspes which are sometimes described exceeding short, whereas the Chersæa or land Aspe which most conceive she used, is above foure cubits long: their number is not unquestionable; for whereas there are generally two described, Augustus (as Plutarch relateth) did carry in his triumph the Image of Cleopatra but with one Aspe unto her arme: as for the two prickes, or little spots in her arme, they rather infer the sex, then plurality: for like the viper, the female Aspe hath foure, but the male two teeth, whereby it left this impression, or double puncture behind it.

And lastly, we might question the place; for some apply them unto her breast, which notwithstanding will not consist with the history, and Petrus Victorius hath well observed the same: but herein the mistake was easie, it being the custome in capitall malefactors to apply them unto the breast, as the Author *De Theriaca ad Pisonem*, an eye-witnesse hereof in Alexandria, where Cleopatra dyed, determineth: I beheld saith he, in Alexandria, how suddenly these Serpents bereave

Ii 2

a man

a man of life; for when any one is condemned to this kinde of death, if they intend to use him favourably, that is, to dispatch him suddenly, they fasten an Aspe unto his breast, and bidding him walke about, he presently perisheth thereby.

CHAP. XIII.

Of the Pictures of the nine Worthies.

THE pictures of the nine Worthies are not unquestionable, and to criticall spectators may seeme to containe sundry improprieties: Some will enquire why Alexander the Great is described upon an Elephant: for indeed, we do not finde he used that animall in his Armies, much lesse in his owne person; but his horse is famous in history, and its name alive to this day: Beside, he fought but one remarkable battaile, wherein there were any Elephants, and that was with Porus King of India; In which notwithstanding, as Curtius, Arrianus, and Plutarch report, he was on horseback himselfe; and if because hee fought against Elephants, he is with propriety set upon their backs, with no lesse or greater reason is the same description agreeable unto Judas Maccabeus, as may be observed from the history of the Maccabees; and also unto Julius Cæsar, whose triumph was honoured with captive Elephants, as may be observed in the order thereof, set forth by *Iacobus Laurus*: and if also wee should admit this description upon an Elephant, yet were not the manner thereof unquestionable, that is, in his ruling the beast alone; for, beside the champion upon their back, there was also a guide or Ruler, which sate more forward to command or guide the beast: Thus did King Porus ride when hee was overthrowne by Alexander; and thus are also the towred Elephants described, Maccab. 2.6. Upon the beasts there were strong towres of wood which covered every one of them, and were girt fast unto them by devices; there were also upon every one of them thirty two strong men, beside the Indian that ruled them.

Others will demand, not onely why Alexander upon an Elephant, but Hector upon an Horse: whereas his manner of fighting, or presenting himselfe in battaile, was in a Chariot, as did the other noble Trojans, who as Pliny affirmeth were the first inventers thereof; the same way of fight is testified by Diodorus, and thus delivered by Sir Walter Raleigh. Of the vulgar little reckoning was made; for they fought all on foote, slightly armed, and commonly followed the successe of their Captaines, who roade not upon horses, but in Chariots drawne by two or three horses; and this was also the ancient way of fight among the Brittaines, as is delivered by Diodorus, Cæsar, and Tacitus; and there want not some who have taken advantage hereof, and

and made it one argument of their originall from Troy.

Lastly, by any man versed in Antiquity, the question can hardly be avoyded, why the horses of these Worthies, especially of Cæsar, are described with the furniture of great saddles, and stirrops; for saddles largely taken, though some defence there may be, yet that they had not the use of stirrops, seemeth out of doubt; as *Pancirollus* hath observed, as *Polydore Virgil* and *Petrus Victorius* have confirmed, expressly discoursing hereon; as is observable from *Pliny*, and cannot escape our eyes in the ancient monuments, medals and Triumphant arches of the Romanes. Nor is there any genuine or classick word in Latine to expresse them; for *staphia* or *stapes* is not to be found in Authors of Antiquity; and whereas the name might promise some Antiquity, because among the three small bones in the Auditory Organ, by Physitians termed *Incus Malleus*, and *stapes*, one thereof from some resemblance doth beare this name, these bones were not observed, much lesse named by *Hippocrates*, *Galen* or any ancient Physitian; but as *Laurentius* observeth concerning the invention of the *stapes* or stirrop bone, there is some contention betweene *Columbus* and *Ingrasias*, the one of Sicilia, the other of Cremona, and both within the compasse of this Century.

The same is also deduceable from very approved Authors: *Polybius* speaking of the way which *Anniball* marched into Italy, useth the word *Bemudeisat*, that is saith *Petrus Victorius*, it was stored with devices for men to get upon their horses, which ascents were termed *Bemata*; and in the life of *Caius Gracchus*, *Plutarch* expresseth as much; for endeavouring to ingratiate himselfe with the people, besides the placing of stones at every miles end, he made at neerer distances certaine elevated places, and *Scalar* ascents, that by the help thereof they might with better ease ascend or mount their horses. Now if we demand how Cavalliers then destitute of stirrops did usually mount their horses, *Vegetius* resolves us, that they used to vault or leape up, and therefore they had wooden horses in their houses and abroad, that thereby young men might enable themselves in this action, wherein by instruction and practice they grew so perfect, that they could vault up on the right or left, and that with their sword in hand, according to that of *Virgil* —

Poscit equos, atque arma simul saltuq; superbus

Emicat.

And againe:

Infruant alii currus & corpora salu

Injectum in equos.

And so *Julius Pollux* adviseth to teach horses to incline, dimit, and bow downe their bodies, that their riders may with better ease ascend them; and thus may it more causally be made out, what *Hippocrates* affirmeth of the *Scythians*, that using continuall riding, they were generally molested with the *Sciatica* or *hippegowte*; or what *Suetonius* delivereth of *Germanicus*, that

that he had slender legs, but encreased them by riding after meales; that is, the humours descending upon their pendulosity, they having no support or suppedaneous stability.

Now if any shall say that these are petty errors and minor lapses not considerably injurious unto truth, yet is it neither reasonable nor safe to contemne inferiour falsities; but rather as betweene falshood and truth, there is no medium, so should they be maintained in their distances, nor the insinuation of the one, approach the sincerity of the other.

CHAP. XIV.

Of the Picture of Jephthah sacrificing his daughter.

THE hand of the Painter confidently setteth forth the picture of Jephthah in the posture of Abraham, sacrificing his onely daughter; Thus indeed is it commonly received, and hath had the attest of many worthy Writers; notwithstanding upon enquiry wee finde the matter doubtfull, and many upon probable grounds to have beene of another opinion; conceaving in this oblation not a naturall but a Civill kinde of death, and a seperation onely unto the Lord; for that he pursued not his vow unto a literall oblation, there want not arguments both from the Text and reason.

For first, it is evident that she deplored her virginity, and not her death; Let me goe up and downe the mountaines, and bewayle my virginity, I and my fellowes.

Secondly, when it is said, that Jephthah did unto her according unto his vow, it is immediately subjoyned, *Et non cognovit virum*, and shee knew no man, which as immediate in words, was probably most neere in sence unto the vow.

Thirdly, it is said in the Text, that the daughters of Israel went yearely to talke with the daughter of Jephthah foure dayes in the yeare, which had she beene sacrificed, they could not have done; For whereas the word is sometime translated to lament, yet doth it also signifie to talke or have conference with one, and by Tremellius who was well able to judge of the Originall, it is in this sence translated: *Ibant filii Israelitarum ad confabulandum cum filia Iephthaci, quatuor diebus quotannis*: And so it is also set downe in the marginall notes of our Translation: And from this annuall concourse of the daughters of Israel, it is not improbable in future Ages, the daughter of Jephthah came to be worshipped as a Deity, and had by the Samaritans an annuall festivity observed unto her honour, as Epiphanius hath left recorded in the heresie of the Melchidecians.

It is also repugnant unto reason, for the offering of mankind was against

against the Law of God, who so abhorred humane sacrifice, that he admitted not the oblation of uncleane beasts, and confined his altars but unto five kinds of Animals; that is, the Oxe, the Goat, the Sheepe, the Pigeon and its kinds: in the cleansing of the leper, there is I confesse, mention made of the Sparrow, but great dispute may be made whether it be properly rendred, and therefore the Scripture with indignation, oft times makes mention of humane sacrifice among the Gentiles, whose oblations scarce made scruple of any Animall, sacrificing not onely man, but Horses, Lyons, Eagles; and though they come not into holocausts, yet do we read the Syrians did make oblations of fishes unto the goddesse Derceto; It being therefore a sacrifice so abominable unto God, although hee had pursued it, it is not probable the Priests and wisdom of Israel would have permitted it, and that not onely in regard of the subject or sacrifice it selfe, but also the sacrificator, which the picture makes to be Jephthah, who was neither Priest, nor capable of that office; for he was a Gileadite, and as the text affirmeth, the son also of an harlot; And how hardly the Priesthood would endure encroachment upon their function, a notable example there is in the Story of Ozias.

Secondly, the offering up of his daughter was not onely unlawfull, and entrenched upon his religion, but had beene a course and progresse that had much condemned his discretion, that is, to have punished himselfe in the strictest observance of his Vow, when as the Law of God had allowed an evasion; that is, by way of commutation or redemption, according as is determined, *Levi. 27.* whereby if she were between the age of five and twenty, shee was to be estimated but at ten shekels, and if between twenty and sixty, not above thirty; a sum that could never discourage an indulgent Parent, it being but the value of a servant slain, and the inconsiderable Salarie of Judas, and will make no greater noyse then three pound fifteen shillings with us; and therefore their conceit is not to be exploded, who say that from the Story of Jephthah sacrificing his owne daughter, might spring the fable of Agamemnon, delivering unto sacrifice his daughter Iphigenia, who was also contemporary unto Jephthah; wherein to answers the ground that hinted it, Iphigenia was not sacrificed her self, but redeemed with an Hart, which Diana accepted for her.

Now the ground at least which much promoted the opinion, might be the dubious words of the text, which containe the sence of his vow; most men adhering unto their common and obvious acception. Whatsoever shall come forth of the doores of my house shall surely be the Lords, and I will offer it up for a burnt offering. Now whereas it is said, *Erit Iehova, & offeram illud holocaustum*, The word signifying both *&* and *aut*, it may be taken disjunctively, *aut offeram*, that is, it shall either be the Lords by separation, or else, an holocaust by common

mon oblation, even as our marginal translation advertiseth; and as Tremellius rendreth it, *Erit inquam Iehova, aut offeram illud holocaustum*; and for the vulgar translation, it useth often & where *aut* must be presumed, as Exod. 21. *Si quis percusserit patrem & matrem*, that is not both, but either. There being therefore two wayes to dispose of her, either to separate her unto the Lord, or offer her as a sacrifice, it is of no necessitie the latter should bee necessary; and surely lesse derogatorie unto the sacred text, and history of the people of God, must bee the former.

CHAP. XV.

Of the picture of Iohn the Baptist.

THE picture of Iohn the Baptist, in a Camells skin is very questionable, and many I perceive have condemned it; the ground or occasion of this description are the words of the holy Scripture, especially of Matthew and Marke, for Luke and Iohn are silent herein; by them it is delivered, his garment was of Camells haire, and had a leatherne girdle about his loynes. Now here it seemes the Camels hair is taken by Painters for the skinne or pelt with the haire upon it: But this exposition will not so well consist with the strict acception of the words; for Marke 1. It is said, he was *ἐν δερμίδι καὶ τριχας καμήλης*, and Matthew 3, *ἐν τριχας καμήλης*, that is, as the vulgar translation, that of Bezza, that of Sixtus Quintus, and Clement the eight hath rendred it, *vestimentum habebat e pilis camelinis*, which is as ours translateth it, a garment of Camells haire; that is made of some texture of that haire, a course garment, a cilicious or sackcloth habit; sutable to the austerity of his life, and the severity of his doctrine, Repentance, and the place thereof the wilderness, his food and diet locusts and wilde hony, agreeable unto the example of Elias, who Kings 1. 8. is said to *vir pilosus*, that is as Junius and Tremellius interpret, *Veste villosa cinctus*, answerable unto the habit of the ancient Prophets, according to that of Zachary 13. In that day the Prophets shall be ashamed, neither shall they weare a rough garment to deceive, and sutable to the Cilicious and hairie Vestes of the strictest Orders of Friars, who derive the Institution of their Monastick life from the example of Iohn and Elias.

As for the wearing of skinnies, where that is properly intended, the expression of the Scripture is plaine, so is it called Heb. 11. they wandered about *ἐν αἰγρίαις δερμασιν*, that is in Goats skinnies; and so it is said of our first Parents, Gen. 3. that God made them *καὶ ἔσεν δερματινὰς Vestes pelliceas*, or coats of skinnies; which though a naturall habit unto all, before the invention of Texture, was something more unto Adam, who had newly learned to die, for unto him a garment from the dead, was but a Dictate of death, and an habit of mortalitie.

Now

Now if any man will say this habit of Iohn, was neither of Camells skinne, nor any course texture of its haire, but rather some finer weave of Camelot, Grogaine or the like, in as much as these stufes are supposed to be made of the haire of that Animall, or because that Aelian affirmeth, that Camells haire of Persia, is as fine as Milesian wooll, wherewith the great ones of that place were clothed; they have discovered an habite, not onely unsutable unto his leatherne cincture, and the courses of his life, but not consistent with the words of our Saviour, when reasoning with the people concerning Iohn, he saith, What went you out into the wilderness to see, a man clothed in soft raiment? Behold they that weare soft rayment are in Kings houses.

CHAP. XVI.

Of the picture of S. Christopher.

THE picture of St Christopher, that is a man of a Giant like stature, bearing upon his shoulders our Saviour Christ, and with a staffe in his hand, wading thorow the water, is known unto children, common over all Europe, not onely as a signe unto houses, but is described in many Churches, and stands Colossus like in the entrance of *Nestre Dame in Paris*.

Now from hence, common eyes conceive an history sutable unto this description, that he carried our Saviour in his Minority over some river or water, which notwithstanding wee cannot at all make out; for wee read not thus much in any good Author, nor of any remarkable Christopher, before the reigne of Decius, who lived 250. yeares after Christ; this man indeed according unto History suffered as a Martyr in the second yeare of that Emperour, and in the Roman Calender takes up the 21. of Iuly.

The ground that begat or promoted this opinion was, first the fabulous adjections of succeeding ages, unto the veritable acts of this Martyr, who in the most probable accounts was remarkable for his staffe, and a man of a goodly stature.

The second was a mistake or misapprehension of the picture; most men conceiving that an History which was contrived at first but as an Emblem or Symbolicall fancy, as from the Annotations of Baronius upon the Roman Martyrology, Lipellous in the life of St Christopher hath observed in these words; *Acta S. Christophori à multis depravata inveniuntur, quod quidem non aliunde originem sumpsisse certum est, quam quod Symbolicas figuras imperiti ad veritatem successu temporis transtulerint: itaque cuncta illa de Sancto Christophoro pingi consuevit, Symbola potius quam historia alicujus existimandum est, esse expressam imaginem*: Now what Emblem this was, or what its signification conjectures

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conjectures are many; Pierius hath set downe one, that is, of the Disciple of Christ; for he that will carry Christ upon his shoulders, must relye upon the staffe of his direction, whereon if he firmeth himselfe, he may be able to overcome the billows of resistance, and in the vertue of this staffe like that of Jacob passe over the waters of Jordan: or otherwise thus; He that will submit his shoulders unto Christ, shall by the concurrence of his power encrease into the strength of a Gyant, and being supported by the staffe of his holy Spirit, shall not be overwhelmed by the waves of the world, but wade through all resistance.

CHAP. XVII.
Of the Picture of S. George.

THE Picture of St. George killing the Dragon, and, as most ancient draughts doe run, with the daughter of a King standing by, is famous amongst Christians; and upon this description dependeth a solemne story, how by this atchieveme he redeemed a Kings daughter, which is more especially beleevd by the English, whose Protector he is, and in which forme and history, according to his description in the English Colledge at Rome, he is set forth in the Icons or Cuts of Martyrs by Cevalerius. Now of what authority soever this piece be among us, it is I perceive received with different belifes: for some men beleve the person and the story; some the person, but not the story, and others deny both.

That such a person there was, we shall not contend: the indistinction of many in the community of name, or the application of the act of one unto another, have made some doubt there was no such man at all; For of this name we meet with more then one in history, and no lesse then two of Cappadocia, the one an Arrian, who was slain by the Alexandrians in the time of Julian, the other a valiant Souldier and Christian Martyr, beheaded in the reigne of Dioclesian: And this is the George conceived in this picture, who hath his day in the Romane Calender, on whom so many fables are delivered, whose story is set forth by Metaphrastes, and his myracles by Turobenfis.

As for the story depending hereon, we cannot make out the verity thereof, and conceive the literall acception a meere mistake of the symbolicall expession, apprehending that a veritable history, which was but an emblem or peece of Christian poesy. And this Emblematicall construction hath been received by men who are not forward to extenuate the acts of their Saints, as from Baronius, Lipellous the Carthusian hath delivered in the life of St. George. *Picturam illam S. Georgii quâ effingitur eques armatus, qui hasta cuspidè hostem interficit, iuxta quam etiam virgo postea, manus supplices tendens, ejus explorat auxilium, Symboli potius quam historia alienius censenda expressa Imago, consuevit quidem*

ut equestri militia miles equestri imagine referri.

Now in the picture of this St. and Souldier was implied the Christian Souldier and true Champion of Christ; A horseman armed *Capa pe*, intimating the Panoplia or compleat armour of a Christian, combating with the Dragon, that is, with the Divell, in defence of the Kings daughter, that is the Church of God; and therefore although the history be not made out, it doth not disparage the Knights and noble order of St. George, whose cognisance is honourable in the emblem of the Souldier of Christ, and is a worthy memoriall to conforme unto its mystery; nor, were there no such person at all, had they more reason to be ashamed, then the noble order of Burgundy, and Knights of the golden Fleece, whose badge is a confessed fable.

CHAP. XVIII.
Of the Picture of Jerome.

THE Picture of Jerome usually described at his study, with a Clock hanging by him is not to be omitted; for though the meaning bee allowable, and probable it is that industrious Father did not let slip his time without account, yet must not perhaps that Clocke be set downe to have been his measure thereof: For Clocks are Automatus organs, and such whereby we now distinguish of time, have found no mention in any ancient Writers, but are of late invention, as Pancirollus observeth, and Polydore Virgil discoursing of new inventions whereof the authors are not knowne makes instance in Clocks and Guns: now Jerome is no late Writer, but one of the ancient Fathers, and lived in the fourth Century, in the reigne of Theodosius the first.

It is not to be denied that before the dayes of Jerome there were Horologies, and severall accounts of time; for they measured the hours not only by drops of water in glasses called Clepsydræ, but also by sand in glasses called Clepsammia; there were also from great antiquity, Sciotericall or Sun Dials, by the shadow of a stile or gnomon denoting the houres of the day: an invention ascribed unto Anaximenes by Pliny, hereof a very memorable one there was in Campus Martius from an obelisk erected, & golden figures placed horizontally about it, which was brought out of Egypt by Augustus, and described by Jacobus Laurus. And another of great antiquity we meet with in the story of Ezechias, for so it is delivered Kings 2.20. That the Lord brought the shadow backward ten degrees by which it had gone down in the Diall of Ahaz; that is, say some, ten degrees, not lines, for the houres were denoted by certaine divisions or steps in the Diall, which others distinguished by lines according to that of Persius—

Sertimus indomitum quod desumare Falernum

Kk 2

Sufficiat

Sufficiat quinta dum linea tangitur umbrâ.—That is, the line next the Meridian, or within an houre of noone.

Of latter yeares there succeeded new inventions, and horologies composed by Trochilick or the artifice of wheeles, whereof some are kept in motion by weight, others performe without it: now as one age instructs another, and time that brings all things to ruine perfects also every thing, so are these indeed of more generall and ready use then any that went before them: by the water-glasses the account was not regular, for from attenuation and condensation, whereby that Element is altered, the houres were shorter in hot weather then in cold, and in Summer then in Winter; as for Sciotericall Dialls, whether of the Sunne or Moon, they are only of use in the actuall radiation of those Luminaries, and are of little advantage unto those inhabitants, which for many months enjoy not the lustre of the Sun.

It is I confesse no easie wonder how the horometry of Antiquity discovered not this Artifice, how Architas that contrived the moving Dove, or rather the Helicoscopia of Archimedes, fell not upon this way; surely as in many things, so in this particular, the present age hath farre surpassed Antiquity, whose ingenuity hath been so bold not only to proceed, below the account of minutes, but to attempt perpetuall motions, and engines whose revolutions (could their substance answer the designe) might outlast the exemplary mobility, and out measure time it selfe; for such a one is that mentioned by John Dee, whose words are these in his learned Preface unto Euclide: By wheeles strange works and incredible are done: A wondrous example was seen in my time in a certaine Instrument, which by the Inventer and Artificer was sold for twenty talents of Gold; and then by chance had received some injury, and one Janellus of Cremona did mend the same, and presented it unto the Emperour Charles the fift. Jeronymus Cardanus, can be my witnesse, that therein was one wheele that moved in such a rate, that in seven thousand yeares onely his owne period should be finished; a thing almost incredible, but how far I keep within my bounds, many men yet alive can tell.

CHAP. XIX.

Of the Pictures of Mermaids, Unicorues, and some others.

FEw eyes have escaped the Picture of the Mermaids; that is, according to Horace his Monster, with womans head above, and fishy extremity below: and this is conceived to answer the shape of the ancient Syrens that attempted upon Ulysses, which notwithstanding were of another description, containing no fishie composure, but made up of Man and Bird; the humane mediety variously placed not only above but

but below, according unto Ælian, Suidas, Servius, Boccatus, and Al-drovandus, who hath referred their description unto the story of fabulous birds, according to the description of Ovid, and the account thereof in Hyginus, that they were the daughters of Melpomene, and metamorphosied into the shape of man and bird by Ceres.

And therefore these pieces so common among us, do rather derive their originall, or are indeed the very descriptions of Dagon, which was made with humane figure above, and fishy shape below; whose stumpe, or as Tremellius and our margin renders it, whose fishie part onely remained, when the hands and upper part fell before the Arke. Of the shape of Atergates, or Derceto with the Phænicians; in whose fishie and feminine mixture, as some conceive, were implied the Moon and the Sea, or the Deity of the waters; and therefore, in their sacrifices they made oblations of fishes: from whence were probably occasioned the pictures of Nereides and Tritons among the Grecians, and such as we read in Macrobius, to have beene placed on the top of the temple of Saturne.

We are unwilling to question the Royall supporters of England, that is, the approved descriptions of the Lion and the Unicorne; although, if in the Lion the position of the pizell be proper, and that the naturall situation; it will be hard to make out their retrocopulation, or their coupling and pissing backward, according to the determination of Aristotle; All that urine backward do copulate *πρηνδον, clunatim*, or averily, as Lions, Hares, Linxes.

As for the Unicorne, if it have the head of a Deere, and the tayle of a Boare, as Vartomannus describeth it, how agreeable it is in this picture every eye may discern: if it be made biforcous or cloven footed, it agreeth unto the description of Vartomannus, but scarce of any other; and Aristotle supposeth that such as devide the hooft doe double the horne; they being both of the same nature, and admitting division together. And lastly, if the horne have this situation, and be so forwardly affixed, as is described, it will not be easily conceived, how it can feed from the ground, and therefore we observe that Nature in other cornigerous animals, hath placed the hornes higher and reclining, as in Bucks; in some inverted upwards, as in the Rhinoceros, the Indian Asse, and the Unicornous Beetles; and thus have some affirmed it is seated in this animall.

Wee cannot but observe that in the picture of Jonah and others, Whales are described with two prominent spouts on their heads; whereas indeed they have but one in the forehead, and terminating over the windepide. Nor can we overlooke the picture of Elephants with Castles on their backs, made in the forme of land Castles, or stationary fortifications, and answerable unto the Armes of Castile, or Sir John Old Castle; whereas the towres they bore were made of wood,

i Sam. 5.

wood, and girt unto their bodies, as is delivered in the books of Macabees, and as they were appointed in the Army of Antiochus.

We will not dispute the pictures of Telary Spiders, and their position in the web, which is commonly made laterall, and regarding the Horizon; although, if it be observed, wee shall commonly finde it downeward, and their heads respecting the Center: We will not controvert the picture of the seven Stars, although if thereby be meant the Pleiades, or subconstellation upon the back of Taurus, with what congruity they are described, either in site or magnitude, in a cleere night an ordinary eye may discover, from July unto April. We will not question the tongues of Adders and Vipers, described like an Anchor, nor the picture of the Flower *de Luce*; though how farre they agree unto their naturall draughts, let every Spectator determine.

Many more there are whereof our pen shall take no notice, nor shall we urge their enquiry; we shall not enlarge with what incongruity, and how dissenting from the pieces of Antiquity, the pictures of their gods and goddeses are described, and how hereby their symbollicall fence is lost, although herein it were not hard, to be informed from Phornutus, Fulgentius, and Albricus. Whether Hercules be more properly described strangling then tearing the Lion, as Victorious hath disputed, nor how the characters and figures of the Signes and Planets be now perverted, as Salmastius hath learnedly declared: Wee will dispencc with Beares with long tayles, such as are described in the figures of heaven; We shall tolerate flying Horses, black Swans, Hydrae's, Centaur's, Harpies, and Satyres; for these are monstrosities, rarities, or else Poeticall fancies, whose shadowed moralities requite their substantiall falsities: wherein indeed we must not deny a liberty, nor is the hand of the Painter more restrainable then the pen of the Poet; but where the real works of Nature, or veritable acts of story are to be described, digressions are aberrations; and Art being but the Imitator or secondary representor, it must not vary from the verity of the example, or describe things otherwise then they truly are or have beene: for hereby introducing false Idea's of things, it perverts and deforms the face and symmetric of truth.

CHAP. XX.

Of the Hieroglyphicall pictures of the Egyptians.

Certainly of all men that suffered from the confusion of Babel, the Egyptians found the best evasion; for, though words were confounded, they invented a language of things, and spake unto each other by common notions in Nature, whereby they discoursed in silence, and were intuitively understood from the theory of their Expresses: for,

for, they assumed the shapes of animals common unto all eyes, and by their conjunctions and compositions were able to communicate their conceptions unto any that coapprehended the Syntaxis of their natures. This doe many conceive to have beene the primitive way of writing, and of greater Antiquity then letters; and this indeed might Adam well have spoken, who understanding the nature of things, had the advantage of naturall expressions, which the Egyptians but taking upon trust upon their owne or common opinion, from conceded mistakes they authentically promoted errors, describing in their Hieroglyphicks creatures of their owne invention, or from knowne and conceded animals, erecting significations not inferrible from their natures.

And first, although there were more things in Nature then words which did expresse them, yet even in these mute and silent discourses, to expresse complexed significations, they took a liberty to compound and piece together creatures of allowable formes unto mixtures inconsistent; and thus began the descriptions of Griphins, Basilisks, Phoenix, and many more; which Emblematisfts and Heralds have entertained with significations answering their institutions; Hieroglyphically adding Martegres, Wivernes, Lion-fishes, with divers others; pieces of good and allowable invention unto the prudent Spectator, but are lookt on by vulgar eyes as literall truths, or absurd impossibilities; whereas, indeed they are commendable inventions, and of laudable significations.

Againe, beside these pieces fictitiously set downe, and having no copy in Nature, they had many unquestionably drawne of inconsequent signification, nor naturally verifying their intention. Wee shall instance but in few, as they stand recorded by Orus: The male sex they expressed by a Vulture, because of Vultures all are females, and impregnated by the winde, which authentically transmitted hath passed many pens, and became the assertion of Aelian, Ambrose, Basil, Isidore, Tzetzes, Philes, and others; wherein notwithstanding what injury is offered unto the Creation in this confinement of sex, and what disturbance unto Philosophy in the concession of windy conceptions, we shall not here declare: By two dragmes they thought it sufficient to signifie an heart, because the heart at one yeare weigheth two dragmes, that is, a quarter of an ounce; and unto fifty yeares annually increaseth the weight of one dragme, after which in the same proportion it yearly decreaseth, so that the life of a man doth not naturally extend above an hundred, and this was not onely a popillary conceit, but consistent agreeous unto their Physicall principles, Heurnius hath accounted of it in his *Philosophica Barbarica*.

A woman that hath but one childe, they expresse by a Lionesse, for that conceaveth but once: fecundity they set forth by a Goate, because but seven dayes old, it beginneth to use coition: the abortion of a woman

man they describe by an horse kicking a wolfe; because a Mare will cast her sole if she tread in the track of that animall. Deformity they signifie by a Beare, and an unstable man by an Hyæna, because that animall yearly exchangeth his sex: A woman delivered of a female child, they imply by a Bull looking over his left shoulder, because if in coition a Bull part from a Cow on that side, the Calf will prove a female.

All which with many more, how farre they consent with truth, we shall not disparage our Reader to dispute; and though some way allowable unto wiser conceits, who could distinctly receive their significations; yet carrying the majesty of Hieroglyphicks, and so transmitted by Authors, they crept into a beliefe with many, and favourable doubt with most: And thus, I feare, it hath fared with the Hieroglyphicall symboles of Scripture, which excellently intended in the species of things sacrificed, in the prohibited meates, in the dreames of Pharaoh, Joseph, and many other passages, are oft times wrackt beyond their symbolizations, and enlarg'd into constructions disparaging their true intentions.

CHAP. XXI.

Compendiously of many questionable customes, opinions, pictures, practises, and popular observations.

1. IF an Hare crosse the high way there are few above threescore that are not perplexed thereat, which notwithstanding is but an Auguriall terror, according to that received expression, *Inauspicatum dat iter oblatum Lepus*, and the ground of the conceit was probably no greater then this, that a fearfull animall passing by us portended unto us some thing to be feared; as upon the like consideration the meeting of a Fox presaged some future imposture, which was a superstitious observation prohibited unto the Jews, as is expressed in the Idolatry of Maimonides, and is referred unto the sin of an observer of Fortunes, or that abuseth events unto good or bad signes, forbidden by the Law of Moses, which notwithstanding sometimes succeeding, according to feares or desires, have left impressions and tumerous expectations in credulous minds for ever.

2. That Owles and Ravens are ominous appearers, and presignifying unlucky events, as Christians yet conceit, was also an Auguriall conception. Because many Ravens were scene when Alexander entered Babylon, they were thought to preominate his death; and because an Owle appeared before the battaile, it presaged the ruine of Crassus, which though decrepite superstitions, and such as had their nativity in times beyond all history, are fresh in the observation of many heads, and

Deut. 18.

and by the credulous and feminine partie still in some Majestie among us. And therefore the Embleme of Superstition was well set out by Ripa, in the picture of an Owle, an Hare, and an old woman; and it no way confirmeth the Auguriall consideration, that an Owle is a forbidden food in the Law of Moses, or that Jerusalem was threatened by the Raven and the Owle, in that expression of Esay 34. That it should be a court for Owles, that the Cormorant and the Bitterne should possesse it, and the Owle and the Raven dwell in it; for thereby was only implied their ensuing desolation, as is expounded in the words succeeding, he shall draw upon it the line of confusion, and the stones of emptinesse.

3. The falling of Salt is an authenticke presagement of ill lucke, nor can every temper contemne it, from whence notwithstanding nothing can be naturally feared: nor was the same a generall prognosticke of future evill among the ancients, but a particular omination concerning the breach of friendship: for salt as incorruptible, was the Simbole of friendship, and before the other service was offered unto their guests, which if it casually fell was accounted ominous, and their amitie of no duration.

4. To breake the eggshell after the meat is out, wee are taught in our childhood, and practise it all our lives, which neverthelesse is but a superstitious relict according to the judgement of Plinie; *Huc pertinet eorum ut exorbuerit quisq; calices protinus frangi, aut eosdem cholearibus perforari*, and the intent hereof was to prevent witchcraft; for lest witches should draw or prick their names therein, and veneficiously mischief their persons, they broke the shell, as Dalecampius hath observed.

5. The true lovers knot is very much magnified and still retained in presents of love among us, which though in all points it doth not make out, had perhaps its originall from Nodus Herculanus, or that which was called Hercules his knot, resembling the Snaky complication in the caduceus or rod of Hermes; and in which forme the Zone or woollen girdle of the Bride was fastened, as Turnebus observeth in his *Adversaria*.

6. When our cheeke burneth or eare tingleth, wee usually say that some body is talking of us; which is an ancient conceit, and ranked among superstitious opinions by Plinie. *Absentes tinnitu aurium presentire sermones de se receptum est*, according to that Disticke noted by Dalecampius.

Garrula quid totis resonas mihi noctibus auris?

Nescio quem dicis nunc meminisse mei: which is a conceit hardly to be made out without the concession of a signifying Genius, or universall Mercury, conducting sounds unto their distant subjects, and teaching us to heare by touch.

LI

7. When

7. When we desire to confine our words we commonly say they are spoken under the Rose; which expression is commendable, if the Rose from any naturall propertie may be the Symbole of silence, as Nazianzene seemes to imply in these translated verses.

Vtq; latet Rosa Verna suo putamine clausa,

Sic os vincla ferat, validiq; ardeat habentis,

Indicatq; suis proluxa silentia labris, and is also tolerable, if

by desiring a secrecy to words spoke under the Rose, wee onely meane in society and compotation, from the ancient custome in Sympotiacke meetings, to weare chapletts of Roses about their heads; and so we condemne not the Germane custome, which over the Table describeth a Rose in the feeling; but more considerable it is, if the originall were such as Lemnius and others have recorded; that the Rose was the flower of Venus, which Cupid consecrated unto Harpocrates the God of silence, and was therefore an Emblem thereof to conceale the pranks of Venery, as is declared in this Tetrasticke

Est Rosa flos veneris, cuius quo facta laterent

Harpocrati matris, dona dicavit Amor;

Inde Rosam mensis hospes suspendit Amicis,

Conviva ut sub ea dicta tacenda sciant.

8. That smoake doth follow the fairest is an usuall saying with us, and in many parts of Europe, whereof although there seeme no naturall ground, yet is it the continuation of a very ancient opinion, as Petrus Victorius and Causabon have observed from a passage in Athenæus, wherein a Parasite thus describeth himselfe.

To every table first I come,

Whence Porridge I am cald by some:

A Capaneus at staires I am,

To enter any roome a Ramme;

Like whips and thongs to all I ply,

Like smoke unto the faire I fly.

9. To set crosse legg'd, or with our fingers pectinated or shut together is accounted bad, and friends will perswade us from it. The same conceit religiously possessed the Ancients, as is observable from Pliny. *Poplites alternis genibus imponere nefas olim*; and also from Athenæus, that it was an old veneficious practise, and Iuno is made in this posture to hinder the delivery of Alcmæna; and therefore, as Pierius observeth, in the Medall of Julia Pia the right hand of Venus, was made extended with the inscription of Venus Genetrix; for the complication or pectination of the fingers was an Hieroglyphick of impediment, as in that place he declareth.

10. The set and statary times of payring of nailes, and cutting of haire is thought by many a point of consideration, which is perhaps but the continuation of an ancient superstition: for piaculous it was unto

unto the Romanes to pare their nayles upon the nundinae observed every ninth day; and was also feared by others in certaine dayes of the weeke, according to that of Ausonius, *Ungues Mercurio, Barbam Jove, Cypride crines*; and was one part of the wickednes that filled up the measure of Manasses, when tis delivered hee observed times, Chron. 2. 23.

11. A common fashion it is to nourish haire upon the molls of the face, which is the perpetuation of a very ancient custome, and though innocently practised among us, may have a superstitious originall, according to that of Pliny: *Naves in facie tondere religiosum habent nunc multi*; from the like might proceed the feares of polling Elvelockes or complicated haire of the head, and also of locks longer then the other haire, they being votary at first, and dedicated upon occasion, preserved with great care, and accordingly esteemed by others, as appears by that of Apuleius: *Adjuro per dulcem capilli tui modulum.*

12. A custome there is in most parts of Europe to adorn Aqueducts, spouts and Cisternes with Lions heads; which though no illaudable ornament is an Egyptian continuation, who practised the same under a symbollicall illation; for because the Sun being in Leo, the flood of Nilus was at the full, and water became conveyed into every part, they made the spouts of their Aqueducts through the head of a Lion: and upon some celestiall respects it is not improbable the great Mogull or Indian King doth beare for his Armes a Lion and the Sun.

13. Many conceive there is somewhat amisse, and that as we usually say, they are unblest untill they put on their girdle: wherein (although most know not what they say) there are involved unknowne considerations; for by a girdle or cincture are symbollically implied Truth, Resolution and Readinesse unto Action, which are parts and vertues required in the service of God: according whereto we finde that the Israelites eat the Paschall Lambe with their loynes girded, and the Almighty challenging Job, bids him gird up his loynes like a man; so runneth the expression of Peter, *Gird up the loynes of your mindes*; be sober and hope to the end; so the high Priest was girt with the girdle of fine linnen; so is it part of the holy habit to have our loynes girt about with truth; and so is it also said concerning our Saviour, *Righteousnesse shall be the girdle of his loynes*, and faithfulnessse the girdle of his reines.

Moreover by the girdle the heart and parts which God requires are devided from the inferiour and epithumeticall organs; implying thereby a memento unto purification and cleannesse of heart, which is commonly defiled from the concupiscence and affection of those parts; and therefore unto this day the Jews do blesse themselves when they put on their zone or cincture: and thus may we make out the doctrine of Pythagoras, to offer sacrifice with our feet naked, that is, that our inferiour parts

Essay 11.

parts and farthest removed from Reason might be free, and of no impediment unto us. Thus Achilles though dipped in Styx, yet having his heele untouched by that water, although he were fortified elsewhere, he was slaine in that part, and as only vulnerable in the inferiour and brutall part of Man: This is that part of Eve and her posterity, the diuell still doth bruise; that is, that part of the soul which adhereth unto earth, and walks in the paths thereof; and in this secondary and symbollicall sense it may be also understood, when the Priests in the Law washed their feet before the sacrifice; when our Saviour washed the feet of his Disciples, and said unto Peter, if I wash not thy feet thou hast no part in me; and thus is it symbollically explainable and implieth purification and cleanness, when in the burnt offerings the Priest is commanded to wash the inwards and legs thereof in water, and in the peace and sin-offerings, to burne the two kidneys, the fat which is about the flanks, and as we translate it the Caul above the Liver. But whether the Jewes when they blessed themselves, had any eye unto the words of Jeremy, wherein God makes them his Girdle; or had therein any reference unto the girdle, which the Prophet was commanded to hide in the hole of the rock of Euphrates, and which was the type of their captivity, we leave unto higher conjecture.

14. The picture of the Creator, or God the Father in the shape of an old Man, is a dangerous piece, and in this fecundity of fables may revive the Anthropomorphites, which although maintained from the expression of Daniel, I beheld where the Ancient of dayes did sit, whose haire of his head was like the pure woole; yet may it be also derivative from the Hieroglyphicall description of the Egyptians, who to expresse their Enep, or Creator of the world, described an old man in a blew mantle, with an egge in his mouth, which was the embleme of the world. Surely those heathens, that notwithstanding their exemplary advantage in heaven, would endure no pictures of Sun or Moone, as being visible unto all the world, and needing no representation, do evidently accuse the practise of those pencils, that will describe invisibles. And he that challenged the boldest hand unto the picture of an Echo, must laugh at this attempt not onely in the description of invisibility, but circumscription of Ubiquity, and fetching under lines incomprehensible circularity.

The pictures of the Egyptians were more tolerable, and in their sacred letters more veniably expressed the apprehension of Divinity; for though they implied the same by an eye upon a Scepter, by an Eagles head, a Crocodill and the like; yet did these manuell descriptions pretend no corporall representations, nor could the people misconceive the same unto reall correspondencies. So though the Cherub carryed some apprehension of Divinity, yet was it not conceived to be the shape thereof: and so perhaps because it is metaphorically predi-

cated

Jer. 13.

cated of God, that he is a consuming fire, he may be harmlesly described by a flaming representation: yet if, as some will have it, all mediocrity of folly is foolish, and because an unrequitable evill may ensue, an indifferent convenience must be omitted; we shall not urge such representations, wee could spare the holy Lamb for the picture of our Saviour, and the Dove or fiery Tongues to represent the holy Ghost.

15. The Sun and Moone are usually described with humane faces; whether herein there be not a Pagan imitation, and those visages at first implied Apollo and Diana we make some doubt; and wee finde the statua of the Sun was framed with rayes about the head, which were the indiciduous and unshaven locks of Apollo. We should be too Iconomical to question the pictures of the winds, as commonly drawne in humane heads, and with their cheeks distended, which notwithstanding wee finde condemned by Minutius, as answering poetical fancies, and the gentile discription of Æolus Boreus, and the feigned Deities of winds.

16. We shall not, I hope, disparage the Resurrection of our Redeemer, if we say the Sun doth not dance on Easter day. And though we would willingly assent unto any sympathicall exultation, yet cannot conceive therein any more then a Tropicall expression; whether any such motion there were in that day wherein Christ arised, Scripture hath not revealed, which hath beene punctuall in other records concerning solary miracles: and the Areopagite that was amazed at the Eclipse, tooke no notice of this, and if metaphoricall expressions goe so farre, we may be bold to affirme, not onely that one Sun danced, but two arose that day: That light appeared at his nativity, and darknesse at his death, and yet a light at both; for even that darknesse was a light unto the Gentiles, illuminated by that obscurity. That 'twas the first time the Sun set about the Horizon, that although there were darknesse above the earth there was light beneath it, nor dare we say that hell was darke if he were in it.

17. Great conceits are raised of the involution or membranous covering, commonly called the silly how, that sometimes is found about the heads of children upon their birth, and is therefore preserved with great care, not onely as medicall in diseases, but effectually in successe, concerning the Infant and others, which is surely no more then a continued superstition; for hereof we reade in the life of Antoninus delivered by Spartianus, that children are borne sometimes with this naturall cap, which Midwives were wont to sell unto credulous Lawyers, who had an opinion it advantaged their promotion.

But to speake strictly the effect is naturall, and thus to be conceived, the Infant hath three teguments, or membranous filmes which cover it in the wombe, that is, the Corion, Amnios, and Allantois; the Corion is the outward membrane wherein are implanted the veynes, Ar-

teries

Or quarelsome with pictures.

teries and umbilicall vessels, whereby its nourishment is conveyed: the Allantois a thin coat seated under the Corion, wherein are received the watery separations conveyed by the urachus, that the acrimony thereof should not offend the skin. The Amnios is a generall investment, containing the sudorous or thin serosity perspirable through the skin. Now about the time when the Infant breaketh these coverings, it sometime carryeth with it about the head a part of the Amnios or neereft coat; which saith Spiegelius, either proceedeth from the toughnesse of the membrane or weakenesse of the Infant that cannot get cleare thereof: & therefore herein significations are naturall and concluding upon the Infant, but not to be extended unto magical signalities or any other perill.

18. That 'tis good to be drunke once a month, is a common flattery of sensuality, supporting it selfe upon physick, and the healthfull effects of inebriation. This indeed seemes plainly affirmed by Avicenna, a Physitian of great Authority, and whose religion prohibiting Wine could lesse extenuate ebriety. But Averroes a man of his owne faith was of another believe, restraining his ebriety unto hilarity, and in effect making no more thereof, then Seneca commendeth, and was allowable in Cato; that is, a sober incalcescence and regulated aestuation from wine, or what may be conceived betweene Joseph and his brethren, when the Text expresseth they were merry, or dranke largely; and whereby indeed the commodities set downe by Avicenna, that is, alleviation of spirits, resolution of superfluities, provocation of sweat and urine may also ensue. But as for dementation, sopition of reason, and the diviner particle from drinke, though American religion approve, and Pagan piety of old hath practised, even at their sacrifices, Christian morality and the Doctrine of Christ will not allow. And surely that religion which excuseth the fact of Noah, in the aged surprisall of six hundred yeares, and unexpected inebriation from the unknowne effects of wine, will neither acquit ebriosity nor ebriety, in their knowne and intended perversions.

And indeed, although sometimes effects succeed which may relieve the body, yet if they carry mischief or perill unto the soule, we are therein restraineable by Divinity, which circumscribeth Physick, and circumstantially determines the use thereof. From naturall considerations, Physick commendeth the use of venery, and happily, incest, adultery, or stupration may prove as physically advantageous, as conjugall copulation; which notwithstanding must not bee drawne into practise. And truly effects, consequents, or events which wee commend, arise oft times from wayes which all condemne. Thus from the fact of Lot, we derive the generation of Ruth, and blessed Nativity of our Saviour; which notwithstanding did not extenuate the incestuous ebriety of the generator. And if, as it is commonly urged, we thinke to extenuate ebriety from the benefit of vomit oft succeeding; Egyptian

tian sobriety will condemne us, who purgeth both wayes twice a month, without this perturbation: and we foolishly contemne the liberall hand of God, and ample field of medicines which soberly produce that action.

19. A conceit there is that the Devill commonly appeareth with a cloven hoofe, wherein although it seeme excessively ridiculous there may be somewhat of truth; and the ground thereof at first might be his frequent appearing in the shape of a Goat, which answers that description. This was the opinion of ancient Christians concerning the apparitions of Panites, Faunes and Satyres, and in this forme we reade of one that appeared unto Antony in the wilderness. The same is also confirmed from expositions of holy Scripture; for whereas it is said, Thou shalt not offer unto Devils, the Originall word is *Seghnirim*, that is, rough and hayrie Goats, because in that shape the Devill most often appeared, as is expounded by the Rabbins, as Tremellius hath also explained; and as the word Alchimah, the god of Emath is by some conceived; nor did he onely assume this shape in elder times, but commonly in later dayes, especially in the place of his worship. If there be any truth in the confession of Witches, and as in many stories it stands confirmed by Bodinus; and therefore a Goat is not improperly made the Hieroglyphick of the Devill, as Pierius hath expressed it; so might it be the Embleme of sin, as it was in the sin offering; and so likewise of wicked and sinfull men, according to the expression of Scripture in the method of the last distribution, when our Saviour shall separate the Sheep from the Goats, that is, the sons of the Lamb from the children of the Devill.

20. A strange kinde of exploration and peculiar way of Rhabdomanancy is that which is used in Minerall discoveries, that is, with a forked hazell, commonly called Moses his rod, which freely held forth, will stirre and play if any mine be under it: and though many there are who have attempted to make it good, yet untill better information, we are of opinion with Agricola, that in it selfe it is a fruitlesse exploration, strongly senting of Pagan derivation, and the *virgula Divina*, proverbially magnified of old; the ground whereof were the Magicall rods in Poets; that of Pollas in Homer, that of Mercury that charmed Argus, and that of Circe which transformed the followers of Ulysses; too boldly usurping the name of Moses rod; from which notwithstanding, and that of Aaron were probably occasioned the fables of all the rest; for that of Moses must needs be famous unto the Egyptians, and that of Aaron unto many other nations, as being preserved in the Arke, untill the destruction of the Temple built by Solomon.

21. A practise there is among us to determine doubtfull matters, by the opening of a booke, and letting fall a staffe, which notwithstanding are

Lev. 17.

are ancient fragments of Pagan divination; the first an imitation of *sortes Homericae*, or *Virgiliana*, drawing determinations from verses casually occurring. The same was practised by Severus, who entertained ominous hopes of the Empire, from that verse in Virgil, *Tu regere imperio populos Romane memento*; and Gordianus who reigned but few dayes was discouraged by another, that is, *Ostendunt terris hunc tantum fata nec ultra esse sinunt*. Nor was this onely performed in Heathen Authors, but upon the sacred text of Scripture, as *Gregorius Turonensis* hath left some account, and as the practise of the Emperour Heraclius, before his Expedition into Asia minor, is delivered by Cedrenus.

Hosea 4.

Ezek. 24.

As for the Divination or decision from the staffe it is an Auguriall relique, and the practise thereof is accused by God himselfe; My people aske counsell of their stocks, and their staffe declareth unto them. And of this kinde of Rhabdomancy was that practised by Nabuchadonofor in that Caldean miscellany, delivered by Ezekiel, The King of Babylon stood at the parting of the way, at the head of the two wayes to use divination, he made his arrowes bright, he consulted with Images, he looked in the Liver; at the right hand were the divinations for Jerusalem, that is, as Estius expoundeth it the left way leading unto Rabbah the chiefe city of the Ammonites, and the right unto Jerusalem, he consulted Idols and entrals, he threw up a bundle of Arrowes, to see which way they would light, and falling on the right hand he marched towards Jerusalem. A like way of Belomancy or Divination by Arrowes hath beene in request with Scythians, Alanes, Germans, with the Africans and Turks of Algier; but of another nature was that which was practised by Elisha, when by an Arrow shot from an Easterne window, he presignified the destruction of Syria, or when according unto the three stroakes of Joash, with an arrow upon the ground, he foretold the number of his victories; for thereby the Spirit of God particular'd the same, and determined the stroakes of the King unto three, which the hopes of the Prophet expected in twice that number.

We are unwilling to enlarge concerning many other, onely referring unto Christian considerations, what naturall effects can reasonably be expected, when to prevent the Ephialtes or night-Mare we hang up an hallow stone in our stables; when for amulets against Agues wee use the chips of Gallows and places of Execution. When for warts wee rub our hands before the Moone, or commit any maculated part unto the touch of the dead. Swarmes hereof our learned Selden and criticall Philologers might illustrate, whose abler performances our adventures doe but sollicite, meane while we hope they will plausibly receive our attempts, or candidely correct our misconceptions.

THE



THE SIXTH BOOK.

Of sundry common opinions Cosmographicall and Historicall.
The first Discourse comprehended in severall Chapters.

CHAP. I.

Concerning the beginning of the World, that the time thereof is not precisely to bee knowne, as men generally suppose: Of mens enquiries in what season or point of the Zodiack it began. That as they are generally made they are in vaine, and as particularly applied uncertain. Of the division of the seasons and foure quarters of the yeare, according to Astronomers and Physicians. That the common compute of the Ancients, and which is yet retained by most, is unreasonable and erroneous. Of some divinations and ridiculous deductions from one part of the yeare to another. And of the providence and wisdom of God in the site and motion of the Sun.



Concerning the World and its temporall circumscriptions, who ever shall strictly examine both extremes, shall easily perceive there is not onely obscurity in its end but its beginning; that as its period is inscrutable, so is its nativity indeterminable: That as it is presumption to enquire after the one, so is there no rest or satisfactory decision in the other. And hereunto we shall more readily assent, if we examine the informations, and take a view of the severall difficulties in this point; which we shall easily doe, if we consider the different conceits of men, and duly perpend the imperfections of their discoveries.

And first, the Heathens or histories of the Gentiles afford us slender satisfaction, nor can they relate any story, or affixe a probable point to its beginning: For some thereof (and those of the wisest amongst them) are so far from determining its beginning, that they opinion and maintaine it never had any at all; as the doctrine of Epicurus implyeth, and more positively Aristotle in his bookes *de Calo* declareth, endeavouring to confirme it with arguments of reason, and those appearingly demonstrative; wherein to speake indifferently, his labours are rationally, and uncontrollable upon the grounds assumed, that is of Physicall generation,

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neration, and a primary or first matter, beyond which no other hand was apprehended: But herein we remaine sufficiently satisfied from Moses, and the doctrine delivered of the Creation, that is a production of all things out of nothing, a formation not only of matter, but of forme, and a materiation even of matter it selfe.

Others are so far from defining the originall of the world or of mankinde, that they have held opinions not only repugnant unto Chronology but Philosophy; that is, that they had their beginning in the soyle where they inhabited, assuming or receiving appellations conformable unto such conceits: So did the Athenians tearm themselves *Autogenes* or *Aberigines*, and in testimony thereof did weare a golden insect on their heads; the very same name is also given unto the Inlanders or Midland inhabitants of this Island by Cæsar. But this is a conceit answerable unto the generation of the Giants, not admittable in Philosophy, much lesse in Divinity, which distinctly informeth wee are all the seed of Adam, that the whole world perished unto eight persons before the flood, and was after peopled by the Colonies of the sonnes of Noah; there was therefore never any *Autochthon*, or man arising from the earth but Adam, for the woman being formed out of the rib, was once removed from earth, and framed from that element under incarnation. And so although her production were not by copulation, yet was it in a manner seminall: For if in every part from whence the seed doth flow, there be contained the Idea of the whole, there was a feminallity and contracted Adam in the rib, which by the information of a soule, was individuated into Eve. And therefore this conceit applyed unto the originall of man, and the beginning of the world, is more justly appropriable unto its end; for then indeed men shall rise out of the earth, the graves shall shoot up their concealed seeds, and in that great Autumne men shall spring up, and awake from their Chaos againe.

Others have been so blind in deducing the originall of things, or delivering their owne beginnings, that when it hath fallen into controverfie they have not recurred unto Chronologie or the records of time, but betaken themselves unto probabilities, and the conjecturalities of Philosophy. Thus when the two ancient Nations, that is, Egyptians and Scythians contended for antiquity, the Egyptians (as Diodorus and Justine relate) pleaded their antiquity from the fertility of their soyl, inferring that men there first inhabited, where they were with most facility sustained, and such a land did they conceive was Egypt.

The Scythians although a cold and heavier Nation urged more acutely, deducing their arguments from the two active elements and principles of all things Fire and Water; for if of all things there was first an union, and that afterward fire overruled the rest, surely that part of earth which was coldest would first get free, and afford a place of habitation: But if all the earth were first involved in water, those parts

would

would surely first appeare, which were most high, and of most elevated situation, and such was theirs: These reasons carried indeed the antiquity from the Egyptians, but confirmed it not in the Scythians; for as Herodotus relateth from Pargitants their first King unto Darius, they accounted but two thousand years.

As for the Egyptians they invented another way of triall, for as the same Author relateth, Psamnitichus their King attempted this decision by a new & unknown experiment, bringing up two Infants with goats, and where they never heard the voice of man, concluding that to be the ancientest Nation, whose language they should first deliver; but herein he forgot that speech was by instruction not instinct, by imitation, not by nature; that men do speak in some kind but like Parrets, and as they are instructed, that is in simple tearms and words, expressing the open notions of things, which the second act of reason compoundeth into propositions, and the last into syllogisms & forms of ratiocination. And howsoever the account of Maneth the Egyptian Priest run very high, and it be evident that Mizraim peopled that Country, whose name with the Hebrews it beareth unto this day; and there be many things of great antiquity related in holy Scripture, yet was their exact account not very ancient; for Ptolomy their Countryman beginneth his Astronomicall compute no higher then Nabonasser, who is conceived by some the same with Salmanasser: As for the argument deduced from the fertility of the soyl, duly enquired, it rather overthroweth then promoteth their antiquity; for that Country whose fertility, they so advance, was in elder and ancient times no firme or open land, but some vast lake or part of the Sea, and became a gained ground by the mud and limous matter brought downe by the river Nilus, which settled by degrees into a firme land; according as is expressed by Strabo, and more at large by Herodotus in his Euterpe, both from the Egyptian tradition and probable inducements from reason, called therefore *fluvii donum*, an accession of the earth or tract of land acquired by the river.

Lastly, some indeed there are, who have kept records of time, and that of a considerable duration, yet doe the exactest thereof afford no satisfaction concerning the beginning of the world, or any way point out the time of its creation. The most authentick records and best approved antiquity are those of the Chaldeans; yet in the time of Alexander the Great, they attained not so high as the flood: For as Simplicius relateth, Aristotle required of Calisthenes who accompanied that Worthy in his expedition, that at his arrive at Babylon, he would enquire of the antiquity of their Records, and those upon compute hee found to amount unto 1903. yeares, which account notwithstanding ariseth no higher then 95. yeares after the flood. The Arcadians I confesse, were esteemed of great Antiquity, and it was usually said they were before the Moone; according unto that of Seneca, *Sydus post veteres*

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veteres Arcades editum; and that of Ovid, *Luna gens prior illa fuit*: But this as Censorinus observeth, must not be taken grossely, as though they were existent before that Luminary, but were so esteemed because they observed a set course of yeare, before the Greeks conformed their yeare unto the course and motion of the Moon.

Thus the heathens affording no satisfaction herein, they are most likely to manifest this truth who have been acquainted with holy Scripture, and the sacred Chronologie delivered by Moses, who distinctly sets downe this account, computing by certaine intervalls, by memorable Ara's, Epoche's, or tearms of time: As from the creation unto the flood, from thence unto Abraham, from Abraham unto the departure from Egypt, &c. Now in this number have only beene Samaritans, Jews, and Christians: for the Jews they agree not in their accounts, as Bodine in his method of history hath observed out of Baal Seder, Rabbi Nassom, Gersom, and others, in whose compute the age of the world is not yet 5400. yeares; and the same is more evidently observable from two most learned Jewes, Philo and Josephus, who very much differ in the accounts of time, and variously summe up these intervalls assented unto by all. Thus Philo from the departure out of Egypt unto the building of the Temple accounts but 920. yeares, but Josephus sets downe 1062. Philo from the building of the Temple to its destruction 440, Josephus 470, Philo from the creation to the destruction of the Temple 3373; but Josephus 3513, Philo from the deluge to the destruction of the Temple 1718, but Josephus 1913, in which computes there are manifest disparities, and such as much divide the concordance and harmony of times.

But for the Samaritans, their account is different from these or any others; for they account from the Creation to the Deluge, but 1302 yeares, which commeth to passe upon the different account of the ages of the Patriarks set downe when they begat children. For whereas the Hebrew, Greek and Latine texts account Jared 162 when he begat Enoch, they account but 62, and so in others. Now the Samaritans were no incompetent judges of times and the Chronologie thereof; for they embraced the five bookes of Moses, and, it seemeth, preserved the Text with far more integrity then the Jews; who as Tertullian, Chrysostome, and others observe did severall wayes corrupt the same especially in passages concerning the prophecies of Christ, so that as Jerome professeth, in his translation he was faine sometime to relieve himselfe by the Samaritane Pentateuch, as amongst others in that Text, Deuteronomy 27, *Maledictus omnis qui non permanserit in omnibus quae scripta sunt in libro Legis*. From hence St. Paul, Gal. 3. inferreth there is no justification by the Law, and urgeth the Text according to the Septuagint. Now the Jewes to afford a latitude unto themselves in their copies expunged the word *ל* or Syncategorematicall terme

terme *omnis*, wherein lyeth the strength of the Law, and of the Apostles argument; but the Samaritan Bible retained it right, and answerable unto what the Apostle had urged.

As for Christians from whom wee should expect the exactest and most concurring account, there is also in them a manifest disagreement, and such as is not easily reconciled. For first, the Latins accord not in their account; for to omit the calculation of the Ancients, of Austin, Bede, and others, the Chronology of the Modernes doth manifestly dissent; for Josephus Scaliger, whom Helvicus seemes to follow, accounts the Creation in 765. of the Julian period; and from thence unto the nativity of our Saviour alloweth 3947. yeares; But Dionysius Petavius a learned Chronologer dissenteth from this compute almost 40. yeares, placing the Creation in the 730. of the Julian period, and from thence unto the Incarnation accounteth 3983. yeares.

For the Greeks, their accounts are more anomalous; for if wee recurre unto ancient computes, we shall finde that Clemens Alexandrinus an ancient Father and preceptor unto Origen, accounted from the Creation unto our Saviour, 5664. yeares; for in the first of his *Stromatics*, he collecteth the time from Adam unto the death of Commodus to be 5858. yeares; now the death of Commodus he placeth in the yeare after Christ 194. which number deducted from the former there remaineth 5664. Theophilus Bishop of Antioch accounteth unto the nativity of Christ 5515. deduceable from the like way of compute, for in his first booke *ad Antolycum*, he accounteth from Adam unto Aurelius Verus 5695. yeares; now that Emperour dyed in the yeare of our Lord 180. which deducted from the former sum there remaineth 5515. Julius Africanus an ancient Chronologer, accounteth somewhat lesse, that is, 5500. Eusebius Orosius and others dissent not much from this, but all exceed five thousand.

The latter compute of the Greeks, as Petavius observeth, hath been reduced unto two or three accounts. The first account unto our Saviour 5501. and this hath beene observed by Nicephorus, Theophanes, and Maximus; the other accounts 5509. And this of all at present is most generally received by the Church of Constantinople, observed also by the Moscovite, as I have scene in the date of the Emperours letters, wherein this yeare of ours 1645. is from the yeare of the world 7154. which doth exactly agree unto this last account 5509. for if unto that summe be added 1645. the product will be 7154. by this Chronology are many Greeke Authors to be understood; and thus is Martinus Crusius to be made out, when in his *Turcograecian* history he delivers, the City of Constantinople was taken by the Turks in the yeare 5482 that is, 6961. and thus unto these Chronologists, the Prophecy of Elias the Rabbin, so much in request with the Jews, and in some credit also with Christians, that the world should last but six thousand yeares;

yeares; unto these, I say, it hath beene long and out of memory disproved for the sabbaticall and 7000. yeare wherein the world should end, (as did the Creation on the seventh day) unto them is long agoe expired, they are proceeding in the eight thousand yeare, and numbers exceeding those days which men have made the types and shadows of these: But certainly what Marcus Leo the Jew conceaveth of the end of the heavens, exceedeth the account of all that ever shall be; for though he conceaveth the Elementall frame shall end in the seventh or Sabbaticall millenary, yet cannot he opinion the heavens and more durable part of the Creation shall perish before seven times seven, or 49. that is, the Quadrant of the other seven, and perfect Jubilee of thousands.

And thus may we observe the difference and wide dissent of mens opinions, and there by the great incertainty in this establishment. The Hebrews not onely dissenting from the Samaritans, the Latins from the Greeks, but every one from another; insomuch that all can be in the right it is impossible; that any one is so, not with assurance determinable; and therefore as Petavius confesseth, to effect the same exactly without inspiration it is impossible, and beyond the Arithmetick of any but God himselfe: And therefore also what satisfaction may be obtained from those violent disputes, and eager enquirers in what day of the month the world began, either of March or October, likewise in what face or position of the Moone, whether at the prime or full, or soone after, let our second and serious considerations determine.

Now the reason and ground of this dissent, is the unhappy difference betweene the Greek and Hebrew editions of the Bible, for unto these two Languages have all Translations conformed; the holy Scripture being first delivered in Hebrew, and first translated into Greek. For the Hebrew, it is incontrovertibly the primitive and surest text to rely on, and to preserve the same entire and uncorrupt, there hath been used the most apparent caution humanity could invent; For as R. Ben. Maimon hath declared, if in the copying thereof one letter were written twice, or if one letter but touched another, that copy was not admitted into their Synagogues, but onely allowable to be read in Schooles, and private families; neither were they carefull onely in the exact number of their sections of the Law, but had also the curiosity to number every word, and affixed the account unto their severall books: Notwithstanding all which, divers corruptions ensued, and severall depravations slipt in, arising from many and manifest grounds, as hath beene exactly noted by Morinus in his preface unto the Septuagint.

As for the Septuagint, it is the first and most ancient Translation recorded, and of greater Antiquity then is the Chaldie version, occasioned by the request of Ptolomeus Philadelphus King of Egypt, for the

the richest ornament of his memorable Library; unto whom the high Priest addressed six Jews out of every Tribe, which amounteth unto 72. and by these was effected that Translation wee usually terme the Septuagint, or Translation of seventy; which name however it obtaine from the number of their persons, yet in respect of one common Spirit, it was the Translation but as it were of one man. For, as the story relateth, although they were set apart and severed from each other, yet were their Translations found to agree in every point, according as is related by Philo and Josephus, although wee finde not the same in Aristeus, who hath expressly treated thereof.

This Translation in ancient times was of great authority: By this many of the Heathens received some notions of the Creation and the mighty works of God; This in expresse termes is often followed by the Evangelists, by the Apostles, and by our Saviour himselfe in the quotations of the Old Testament. This for many years was used by the Jews themselves, that is, such as did Hellenize and dispersedly dwelt out of Palestine with the Greeks; And this also the succeeding Christians and ancient Fathers observed, although there succeeded other Greek versions, that is, of Aquila, Theodosius and Symmachus; for the Latin translation of Jerome, called now the Vulgar, was about 800. yeares after, although we shall not deny there was a Latin translation before, called the Italic version, and Austin forbad that of Jerom to be used in his Dioceffe.

Whatsoever Interpretations there have beene since, have beene especially effected with reference unto these, that is, the Greeke and Hebrew text; the Translators sometimes following the one, sometimes adhering unto the other, according as they found them consonant unto truth, or most correspondent unto the rules of faith. Now however it commeth to passe these two are very different in the enumeration of Genealogies, and particular accounts of time; for in the second intervall, that is betweene the flood and Abraham, there is by the Septuagint introduced one Cainan to be the son of Arphaxad and father of Salah; whereas in the Hebrew there is no mention of such a person, but Arphaxad is set downe to be the father of Salah. But in the first intervall, that is, from the Creation unto the flood, their disagreement is more considerable, for therein the Greek exceedeth the Hebrew, and common account almost 600. yeares; and 'tis indeed a thing not very strange, to be at the difference of a third part, in so large and collective an account, if wee consider how differently they are set forth in minor and lesse mistakeable numbers. So in the Prophecie of Jonah, both in the Hebrew and Latin text, it is said, Yet forty dayes and Ninivy shall be overthrowne: But the Septuagint saith plainly, and that in letters at length, *ἑξήκοντα ἡμέρας*, that is, yet three dayes and Ninivy shall be destroyed; which is a difference not newly crept in, but an observation

servation very ancient, discussed by Austin, and Theodoret, and was conceived an error committed by the Scribe. Men therefore have raised different computes of time, according as they have followed these different texts, and so have left the history of times far more perplexed then Chronology hath reduced.

Again, however the texts were plaine, and might in their numerations agree, yet were there no small difficulty to set downe a determinable Chronology, or establish from hence any fixed point of time; for the doubts concerning the time of the Judges are inexplicable, that of the Reignes and succession of Kings is as perplexed, it being uncertaine whether the yeares both of their lives and reignes ought to be taken as complete, or in their beginning and but currant accounts. And thus also it is not unreasonable to make some doubt whether in the first Ages, and long lives of our fathers, Moses doth not sometime account by full and round numbers, whereas strictly taken they might be some few yeares above or under; As in the age of Noah, it is delivered to be just five hundred when he begat Sem, whereas perhaps hee might be somewhat above or below that round and complete number, for the same way of speech is usuall in diverse other expressions: Thus doe we say the Septuagint, and using the full and articulate number, doe write the Translation of Seventy, whereas we have shewen before, the precise number was seventy two; so is it said that Christ was three dayes in the grave, according to that of Matthew, as Jonas was three dayes and three nights in the Whales belly, so shall the Son of man be three dayes and three nights in the heart of the earth: which notwithstanding must be taken Synecdochically, or by understanding a part for an whole day; for he remained but two nights in the grave, for he was buried in the afternoone of the first day, and arose very early in the morning on the third; that is, hee was interred in the Eve of the Sabbath, and arose the morning after it.

Moreover, although the number of yeares be determined and rightly understood, there be without doubt a certaine truth herein, yet the text speaking obscurely or dubiously, there is oft times no slender difficulty at what point to begin or terminate the account. So when it is said, Exod. 12. the sojourning of the children of Israel who dwelt in Ægypt was 430. yeares, it cannot be taken strictly, and from their first arrivall into Ægypt, for their habitation in that land was farre lesse; but the account must begin from the covenant of God with Abraham, and must also comprehend their sojourns in the land of Canaan, according as is expressed, Gal. 3. The Covenant that was confirmed before of God in Christ, the Law which was 430. yeares after cannot disanull. Thus hath it also happened in the account of the 70. yeares of their captivity, according to that of Jeremy, chap. 20. This whole land shall be a desolation, and these nations shall serve the King of Babylon 70. yeares;

yeares; now where to begin, or end this compute ariseth no small difficulty: for there were three remarkable captivities, and deportations of the Jewes; the first was in the third or fourth yeare of Joachim, and first of Nabuchodonozer, when Daniel was carryed away; the second in the raigne of Jeconiah, and the eighth yeare of the same King; the third and most deplorable in the raigne of Zedechias, and in the nineteenth yeare of Nabuchodonozer, whereat both the Temple and City were burned. Now such is the different conceit of these times, that men have computed from all; but the probablest account and most concordant unto the intention of Jeremy, is from the first of Nabuchodonozer unto the first of King Cyrus over Babylon; although the Prophet Zachary, chap. 1. 12. accounteth from the last. O Lord of hostes, How long! Wilt thou not have mercy on Jerusalem, against which thou hast had indignation these threescore and ten yeares? for he maketh this expostulation in the second yeare of Darius Hystaspes, wherein he prophesied, which is about eightene yeares in account after the other.

Thus also although there be a certaine truth therein, yet is there no easie doubt concerning the seventie weekes, or seventie times seven yeares of Daniel; whether they have reference unto the nativitie or passion of our Saviour, and especially from whence, or what point of time they are to be computed; for thus is it delivered by the angel Gabriel: Seventie weekes are determined upon thy people; and againe in the following verse: Know therefore and understand, that from the going forth of the Commandment to restore and to build Jerusalem unto the Messias the Prince, shall be seven weekes, and threescore and two weekes, the street shall be built againe, and the wall even in troublesome times; and after threescore and two weekes shall Messiah be cut off; Now the going out of the Commandment to build the City, beeing the point from whence to compute, there is no slender controversie when to begin; for there are no lesse then foure severall Edicts to this effect; the one in the first yeere of Cyrus, the other in the second of Darius, the third and fourth in the seventh, and in the twentieth of Artaxerxes Longimanus; although as Petavius accounteth it best, accordeth unto the twentieth yeare of Artaxerxes, from whence Nehemiah deriveth his Commission: Now that computes are made incertainely with reference unto Christ, it is no wonder, since I perceive the time of his Nativitie is in controversie, and no lesse his age at his Passion: For Clemens and Tertullian conceive he suffered at thirtie, but Irenæus a Father nearer his time, is further off in his account, that is, betweene forty and fifty.

Longomontanus a late Astronomer, endeavours to discover this secret from Astronomical grounds, that is, the Apogee of the Sunne, conceiving the Excentricity invariable, and the Apogee yearly to move

move one scruple, two seconds, fifty thirds, &c. Wherefore if in the time of Hipparchus, that is, in the yeare of the Julian period 4557. it was in the fifth degree of Gemini, and in the dayes of Tycho Brahe, that is, in the yeare of our Lord 1588. or of the world 5554. the same was removed unto the fifth degree of Cancer; by the proportion of its motion, it was at the creation first in the beginning of Aries, and the Perigeum or nearest point in Libra. But this conceit how ingenious or subtile soever is not of satisfaction; it being not determinable, or yet agreed in what time precisely the Apogeeum absolveth one degree, as Petavius hath also delivered in his fourth *de Doctrina temporum*.

Lastly, however these or other difficulties intervene, and that wee cannot satisfie our selves in the exact compute of time, yet may wee notwithstanding sit downe with the common and usuall account; nor are these differences derogatorie unto the Advent or Passion of Christ, unto which indeed they all doe seeme to point; for the Prophecies concerning our Saviour, were indefinitely delivered before that of Daniel; for so was that pronounced unto Eve in Paradise, that after of Balaam, those of Isaiah and the Prophets, and that memorable one of Jacob, the Scepter shall not depart from Israel untill Shilo come; which time notwithstanding it did not define at all. In what year therefore soever, either from the destruction of the Temple, from the reedifying thereof, from the Flood, or from the Creation he appeared, certaine it is, that in the fulnesse of time he came. When he therefore came is not so considerable, as that he is come; in the one there is consolation, in the other no satisfaction; The greater Quere is, when he will come again, and yet indeed it is no Quere at all; for that is never to be knowne, and therefore vainely enquired; 'tis a professed and authentick obscurity, unknown to all but to the omniscience of the Almighty. Certainly the ends of all things are wrapt up in the hands of God, he that undertakes the knowledge thereof forgets his owne beginning, and disclaims his principles of earth; No man knows the end of the world, nor assuredly of any thing in it: God sees it because unto his Eternity it is present, hee knoweth the ends of us, but not of himselfe, and because hee knowes not this, he knoweth all things, and his knowledge is endlesse, even in the object of himselfe.

CHAP. II.

Of mens Enquiries in what season or point of the Zodiack it began, that as they are generally made they are in vaine, and as particularly uncertaine.

Concerning the Seasons, that is, the quarters of the yeare; some are ready to enquire, others to determine, in what season, whether in the Autumne, Spring, Winter or Summer the world had its beginning. Where-

Wherein we cannot but affirme, that as the question is generally, and in respect of the whole earth proposed, it is most vainely, and with a manifest injury unto reason in any particular determined, because when ever the world had its beginning it was created in all these four. For, as we have else where delivered, whatsoever signe the Sun posseseth (whose recesses or vicinity defineth the quarters of the yeare) those four seasons were all actually existent, it being the nature of that Luminary to distinguish the severall seasons of the yeare, all which it maketh at one time in the whole earth, and successively in any part thereof. Thus if wee suppose the Sunne created in Libra, in which signe unto some it maketh Autumne, at the same time it had beene winter unto the Northern-pole; for unto them at that time the Sun beginneth to be invisible, and to shew it selfe againe unto the pole of the South, unto the position of a right Sphere, or directly under the Equator, it had beene Summer; for unto that situation the Sunne is at that time verticall: unto the latitude of Capricorne, or the Winter Solstice it had been spring; for unto that position it had been in a middle point, and that of ascent, or approximation; but unto the latitude of Cancer or the Summer Solstice it had been Autumne; for then had it it beene placed in a middle point, and that of descent; or elongation.

And if wee shall take it literally what Moses described popularly, this was also the constitution of the first day: for when it was evening unto one longitude, it was morning unto another; when night unto one, day unto another; and therefore that question whether our Saviour shall come againe in the twilight, as is conceived he arose, or whether he shall come upon us in the night, according to the comparison of a thiefe, or the Jewish tradition, that he will come about the time of their departure out of Egypt, when they ate the Pascheover, and the Angell passed by the doores of their houses; this Quere I say needeth not further dispute, for if the earth be almost every where inhabited, and his coming (as Divinity affirmeth) must needs be unto all, then must the time of his appearance bee both in the day and night: For if unto Jerusalem, or what part of the world soever he shall appear in the night, at the same time unto the Antipodes it must be day, if twilight unto them; broad day unto the Indians; if noone unto them, yet night unto the Americans; and so with variety according unto various habitations, or different positions of the Spheare, as will be easily conceived by those who understand the affections of different habitations, and the conditions of Antæci, Perieci, and Antipodes; and so although he appeare in the night, yet may the day of Judgement or Doomsday well retain that name; for that implyeth one revolution of the Sun, which maketh the *revolution*, that is, the day and night, and that one naturall day: and yet to speake strictly, if (as the Apostle affirmeth) we shall be changed

in the twinkling of an eye, (and as the Schooles determine) the destruction of the world shall not be successive but in an instant, we cannot properly apply thereto the usuall distinctions of time, calling that twelve houres, which admits not the parts thereof, or use at all the name of time, when indeed the nature thereof shall perish.

But if the enquiry be made unto a particular place, and the question determined unto some certaine Meridian; as namely, unto Mesopotamia, wherein the seat of Paradise is presumed, the Quarry becomes more seasonable, and is indeed in nature also determinable; yet positively to define that season, there is I conceive no slender difficulty; for some contend that it began in the Spring, as beside Eusebius, Ambrose, Bede, and Theodoret, some few years past *Henrico Philippi* in his Chronologie of the Scripture: Others are altogether for Autumne, and from hence doe our Chronologers commence their compute, as may be observed in Helvicus, Jos. Scaliger, Calvisius and Petavius.

CHAP. III.

Of the Divisions of the seasons and foure quarters of the yeare, according unto Astronomers and Physitians, that the common compute of the Ancients, and which is still retained by some is very questionable.

AS for the divisions of the yeare, and the quartering out this remarkable standard of time, there have passed especially two distinctions; the first in frequent use with Astronomers, according to the cardinall interfections of the Zodiack, that is the two *Æquinoxials* and both the Solsticial points, defining that time to be the spring of the yeare, wherein the Sunne doth passe from the *Æquinox* of Aries unto the Solstice of Cancer, the time between the Solstice and the *Æquinox* of Libra, Summer; from thence unto the Solstice of Capricornus, Autumne; and from thence unto the *Æquinox* of Aries againe Winter. Now this division although it be regular and equall, is not universall; for it includeth not those latitudes, which have the seasons of the year double, as have the Inhabitants under the *Æquator*, or else between the Tropicks; for unto them the Sunne is verticall twice a yeare, making two distinct Summers in the different points of verticallity. So unto those which live under the *Æquator*, when the Sunne is in the *Æquinox* it is Summer, in which points it maketh Spring or Autumne unto us; and unto them it is also Winter when the Sun is in either Tropick; whereas unto us it maketh alwayes Summer in the one: And the like will happen unto those habitations, which are between the Tropicks, and the *Æquator*.

A second and more sensible division there is observed by Hippocrates, and most of the ancient Greekes, according to the rising and setting

setting of divers starres, dividing the yeare, and establishing the account of seasons from usuall alterations, and sensible mutations in the ayre, discovered upon the rising and setting of those starres; accounting the Spring from the *Æquinoxiall* point of Aries, from the rising of the Pleiades, or the severall starres on the backe of Taurus, the Summer, from the rising of Arcturus, a starre between the thighes of Bootes, Autumne, and from the setting of the Pleiades, Winter: of these divisions because they were unequall they were faine to subdivide the two larger portions, that is of the Summer and Winter quarters; the first part of the Summer they named *θερος*, the second unto the arising of the Dog-star, *ως*, from thence unto the setting of Arcturus *ὁπώγας*; the Winter they divided also into three parts, the first part, or that of seed time they named *καρπεον*, the middle or proper Winter, *χελων*, the last which was their planting or grasing time *εὐραλια*; this way of division was in former ages received, is very often mentioned in Poets, translated from one Nation to another, from the Greeks unto the Latines, as is received by good Authors, and delivered by Physitians, even unto our times.

Now of these two, although the first in some latitude may be retained, yet is not the other in any to be admitted: For in regard of time (as we declare in the Chap. of canicular dayes) the starres do vary their longitudes, and consequently the times of their ascension and descension; That starre which is the terme of numeration or point, from whence we commence the account, altering his site and longitude in proceffe of time, and removing from West to East, almost one degree in the space of 72 yeares; so that the same starre, since the age of Hippocrates who used this account, is removed in *consequentia* about 27 degrees; which difference of their longitudes, doth much diversifie the times of their ascents, and rendereth the account unstable which shall proceed thereby.

Again, in regard of different latitudes, this cannot be a settled rule or reasonably applyed unto many Nations; for whereas the setting of the Pleiades or seven starres is designed the terme of Autumne, and the beginning of Winter, unto some latitudes these starres doe never set, as unto all beyond 67 degrees; and if in severall and farre distant latitudes we observe the same starre as a common terme of account unto both, we shall fall upon an unexpected, but an unsufferable absurdity; and by the same account it will be Summer unto us in the North, before it be so unto those, which unto us are Southward, and many degrees approaching nearer the Sun. For if we consult the doctrine of the sphere, and observe the ascension of the Pleiades, which maketh the beginning of Summer, we shall discover that in the latitude of 40, these starres arise in the 16 degree of Taurus; but in the latitude of 50 they ascend in the eleventh degree of the same signe, that is 5 dayes sooner; so shall it bee

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Summer unto London before it be unto Toledo, and begin to scorch in England, before it grow hot in Spaine.

This is therefore no generall way of compute, nor reasonable to be derived from one Nation unto another, the defect of which consideration hath effected divers errors in Latine Poets, translating these expressions from the Greekes, and many difficulties even in the Greekes themselves; which living in divers latitudes, observed yet the same compute; so that to make them out, wee are faine to use distinctions, sometime computing cosmically what they intended heliacally, and sometime in the same expression the rising heliacally, the setting cosmically; otherwise it will be hardly made out, what is delivered by approved Authors; and is an observation very considerable unto those which meet with such expressions in ancient Writers, as they are very frequent in the Poets of elder times, especially Hesiod, Aratus, Virgil, Ovid, and Manilius, and the Authors Geoponicall, or which have treated *de re Rustica*, as Constantine, Marcus Cato, Columella, Palladius and Varro.

Lastly, the absurdity in making common unto many Nations those considerations, whose verity is but particular unto some, will more evidently appeare, if we examine the rules and precepts of some one climate, and fall upon consideration with what incongruity they are transferable unto others; Thus is it advised by Hesiod

Pleiadibus Atlante natis orientibus

Incipe messeri, Arationem vero occidentibus: implying hereby the Heliacall ascent and cosmicall descent of those starres. Now herein he setteth downe a precept to beginne harvest at the arise of the Pleiades, which in his time was in the beginning of May. This indeed was consonant unto the clyme wherein he lived, and their harvest began about that season, but is not applyable unto our owne; for therein we are so farre from expecting an harvest, that our Barley seed is not ended: Againe, correspondent unto the precept of Hesiod, Virgil affordeth another—

*Ante tibi eorū Atlantides abscondantur,
Debita quam sulcis committas semina.*

Understanding hereby their Cosmicall descent, or their setting when the Sunne ariseth, and not their Heliacall obscuration, or their inclusion in the lustre of the Sunne, as Servius upon this place would have it; for at that time these starres are many signes removed from that luminary. Now herein he strictly delivereth a precept, not to beginne to sow before the setting of these starres, which notwithstanding without an injury to agriculture, cannot be observed in England; for they set unto us about the 12 of November, when our seed time is almost ended.

And this diversity of clyme and observations Cælestiall, precisely observed

observed unto certaine starres and months, hath not onely overthrowne the deductions of one Nation to another, but hath perturbed the observation of festivities and statary solemnities, even with the Jewes themselves: for unto them it was commanded that at their entrance into the land of Canaan, in the fourteenth of the first month, that is Abib or Nisan which is Spring with us, they should observe the celebration of the Paschever; and on the morrow after, which is the fifteenth day of the feast of unleavened bread; and in the sixteenth of the same month, that they should offer the first sheafe of the harvest. Now all this was feasible and of an easie possibility in the land of Canaan, or latitude of Jerusalem; for so is it observed by severall Authors in later times, and is also testified by holy Scripture in times very far before; for so when the children of Israel passed the river Jordan, it is delivered by way of Parenthesis, that the river overfloweth its banks in the time of harvest, which is conceived the time wherein they passed, and chap. 5. it is after delivered, that in the fourteenth day they celebrated the Paschever, which according to the Law of Moses was to be observed in the first month, or month of Abib.

And therefore it is no wonder, nor any Paradox what is related by Luke, that the Disciples upon the Deuteroprotein, as they passed by, plucked the ears of corne; for the Deuteroprotein or second first Sabbath, was the first Sabbath after the deuter or second of the Paschever, which was the sixteenth of Nisan or Abib; and this is also evidenced from the received construction of the first and latter rayne, delivered Deut. 11. I will give you the rain of your land in his due season, the first rain and the latter raine; for the first rayn fell upon the seed time about October, and was to make the seed to root, the latter was to fill the ear, and fell in Abib, or March the first month; according as is expressed Joel 2. And he will cause to come downe for you the rayne, the former rayne, and the latter rayne in the first month, that is the month of Abib wherein the Paschever was observed. This was the Law of Moses, and this in the land of Canaan was well observed according to the first institution; but since their dispersion and habitation in Countries, whose constitutions admit not such tempestivity of harvest, and many not before the latter end of Summer, notwithstanding the advantage of their Lunary account, and intercalary month, Veader affixed unto the beginning of the yeare, there will be found a great disparity in their observations, nor can they strictly and at the same season with their forefathers observe the commands of their God.

To adde yet further, those Geoponicall rules and precepts of Agriculture which are delivered by divers Authors, are not to be generally received, but respectively understood unto clymes wherein they are determined. For whereas one adviseth to sow this or that at one season, a second to set this or that at another, it must be conceived relatively,

Josh. 3.

ly, and every Nation must have its Country Farme; for herein we may observe a manifest and visible difference, not only in the seasons of harvest, but in the graines themselves; for with us Barley harvest is made after Wheat harvest, but with the Israelites and Egyptians it was otherwise; and so is it expressed by way of priority, Ruth the 2. So Ruth kept fast by the maidens of Boaz to glean unto the end of Barley harvest and of Wheat harvest; which in the plague of hayle in Egypt is more plainly delivered Exod. 9. And the Flax and the Barley were smitten, for the Barley was in the eare and the Flax was balled, but the Wheat and the Rye were not smitten, for they were not growne up.

And thus we see the account established upon the arise or descent of the starres can be no reasonable rule unto distant Nations at all, and by reason of their retrogression but temporary unto any one; nor must these respective expressions be entertained in absolute considerations, for so distinct is the relation, and so artificiall the habitude of this inferiour globe unto the superiour, and even of one thing in each unto the other: that generall rules are dangerous, and applications most safe that runne with security of circumstance, which rightly to effect is beyond the subtilty of sense, and requires the artifice of reason.

CHAP. IV.

Of some computation of dayes and deductions of one part of the year unto another.

Fourthly, there are certaine vulgar opinions concerning dayes of the yeare and conclusions popularly deduced from certaine dayes of the month; men commonly beleeving the dayes encrease and decrease equally in the whole yeare, which notwithstanding is very repugnant unto truth; For they encrease in the month of March, almost as much as in the two months of January and February; and decrease as much in September, as they doe in July and August: For indeed the dayes encrease or decrease according to the declination of the Sun; that is, its deviation Northward or Southward from the Equator. Now this digression is not equall, but neare the Equinoxiall interfections, it is right and greater, neare the Solstices more oblique and lesser. So from the eleventh of March the vernall Equinox unto the eleventh of Aprill the Sun declineth to the North twelve degrees; from the eleventh of Aprill unto the eleventh of May but 8, from thence unto the 15 of June, or the Summer Solstice but 3 and a halfe; all which make 23 degrees and an halfe, the greatest declination of the Sun.

And this inequality in the declination of the Sun in the Zodiacke or line of life, is correspondent unto the growth or declination of man; for setting out from our infancie we encrease not equally, or regularly

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attaine to our state or perfection; nor when we descend from our state, and tend unto the earth againe is our declination equall, or carryeth us with even paces unto the grave. For, as Hippocrates affirmeth, a man is hottest in the first day of his life, and coldest in the last; his naturall heate setteth forth most vigorously at first, and declineth most sensibly at last. And so though the growth of man end not perhaps untill 21. yet in his stature more advanced in the first septenary then in the second, and in the second, more then in the third, and more indeed in the first seven yeares, then in the fourteene succeeding: for, what stature we attaine unto at seven yeares, we do sometimes but double, most times come short at one and twenty. And so do we decline againe; for in the latter age upon the Tropick and first descension from our solstice, wee are scarce sensible of declination; but declining further, our decrement accelerates, we set apace, and in our last dayes precipitate into our graves. And thus are also our progressions in the wombe, that is, our formation, motion, our birth or exclusion. For our formation is quickly effected, our motion appeareth later, and our exclusion very long after: if that be true which Hippocrates and Avicenna have declared, that the time of our motion is double unto that of formation, and that of exclusion treble unto that of motion; as if the Infant bee formed at 35. dayes, it moveth at 70. and is borne the 210. day, that is, the seventh month; or if it receaves not formation before 45. dayes, it moveth the 90. day, and is excluded in 270. that is, the 9. month.

There are also certaine popular prognosticks drawne from festivals in the Calendar, and conceived opinions of certaine dayes in months, so is there a generall tradition in most parts of Europe, that inferreth the coldnesse of succeeding winter from the shining of the Sun upon Candlemas day, according to the proverbiall distich.—

Si Sol splendescat Mariâ purificante,

Major erit glacies post festum quam fuit ante.

So is it usuall amongst us to qualifie and conditionate the twelve months of the yeare, answerably unto the temper of the twelve dayes in Christmasse, and to ascribe unto March certaine borrowed dayes from Aprill; all which men seeme to beleeve upon annuall experience of their own, and the received traditions of their forefathers.

Now it is manifest, and most men likewise know, that the Calendars of these computers, and the accounts of these dayes are very different; the Greeks dissenting from the Latins, and the Latins from each other, the one observing the Julian or ancient account, as great Britaine and part of Germany; the other adhering to the Gregorian or new account, as Italy, France, Spaine, and the united Provinces of the Netherlands. Now this latter account by ten dayes at least anticipateth the other; so that before the one beginneth the account, the other is past it; yet in these severall calculations, the same events seeme true,

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and men with equall opinion of verity, expect and confesse a confirmation from them both. Whereby is evident the Oraculous authority of tradition, and the easie seduction of men, neither enquiring into the verity of their substance, nor reforming upon repugnance of circumstance.

And thus may diverse easily be mistaken who superstitiously observe certaine times, or set downe unto themselves an observation of unfortunate months, or dayes, or howres; As did the Egyptians, two in every month, and the Romans, the dayes after the Nones, Ides, and Calends. And thus the Rules of Navigators must often faile, setting downe, as Rhodiginus observeth, suspected and ominous dayes, in every month, as the first and seventh of March, the fift and sixt of Aprill, the sixt, the twelfth and fifteenth of February. For the accounts hereof in these months are very different in our dayes, and were different with severall nations in Ages past; and yet how strictly soever the account be made, and even by the selfe same Calendar, yet is it possible that Navigators may be out. For so were the Hollanders, who passing Westward through *fretum le Mayre*, and compassing the Globe, upon their returne into their owne Countrey, found that they had lost a day. For if two men at the same time travell from the same place, the one Eastward, the other Westward round about the earth, and meet in the same place from whence they first set forth; it will so fall out, that he which hath moved Eastward against the diurnall motion of the Sun, by anticipating daylie something of its circle with his owne motion, will gaine one day; but he that travelleth Westward, with the motion of the Sun, by seconding its revolution, shall lose or come short a day; and therefore also upon these grounds that Delos was seated in the middle of the earth, it was no exact decision, because two Eagles let flye East and West by Jupiter, their meeting fell out just in the Island Delos.

CHAP. V.

A Digression of the wisdom of God in the site and motion of the Sun.

HAVING thus beheld the Ignorance of man in some things, his error and blindnesse in others; that is, in the measure of duration both of yeares and seasons, let us a while admire the Wisdome of God in this distinguisher of times, and visible Deity, as some have termed it, the Sun; which though some from its glory adore, and all for its benefits admire, we shall advance from other considerations, and such as illustrate the artifice of its Maker; nor doe wee thinke we can excuse the duty of our knowledge, if we onely bestow the flourish of Poetry hereon, or those commendatory conceits which popularly set forth the

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eminency of this creature, except we ascend unto subtiler considerations, and such as rightly understood, convincively declare the wisdom of the Creator, which since a Spanish Physition hath begun, wee will enlarge with our owne deductions; and this we shall endeavour from two considerations, that is, its proper situation, and wisely ordered motion.

And first, we cannot passe over his providence in that it moveth at all; for, had it stood still, and were it fixed like the earth, there had beene then no distinction of times, either of day or yeare, of Spring, of Autumne, of Summer, or of Winter; for these seasons are defined by the motions of the Sun; when that approacheth neere us, wee call it Summer, when furthest off, Winter, when in the middle spaces, Spring or Autumne; whereas remaining in one place these distinctions had ceased, and consequently the generation of all things depending on their vicissitudes; making in one hemisphere a perpetuall Summer, in the other a deplorable and comfortlesse Winter, and thus had it also beene continuall day unto some, and perpetuall night unto others; for the day is defined by the abode of the Sun above the Horizon, and the night by its continuance below; so should we have needed another Sun, one to illustrate our hemisphere, a second to enlighten the other, which inconvenience will ensue, in what site soever we place it, whether in the poles, or the Equator, or betweene them both; no spherically body of what bignesse soever illuminating the whole sphere of another, although it illuminate something more then halfe of a lesser, according unto the doctrine of the Opticks.

His wisdom is againe discernable not onely in that it moveth at all, and in its bare motion, but wonderfull in contriving the line of its revolution; which from his artifice is so effected, that by a vicissitude in one body and light, it sufficeth the whole earth, affording thereby a possible or pleasurable habitation in every part thereof; and that is the line Ecliptick, all which to effect by any other circle it had beene impossible. For first, if we imagine the Sun to make his course out of the Ecliptick, and upon a line without any obliquity, let it be conceived within that Circle, that is, either on the Equator, or else on either side (for, if we should place it either in the Meridian or Colures, beside the subversion of its course from East to West, there would ensue the like inconveniences.) Now if we conceive the Sun to move betweene the obliquity of this Ecliptick in a line upon one side of the Equator, then would the Sunne be visible but unto one pole, that is, the same which was nearest unto it. So that unto the one it would be perpetuall day, unto the other perpetuall night; the one would be oppressed with constant heate, the other with unsufferable cold; and so the defect of alternation would utterly impugne the generation of all things, which naturally require a vicissitude of heate to their production, and no

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lesse to their encrease and conservation.

But if we conceive it to move in the *Æquator*; first, unto a parallell sphere, or such as have the pole for their Zenith, it would have made neither perfect day nor night; for being in the *Æquator* it would intersect their Horizon, and be halfe above, and halfe beneath it; or rather it would have made perpetuall night to both: for though in regard of the rationall Horizon, which bissecteth the Globe into equall parts, the Sunne in the *Æquator* would intersect the Horizon: yet in respect of the sensible Horizon (which is defined by the eye) the Sun would bee visible unto neither. For if as ocular witnesses report, and some doe also write, by reason of the connexity of the Earth the eye of man under the *Æquator* cannot discover both the poles, neither would the eye under the poles discover the Sunne in the *Æquator*. And thus would there nothing fructifie either neare or under them, the Sunne being Horizontall to the poles, and of no considerable altitude unto parts a reasonable distance from them. Again, unto a right sphere, or such as dwell under the *Æquator*, although it made a difference in day and night, yet would it not make any distinction of seasons: for unto them it would be constant Summer, it being alwayes verticall, and never deflecting from them: So had there been no fructification at all, and the Countries subjected would be as inhabitable, as indeed antiquity conceived them.

Lastly, it moving thus upon the *Æquator*, unto what position soever, although it had made a day, yet could it have made no yeare; for it could not have had those two motions now ascribed unto it, that is, from East to West, whereby it makes the day, and likewise from West to East, whereby the yeare is computed: for according to Astronomy, the poles of the *Æquator* are the same with those of the *Primum Mobile*. Now it is impossible that on the same circle, having the same poles, both these motions from opposite termes, should be at the same time performed; all which is salved if we allow the Sunne an obliquity in his annuall motion, and conceive him to move upon the poles of the Zodiack, distant from these of the world 23 degrees and an halfe: And thus may we discern the necessity of its obliquity, and how inconvenient its motion had been upon a circle parallell to the *Æquator*, or upon the *Æquator* it selfe.

Now with what providence this obliquity is determined, we shall evidently perceive upon the ensuing inconveniences from any deviation: for first, if its obliquity had been lesse, as instead of twenty three degrees, twelve or the halfe thereof, the vicissitude of seasons appointed for the generation of all things, would surely have been too short; for different seasons would have hudled upon each other, and unto some it had not been much better then if it had moved on the *Æquator*: but had the obliquity been greater then now it is, as double or of 40.

degrees

degrees, severall parts of the earth had not been able to endure the disproportionable differences of seasons, occasioned by the great recess, and distance of the Sunne: for unto some habitations the Summer would have been extreme hot, and the Winter extreme cold; likewise the Summer temperate unto some, but excessive and in extremity unto others, as unto those who should dwell under the Tropicke of Cancer, as then would doe some part of Spaine, or ten degrees beyond, as Germany, and some part of England, who would have Summers as now the Moores of Africa; for the Sunne would sometime be verticall unto them: but they would have Winters like those beyond the Articke Circle, for in that season the Sunne would be removed above 80 degrees from them. Again, it would be temperate to some habitations in the Summer, but very extreme in the Winter; temperate to those in two or three degrees beyond the Artick Circle, as now it is unto us; for they would be equidistant from that Tropick, even as we are from this at present; but the Winter would be extreme, the Sun being removed above an hundred degrees, and so consequently would not be visible in their Horizon; no position of sphere discovering any starre distant above 90 degrees, which is the distance of every Zenith from the Horizon. And thus if the obliquity of this Circle had been lesse, the vicissitude of seasons had been so small as not to be distinguished; if greater, so large and disproportionable as not to be endured.

Now for its situation, although it held this Eclypticke line, yet had it been seated in any other Orbe, inconveniences would ensue of condition like the former; for had it been placed in the lowest sphere, and where is now the Moone, the yeare would have consisted but of one moneth; for in that space of time it would have passed through every part of the Eclyptick, so would there have been no reasonable distinction of seasons required for the generation and fructifying of all things; contrary seasons which destroy the effects of one another, so suddenly succeeding; besides by this vicinity unto the earth its heat had been intollerable: for if (as many affirme) there is a different sense of heat from the different points of its proper orbe, and that in the Apogeeum or highest point (which happeneth in Cancer) it is not so hot under that Tropick, on this side the *Æquator*, as unto the other side in the Perigeum or lowest part of the eccentric (which happeneth in Capricornus) surely being placed in an orbe farre lower, its heat would be unsufferable, nor needed we a fable to set the world on fire.

But had it been placed in the highest Orbe or that of the eight sphere, there had been none but Platoes yeare, and a farre lesse distinction of seasons; for one yeare had then been many, and according unto the slow revolution of that orbe which absolveth not his course in many thousand years, no man had lived to attaine the account thereof. These are the inconveniences ensuing upon its situation in the extreme orbes, and

and had it been placed in the middle orbes of the Planets, there would have ensued absurdities of a middle and participating nature.

Nor whether we adhere unto the hypothesis of Copernicus, affirming the Earth to move, and the Sunne to stand still; or whether wee hold as some of late have concluded from the spots in the Sun, which appeare and dis-appeare againe; that besides the revolution it maketh with its Orbes, it hath also a dieticall motion and rowles upon its owne poles; whether I say we affirme these or no, the illations before mentioned are not thereby infringed: we therefore conclude this contemplation, and are not afraid to believe, it may be literally said of the wisdom of God, what men will have figuratively spoken of the works of Christ, that if the wonders thereof were duly described, the whole world, that is all within the last circumference, would not containe them; for as his wisdom is infinit, so cannot the due expressions thereof be finite, and if the world comprise him not, neither can it comprehend the story of him.

CHAP. VI.

Concerning the vulgar opinion that the earth was slenderly peopled before the Flood.

BESIDE the slender consideration men of latter times doe hold of the first ages, it is commonly opinioned, and at first thought generally imagined, that the Earth was thinly inhabited, at least not remotely planted before the Flood; so that some conceiving it needlesse to bee universal, have made the deluge particular, and about those parts where Noah built his Arke; which opinion because it is not only injurious to the Text, humane history, and common reason, but also derogatory unto that great worke of God, the universall inundation, it will be needfull to make some farther Inquisition; and (although predetermined by opinion) whether many might not suffer in the first Flood, as they shall in the last Flame, that is who knew not Adam nor his offence, and many perish in the deluge, who never heard of Noah or the Arke of his preservation.

Now for the true enquire thereof, the meanes are as obscure as the matter, which being naturally to be explored by History humane or divine, receiveth thereby no small addition of obscurity: for as for humane relations, they are so fabulous in Deucalions flood, that they are of little credit about Ogyges & Noah's; for the Heathens (as Varro accounteth) make three distinctions of time: the first from the beginning of the World unto the generall Deluge of Ogyges they terme, *adelon*; that is a time not much unlike that which was before time, im-manifest and unknowne, because thereof there is almost nothing or very

very obscurely delivered: for though divers Authors have made some mention of the Deluge, as Manethon the Egyptian Priest, *Zenophon de equivocis*, *Fabius Pictor de Aureo seculo*, *Mar. Cato de originibus*, and *Archilochus* the Greek, who introduceth also the testimony of Moses in his fragment *de temporibus*: yet have they delivered no account of what preceded or went before it. Josephus I confesse in his Discourse against Appion induceth the antiquity of the Jewes unto the flood, and before, from the testimony of humane Writers, insisting especially upon *Maseas of Damascus*, *Jeronymus Aegyptius*, and *Berosus*; and confirming the long duration of their lives, not only from these, but the authority of *Hesiod*, *Erathius*, *Hellanicus* and *Agefilaus*. *Berosus* the Chaldean Priest, writes most plainly mentioning the City of *Enos*, the name of *Noah* and his sonnes, the building of the Arke, and also the place of its landing. And *Diodorus Siculus* hath in his third booke a passage which examineth advanceth as high as *Adam*, for the Chaldeans, saith he, derive the originall of their Astronomy and letters forty three thousand yeares before the Monarchy of *Alexander the Great*; now the yeares whereby they computed the antiquity of their letters being as *Xenophon* interprets to be accounted Lunary, the compute will arise unto the time of *Adam*: for forty three thousand Lunary years make about three thousand six hundred thirty foure yeares, which answereth the Chronologie of time from the beginning of the world unto the reigne of *Alexander*, as *Annius of Viterbo* computeth in his Comment upon *Berosus*.

The second space or intervall of time is accounted from the Flood unto the first Olympiade, that is the yeare of the world 3174. which extendeth unto the dayes of *Isaiah* the Prophet, and some twenty years before the foundation of *Rome*; this they terme mythicon or fabulous, because the account thereof especially of the first part is fabulously or imperfectly delivered: hereof some things have been briefly related by the Authors above mentioned; more particularly by *Dares Phrygius*, *Dictys Cretensis*, *Herodotus*, *Diodorus Siculus*, and *Trogus Pompeius*; the most famous Greek Poets lived also in this Intervall, as *Orpheus*, *Linus*, *Musaeus*, *Homer*, *Hesiod*; and herein are comprehended the grounds and first inventions of Poeticall fables, which were also taken up by historicall Writers, perturbing the Chaldean and Egyptian Records with fabulous additions, and confounding their names and stories, with their owne inventions.

The third time succeeding untill their present ages, they terme historicon, that is such wherein matters have been more truly historified, and may therefore be beleaved. Of these times also have written *Herodotus*, *Thucydides*, *Xenophon*, *Diodorus*, and both of these and the other preceding such as have delivered universall Histories or Chronologies; as to omit *Philo*, whose Narrations concern the Hebrews,

brewes, Eusebius, Julius Africanus, Orosius, Ado of Vienna, Marianus Scotus, *Historia tripartita*, *Vrßpergensis*, Carion, Pineda, Salian, and with us Sir Walter Raleigh.

Now from the first hereof that most concerneth us, wee have little or no assistance, the fragments and broken records hereof inforcing not at all our purpose; and although some things not usually observed, may be from thence collected, yet doe they not advantage our discourse, nor any way make evident the point in hand: For the second, though it directly concernes us not, yet in regard of our last medium and some illustrations therein, we shall be constrained to make some use thereof. As for the last it concernes us not at all, for treating of times far below us, it can no way advantage us; and though diverse in this last Age have also written of the first, as all that have delivered the generall accounts of time, yet are their Tractates little auxiliary unto ours, nor afford us any light to detenebrate and cleare this truth.

As for holy Scripture and divine relation, there may also seeme therein but slender information, there being onely left a briefe narration hereof by Moses, and such as afford no positive determination. For the text delivereth but two genealogies, that is, of Cain and Seth; in the line of Seth there are onely ten descents, in that of Cain but seven, and those in a right line with mention of father and sonne, excepting that of Lamech, where is also mention of wives, sons, and a daughter: notwithstanding if we shall seriously consider what is delivered therein, and what is also deducible, it will be probably declared what is by us intended, that is, the populous and ample habitation of the earth before the flood, which wee shall labour to induce not from postulates and entreated Maximes, but undeniable principles declared in holy Scripture, that is, the length of mens lives before the flood, and the large extent of time from the creation thereunto.

We shall onely first crave notice, that although in the relation of Moses there be very few persons mentioned, yet are there many more to be presumed; nor when the Scripture in the line of Seth nominats but ten persons, are they to be conceived all that were of this generation; the Scripture singly delivering the holy line, wherein the world was to be preserved, first in Noah, and afterward in our Saviour. For in this line it is manifest there were many more borne then are named; for it is said of them all, that they begat sons and daughters. And whereas it is very late before it is said they begat those persons which are named in the Scripture, the soonest at 65. it must not be understood that they had none before, but not any in whom it pleased God the holy line should be continued. And although that expression that they begat sons and daughters be not determined to be, before or after the mention of these, yet must it be before in some; for before it is said that Adam begat Seth at the 130. yeare, it is plainly affirmed that Cain knew

knew his wife, and had a son, which must be one of the daughters of Adam, one of those whereof it is after said, hee begat sons and daughters. And so for ought can be disproved there might be more persons upon earth then are commonly supposed, when Cain slew Abel, nor the fact so hainously to be aggravated in the circumstance of the fourth person living. And whereas it is said upon the nativity of Seth, God hath appointed me another seed instead of Abel, it doth not imply he had no other all this while, but not any of that expectation, or appointed (as his name implies) to make a progression in the holy line, in whom the world was to be saved, and from whom he should be borne, that was mystically slaine in Abel.

Now our first ground to induce the numerosity of people before the flood, is the long duration of their lives beyond 7. 8. and 9. hundred yeares, which how it conduceth unto populousity wee shall make but little doubt, if we consider there are two maine causes of numerosity in any kind or species, that is, a frequent and multiparous way of breeding, whereby they fill the world with others, though they exist not long themselves; or a long duration and subsistence, whereby they doe not onely replenish the world with a new annumeration of others, but also maintaine the former account in themselves. From the first cause we may observe examples in creatures oviparous, as birds and fishes; in vermiparous, as Flies, Locusts, and Gnats; in animals also viviparous, as Swine and Conies; of the first there is a great example in the heard of Swine in Galilee, although it were an uncleane beast, and forbidden unto the Jews. Of the other a very remarkable one in Athenus, in the Isle Astipalea, one of the Cyclades now called Stampalia, wherein from two that were imported, the number so encreased, that the Inhabitants were constrained to have recourse unto the Oracle of Delphos, for an invention how to destroy them.

Others there are which make good the paucity of their breed with the length and duration of their dayes, whereof there want not examples in animals uniparous: First, in bisulcous or cloven hooft, as Camels, and Beeves, whereof there is above a million annually slaine in England: It is also said of Job, that he had a thousand yoke of Oxen, and six thousand Camels; and of the children of Israel passing into the land of Canaan, that they tooke from the Midianites threescore and ten thousand Beeves; and of the Army of Semiramis, that there were therein 100000. Camels; for Solipes, or firme hoofed creatures, as Horses, Asses, Mules, &c. they are also in mighty numbers; so is it delivered that Job had a thousand she Asses: that the Midianites lost 61000. Asses: for horses it is affirmed by Diodorus, that Nimus brought against the Bactrians 280000. horses; after him Semiramis 500000. horses, and Chariots 100000. even in creatures sterill and such as do not generate, the length of life conduceth much unto the multiplicity of the species,

species; for the number of Mules which live farre longer then their Dammes or Sires, in countries where they are bred is very remarkable, and farre more common then horses.

For animals multifidous, or such as are digitated or have severall divisions in their feete, there are but two that are uniparous, that is, Men and Elephants; in whom though their generations be but single, they are notwithstanding very numerous. The Elephant (as Aristotle affirmeth) carryeth the young two yeares and conceaveth not againe (as *Edvardus Lopez* affirmeth) in many after; yet doth their age requite this disadvantage, they living commonly one hundred, sometime two hundred yeares. Now although they be unusuall with us in Europe, and altogether unknowne unto America, yet in the two other parts they are abundant, as evidently appears by the relation of *Gercias ab Horto*, Physitian to the Viceroy at Goa; who in his Chapter *de Ebore*, relates that at one venation the King of Sian tooke foure thousand, and is of opinion they are in other parts, in greater number then herds of Beeves in Europe. And though this delivered from a Spaniard unacquainted with our Northerne droves, may seeme very farre to exceed, yet must we conceive them very numerous, if wee consider the number of teeth transported from one Countrey to another, they having onely two great teeth, and those not falling or renewing.

As for man the disadvantage in his single issue is the same with these, and in the latenesse of his generation somewhat greater then any, yet in the continuall and not interrupted time thereof, and the extent of dayes, he becomes at present, if not then any other species, at least more numerous then these before mentioned. Now being thus numerous at present, and in the measure of threescore, fourescore or an hundred years, if their dayes extended unto fixe, seven, or eight hundred, their generations would be proportionably multiplied; their times of generation being not onely multiplied, but their subsistence continued; for though the great Grandchild went on, the Tycho or first Originall would subsist and make one of the world, though he outlived all the termes of consanguinity, and became a stranger unto his proper progeny. So by compute of Scripture Adam lived unto the ninth generation, unto the dayes of Lamech the father of Noah; Methuselah unto the yeare of the flood, and Noah was contemporary unto all from Enoch unto Abraham. So that although some dyed, the father beholding so many discentes, the number of survivors must still be very great; for if halfe the men were now alive, which lived in the last Century, the earth would scarce containe their number; whereas in our abridged and septuagesimall ages, it is very rare and deserves a distich to behold the fourth generation: Xerxes complaint still remaining, and what he lamented in his Army, being almost deplorable in the whole world, men seldome ariving unto those yeares whereby Methuselah exceeded
nine

nine hundred, and what Adam came short of a thousand, was defined long agoe to be the age of man.

Now although the length of dayes conduceth mainly unto the numerosity of mankind, and it be manifest from Scripture they lived very long, yet is not the period of their lives determinable, and some might be longer livers, then we account that any were; For, (to omit that conceit of some, that Adam was the oldest man, in as much as he is conceived to be created in the maturity of mankind, that is, at 60. (for in that age it is set downe they begat children) so that adding this number unto his 930. he was 21. yeares older then any of his posterity) that even Methuselah was the longest lived of all the children of Adam, we need not grant, nor is it definitively set downe by Moses: Indeed of those ten mentioned in Scripture with their severall ages it must be true; but whether those seven of the line of Caine and their progeny, or any of the sons or daughters posterity after them outlived those, is not exprest in holy Scripture; and it will seeme more probable that of the line of Caine, some were longer lived then any of Seth, if we concede that seven generations of the one lived as long as nine of the other. As for what is commonly alledged, that God would not permit the life of any unto a thousand, because (alluding unto that of David) no man should live one day in the sight of the Lord, although it be urged by divers, yet is it me thinks an inference somewhat Rabbinicall, and not of power to perswade a serious examiner.

Having thus made manifest in generall how powerfully the length of lives conduced unto populosity of those times, it will yet be easier acknowledged if we discend to particularities, and consider how many in seven hundred yeares might discend from one man; wherein considering the length of their dayes, we may conceive the greatest number to have beene alive together. And this that no reasonable spirit may contradict, wee will declare with manifest disadvantage; for whereas the duration of the world unto the flood was above 1600. yeares, we will make our compute in lesse then halfe that time; nor will we begin with the first man, but allow the earth to bee provided of women fit for marriage the second or third first Centuries; and will onely take as granted, that they might beget children at sixty, and at an hundred yeares have twenty, allowing for that number forty yeares. Nor will we herein single out Methuselah, or account from the longest livers, but make choice of the shortest of any wee finde recorded in the Text, excepting Enoch; who after hee had lived as many yeares as there be dayes in the yeare, was translated at 365. And thus from one stock of seven hundred yeares, multiplying still by twenty, we shall finde the product to be one thousand, three hundred forty seven millions, three hundred sixty eight thousand, foure hundred and twenty.

Centuries	1	20.
	2	400.
	3	800.
	4	160,000.
	5	3,200,000.
	6	46,000,000.
	7	1,280,000,000.

The product 1,347,368,420. Now had wee computed by Methuselah the summe had exceeded five hundred thousand millions; as large a number from one stock as may bee conceived in Europe; especially if in Constantinople the greatest City thereof, there be no more then Botero accounteth, seven hundred thousand soules, which duely considered, wee shall rather admire how the earth contained its inhabitants, then doubt its inhabitation; and might conceive the Deluge not simply penall, but in some way also necessary; as many have conceived of translations, if Adam had not sinned, and the race of man had remained upon earth immortall.

Now whereas some to make good their longevity, have imagined that the yeares of their compute were Lunary; unto these we must reply, That if by a lunary yeare they understand twelve revolutions of the Moone, that is, 354. dayes, eleven fewer then in the Solary yeare; there will be no great difference, at least not sufficient to convince or extenuate the question: But if by a Lunary yeare they meane one revolution of the Moone, that is, a month; they first introduce a yeare never used by the Hebrewes in their Civill accompts; and what is delivered before of the Chaldean yeares, (as Xenophon gives a caution) was onely received in the Chronology of their Arts. Secondly, they contradict the Scripture, which makes a plaine enumeration of many months in the account of the Deluge, for so it is expressed in the Text. In the tenth month, in the first day of the month were the tops of the mountaines seene; Concordant whereunto is the relation of humane Authors, for so saith Xenophon *de Aequivocis*, *Inundationes plures fuere, prima novimestris inundatio terrarum sub prisco Ogyge*; and the like also Solinus, *Memini se hoc loco par est post primum diluvium Ogygi temporibus notatum, cum novem & amplius mensibus diem continua nox inumbrasset, Delon ante omnes terras radiis solis illuminatum sortitumque ex eo nomen*. And lastly, they fall upon an absurdity, for they make Enoch to beget children about six yeares of age; for whereas it is said he begat Methuselah at 65. if we shall account every month a yeare, he was at that time some sixe yeares and an halfe, for so many months are contained in that space of time.

Having thus declared how much the length of mens lives conduced unto the populousity of their kinde, our second foundation must be the large extent of time, from the Creation unto the Deluge; that is, according

according unto received computes about 1655 yeares) a longer time then hath passed since the nativity of our Saviour; and which we cannot but conceive sufficient for a very large encrease, if we do but affirm what reasonable enquirers will not deny; That the earth might be as populous in that number of yeares before the Flood, as we can manifest it was in the same number after. And whereas there may be conceived some disadvantage, in regard that at the Creation, the originall of mankind was in two persons, but after the Flood their propagation issued at least from sixe; against this we might very well set the length of their lives before the Flood, which were abbreviated after, and in halfe this space contracted into hundreds and threescores. Notwithstanding to equalize accounts, we will allow three hundred yeares, and so long a time as we can manifest from the Scripture, There were foure men at least that begat children, Adam, Cain, Seth, and Enos; so shall wee fairly and favourably proceed if we affirme the world to have been as populous in sixteen hundred and fifty yeares before the Flood, as it was in thirteen hundred after. Now how populous and largely inhabited it was within this period of time, we shall endeavour to declare from probabilities, and severall testimonies of Scripture and humane Authors.

And first, to manifest the same neere those parts of the Earth where the Arke is presumed to have rested, wee have the relation of holy Scripture accounting the genealogie of Japhet, Cham and Sem, and in this last, foure descents unto the division of the earth in the dayes of Peleg, which time although it were not upon common compute much above an hundred yeares, yet were they at this time mightily encreased; nor can we well conceive it otherwise, if we consider they began already to wander from their first habitation, and were able to attempt so mighty a worke as the building of a City and a Tower, whose top should reach unto the heavens, whereunto there was required no slender number of persons, if we consider the magnitude thereof, expressed by some, & conceived to be *Turris Babel* in Herodotus; and the multitudes of people recorded at the erecting of the like or inferiour structures: for so is it delivered in the Book of Kings, that at the building of Solomons Temple there were threescore and ten thousand that carryed burdens, and fourscore thousand hewers in the mountaines, beside the chiefe of his officers three thousand and three hundred; and at the erecting of the Pyramids in the reigne of King Cheops, as Herodotus reports there were *decem* myriades, that is an hundred thousand men. And though it be said of the Egyptians, *Porum & cape nefas violare & frangere morsu*; yet did the summes expended in Garlick and Onyons amount unto no lesse then one thousand six hundred Talents.

The first Monarchy or Kingdome of Babylon is mentioned in Scripture under the foundation of Nimrod, which is also recorded in humane

manehistory, as beside Berosus, in Diodorus and Justine, for Nimrod of the Scriptures is Belus of the Gentiles, and Assur the same with Ninus his successour. There is also mention of divers Cities, particularly of Ninivy and Resen expressed emphatically in the Text to be a great City.

That other Countries round about were also peopled, appears by the Wars of the Monarchs of Assyria with the Bactrians, Indians, Scythians, Ethiopians, Armenians, Hyrcanians, Parthians, Persians, Sussians; they vanquishing (as Diodorus relateth) Egypt, Syria, and all Asia minor, even from Bosphorus unto Tanais. And it is said, that Semiramis in her expedition against the Indians, brought along with her the King of Arabia. About the same time of the Assyrian Monarchy, do Authors place that of the Sycionians in Greece, and soone after, that of the Argives, and not very long after, that of the Athenians under Cecrops; and within our period assumed are hystorified many memorable actions of the Greekes, as the expedition of the Argonauts, with the most famous Wars of Thebes and Troy.

That Canaan also and Egypt were well peopled farre within this period, besides their plantation by Canaan and Misraim, appeareth from the history of Abraham, who in lesse then 400 yeares after the Flood journeyed from Mesopotamia unto Canaan and Egypt; both which he found well peopled and policied into Kingdomes; wherin also in 430 yeares, from threescore and ten persons which came with Jacob into Egypt he became a mighty Nation: for it is said, at their departure, there journeyed from Rhamesis to Succoth about six hundred thousand on foot, that were men besides children. Now how populous the land from whence they came was, may be collected not only from their ability in commanding so mighty subjections, but from the severall accounts of that Kingdome delivered by Herodotus; and how soone it was peopled is evidenced from the pillar of their King Osyris, with this inscription in Diodorus; *Mibi pater est Saturnus deorum junior, sum vero Osyris rex qui totum peragravi orbem usq; ad Indorum fines, ad eos quoq; sum profectus qui septentrioni subjacent usq; ad Istri fontes, & alias partes usq; ad Oceanum.* Now according unto the best determinations Osyris was Mizraim, & Saturnus Egyptius, the same with Cham, after whose name Egypt is not only called in Scripture the land of Ham, but thus much is also testified by Plutarch; for in his Treatise *de Osyride*, he delivereth that Egypt was called *Chamia* a *Chamo* Noe filio, that is from Cham the sonne of Noah. And if according to the consent of ancient Fathers, Adam was buried in the same place, where Christ was crucified, that is Mount Calvary, the first man ranged farre before the Flood, and laid his bones many miles from that place, where its presumed he received them: And this migration was the greater, if as the Text expresseth, he was cast out of the East-side of Paradise

Paradise to till the ground, and as the Position of the Cherubins implyeth, who were placed at the East end of the garden, to keep him from the tree of life.

That the extream and remote parts of the earth were in this time inhabited, is also induceable from the like Testimonies; for (omitting the numeration of Josephus, and the genealogies of the sonnes of Noah) that Italy was inhabited appeareth from the Records of Livie, and Dionysius Halicarnassens, the story of Aeneas, Evander, and Janus, whom Anniius of Viterbo, and the Chorographers of Italy, do make to be the same with Noah: that Sicily was also peopled, is made out from the frequent mention thereof in Homer, the Records of Diodorus and others; but especially from a remarkable passage touched by Aretius and Rauzanus Bishop of Lucerium, but fully explained by Thomas Fazelli in his accurate history of Sicily; that is, from an ancient inscription in a stone at Panormo, expressed by him in its proper characters, and by a Syrian thus translated: *Non est alius Deus prater unum Deum, non est alius potens prater eundem Deum, neque est alius victor prater eundem quem colimus Deum: Hujus turris praefectus est Sapha filius Eliphar, filii Esau, fratris Jacob, filii Isaac, filii Abraham; & turri quidem ipsi nomen est Baych, sed turri huic proxima nomen est Pharath.* The antiquity of the inhabitation of Spaine is also confirmable, not onely from Berosus in the plantation of Tuball and a City continuing yet in his name, but the story of Gerion, the travells of Hercules and his pillars, and especially a passage in Strabo, which advanceth unto the time of Ninus, thus delivered in his fourth Booke. The Spaniards (saith he) affirme that they have had laws and letters above fixe thousand yeares. Now the Spaniards or Iberians observing (as Xenophon hath delivered) *Annum quadrimestrem*, foure months unto a yeare, this compute will make up 2000 Solary yeares, which is about the space of time from Strabo who lived in the dayes of Augustus, unto the reigne of Ninus.

That Mauritania and the coast of Africa were peopled very soon, is the conjecture of many wise men, & that by the Phæniceans, who left their Country upon the invasion of Canaan by the Israelites: for beside the conformity of the punicke or Carthaginean language with that of Phænicea, there is a pregnant and very remarkable testimony hereof in Procopius, who in his second *de bello Vandalico*, recordeth, that in a Towne of Maurirania Tingitana, there was to be seen upon two white Columns in the Phænicean language these ensuing words; *Nos Maurici sumus qui fugimus à facie Iehoschua filii Nuniis preditoris.* The fortunate Islands or Canaries were not unknowne: for so doth Strabo interpret that speech in Homer of Proteus unto Menelaus

*Sed te qui terra postremus terminus extat,
Elysium in Campum caelestia numina ducunt.*

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The like might we affirme from credible histories both of France and Germany, and probably also out of our owne Country; for omitting the fabulous and Trojan originall delivered by Jeofrey of Monmouth, and the expresse text of Scripture, that the race of Japhet did people the Isles of the Gentiles; (in which number this of ours hath beene specially accounted) their originall was so obscure in Cæsars time, that he affirmeth the Inland inhabitants were Aborigines, that is, such as reported, that they had their beginning in the Island; That Ireland our neighbour Island was not long time without Inhabitants, may be made probable by sundry accounts, although we abate the Tradition of Bartholomæus the Scythian, who arrived there three hundred years after the Flood, or the relation of Giraldus, that Cæsaria the daughter of Noah dwelt there before.

Thus though we have declared how largely the world was inhabited within the space of 1300 years, yet must it be conceived more populous then can be evinced; for a greater part of the Earth hath ever been peopled, then hath been known or described by Geographers, as will appeare by the discoveries of all ages; for neither in Herodotus or Thucydides do we finde any mention of Rome, nor in Ptolomy of many parts of Europe, Asia, or Africa: and because many places wee have declared of long plantation, of whose populousity notwithstanding or memorable actions we have no ancient story, if we may conjecture of these by what we finde related of others, wee shall not need many words, nor assume the halfe 1300 yeares, and this we might illustrate from the mighty acts of the Assyrians performed not long after the Flood, and recorded by Justine and Diodorus, who makes relation of expeditions by Armies more numerous then have beene ever since. For Ninus King of Assyria brought against the Bactrians 700000 foot, 200000 horse, 10600 Chariots; Semiramis his successor led against the Indians 1300000 foot, 500000 horse, 100000 Chariots, and as many upon Camells: And it is said, Staurobates the Indian King met her with greater force then she brought against him; all which was performed within lesse then foure hundred yeares after the Flood.

Now if any man imagine the unity of their language did hinder their dispersion before the Flood, we confesse it some hindrance at first, but not much afterward: for though it might restraine their dispersion, it could not their populousity, which necessarily requireth transmigration & emission of Colonies, as we read of Romanes, Greeks, Phœniceans in ages past, and have beheld examples thereof in our dayes; and we may also observe that after the Flood before the confusion of tongues, men began to disperse; for it is said, they journied towards the East, and the Scripture it selfe expresseth a necessity conceived of their dispersion, for the intent of erecting the Tower is so delivered in the text, lest we be scattered abroad upon the face of the earth.

Againe,

Againe, if any man imagine the plantation of the earth more easie in regard of Navigation and shipping discovered since the Flood, whereby the Islands and devided parts of the earth are now inhabited; hee must consider that whether there were Islands or no before the Flood is not yet determined, and is with probability denyed by very learned Authors.

Lastly, if we shall fall into apprehension that it was lesse inhabited, because it is said in the sixt of Genesis about 120. yeares before the Flood, and it came to passe that when men began to multiply upon the face of the earth: Beside that this may be onely meant of the race of Cain, it will not import they were not multiplyed before, but that they were at that time plentifully encreased; for so is the same word used in other parts of Scripture. And so is it afterward in the 9. Chap. said that Noah began to be an husbandman, that is, he was so, or earnestly performed the Acts thereof: so it is said of our Saviour that he began to cast them out that bought and sold in the Temple; that is, he actually cast them out, or with alacrity effected it.

And thus have I declared my private and probable conceptions in the enquiry of this truth, but the certainty hereof let the Arithmeticke of the last day determine, and therefore expect no further beliefe then probability and reason induce; onely desire men would not swallow dubiosities for certainties, and receive as principles, points mainly controvertible, for we are to adhere unto things doubtfull in a dubious and opinative way; it being reasonable for every man to vary his opinion according to the variance of his reason, and to affirme one day what he denyed another, wherein although at last we misse of truth, wee dye notwithstanding in harmelesse and inoffensive errors, because we adhere unto that whereunto the examen of our reasons, and honest enquiries induce us.

CHAP. VII.

Of East and West.

THE next shall be of East and West, that is, the proprieties and conditions ascribed unto Regions respectively unto those situations, which hath been the obvious conception of Philosophers and Geographers, magnifying the condition of India, and the Easterne Countries, above the setting and occidentall Climates; some ascribing hereto the generation of gold, pretious stones, and spices, others the civility and naturall endowments of men; conceiving the bodies of this situation to receive a speciall impression from the first salutes of the Sunne, and some appropriate influence from his ascendent and orientall radiations. But these proprieties affixed unto bodies, upon considerations

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tions deduced from East, West, or those observable points of the sphere, how specious and plausible soever, will not upon enquiry bee justified from such foundations.

For, to speake strictly, there is no East and West in nature; nor are those absolute and invariable, but respective and mutable points, according unto different longitudes, or distant parts of habitation, whereby they suffer many and considerable variations. For first, unto some, the same part will be East or West in respect of one another, that is, unto such as inhabit the same parallel, or differently dwell from East to West. Thus as unto Spaine, Italy lyeth East, unto Italy, Greece, unto Greece Persia, & unto Persia China; so again unto the Country of China, Persia lyeth West, unto Persia Greece, unto Greece Italy, and unto Italy Spaine; so that the same Country is sometimes East and sometimes West, and Persia though East unto Greece, yet is it West unto China.

Unto other habitations the same point will be both East and West, as unto those that are Antipodes or seated in points of the Globe diametrically opposed; so the Americans are Antipodall unto the Indians, and some part of India is both East and West unto America, according as it shall be regarded from one side or the other, to the right or to the left; and setting out from any middle point, either by East or West, the distance unto the place intended is equall, and in the same space of time in nature also performable.

To a third that have the Poles for their vertex, or dwell in the position of a parallel sphere, there will be neither East nor West, at least the greatest part of the year; for if (as the name Orientall implyeth) they shall account that part to be East where ever the Sunne ariseth, or that West where the Sunne is occidentall or setteth, almost halfe the yeare they have neither the one nor the other; for halfe the yeare it is below their Horizon, and the other halfe it is continually above it, and circling round about them intersecteth not the Horizon, nor leaveth any part for this compute. And if (which will at first seem very reasonable) that part should be termed the Easterne point, where the Sunne at the Æquinox, and but once in the yeare ariseth, yet will this also disturbe the Cardinall accounts, nor will it with propriety admit that appellation: For that surely cannot be accounted East which hath the South on both sides, which notwithstanding, this position must have; for if unto such as live under the pole, that be only North which is above them, that must be Southerly which is below them, which is all the other portion of the Globe beside that part possessed by them. And thus these points of East and West being not absolute in any, respective in some, and not at all relating unto others, we cannot hereon establish so generall considerations, nor reasonably erect such immutable assertions, upon so unstable foundations.

Now the ground that begat or promoted this conceit, was first a mistake

mistake in the apprehension of East and West, considering thereof as of the North and South, and computing by these as invariably as by the other; but herein, upon second thoughts there is a great disparity: For the North and Southerne pole, are the invariable termes of that Axis whereon the heavens doe move, and are therefore incommunicable and fixed points whereof the one is not apprehensible in the other; but with the East and West it is quite otherwise, for the revolution of the Orbes being made upon the poles of North and South, all other points about the Axis are mutable; and wheresoever therein the East point be determined, by succession of parts in one revolution every point becommeth East: and so if where the Sunne ariseth, that part be termed East, every habitation differing in longitude, will have this point also different, in as much as the Sunne successively ariseth unto every one.

The second ground, although it depend upon the former, approacheth nearer the effect; and that is the efficacy of the Sunne, set out and divided according to priority of assent, whereby his influence is conceived more favourable unto one Country then another, and to felicitate India more then any after. But hereby we cannot avoid absurdities and such as infer effects controulable by our senses: For first, by the same reason that we affirm the Indian richer then the American, the American will also be more plentiful then the Indian, and England or Spaine more fruitfull then Hispaniola or golden Castile; in as much as the Sunne ariseth unto the one sooner then the other, and so accountably unto any Nation subjected unto the same parallel, or with a considerable diversity of longitude from each other.

Secondly, an unsufferable absurdity will ensue, for thereby a Country may be more fruitfull then it selfe: For India is more fertile then Spaine, because more East, and that the Sunne ariseth first unto it; Spaine likewise by the same reason more fruitfull then America, and America then India; so that Spaine is lesse fruitfull then that Country, which a lesse fertile Country then it selfe, excelleth.

Lastly, if we conceive the Sunne hath any advantage by the priority of its ascent, or makes thereby one Country more happy then another, we introduce unjustifiable acceptions; and impose a naturall partiality on that luminary, which being equidistant from the Earth, and equally removed in the East as in the West, his power and efficacy in both places must bee equall, as Boetius hath taken notice in his first *de Gemmis*, and Scaliger hath graphically declared in his *Exercitationes*; some have therefore forsaken this refuge of the Sunne, and to salve the effect have recurred unto the influence of the starres, making their activities Nationall, and appropriating their powers unto particular regions: So Cardan conceiveth the tayle of *Ursa major* peculiarly respecteth Europe, whereas indeed once in 24

houres it also absolveth its course over Asia and America : And therefore it will not be easie to apprehend those stars peculiarly glance on us, who must of necessity carry a common eye and regard unto all Countries unto whom their revolution and verticity is also common.

The effects therefore are different productions in severall Countries, which we impute unto the action of the Sunne, must surely have nearer and more immediate causes then that Luminary; and these if wee place in the propriety of the clime, or condition of soyle wherein they are produced, we shall more reasonably proceed, then they who ascribe them unto the activity of the Sunne, whose revolution being regular, it hath no power nor efficacie peculiar from its orientality, but equally disperseth his beames unto all which equally and in the same restriction receive his lustre; and being an universall and indefinite agent, the effects or productions we behold, receive not their circle from his causality, but are determined by the principles of the place or qualities of that region which admits them: and this is evident not onely in gemmes, mineralls, and metalls, but observable in plants and animalls, whereof some are common unto many Countries, some peculiar unto one, some not communicable unto another: For the hand of God that first created the earth, hath with variety disposed the principles of all things, wisely contriving them in their proper seminaries, and where they best maintaine the intention of their species; whereof if they have not a concurrence, and be not lodged in a convenient matrix, they are not excited by the efficacie of the Sunne, or fayling in particular causes receive a reliefe or sufficient promotion from the universall. For although superiour powers cooperate with inferiour activities, and may (as some conceive) carry a stroake in the plasticke and formative draught of all things, yet doe their determinations belong unto particular agents, and are defined from their proper principles. Thus the Sunne which with us is fruitfull in the generation of frogs, toads, and serpents, to this effect proves impotent in our neighbour Island; wherein as in all other carrying a common aspect, it concurrerh but unto predisposed effects, and onely suscitates those formes, whose determinations are seminall, and proceed from the Idea of themselves.

Now wheras there be many observations concerning East, and divers considerations of Art which seeme to extoll the quality of that point, if rightly understood they doe not really promote it. That the Astrologer takes account of nativities from the Ascendent, that is, the first house of the heavens, whose beginning is toward the East, it doth not advantage the conceit; for, he establisheth not his Judgement upon the Orientality thereof, but considereth therein his first ascent above the Horizon; at which time its efficacy becomes observable, and is conceived to have the signification of life, and to respect the condition

of all things, which at the same time arise from their causes, and ascend to their Horizon with it. Now this ascension indeed falls out respectively in the East; but as we have delivered before, in some positions there is no Easterne point from whence to compute these ascensions. So is it in a parallel spheare: for, unto them six houses are continually depressed, and six never elevated; and the Planets themselves, whose revolutions are of more speed, and influences of higher consideration, must finde in that place a very imperfect regard; for halfe their period they absolve above, and halfe beneath the Horizon; and so for six yeares, no man can have the happinesse to be borne under Jupiter, and for fiftene together all must escape the ascendent dominion of Saturne.

That Aristotle in his Politicks, commends the situation of a City which is open towards the East, and admitteth the rayes of the rising Sun, thereby is implied no more particular efficacy then in the West; But that site is commended, in regard the damps and vaporious exhalations ingendered in the absence of the Sun, are by his returning rayes the sooner dispelled, and men thereby more early enjoy a cleare and healthy habitation; and upon these and the like considerations it is, that *Marcus Varro de re Rustica*, commendeth the same situation, and exposeth his farme unto the equinoxiall ascent of the Sun; that Palladius adviseth the front of his edifice should so respect the South, that in the first angle it receive the rising rayes of the winter Sunne, and decline a little from the winter setting thereof. And concordant hereunto is the instruction of Columella in his Chapter *De positione villa*, which hee contriveth into Summer and Winter habitations; ordering that the Winter lodgings regard the winter ascent of the Sun, that is, South-East; and the roomes of repast at supper, the Equinoxiall setting thereof, that is, the West; that the Summer lodgings regard the Equinoxiall Meridian, but the roomes of carnation in the Summer, he obverts unto the winter ascent, that is, South-East; and the Balnearies or bathing places, that they may remaine under the Sun untill evening, hee exposeth unto the Summer setting, that is, North-West; in all which, although the Cardinall points be introduced, yet is the consideration Solary, and onely determined unto the aspect or visible reception of the Sun.

That Mahumetans and Jews in these and our neighbour parts are observed to use some gestures towards the East, as at their benediction, and the killing of their meate it cannot be denied; and though many ignorant spectators, and not a few of the actors conceive some Magick or mysterie therein, yet is the Ceremony onely Topicall, and in a memoriall relation unto a place they honour. So the Jews do carry a respect and cast an eye upon Jerusalem; for which practise they are not without the example of their forefathers, and the encouragement

Dan. 6.

of their wife King; For so it is said that Daniel went into his house, and his windowes being opened towards Jerusalem, he kneeled upon his knees three times a day, and prayed; So is it expressed in the prayer of Solomon, what prayer or supplication soever be made by any man, which shall spread forth his hands towards this house, if thy people go out to battaile, and shall pray unto the Lord towards the City which thou hast chosen, and toward the house which I have chosen to build for thy Name, then heare thou in heaven their prayer, and their supplication, and maintaine their cause. Now the observation hereof, unto the Jews that are dispersed Westward, and such as most converse with us, directeth their regard unto the East; But the words of Solomon are applyable unto all quarters of heaven, and by the Jews of the East and South must be regarded in a contrary position. So Daniel in Babylon looking toward Jerusalem had his face toward the West; So the Jews in their owne Land looked upon it from all quarters. For the Tribe of Judah beheld it to the North; Manasses, Zabulon, and Naphtali unto the South; Ruben and Gad unto the West; onely the Tribe of Dan regarded it directly or to the due East: and so when it is said Luke 12. when you see a cloud rise out of the West, you say there commeth a showre, and so it is; the observation was respective unto Judea; nor is this a reasonable illation in all other Nations whatsoever; For the Sea lay West unto that Country, and the winds brought raine from that quarter; But this consideration cannot be transferred unto India or China, which have a vast Sea Eastward, and a vaster Continent toward the West. So likewise when it is said by Job, in the vulgar Translation, Gold commeth out of the North; is this a reasonable inducement unto us and many other Countries, from some particular mines septentrionall unto his situation, to search after that metall in cold and Northerne regions, which wee most plentifully discover in hot and Southerne habitations?

For the Mahometans as they partake with all Religions in something, so they imitate the Jew in this. For in their observed gestures, they hold a regard unto Mecha and Medina Talnabi, two Cities in *Arabia felix*; where their Prophet was borne and buried; whither they performe their pilgrimages; and from whence they expect he should returne againe. And therefore they direct their faces unto these parts, which unto the Mahometans of Barbary and Ægypt lye East, and are in some point thereof, unto many other parts of Turkey: wherein notwithstanding there is no Orientall respect, for with the same devotion on the other side they regard these parts toward the West, and so with variety wheresoever they are seated, conforming unto the ground of their conception.

Fourthly, whereas in the ordering of the Campe of Israel, the East quarter is appointed unto the noblest Tribe, that is the Tribe of Judah, accor-

according to the command of God, Numb. 2. In the East-side toward the rising of the Sunne, shall the Standard of the Tribe of Judah pitch, it doth not peculiarly extoll that point; for herein the East is not to be taken strictly, but as it signifieth or implyeth the formost place; for Judah had the Van, and many Countries through which they passed were seated Easterly unto them. Thus much is implied by the Originall, and expressed by Translations which strictly conforme thereto: So Tremellius and Junius, *Castra habentium ab anteriore parte Orientem versus, vexillum esto castrorum Iude;* so hath R. Solomon Jarchi expounded it, the foremost or before, is the East quarter, and the West is called behind: And upon this Interpretation may all be salved that is alleageable against it. For if the Tribe of Judah were to pitch before the Tabernacle at the East, and yet to march first, as is commanded Numb. 10. there must ensue a disorder in the Campe, nor could they conveniently observe the execution thereof: For when they set out from Mount Sinah where the Command was delivered, they made Northward unto Rithmah; from Riffah unto Ezionbeber about fourteen stations they marched South: From Almon Diblathaim through the mountaines of Yabarim and plaines of Moab towards Jordan the face of their march was West: So that if Judah were strictly to pitch in the East of the Tabernacle, every night he encamped in the Reare: And if (as some conceive) the whole Campe could not be lesse then twelve miles long, it had been preposterous for him to have marched foremost, or set out first, who was most remote from the place to be approached.

Fifthly, that Learning, Civility and Arts, had their beginning in the East, it is not imputable either to the action of the Sunne, or its Orientality, but of the first plantation of Man in those parts, which unto Europe doe carry the respect of East; for on the mountaines of Ararat, that is part of the hill Taurus, between the East-Indies and Scythia, as Sir W. Raleigh accounts it, the Arke of Noah rested; from the East they travelled that built the Tower of Babel, from thence they were dispersed and successively enlarged, and learning good Arts and all Civility communicated. The progression whereof was very sensible; and if we consider the distance of time between the confusion of Babel, and the civility of many parts now eminent therein, it travelled late and slowly into our quarters; for notwithstanding the learning of Bardes and Druides of elder times, he that shall peruse that worke of Tacitus *de moribus Germanorum*, may easily discern how little civility two thousand years had wrought upon that Nation; the like he may observe concerning our selves, from the same Author in the life of Agricola, and more directly from Strabo, who to the dishonour of our Predecessours, and the disparagement of those that glory in the Antiquity of their Ancestors, affirmeth, the Britans were so simple, that though

though they abounded in Milke, they had not the Artifice of Cheefe.

Lastly, that the Globe it selfe is by Cosmographers divided into East and West, accounting from the first Meridian, it doth not establish this conceit; for that division is not naturally founded, but artificially set downe, and by agreement; as the aptest termes to define or commensurate the longitude of places. Thus the ancient Cosmographers doe place the division of the East and Western Hemisphere, that is the first terme of longitude in the Canary or fortunate Islands; conceiving these parts the extreamest habitations Westward: But the Modernes have altered that terme and translated it unto the Azores or Michaels Islands, and that upon a plausible conceit of the small or insensible variation of the compasse in those parts; wherein nevertheless, and though upon second invention, they proceed upon a common and no appropriate foundation; for even in that Meridian farther North or South the compasse observably varieth; and there are also other places wherein it varieth not, as Alphonso and Rodoriges de Lago will have it about *Capo de las Agullas* in Africa; as Maurolycus affirmeth in the shore of Peloponesus in Europe, and as Gilbertus averreth, in the midst of great regions, in most parts of the earth.

CHAP. VIII.
Of the River Nilus.

Hereof uncontroulably and under generall consent many opinions are passant, which notwithstanding upon due examination, do admit of doubt or restriction: It is generally esteemed, and by most unto our dayes received, that the River of Nilus hath seven ostiaries; that is, by seven Channells disburdeneth it selfe into the Sea; wherein notwithstanding, beside that we finde no concurrent determination of ages past, and a positive and undeniable refute of these present, the affirmative is mutable, and must not be received without all limitation.

For some, from whom wee receive the greatest illustrations of Antiquity, have made no mention hereof: So Homer hath given no number of its Channells, nor so much as the name thereof in use with all Historians. Eratosthenes in his description of Ægypt hath likewise passed them over: Aristotle is so indistinct in their names and numbers, that in the first of Meteors, he plainly affirmeth the Region of Ægypt, which we esteem the ancientest Nation in the World, was a meere gained ground; and that by the settling of mud and limous matter brought downe by the River Nilus, that which was at first a continued Sea, was raysed at last into a firme and habitable Country. The like opinion hee held of Mæotis Palus, that by the floods of Tanais and earth

earth brought downe thereby, it grew observably shallower in his dayes, and would in proceffe of time become a firme land. And though his conjecture be not as yet fulfilled, yet is the like observable in the River Gihon, a branch of Euphrates and River of Paradise, which having in former Ages discharged it selfe into the Persian Sea, doth at present fall short, being lost in the lakes of Chaldea, and hath left betwene the Sea, a large and considerable part of dry land.

Others expressly treating hereof have diversly delivered themselves; Herodotus in his Euterpe makes mention of seven, but carelessly of two thereof; that is, *Bolbitinum*, and *Bucolicum*; for these, saith he, were not the naturall currents, but made by Art for some occasionall convenience. Strabo in his Geography naming but two, *Pelusiacum* and *Canopicum*, plainly affirmeth there were many more then seven; *Inter hæc alia quinque, &c.* There are (saith he) many remarkable townes within the Currents of Nile, especially such which have given the names unto the ostiaries thereof, not unto all, for they are eleven, and foure besides, but unto seven and most considerable; that is, *Canopicum*, *Bolbitinum*, *Selenneticum*, *Sebenneticum*, *Pharniticum*, *Mendesium*, *Taniticum*, and *Pelusium*; wherein to make up the number, one of the artificiall channels of Herodotus is accounted: Ptolomy an Ægyptian, and borne at the Pelusian mouth of Nile, in his Geography maketh nine, and in the third Map of Africa, hath unto their mouths prefixed their severall names, that is, *Heracleoticum*, *Bolbitinum*, *Sebenneticum*, *Pi-neptum*, *Diolcos*, *Pathmeticum*, *Mendesium*, *Taniticum*, *Pelusiacum*; wherein notwithstanding there are no lesse then three different names from those delivered by Pliny: All which considered, we may easily discern that Authors accord not either in name or number, and must needs confirme the Judgement of Maginus, *de Ostiorum, Nili numero & nominibus, valde antiqui scriptores discordant.*

Moderne Geographers and travellers do much abate of this number; for as Maginus and others observe, there are now but three or foure mouths thereof, as Gulielmus Tyrius long agoe, and Bellonius since, both ocular enquirers, with others have attested. For below Cairo, the River devides it selfe into foure branches, whereof two make the chiefe and navigable streames, the one running to Pelusium of the Ancients, and now *Damiata*; the other unto *Canopium* and now *Rosetta*; the other two, saith Mr. Sandys, doe runne betwene these, but poore in water; of those seven mentioned by Herodotus; and those nine by Ptolomy, these are all I could either see, or heare of.

Lastly, what ever was or is their number, the contrivers of Cards and Maps, afford us no assurance or constant description therein. For whereas Ptolomy hath set forth nine, Hondius in his Map of Africa, makes but eight, and in that of Europe ten. Ortelius in his *Theatrum Botanicum*, in the Map of the Turkish Empire, setteth downe eight, in that

that of Ægypt eleven, and Maginus in his Map of that Countrey hath observed the same number; and if we enquire farther, wee shall finde the same diversity and discord in divers others.

And thus may we perceave that this account was differently related by the Ancients, that it is undeniably rejected by the Modernes, and must be warily received by any. For if wee receive them all into account, they were more then seven, If onely the naturall fluces they were fewer; and however we receive them, there is no agreeable and constant description thereof. And therefore how reasonable it is to draw continuall and durable deductions from alterable and uncertaine foundations, let them consider who make the gates of Thebes, and the mouthes of this River a constant and continued periphrasis for this number, and in their Poeticall expressions do give the River that Epithire unto this day; conceaving a perpetuity in mutability, and upon unstable foundations erecting eternall assertions.

The same River is also accounted the greatest of the earth, called therefore *Fluviorum pater*, and *totius Orbis maximus* by Ortelius; with the verity hereof, I confesse I could be well contented, nor do I wish the ruine of this assertion; neverthelesse if this be true, many Maps must be corrected, or the relations of divers good Authors renounced.

For first, in the deliniations of many Maps of Africa, the River Niger exceedeth it about ten degrees in length, that is, no lesse then six hundred miles. For, arising beyond the Æquator it maketh Northward almost 15. degrees, and deflecting after Westward, without meanders, continueth a strait course about 40. degrees; and with many great currents disburdeneth it selfe into the Occidentall Ocean. Againe, if wee credit the descriptions of good Authors, other Rivers excell it in length or breadth, or both; Arrianus in his history of Alexander, assigneth the first place unto the River Ganges, which truly according unto later relations, if not in length, yet in breadth and debth may bee granted to excell it: For the magnitude of Nilus consisteth in the dimension of Longitude, and is inconsiderable in the other, what stream it maintaineth beyond Syene or Asna, and so forward unto its originall, relations are very imperfect, but below these places and farther removed from the head, the current is but narrow; and we reade in the history of the Turks, the Tartar horsemen of Selimus, swam over the Nile from Cairo, to meet the forces of Tonombeius; Scortias the Jesuite expressly treating hereof, preferreth the River of Plate in America; for that as Maffeus hath delivered, falleth into the Ocean in the latitude of forty Leagues, and with that source and plenty that men at Sea doe taste fresh water, before they approach so neere as to discover the land: So is it exceeded by that which by Cardan is termed the greatest in the world, that is the River Oregliana in the same Continent, which as Maginus delivereth, hath beene navigated 6000. miles, and opens in a

Channell

Channell of ninety leagues broad; so that, as Acofta an ocular witness recordeth, they that sayle in the middle, can make no land of either side.

Now the ground of this assertion was surely the magnifying esteem of the Ancients, arising from the indiscavery of its head. For as things unknowne seeme greater then they are, and are usually received with amplifications above their nature; So might it also be with this River, whose head being unknowne and drawne to a proverbiall obscurity, the opinion thereof became without bounds, and men must needs conceat a large extent of that to which the discovery of no man had set a period. And this an usuall way to give the superlative unto things of eminency in any kinde: and when a thing is very great, presently to define it to be the greatest of all; whereas indeed Superlatives are difficult, whereof there being but one in every kinde, their determinations are dangerous, and must not be made without great circumspection. So the City of Rome is magnified by the Latins to be the greatest of the earth; but time and Geography enforme us, that Cairo is bigger then ever it was, and Quinsay in China farre exceedeth both. So is Olympus extolled by the Greeks, as an hill attaining unto heaven; but the enlarged Geography of after times makes slight account hereof, when they discourse of Andes in Peru, or Teneriffa in the Canaries. So have all Ages conceived, and most are still ready to sweare, the Wren is the least of birds, yet the discoveries of America, and even of our owne Plantations have shewed us one farre lesse, that is, the Humbird, not much exceeding a Beetle. And truly, for the least and greatest, the highest and the lowest of every kinde, as it is very difficult to define them in visible things, so is it to understand in things invisible. Thus is it no easie lesson to comprehend the first matter, and the affections of that which is next neighbour unto nothing; and impossible truly to comprehend God, who indeed is all things; and so things as they arise unto perfection, and approach unto God, or descend to imperfection, and draw neerer unto nothing, fall both imperfectly into our apprehensions; the one being too weake for our conception, our conception too weake for the other.

Thirdly, divers conceptions there are concerning its increment or inundation. The first unwarily opinions, that this encrease or annuall overflowing is proper unto Nile, and not agreeable unto any other River; which notwithstanding is common unto many currents of Africa. For about the same time the River Niger, and Zaire do overflow, and so do the Rivers beyond the mountaines of the Moone, as Suama, and Spirito Santo: and not onely these in Africa, but some also in Europe and Asia; for so it is reported of Menan in India, and so doth Botero report of Duina in Livonia, and the same is also observable in the River Jordan in Judea; for so is it delivered Josuah 3. that Jordan over-

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floweth

floweth all his banks in the time of harvest.

The effect indeed is wonderfull in all, and the causes surely best resolvable from observations made in the Countries themselves, the parts through which they passe, or whence they take their originall; That of Nilus hath beene attempted by many, and by some to that despair of resolution, that they have only referred it unto the providence of God, and the secret manuduction of all things unto their ends; but divers have attained the truth, and the cause alledged by Diodorus, Seneca, Strabo and others is allowable; that the inundation of Nilus in Egypt proceeded from the raines in Æthiopia, and the mighty source of waters falling towards the fountaines thereof. For, this inundation unto the Egyptians happeneth when it is winter unto the Æthiopians; which habitations, although they have no cold winter, the Sun being no farther removed from them in Cancer, then unto us in Taurus; yet is the fervour of the ayre so well remitted, as it admits a sufficient generation of vapours, and plenty of showres ensuing thereupon. This theory of the Ancients is since confirmed by experience of the Modernes, as namely by Franciscus Alvarez who lived long in those parts, and hath left a description of Æthiopia; affirming that from the middle of June unto September, there fell in his time continuall raines. As also Antonius Ferdinandus, who in an Epistle written from thence, and noted by Condignus, affirmeth that during the winter, in those Countries there passed no day without raine.

Now this is also an usuall course to translate a remarkable quality into a propriety, and where we admire an effect in one, to opinion there is not the like in any other, with these conceits do common apprehensions entertaine the antidotall and wondrous condition of Ireland; conceaving in that Land onely an immunity from venomous creatures, but unto him that shall further enquire, the same will be affirmed of Creta memorable in ancient stories, even unto fabulous causes and benediction from the birth of Jupiter: The same is also found in Ebusus or Evisa, an Island neere Majorca upon the coast of Spaine. With these opinions do the eyes of neighbour spectators behold Ætna, the flaming mountaine in Sicilia; But Navigators tell us there is a burning mountaine in Island, a more remarkeable one in Teneriffa of the Canaries, and many vulcano's or fiery hills elsewhere. Thus Crocodiles were thought to be peculiar unto Nile, and the opinion so possessed Alexander, that when he had discovered some in Ganges, he fell upon conceit he had found the head of Nilus; but later discoveries affirme they are not onely in Asia and Africa, but very frequent in some Rivers of America.

Another opinion confineth its inundation, and positively affirmeth, it constantly encreaseth the seventeenth day of June, wherein notwithstanding a larger forme of speech were safer, then that which punctually

ally prefixeth a constant day thereto: for first, this expression is different from that of the Ancients, as Herodotus, Diodorus, Seneca, &c. delivering only that it happeneth about the entrance of the Sunne into Cancer; wherein they warily deliver themselves, and reserve a reasonable latitude. So when Hippocrates saith, *Sub Cane & ante Canem difficiles sunt purgationes*; there is a latitude of dayes comprised therein, for under the Dogstar he containeth not onely the day of its ascent, but many following, and some ten dayes preceding: So Aristotle delivers the affections of animalls, with the wary termes of *Circa & magna ex parte*: and when Theodorus translateth that part of his, *Cocunt Thunni & Scombrimense Februario post Idus, pariunt Ianio ante Nonas*: Scaliger for *ante Nonas*, renders it *Ianii initio*, because that exposition affordeth the latitude of divers dayes: For affirming it happeneth before the Nones, he alloweth but one day, that is the Calends, for in the Romane account the second day is the fourth of the Nones of June.

Againe, were the day definitive it had prevented the delusion of the Devill, nor could he have gained applause by its prediction; who (notwithstanding as Athanasius in the life of Anthony relateth) to magnifie his knowledge in things to come, when he perceived the rains to fall in Æthiopia, would preface unto the Egyptians the day of its inundation. And this would also make uselesse that naturall experiment observed in earth or sand about the River, by the weight whereof (as good Authors report) they have unto this day, a knowledge of its encrease.

Lastly, it is not reasonable from variable and unstable causes, to derive a fixed and constant effect, and such are the causes of this Inundation, which cannot indeed be regular, and therefore their effects not prognosticable like Ecclices; for depending upon the clouds and descent of showres in Æthiopia, which have their generation from vaporous exhalations, they must submit their existence unto contingencies, and endure anticipation and recession from the moveable condition of their causes. And therefore some yeares there hath been no encrease at all, as Seneca and divers relate of the eleventh yeare of Cleopatra, nor nine yeares together, as is testified by Calisthenes. Some yeares it hath also retarded, and came far later then usually it was expected, as according to Sozomen and Nicephorus it happened in the dayes of Theodosius; whereat the people were ready to mutiny, because they might not sacrifice unto the River according to the custome of their Predecessors.

Now this is also an usuall way of mistake, and many are deceived who too strictly construe the temporall considerations of things. Thus bookes will tell us, and we are made to beleieve that the fourteenth yeare males are seminificall and pubescent; but he that shall enquire into the generality, will rather adhere unto the cautelous assertion of Aristotle, that is *his septem annis exactis*, and then but *magna ex parte*.
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That Whelps are blinde nine dayes, and then begin to see is generally beleev'd; but as we have elsewhere declared, it is exceeding rare, nor doe their eye-lids usually open untill the twelfth, and sometimes not before the fourteenth day. And to speake strictly an hazardable determination it is unto fluctuating and indifferent effects, to affixe a positive type or period; for in effects of far more regular causalities difficulties doe often arise, and even in time it selfe which measureth all things, we use allowance in its commensuration. Thus while we conceive we have the account of a year in 365 dayes, exact enquirers and computists will tell us, that we escape 6 houres, that is a quarter of a day; and so in a day which every one accounts 24 houres, or one revolution of the Sunne; in strict account we must allow the addition of such a part as the Sunne doth make in his proper motion, from West to East, whereby in one day he describeth not a perfect circle.

Fourthly, it is affirmed by many, and received by most, that it never raineth in Egypt, the River supplying that defect, and bountifully requiting it in its Inundation: but this must also be received in a qualified sense, that is, that it raines but seldome at any time in the Summer, and very rarely in the Winter. But that great showres do sometimes fall upon that Region, beside the assertion of many Writers, we can confirme from honourable and ocular testimony, and that not many yeares past, it rayned in Grand Cairo 8 or 9 dayes together. Beside men hereby forget the relation of holy Scripture, as is delivered Ex. 9. Behold I will cause it to raine a very grievous haile, such as hath not been in Egypt since the foundation thereof even untill now: wherein God threatening such a raine as had not happened, it must be presumed they had been acquainted with some before; and were not ignorant of the substance, the menace being made in the circumstance.

Now this mistake ariseth from a misapplication of the bounds or limits of time, and an undue transition from one unto another; which to avoid we must observe the punctuall differences of time, and so reasonably distinguish thereof, as not to confound or lose the one in the other. For things may come to passe, *Semper, Plerumq̃, Sape, or Nunquam, Aliquando, Raro*; that is Alwayes or never, for the most part or Sometimes, Oftimes or Seldome: Now the deception is usuall which is made by the misapplication of these; men presently concluding that to happen often, which happeneth but sometimes; that never, which happeneth but seldome; and that alway which happeneth for the most part: So is it said, the Sunne shines every day in Rhodes, because for the most part, it faileth not: So we say and believe that a Camelion never eateth, but liveth only upon ayre, whereas indeed it is seen to eat very seldome, but many there are who have beheld it to feed on flies. And so it is said, that children borne in the eighth moneth live not; that is, for the most part, but not to be concluded alwayes; nor it seems in

Sir William
Paston.

former ages in all places; for it is otherwise recorded by Aristotle concerning the births of Egypt.

Lastly, it is commonly conceived that divers Princes have attempted to cut the Isthmus or tract of land which parteth the Arabian, and Mediterranean Sea; but wherein upon enquiry I finde some difficulty concerning the place attempted; many with good authority affirming, that the intent was not immediatly to unite these Seas, but to make a navigable channell betweene the Red Sea and the Nile, the markes whereof are extant to this day; it was first attempted by Serlostris, after by Darius, and in a feare to drowne the Country deserted by them both, but was long after re-attempted, and in some manner effected by Philadelphus; and so the Grand Signior who is Lord of the Country, conveyeth his Gallies into the Red Sea by the Nile; for he bringeth them downe to Grand Cairo where they are taken in peeces, carryed upon Camels backs, and rejoyned together at Sues, his port and navall station for that Sea, whereby in effect he acts the designe of Cleopatra, who after the battell of Actium, in a different way would have conveyed her Gallies into the Red Sea.

And therefore that proverbe to cut an Isthmus, that is to take great paines, and effect nothing, alludeth not unto this attempt; but is by Erasmus applyed unto severall other, as that undertaking of Cnidians to cut their Isthmus, but especially that of Corinth so unsuccessfully attempted by many Emperors. The Cnidians were deterred by the peremptory dissuasion of Apollo, plainly commanding them to desist; for if God had thought it fit, hee would have made that Country an Island at first. But this perhaps will not be thought a reasonable discouragement unto the activity of those spirits which endeavour to advantage nature by Art, and upon good grounds to promote any part of the universe; nor will the ill successe of some be made a sufficient determent unto others; who know that many learned men affirme, that Islands were not from the beginnings; that many have been made since by Art; that some Isthmes have been eat through by the Sea, and others cut by the spade: And if policie and conveniencie would permit, that of Panama in America were most worthy the attempt, it being but few miles over, and would open a shorter cut unto the East Indies and China.

CHAP. IX.

Of the Red Sea.

Contrary apprehensions are made of the Erythraean or Red Sea; most apprehending a materiall rednesse therein, from whence they derive its common denomination; and some so lightly conceiving hereof.

hereof, as if it had no rednesse at all, are faine to recurre unto other originalls of its appellation, wherein to deliver a distinct account, we first observe that without consideration of colour it is named the Arabian Gulph: The Hebrews who had best reason to remember it, doe call it Zuph, or the weedy Sea, because it was full of sedge, or they found it so in their passage; the Mahometans who are now Lords thereof doe know it by no other name then the Gulph of Mecha a City of Arabia.

The streame of Antiquity deriveth its name from King Erythrus, so slightly conceiving of the nominall deduction from Rednesse, that they plainly deny there is any such accident in it. The words of Curtius are plain beyond evasion, *Ab Erythro rege inditum est nomen, propter quod ignari rubere aquas credunt*: Of no more obscurity are the words of Philostratus, and of later times Sabellicus, *Stulte persuasum est vulgo rubras alicubi esse maris aquas, quin ab Erythro rege nomen pelago inditum*: of this opinion was Andraeus Corsalius, Plinie, Solinus, Dio, Cassius, who although they denyed not all rednesse, yet did they relye upon the originall from King Erythrus.

Others have fallen upon the like, or perhaps the same conceit under another appellation; deducing its name not from King Erythrus but Elau or Edom whose habitation was upon the coasts thereof: Now Edom is as much as Erythrus, and the Red Sea no more then the Idumean; from whence the posterity of Edom removing towards the Mediterranean coast; according to their former nomination by the Greeks were called Phœnicians or red men, and from a plantation and colony of theirs an Island neere Spaine, was by the Greek describers termed Erythra, as is declared by Strabo and Solinus.

Very many omitting the nominall derivation doe rest in the grosse and literall conception thereof, apprehending a reall rednesse and constant colour of parts. Of which opinion are also they which hold the Sea receiveth a red and mimous tincture from springs, wells, and currents, that fall into it: and of the same believe are probably many Christians who conceiving the passage of the Israelites through this Sea to have been the type of Baptisme, according to that of the Apostle, All were baptised unto Moses in the cloud, and in the Sea, for the better resemblance of the blood of Christ, they willingly received it in the apprehension of rednesse, and a colour agreeable unto its mystery; according to that of Austen, *Significat mare illud rubrum Baptismum Christi; unde nobis Baptismus Christi nisi sanguine Christi consecratus?*

But divers Modernes not considering these conceptions, and appealing unto the Testimony of sense, have at last determined the point; concluding a rednesse herein, but not in the sense received. Sir Walter Raleigh from his owne and Portugall observations, doth place the red-

1 Cor. 10. 2.

nesse of this Sea, in the reflexion from red Islands, and the rednesse of the earth at the bottome, wherein Corall grows very plentifully, and from whence in great abundance it is transported into Europe; the observations of Alberquerque, and *Stephanus de Gama*, as from *Iohannes de Barros*, *Fernandus de Cordova* relateth, derive this rednesse from the colour of the sand and argillous earth at the bottome; for being a shallow Sea, while it rouleth to and fro, there appeareth a rednesse upon the water, which is most discernible in sunny and windie weather. But that this is no more then an apparent rednesse, he confirmeth by an experiment: for in the reddest part taking up a vessell of water, it differed not from the complexion of other Seas; nor is this colour discoverable in every place of that Sea; for as he also observeth, in some places it is very green, in others white and yellow, according to the colour of the earth or sand at the bottome. And so may Philostratus bee made out when he saith, this Sea is blue; or Bellonius denying this rednesse, because he beheld not that colour about Sues; or when Corsalius at the mouth thereof could not discover the same.

Now although we have enquired the ground of rednesse in this Sea, yet are we not fully satisfied; for what is forgot by many, and knowne by few, there is another Red Sea whose name we pretend not to make out from these principles; that is, the Persian Gulph or Bay, which divideth the Arabian and Persian shoare, as Plinie hath described it, *Mare rubrum in duos dividitur sinus, is qui ab Oriente est Persicus appellatur*, or as Solinus expresseth it, *Qui ab Oriente est Persicus appellatur, ex adverso unde Arabia est, Arabicus*; whereto assenteth Suidas, Ortelius, & many more; and therefore there is no absurdity in Strabo when he delivereth that Tigris and Euphrates doe fall into the Red Sea, and *Fernandus de Cordova*, justly defendeth his Countreiman Seneca in that expression, *Et qui renatum prorsus excipiens diem*

Tepidum Rubenti Tigrin immiscet freto.

Nor hath only the Persian Sea received the same name with the Arabian, but, what is strange, and much confounds the distinction, the name thereof is also derived from King Erythrus, who was conceived to be buried in an Island of this Sea, as Dionysius Afer, Curtius, and Suidas doe deliver, which were of no lesse probability then the other, if as with the same Authors Strabo affirmeth, he was buried neere Caramania bordering upon the Persian Gulph; and if his tombe was seen by Nearchus, it was not so likely to be in the Arabian Gulph; for we read that from the River Indus he came unto Alexander at Babylon, some few dayes before his death. Now Babylon was seated upon the River Euphrates, which runnes into the Persian Gulph; and therefore however the Latine expresseth it in Strabo, that Nearchus suffered much in the Arabian Sinus, yet is the originall *κόλπος πέρσιος*, that is the Gulph of Persia.

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That therefore the Red Sea or Arabian Gulph received its name from personall derivation is but uncertaine, that both the Seas of one name should have one common denominator lesse probable; that one from name, another from colour not incredible; that there is a grosse and materiall rednesse in either not to be affirmed, that there is an emphaticall or apparent rednesse in one, not well to be denied; and this is sufficient to make good the Allegory of the Christians; and in this distinction may we justifie the name of the Blacke Sea, given unto Pontus Euxinus, the name of Xanthus, or the Yellow River of Phrygia, and the name of Mar Vermeio, or the Red Sea in America.

CHAP. X.

Of the Blacknesse of Negroes.

IT is evident not only in the generall frame of Nature, that things most manifest unto sense, have proved obscure unto the understanding: But even in proper and appropriate objects, wherein we affirme the sense cannot erre, the faculties of reason most often fail us. Thus of colours in generall, under whose glosse and vernish all things are seen, no man hath yet beheld the true nature, or positively set downe their incontrollable causes; which while some ascribe unto the mixture of the Elements, others to the graduality of opacity and light; they have left our endeavours to grope them out by twilight, and by darknesse almost to discover that whose existence is evidenced by light. The Chymists have attempted laudably, reducing their causes unto Sal, Sulphur, and Mercury; and had they made it out so well in this, as in the objects of smell and taste, their endeavours had been more acceptable: For whereas they refer Sapor unto Salt, and Odor unto Sulphur, they vary much concerning colour; some reducing it unto Mercury, some to Sulphur, others unto Salt; wherein indeed the last conceit doth not oppresse the former, and Salt may carry a strong concurrence therein. For beside the fixed and terrestrious Salt, there is in naturall bodies a *Sal niter* referring unto Sulphur; there is also a volatile or Armoniac Salt, retaining unto Mercury; by which Salts the colours of bodies are sensibly qualified, and receive degrees of lustre or obscurity, superficiality or profundity, fixation or volatility.

Their generall or first natures being thus obscure, there will be greater difficulties in their particular discoveries, for being farther removed from their simplicities they fall into more complexed considerations, and so require a subtiler act of reason to distinguish and call forth their natures. Thus although a man understood the generall nature of colours, yet were it no easie problem to resolve, Why grass is green?

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Why Garlick, Molyes, and Porrets have white roots, deep green leaves, and blacke seeds? Why severall docks, and sorts of Rhubarb with yellow roots, send forth purple flowers? Why also from Lactary or milky plants which have a white and lacteous juice dispersed through every part, there arise flowers blue and yellow? Moreover beside the specificall and first digressions ordained from the Creation, which might bee urged to salve the variety in every species; why shall the marvaile of Peru produce its flowers of different colours, and that not once, or constantly, but every day and variously? Why Tulips of one colour produce some of another, and running through almost all, should still escape a blew? And lastly, why some men, yea and they a mighty and considerable part of mankind, should first acquire and still retaine the glosse and tincture of blacknesse? which who ever strictly enquires, shall finde no lesse of darknesse in the cause, then blacknesse in the effect it selfe, there arising unto examination no such satisfactory and unquarrellable reasons, as may confirme the causes generally received, which are but two in number; that is the heat and scorch of the Sunne, or the curse of God on Cham and his posterity.

The first was generally received by the Ancients, especially the heathen, who in obscurities had no higher recourse then Nature, as may appeare by a Discourse concerning this point in Strabo: By Aristotle it seems to be implied, in those Problems which enquire why the Sun makes men blacke, and not the fire? why it whitens wax, yet blacks the skin? By the word *Æthiops* it selfe, applyed to the memorablest Nations of Negroes, that is of a burnt or torrid countenance: The fancie of the fable infers also the Antiquity of the opinion, which deriveth the complexion from the deviation of the Sunne, and the conflagration of all things under Phaeton: But this opinion though generally embraced, was I perceive rejected by Aristobulus a very ancient Geographer, as is discovered by Strabo; It hath been doubted by severall moderne Writers, particularly by Ortelius, but amply and satisfactorily discussed as we know by no man; we shall therefore endeavour a full delivery hereof, declaring the grounds of doubt, and reasons of deniall, which rightly understod, may if not overthrow, yet shrewdly shake the security of this assertion.

And first, many which countenance the opinion in this reason, doe tacitly and upon consequence overthrow it in another: For whilst they make the River Senaga to divide and bound the Moores, so that on the South-side they are blacke, on the other onely tawnie; they imply a secret causality herein from the ayre, place or River, and seem not to derive it from the Sunne; the effects of whose activity are not precipitously abrupted, but gradually proceed to their cessations.

Secondly, if we affirme that this effect proceeded, or as we will not be backward to concede, it may be advanced and fomented from the

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fervor of the Sunne; yet doe we not hereby discover a principle sufficient to decide the question concerning other animals; nor doth he that affirmeth the heat makes man blacke, afford a reason why other animals in the same habitations maintaine a constant and agreeable hue unto those in other parts, as Lions, Elephants, Camels, Swans, Tigers, Estriges, which though in Æthiopia, in the disadvantage of two Summers, and perpendicular rayes of the Sunne, doe yet make good the complexion of their species, and hold a colourable correspondence unto those in milder regions. Now did this complexion proceed from heat in man, the same would be communicated unto other animals which equally participate the Influence of the common Agent: For thus it is in the effects of cold in Regions far removed from the Sunne; for therein men are not only of faire complexions, gray eyed, and of light haire, but many creatures exposed to the ayre, defect in extremity from their naturall colours, from browne, russet and blacke, receiving the complexion of Winter, and turning perfect white; for thus Olaus Magnus relates, that after the Autumnall Æquinox, Foxes begin to grow white; thus Michovius reporteth, and we want not ocular confirmation, that Hares and Partridges turne white in the Winter; and thus a white Crow, a Proverbiall rarity with us, is none unto them; but that inseparable accident of Aristotles is separated in many hundreds.

Thirdly, if the fervor of the Sunne, or intemperate heat of clime did solely occasion this complexion, surely a migration or change thereof might cause a sensible, if not a totall mutation; which notwithstanding experience will not admit: For Negroes transplanted although into cold and flegmaticke habitations continue their hue both in themselves, and also their generations; except they mixe with different complexions, whereby notwithstanding there only succeeds a remission of their tinctures, there remaining unto many descents, a full shadow of their originalls; and if they preserve their copulations entire they still maintaine their complexions, as is very remarkable in the dominions of the Grand Signior, and most observable in the Moores in Brasilia, which transplanted about an hundred years past, continue the tinctures of their fathers unto this day: and so likewise faire or white people translated into hotter Countries receive not impressions amounting to this complexion, as hath been observed in many Europeans who have lived in the land of Negroes: and as *Edvardus Lopes* testifieth of the Spanish plantations, that they retained their native complexions unto his dayes.

Fourthly, if the fervor of the Sunne were the sole cause hereof in Æthiopia or any land of Negroes, it were also reasonable that inhabitants of the same latitude subjected unto the same vicinity of the Sunne, the same diurnall arch, and direction of its rayes, should also

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partake of the same hue and complexion, which notwithstanding they do not; For the Inhabitants of the same latitude in Asia are of a different complexion, as are the Inhabitants of Cambogia and Java; inso-much that some conceive the Negroe is properly a native of Africa, and that those places in Asia inhabited now by Moores, are but the intrusions of Negroes ariving first from Africa, as we generally conceive of Madagascar, and the adjoyning Islands, who retain the same complexion unto this day. But this defect is more remarkable in America, which although subjected unto both the Tropicks, yet are not the Inhabitants black betweene, or neere, or under either, neither to the Southward in Brasilia, Chili, or Peru, nor yet to the Northward in Hispaniola, Castilia, del Oro, or Nicaraguava; and although in many parts thereof it be confessed there bee at present swarmes of Negroes serving under the Spaniard, yet were they all transported from Africa, since the discovery of Columbus, and are not indigenous or proper natives of America.

Fifthly, we cannot conclude this complexion in Nations from the vicinity or habitude they hold unto the Sun, for even in Africa they be Negroes under the Southerne Tropick, but are not all of this hue either under or neere the Northerne. So the people of Gualata, Agades, Garamantes, and of Goaga, all within the Northerne Tropicks are not Negroes, but on the other side about Capo Negro, Cefala, and Madagascar, they are of a Jetty black.

Now if to salve this Anomaly wee say the heate of the Sun is more powerfull in the Southerne Tropick, because in the signe of Capricorne falls out the Perigeum or lowest place of the Sun in his Excentrick, whereby he becomes neerer unto them then unto the other in Cancer, wee shall not absolve the doubt. And if any insist upon such nicities, and will presume a different effect of the Sun, from such a difference of place or vicinity, we shall ballance the same with the concernment of its motion, and time of revolution, and say he is more powerfull in the Northerne hemisphere, and in the Apogeum; for therein his motion is slower, and so his heate respectively unto those habitations, as of duration so also of more effect. For, though he absolve his revolution in 365. dayes, odde howres and minutes, yet by reason of his Excentricity, his motion is unequall, and his course farre longer in the Northerne semicircle, then in the Southerne; for the latter he passeth in 178. dayes, but the other takes him 187. that is, eleven dayes more; so is his presence more continued unto the Northerne Inhabitant, and the longest day in Cancer is longer unto us, then that in Capricorne unto the Southerne habitator. Beside, hereby we only inferre an inequality of heate in different Tropicks, but not an equality of effects in other parts subjected to the same; For, in the same degree, and as neere the earth he makes his revolution unto the American, whole

whose Inhabitants notwithstanding partake not of the same effect. And if herein we seek a reliefe from the Dogstarre, we shall introduce an effect proper unto a few, from a cause common unto many, for upon the same grounds that Starre should have as forcible a power upon America and Asia, and although it be not verticall unto any part of Asia, but onely passeth by Beach, *in terra incognita*; yet is it so unto America, and vertically passeth over the habitations of Peru and Brasilia.

Sixtly, and which is very considerable, there are Negroes in Africa beyond the Southerne Tropick, and some so far removed from it, as Geographically the clime is not intemperate, that is, neere the cape of good Hope, in 36. of Southerne Latitude. Whereas in the same elevation Northward, the Inhabitants of America are faire, and they of Europe in Candy, Sicily, and some parts of Spaine deserve not properly so low a name as Tawny.

Lastly, whereas the Africans are conceived to be more peculiarly scorched and torried from the Sun, by addition of drinesse from the soyle, from want and defect of water, it will not excuse the doubt. For the parts which the Negroes possesse, are not so void of Rivers and moisture, as is herein presumed; for on the other side the mountaines of the Moone, in that great tract called Zanzibar, there are the mighty Rivers of Suama, and *Spirito Santo*; on this side, the great River Zaire, the mighty Nile and Niger, which doe not onely moysten, and temperate the ayre by their exhalations, but refresh and humectate the earth by their annuall inundations. Beside, in that part of Africa, which with all disadvantage is most dry, that is, in site betweene the Tropicks, defect of Rivers and inundations, as also abundance of sands, the people are not esteemed Negroes; and that is Lybia, which with the Greeks carries the name of all Africa; A region so desert, dry and sandy, that travellers (as Leo reports) are faine to carry water on their Camels, whereof they finde not a drop sometime in 6. or 7. dayes; yet is this Countrey accounted by Geographers no part of *terra Nigritarum*, and Ptolomy placeth herein the *Leuco Aethiopes*, or pale and Tawney Moores.

Now the ground of this opinion might bee the visible quality of Blacknesse observably produced by heate, fire, and smoake; but especially with the Ancients the violent esteeme they held of the heate of the Sun, in the hot or torrid Zone; conceiving that part uninhabitable, and therefore that people in the vicinities or frontiers thereof, could not escape without this change of their complexion. But how farre they were mistaken in this apprehension, moderne Geography hath discovered: And as wee have declared, there are many within this Zone whose complexions descend not so low as blacknesse. And if we should strictly insist hereon, the possibility might fall into some question; that is, whether the heate of the Sun, whose fervor may swarte

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a living part, and even black a dead or dissolving flesh, can yet in animals whose parts are successive and in continuall flux, produce this deepe and perfect glosse of Blacknesse.

Thus having evinced at least made dubious, the Sunne is not the Author of this blacknesse, how and when this tincture first began is yet a Riddle, and positively to determine it surpasseth my presumption. Seeing therefore we cannot certainly discover what did effect it, it may afford some piece of satisfaction to know what might procure it: It may be therefore considered, whether the inward use of certaine waters or fountaines of peculiar operations, might not at first produce the effect in question. For, of the like we have records in story related by Aristotle, Strabo, and Pliny, who hath made a collection hereof, as of two fountaines in Baetia, the one making Sheepe white, the other black, of the water of Siberis which made Oxen black, and the like effect it had also upon men, dying not onely the skin, but making their haire black and curled. This was the conceit of Aristobulus, who received so little satisfaction from the other, or that it might be caused by heate, or any kinde of fire, that he conceived it as reasonable to impute the effect unto water.

Secondly, it may be perpended whether it might not fall out the same way that Jacobs cattell became speckled, spotted and ring-straked, that is, by the power and efficacy of Imagination; which produceth effects in the conception correspondent unto the phancy of the Agents in generation, and sometimes assimilates the Idea of the generator into a realty in the thing ingendred. For, hereof there passe for current many indisputed examples; so in Hippocrates wee read of one, that from the view and intention of a picture conceived a Negroe; And in the history of Heliodore of a Moorish Queene, who upon aspection of the picture of Andromeda, conceived and brought forth a faire one. And thus perhaps might some say it was at the beginning of this complexion, induced first by Imagination, which having once impregnated the seed, found afterward concurrent productions, which were continued by Climes, whose constitution advantaged the first impression. Thus Plotinus conceiveth white Peacocks first came in: Thus as Aldrovand relateth, many opinion that from aspection of the Snow which lyeth long in Northerne Regions, and high mountaines, Hawkes, Kites, Beares, and other creatures become white; And by this way Austin conceiveth the Devill provided, they never wanted a white spotted Oxe in Egypt, for such an one they worshipped, and called it Apis.

Thirdly, it is not indisputable whether it might not proceed from such a cause and the like foundation of Tincture, as doth the black Jaundise, which meeting with congenerous causes might settle durable iniquations, and advance their generations unto that hue, which was naturally

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naturally before but a degree or two below it: And this transmission we shall the easier admit in colour, if we remember the like hath been effected in organical parts and figures; the Symmetry whereof being casually or purposely perverted, their morbosities have vigorously descended to their posterities, and that in durable deformities. This was the beginning of Macrocephali or people with long heads, whereof Hippocrates, *De Aere, Aquis, & Locis*, hath cleerely delivered himself: *Cum primum editus est Infans, caput ejus tenellum manibus effingunt, & in longitudine adolescere cogunt; hoc institutum primum hujusmodi, natura dedit vitium, successu vero temporis in naturam abiit, ut proinde instituto nihil amplius opus esset; semen enim genitale ex omnibus corporis partibus provenit, ex sanis quidem sanum, ex morbofis morbosum: Si igitur ex calvis calui, ex cactis cacti, & ex distortis, ut plurimum, distorti gignuntur, eademq; in ceteris formis valet ratio, quid prohibet cur non ex macrocephalis macrocephali gignantur?* Thus as Aristotle observeth, the Deeres of Arginula had their eares divided, occasioned at first by flitting the eares of Deere. Thus have the Chineses little feete, most Negroes great lips and flat noses; and thus many Spaniards, and mediterranean Inhabitants, which are of the race of Barbary Moores, (although after frequent commixture) have not worne out the Camoys nose unto this day.

Lastly, if wee must still be urged to particularities, and such as declare how and when the seede of Adam did first receive this tincture; wee may say that men became blacke in the same manner that some Foxes, Squirrels, Lions first turned of this complexion, whereof there are a constant sort in divers Countries; that some Chaughes came to have red legs and bills, that Crowes became pyed; All which mutations however they began, depend on durable foundations, and such as may continue for ever. And if as yet we cannot satisfie, but must farther define the cause and manner of this mutation; wee must confesse, in matters of Antiquity, and such as are decided by History, if their Originals and first beginnings escape a due relation, they fall into great obscurities, and such as future Ages seldom reduce unto a resolution. Thus if you deduce the Administration of Angels, and that they dispersed the creatures into all parts after the flood, as they had congregated them into Noahs Arke before; it will be no easie question to resolve, how severall sorts of Animalls were first dispersed into Islands, and almost how any into America. How the venereall contagion began in that part of the earth, since history is silent, is not easily resolved by Philolophy; For, whereas it is imputed unto Anthropophagy, or the eating of mans flesh, the cause hath beene common unto many other Countries, and there have beene Canibals or men-eaters in the three other parts of the world, if wee credit the relations of Ptolomy, Strabo, and Pliny. And thus, if the favourable pen of Moses had not revealed

revealed the confusion of tongues, and positively declared unto us their division at Babell, our disputes concerning their beginning had beene without end, and I feare we must have left the hopes of that decision unto Elias.

And if any will yet insist, and urge the question farther still upon me, I shall be enforced unto divers of the like nature, wherein perhaps I shall receive no greater satisfaction. I shall demand how the Camels of Baetria came to have two bunches on their backs, whereas the Camels of Arabia in all relations have but one? How Oxen in some Countries began and continue gibbous or bunch back'd? what way those many different shapes, colours, haire, and natures of Dogs came in? how they of some Countries became depilous and without any haire at all, whereas some sorts in excess abound therewith? How the Indian Hare came to have a long tayle, whereas that part in others attaines no higher then a scut? How the hogs of Illyria which Aristotle speakes of, became to be solipedes or wholl hoofed, whereas in all other parts they are bisulcous and described cloven hoofed by God himselfe? All which with many others must needs seeme strange unto those, that hold there were but two of the unclean sort in the Arke, and are forced to reduce these varieties to unknowne originals since.

However therefore this complexion was first acquired, it is evidently maintained by generation, and by the tincture of the skin as a spermatieall part traduced from father unto son, so that they which are strangers contract it not, and the Natives which transmigrate omit it not without commixture, and that after divers generations. And this affection (if the story were true) might wonderfully be confirmed, by what Maginus and others relate of the Emperour of Ethiopia, or Prester John, who derived from Solomon is not yet descended into the hue of his Countrey, but remains a Mulatto, that is, of a mongrill complexion unto this day. Now although we conceive this blacknesse to be seminall, yet are we not of Herodotus conceit, that is, that their seed is black; an opinion long agoe rejected by Aristotle, and since by sence and enquiry; his assertion against the Historian was probable, that all seed was white; that is, without great controversie in viviparous Animals, and such as have Testicles, or preparing vessels wherein it receives a manifest dealbation: And not onely in them, but (for ought I know) in Fishes, not abating the seed of Plants, whereof though the skin and covering be black, yet is the seed and fructifying part not so: as may be observed in the seeds of Onyons, Pyonie, and Basil: most controvertible it seemes, in the spawne of Frogs, and Lobsters, whereof notwithstanding at the very first the spawne is white, contracting by degrees a blacknesse, answerable in the one unto the colour of the shell, in the other unto the porwige or Tadpole, that is, that animall which

first proceedeth from it: And thus may it also be in the generation and sperme of Negroes; that being first and in its naturals white, but upon separation of parts, accidents before invisible become apparent; there arising a shadow or darke efflorescence in the outside, whereby not onely their legitimate and timely births, but their abortions are also duskie, before they have felt the scorch and fervor of the Sun.

CHAP. XI.

Of the same.

A Second opinion there is, that this complexion was first a curse of God derived unto them from Cham, upon whom it was was inflicted for discovering the nakednesse of Noah. Which notwithstanding is sooner affirmed then proved, and carrieth with it sundry improbabilities. For first, if we derive the curse on Cham, or in generall upon his posterity, we shall Benegroe a greater part of the earth then ever was, or so conceived; and not onely paint the Æthiopians, and reputed sons of Cush, but the people also of Egypt, Arabia, Assyria, and Chaldea; for by his race were these Countries also peopled. And if concordantly unto Berosus, the fragment of *Cato de Originibus*, some things of Halicarnasseus, Macrobius, and out of them of Leandro and Annius, wee shall conceive of the travailes of Camele or Cham, wee may introduce a generation of Negroes as high as Italy, which part was never culpable of deformity, but hath produced the magnified examples of beauty.

Secondly, the curse mentioned in Scripture was not denounced upon Cham, but Canaan his youngest son, and the reasons thereof are divers; the first, from the Jewish Tradition, whereby it is conceived, that Canaan made the discovery of the nakednesse of Noah, and notified it unto Cham. Secondly, to have cursed Cham had been to curse all his posterity, whereof but one was guilty of the fact. And lastly, he spared Cham, because he had blessed him before, cap. 9. Now if we confine this curse unto Canaan, and thinke the same fulfilled in his posterity, then do we induce this complexion on the Sidonians, then was the promised land a tract of Negroes; For from Canaan were descended the Canaanites, Jebusites, Amorites, Gergezites, and Hevites, which were possessed of that Land.

Thirdly, although we should place the originall of this curse upon one of the sons of Cham, yet were it not knowne from which of them to derive it. For the particularity of their descents is imperfectly set downe by accountants, nor is it distinctly determinable from whom thereof the Æthiopians are proceeded. For, whereas these of Africa are generally esteemed to be the Issue of Chus, the elder son of Cham,

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it is not so easily made out. For the land of Chus, which the Septuagint translates Æthiopia, makes no part of Africa, nor is it the habitation of Blackmores, but the countrie of Arabia, especially the Happy, and stony; possessions and Colonies of all the sons of Chus, excepting Nimrod, and Havilah, possessed and planted wholly by the children of Chus, that is, by Sabrah and Raamah, Sabracha, and the sons of Raamah, Dedan and Sheba, according unto whose names the Nations of those parts have received their denominations, as may bee collected from Pliny and Ptolomy; and as wee are informed by credible Authors, they hold a faire Analogie in their names, even unto our dayes. So the wife of Moses translated in Scripture an Æthiopian, and so confirmed by the fabulous relation of Josephus, was none of the daughters of Africa, nor any Negroe of Æthiopia, but the daughter of Jethro, Prince and Priest of Madian, which was a part of Arabia the stony, bordering upon the Red Sea. So the Queene of Sheba came not unto Solomon out of Æthiopia, but from Arabia, and that part thereof which bore the name of the first planter thereof, the son of Chus. So whether the Eunuch which Philip the Deacon baptised, were servant unto Candace Queene of the African Æthiopia, (although Damianus à Goes, Codignus, and the Æthiopick relations averre) is yet by many, and with strong suspicions doubted. So that Army of a million, which Zerah King of Æthiopia is said to bring against Asa, was drawn out of Arabia, and the plantations of Chus, not out of Æthiopia, and the remote habitations of the Moores; For it is said that Asa pursuing his victory, tooke from him the city Gerar; now Gerar was no city in or neere Æthiopia, but a place betweene Cadesh and Zur, where Abraham formerly sojourned. Since therefore these African Æthiopians, are not convinced by the common acception to be the sons of Chus, whether they be not the posterity of Phut, or Mizraim, or both, it is not assuredly determined; For Mizraim, he possessed Egypt, and the East parts of Africa: From Ludym his son came the Lybians, and perhaps from them the Æthiopians: Phut possessed Mauritania, and the Western parts of Africa, & from these perhaps descended the Moors of the West, of Mandinga, Meleguette and Guinie. But from Canaan, upon whom the curse was pronounced, none of these had their originall, for he was restrained unto Canaan and Syria; although in after Ages many Colonies dispersed, and some thereof upon the coasts of Africa, and the prepossessions of his elder brothers.

Fourthly, to take away all doubt or any probable divarication, the curse is plainly specified in the Text, nor need we dispute it, like the marke of Cain; *Servus servorum erit fratribus suis*, Cursed be Canaan, a servant of servants shall he be unto his brethren; which was after fulfilled in the conquest of Canaan, subdued by the Israelites, the posterity of Sem; which Prophecy Abraham well understanding, tooke an

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oath of his servant not to take a wife for his Son Isaac out of the daughters of the Canaanites; And the like was performed by Isaac in the behalfe of his son Jacob. As for Chama and his other sons this curse attained them not, for Nimrod the son of Chus set up his kingdome in Babylon, and erected the first great Empire, Mizraim and his posterity grew mighty Monarches in Ægypt; and the Empire of the Æthiopians hath beene as large as either.

Lastly, whereas men affirme this colour was a Curse, I cannot make out the propriety of that name, it neither seeming so to them, nor reasonably unto us; for they take so much content therein, that they esteeme deformity by other colours, describing the Devill, and terrible objects White. And if wee seriously consult the definitions of beauty, and exactly perpend what wise men determine thereof, wee shall not reasonably apprehend a curse, or any deformity therein. For first, some place the essence thereof in the proportion of parts, conceiving it to consist in a comely commensurability of the whole unto the parts, and the parts betweene themselves, which is the determination of the best and learned Writers: and whereby the Moores are not excluded from beauty; there being in this description no consideration of colours, but an apt connexion and frame of parts and the whole. Others there be, and those most in number, which place it not onely in proportion of parts, but also in grace of colour; But to make Colour essentiall unto Beauty, there will arise no slender difficulty; For, Aristotle in two definitions of pulchritude, and Galen in one, have made no mention of colour: Neither will it agree unto the Beauty of Animals, wherein notwithstanding there is an approved pulchritude. Thus horses are handsome under any colour, and the symmetry of parts obscures the consideration of complexions; Thus in concolour animals and such as are confined unto one colour wee measure not their Beauty thereby; for if a Crow or Black-bird grow white, wee generally accounted it more pretty, And even in monstrosity descend not to opinion of deformity. And by this way likewise the Moores escape the curse of deformity, there concurring no stationary colour, and sometimes not any unto Beauty.

The Platonick contemplators reject both these descriptions founded upon parts and colours, or either, as M. Leo the Jew hath excellently discoursed in his Genealogy of Love, defining Beauty a formall grace, which delights and moves them to love which comprehend it. This grace say they, discoverable outwardly, is the resplendor and Raye of some interiour and invisible Beauty, and proceedeth from the formes of compositions amiable; whose faculties if they can aptly contrive their matter, they beget in the subject an agreeable and pleasing beauty, if over ruled thereby, they evidence not their perfections, but runne into deformity. For seeing that out of the same materials, Therisites and

and Paris Beauty and monstrosity may be contrived, the formes and operative faculties introduce and determine their perfections; which in naturall bodies receive exactnesse in every kinde, according to the first Idea of the Creator, and in contrived bodies the phancie of the Artificer: And by this consideration of Beauty, the Moores also are not excluded, but hold a common share therein with all mankind.

Lastly, in whatsoever its Theory consisteth, or if in the generall, we allow the common conceit of symmetry and of colour, yet to descend unto singularities, or determine in what symmetry or colour it consisted, were very dangerous; for beauty is determined by opinion, and seems to have no essence that holds one notion unto all; that seeming beauteous unto one, which hath no favour with another, and that unto every one, according as custome hath made it naturall, or sympathy and conformity of minds shall make it seem agreeable. Thus flat noses seem comly unto the Moore, an Aquiline or hawked one unto the Persian, a large and prominent nose unto the Romane, but none of all these are acceptable in our opinion. Thus some thinke it most ornamentall to weare their Bracelets on their wrests, others say it is better to have them about their Ancles; some thinke it most comely to weare their Rings and Jewells in the Eare, others will have them about their privities; a third will not thinke they are compleat except they hang them in their lips, cheeks or noses. Thus Homer to set off Minerva calleth her *χλωρόπις*, that is gray or light blew eyed: now this unto us seems farre lesse amiable then the black. Thus we that are of contrary complexions accuse the blacknes of the Moores as ugly: But the Spouse in the Canticles excuseth this conceit, in that description of hers, I am black, but comely: And howsoever Cerberus, and the furies of hell be described by the Poets under this complexion, yet in the Beauty of our Saviour blacknesse is commended, when it is said his locks are bushie and blacke as a Raven. So that to inferre this as a curse, or to reason it as a deformity, is no way reasonable; the two foundations of beauty Symmetry and Complexion, receiving such various apprehensions, that no deviation will bee expounded so high as a curse, or undeniable deformity, without a manifest and confessed degree of monstrosity.

Lastly, it is a very injurious method unto Philosophy, and a perpetuall promotion unto Ignorance, in points of obscurity, nor open unto easie considerations, to fall upon a present refuge unto Miracles, or recurre unto immediate contrivance from the insearchable hands of God. Thus in the conceit of the evill odor of the Jewes, Christians without a farther research into the verity of the thing, or enquiry into the cause, drawe up a judgement upon them, from the passion of their Saviour. Thus in the wondrous effects of the clime of Ireland, and the freedome from all venomous creatures, the credulity of common conceit imputes this immunity unto the benediction of St. Patrick, as Beda and

and Gyraldus have left recorded. Thus the Asse having a peculiar marke of a crosse made by a blacke list downe his backe, and another athwart, or at right angles downe his shoulders; common opinion ascribe this figure unto a peculiar signation, since that beast had the honour to beare our Saviour upon his backe. Certainly this is a course more desperate then Antipathies, Sympathies or occult qualities; wherein by a finall and satisfactive discernment of faith, we lay the last and particular effects upon the first and generall cause of all things, whereas in the other wee doe but palliate our determinations, untill our advanced endeavors doe totally reject or partially salve their evasions.

CHAP. XII.

A digression concerning Blacknesse.

Here being therefore two opinions repugnant unto each other, it may not be presumptive or skepticall in me to doubt of both, and because we remaine imperfect in the generall theory of Colours, wee shall deliver at present a short discovery of blacknes, wherein although perhaps we afford no greater satisfaction then others, yet shall our attempts exceed any; for wee shall empirically and sensibly discourse hereof, deducing the causes of Blacknesse from such originalls in Nature, as we doe generally observe things are denigrated by Art: And herein I hope our progression will not be thought unreasonable; For Art being the imitation of Nature, or Nature at the second hand, it is but a sensible expression of effects dependant on the same, through more removed causes, and therefore the works of the one, must prove reasonable discoverers of the other.

And first, things become blacke by a sooty and fuliginous matter proceeding from the sulphur of bodies torrifed, not taking *fuligo* strictly, but in opposition unto *αἴμα*, that is any kind of vaporious or madeying excretion, and comprehending *ἀναθυμίασις*, that is as Aristotle defines it, a separation of moist and dry parts made by the action of heat or fire, & colouring bodies objected. Hereof, in his Meteors, from the qualities of the subject he raiseth three kinds; the exhalations from ligneous and lean bodies, as bones, hair, and the like he calleth *καπνός* *fumus*; from fat bodies, and such as have not their fatnesse conspicuous or separated, he tearmeth *λίγρος* *fuligo*, as waxe, rosin, pitch, or turpentine; that from unctuous bodies, and such whose oylineffe is evident, he nameth *κρίστα* or *nidor*; now every one of these doe blacke the bodies objected unto them, and are to be conceived in the sooty and fuliginous matter expressed.

I say, proceeding from the sulphur of bodies torrifed, that is the oily

oily fat and unctuous parts wherein consist the principles of flammability; not pure and refined sulphur, as in the spirits of wine often rectified, but containing terrestrious parts, and carrying with it the volatile salt of the body, and such as is distinguishable by taste in foot; nor vulgar and usuall sulphur, for that leaves none or very little blacknesse, except a metalline body receive the exhalation.

I say, torrifed, singed, or suffering some impression from fire, thus are bodies casually or artificially denigrated, which in their naturalls are of another complexion; thus are Charcoales made black by an infection of their own suffitus; so is it true what is affirmed of combustible bodies, *Adusta nigra, perusta alba*, black at first from the fuliginous tincture, which being exhaled they become white, as is perceptible in ashes. And so doth fire cleanse and purifie bodies, because it consumes the sulphureous parts, which before did make them foule; and therefore refines those bodies which will never bee mundified by water. Thus Camphire of a white substance, by its fuligo affordeth a deepe black. So is pitch blacke, although it proceed from the same tree with rozen, the one distilling forth, the other forced by fire; so of the suffitus of a torch, doe Painters make a velvet blacke; so is lampe blacke made; so of burnt Harts horn a sable; so is Bacon denigrated in Chimneyes: so in fevers and hot distempers from choler adust is caused a blacknesse in our tongues, teeth and excretions: so are ustilago, brant corne and trees blacke by blasting, so parts cauterized, gangrenated, fiderated and mortified, become black, the radicall moisture, or vitall sulphur suffering an extinction, and smothered in the part affected. So not only actuall but potentiall fire, nor burning fire, but also corroding water will induce a blacknes. So are Chimneyes and furnaces generally blacke, except they receive a cleare and manifest sulphur; for the smoak of sulphur will not blacke a paper, and is commonly used by women to whiten Tiffanies; which it performeth by an acide vitriolous, and penetrating spirit ascending from it, by reason whereof it is not apt to kindle any thing, nor will it easily light a candle, untill that spirit bee spent, and the flame approacheth the match: And this is that acide and piercing spirit which with such activity and compunction invadeth the braines and nostrills of those that receive it. And thus when Bellonius affirmeth that Charcoales, made out of the wood of Oxycedar are white, Dr. Jordan in his judicious Discourse of minerall waters yeeldeth the reason, because their vapours are rather sulphureous then of any other combustible substance. So we see that Tinby coals will not blacke linnen being hanged in the smoake thereof, but rather whiten it, by reason of the drying and penetrating quality of sulphur, which will make red Roses white: And therefore to conceive a generall blacknesse in Hell, and yet therein the materiall flames of sulphur, is no Philosophicall conception, nor will it consist with the reall effects of its nature.

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and even at some distance Vitriol it selfe in living bodies; for there is a sowre, stipticke salt diffused through the earth, which passing a concoction in plants, becommeth milder and more agreeable unto the sense, and this is that vegetable vitriol, whereby divers plants containe a gratefull sharpnesse; as Lemmons, Pomegranates, Cherries, or an austere and inconcocted roughnesse, as Sloss, Medlers and Quinces: And that not onely vitriol is a cause of blacknesse, but that the salts of naturall bodies doe carry a powerfull stroake in the tincture and vernish of all things, we shall not deny, if we contradict not experience, and the visible art of Dyars, who advance and graduate their colours with Salts, for the decoctions of simples which beare the visible colours of bodies decocted, are dead and evanid without the commixtion of Alume, Argol, and the like; and this is also apparent in Chymicall preparations. So Cinaber becomes red by the acide exhalation of sulphur, which otherwise presents a pure and niveous white. So spirits of Salt upon a blew paper make an orient red. So Tartar or vitriol upon an infusion of violets affords a delightfull crimson. Thus it is wonderfull what variety of colours the spirits of Saltpeter, and especially, if they be kept in a glasse while they pierce the sides thereof; I say, what Orient greens they will project: from the like spirits in the earth the plants thereof perhaps acquire their verdure. And from such salary irradiations may those wondrous varieties arise, which are observable in Animalls, as Mallards heads, and Peacocks feathers, receiving intention or alteration according as they are presented unto the light. Thus Saltpeter, Ammoniack and Minerall spirits emit delectable and various colours; and common *Aqua fortis* will in some green and narrow mouthed glasses, about the verges thereof, send forth a deep and Gentianella blew.

Thus have we at last drawne our conjectures unto a period; wherein if our contemplations afford no satisfaction unto others, I hope our attempts will bring no condemnation on our selves; (for besides that adventures in knowledge are laudable, and the assayes of weaker heads affords oftentimes improveable hints unto better) although in this long journey we misse the intended end, yet are there many things of truth disclosed by the way: And the collaterall verity, may unto reasonable speculations, requite the capitall indiscovery.

THE



THE SEVENTH BOOKE.

Concerning many Historicall Tenents generally received, and some deduced from the History of holy Scripture.

CHAP. I. *Of the Forbidden fruit.*



That the Forbidden fruit of Paradise was an Apple, is commonly beleaved, confirmed by Tradition, perpetuated by writings, verses, pictures; and some have been so bad Profodians, as from thence to derive the Latine word *Malum*; because that fruit was the first occasion of evill, wherein notwithstanding determinations are presumptuous, and many I perceive are of another beleefe; for some have conceived it a Vine, in the mystery of whose fruit lay the expiation of the Transgression: Goropius Becanus reviving the conceit of Barcephas, peremptorily concludeth it to be the Indian Fig-tree, and by a witty Allegory labours to confirme the same. Some fruits we observe to passe under the name of Adams apples, which in common acception admit not that appellation, the one described by Mathiolus under the name of *Pomum Adami*, a very faire fruit, and not unlike a Citron, but somewhat rougher chopt and cranied, vulgarly conceived the markes of Adams teeth; another, the fruit of that plant Serapion termeth *Musa*, but the Easterne Christians commonly the Apples of Paradise; not resembling an apple in figure, and in taste a Melon or Cowcumber; which fruits although they have received appellations suitable unto the Tradition, yet can we not from thence inferre they were this fruit in question; no more then *Arbor vita*, so commonly called, to obtaine its name from the tree of life

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in Paradise, or *arbor Indæ*, to bee the same which supplied the gibbet unto Judas.

Again, there is no determination in the Text, wherein is only particularized that it was the fruit of a tree good for food and pleasant unto the eye, in which regards many excell the Apple; and therefore learned men doe wisely conceive it inexplicable, and Philo puts determination unto despaire, when hee affirmeth the same kinde of fruit was never produced since. Surely, were it not requisite or reasonable to have been concealed, it had not passed unspecified, nor the tree revealed which concealed their nakednesse, and that concealed which revealed it; for in the same Chapter mention is made of Fig-leaves, and the like particulars although they seem uncircumstantiall are oft set downe in holy Scripture; so is it specified that Elias sat under a Juniper tree, Absolon hanged by an Oake, and Zacheus got up into a Sycomore.

And although to condemne such indeterminables, unto him that demanded on what hand Venus was wounded, the Philosopher thought it a sufficient resolution to reinquire upon what leg King Philip halted; and the Jews not undoubtedly resolved of the Sciatica side of Jacob, do cautelously in their diet abstaine from the sinewes of both; yet are there many nice particulars which may bee authentically determined. That Peter cut off the right eare of Malchus is beyond all doubt. That our Saviour eat the Pasche in an upper room, we may determine from the Text; and some we may concede which the Scripture plainly defines not. That the Dyall of Ahaz was placed upon the West side of the Temple, wee will not deny, or contradict the description of Adricomius. That Abrahams servant put his hand under his right thigh, we shall not question; and that the Thiefe on the right hand was saved, and the other on the left reprobated, to make good the Method of the last Judicall dismissal, we are ready to admit; but surely in vaine we enquire of what wood was Moses rod, or the tree that sweetened the waters; or though tradition or humane history might afford some light, whether the crowne of thorns was made of Paliurus, whether the crosse of Christ were made of those foure woods in the Disticke of Durantes, or only of Oake according unto Lipsius and Goropius, we labour not to determine; for though hereof prudent symbolles and pious Allegories be made by wiser conceivers, yet common heads will flye unto superstitious applications, and hardly avoid miraculous or magicall expectations.

Now the ground or reason that occasioned this expression by an Apple, might be the community of this fruit, and which is often taken for any other. So the Goddesse of gardens is termed *Pomona*; so the Proverbe expresseth it to give Apples unto Alcinous; so the fruit which Paris decided was called an Apple; so in the garden of Hesperides

*Pes cedrus est,
fraxinus cupressus,
oliva sum-
pnum, pal-
mas, transver-
sum Christi sunt
in cruce lignum.*

rides (which many conceive a fiction drawne from Paradise) we read of golden Apples guarded by the Dragon; and to speake strictly in this appellation they placed it more safely then any other; for beside the great variety of Apples, the word in Greeke comprehendeth Orenge, Lemmons, Citrons, Quinces, and as Ruellius defineth, such fruits as have no stone within, and a soft covering without, excepting the Pomegranate.

It hath been promoted in some constructions from a passage in the Canticles, as it runnes in the vulgar Translation, *Sub arboe malo suscitavi te, ibi corrupta est mater tua, ibi violata est generix tua*; which words notwithstanding parabollically intended, admit no literall inference, and are of little force in our Translation, I raysed thee under an Apple tree, there thy mother brought thee forth, there she brought thee forth that bare thee. So when from a basket of Summer fruits, or Apples, as the Vulgar rendreth them, God by Amos foretold the destruction of his people, we cannot say they had any reference unto the fruit of Paradise which was the destruction of man; but thereby is declared the propinquity of their desolation, and that their tranquility was of no longer duration then those horary and soon decaying fruits of Summer; nor when it is said in the same Translation, *Poma desiderii anime tue discesserunt à te*, the Apples that thy soul lusted after are departed from thee, is there any allusion therein unto the fruit of Paradise? but thereby is threatned unto Babylon, that the pleasures and delights of their palate should forsake them: and we read in Pierius, that an Apple was the Hieroglyphicke of Love, and that the Statua of Venus was made with one in her hand.

Since therefore after this fruit curiosity fruitlessly enquireth, and confidence blindly determineth, we shall surcease our Inquisition, rather troubled that it was tasted, then troubling our selves in its decision; this only we observe, when things are left uncertaine men will assure them by determination; which is not only verified concerning the fruit but the Serpent that perswaded, many defining the kinde or species thereof. So Bonaventure and Comestor affirme it was a Dragon, Eugubinus a Basiliske, Delrio a viper, and others a common snake, wherein men still continue the delusion of the Serpent, who having deceived Eve in the maine, sets her posterity a worke to mistake in the circumstance, and endeavours to propagate errors at any hand, and those he surely most desireth which either concern God or himself; for they dishonour God who is absolute truth and goodnesse, but for himselfe, who is extremely evill, and the worst we can conceive, by aberration of conceit they extenuate his depravity, and ascribe some goodnesse unto him.

Cant. 8.

Apoc. 14.

CHAP.

CHAP. II.

That a man hath one rib lesse then a woman.

THat a man hath one rib lesse then a woman, is a common conceit derived from the history of Genesis, wherein it stands delivered, that Eve was framed out of a rib of Adam; whence 'tis concluded the sex of man still wants that rib our Father lost in Eve; and this is not onely passant with the many, but was urged against Columbus in an Anatomy of his at Pisa, where having prepared the Skeleton of a woman that chanced to have thirteene ribs of one side, there arose a party that cryed him downe, and even unto oathes affirmed, this was the rib wherein a woman exceeded; were this true, it would autoptically silence that dispute out of which side Eve was framed; it would determine the opinion of Oleaster, that she was made out of the ribs of both sides, or such as from the expression of the Text maintaine there was a plurality required; and might indeed decry the parabolically exposition of Origen, Cajetan, and such as fearing to concede a monstrosity, or mutilate the Integrity of Adam, preventively conceive the creation of thirteene ribs.

But this will not consist with reason or inspection: for if wee survey the Skeleton of both sexes, and therein the compage of bones, wee shall readily discover that men and women have foure and twenty ribs, that is, twelve on each side, seven greater annexed unto the Sternon, and five lesser which come short thereof, wherein if it sometimes happen that either sex exceed, the conformation is irregular deflecting from the common rate or number, and no more inferrible upon mankind, then the monstrosity of the son of Rapha, or the vicious excess in the number of fingers and toes: and although some difference there be in figure, and the female *os inominatum* be somewhat more protuberant, to make a fayrer cavity for the Infant, the coccyx sometime more reflected to give the easier delivery, and the ribs themselves seeme a little flatter, yet are they equall in number. And therefore, while Aristotle doubteth the relations made of Nations which had but seven ribs on a side, and yet delivereth that men have generally no more then eight; as he rejecteth their history, so can we not accept of his Anatomy.

Again, although we concede there wanted one rib in the Skeleton of Adam, yet were it repugnant unto reason and common observation that his posterity should want the same; for we observe that mutilations are not transmitted from father unto son; the blind begetting such as can see, men with one eye, children with two, and criples mutilate in their owne persons, do come out perfect in their generations. For, the

*Os ex offi-
bus meis.*

the seed conveigheth with it not onely the extract and single Idea of every part, whereby it transmits their perfections or infirmities, but double and over againe; whereby sometimes it multipliciously delineates the same, as in Twins in mixed and numerous generations. And to speake more strictly, parts of the seed do seeme to containe the Idea and power of the whole; so parents deprived of hands, beget manuall issues, and the defect of those parts is supplied by the Idea of others. So in one graine of corne appearing similiary and insufficient for a plurall germination, there lyeth dormant the virtuality of many other, and from thence sometimes proceed an hundred eares: and thus may bee made out the cause of multiparous productions; for though the seminall materialls disperse and separate in the matrix, the formative operator will not delineat a part, but endeavour the formation of the whole, effecting the same as farre as the matter will permit, and from devided materials attempt entire formations. And therefore, though wondrous strange, it may not be impossible what is confirmed at Laufdun concerning the Countesse of Holland, nor what Albertus reports of the birth of an hundred and fifty, and if we consider the magnalities of Generation in some things, wee shall not controvert its possibilities in others; nor easily question that great worke, whose wonders are onely second unto those of the Creation, and a close apprehension of the one, might perhaps afford a glimmering light, and crepusculous glance of the other.

CHAP. III.

Of Methuselah.

WHat hath beene every where opinion'd by all men, and in all times, is more then Paradoxically to dispute; and so that Methuselah was the longest liver of all the posterity of Adam we quietly beleeve: but that he must needs be so, is perhaps below Paralogy to deny. For hereof there is no determination from the Text; wherein it is onely particular'd hee was the longest liver of all the Patriarchs whose age is there expressed, but that he outlived all others we cannot well conclude. For of those nine whose death is mentioned before the flood, the Text expresseth that Enoch was the shortest liver, who saw but three hundred sixty five yeares; but to affirme from hence, none of the rest, whose age is not expressed, did dye before that time, is surely an illation whereto we cannot assent.

Again, many persons there were in those dayes of longevity, of whose age notwithstanding there is no account in Scripture; as of the race of Caine, the wives of the nine Patriarches, with all the sons and daughters that every one begat, whereof perhaps some persons might out-

outlive Methuselah; the Text intending onely the masculine line of Seth, conduceable unto the Genealogy of our Saviour, and the antediluvian Chronology. And therefore we must not contract the lives of those which are left in silence by Moses; for neither is the age of Abel expressed in the Scripture, yet is he conceived farre elder then commonly is opinion'd: and if wee beleve the conclusion of his Epitaph as made by Adam, and so set downe by Salian, *Posuit marens pater cui à filio justius positum foret, Anno ab ortu rerum 130. ab Abele nato 129.* we shall not need to doubt; which notwithstanding Cajetan and others confirme; nor is it improbable, if wee conceive that Abel was borne in the second yeare of Adam, and Seth a yeare after the death of Abel: for so it being said, that Adam was an hundred and thirty yeares old when he begat Seth, Abel must perish the yeare before, which was one hundred twenty nine.

And if the account of Cain extend unto the Deluge, it may not bee improbable, that some thereof exceeded any of Seth: nor is it unlikely in life, riches, power and temporall blessings, they might surpass them in this world, whose lives referred unto the next; for so when the seed of Jacob was under affliction and captivity, that of Ismael and Esau flourished and grew mighty, there proceeding from the one twelve Princes, from the other, no lesse then foureteene Dukes and eight Kings. And whereas the age of Cain and his posterity is not delivered in the Text, some doe save it from the secret method of Scripture, which sometimes wholly omits, but seldome or never delivers the entire duration of wicked and faithlesse persons; as is observable in the history of Esau, and the Kings of Israel and Judah. And therefore, that mention is made that Ismael lived 137. yeares, some conceive he adhered unto the faith of Abraham; for so did others who were not descended from Jacob; for Job is thought to be an Idumean, and of the seed of Esau.

Lastly, (although we rely not thereon) we will not omit that conceit urged by learned men, that Adam was elder then Methuselah, in as much as he was created in the perfect age of Man, which was in those dayes fifty or sixty yeares, for about that time wee read that they begat children; so that if unto 930. we adde sixty yeares, he will exceed Methuselah. And therefore if not in length of dayes, at least in old age he surpassed others; he was older then all who was never so young as any; for though hee knew old age he was never acquainted with puberty, youth, or Infancy; and so in a strict account he begat children at one yeare old; and if the usuall compute will hold, that men are of the same age which are borne within compasse of the same yeare, Eve was as old as her husband and parent Adam, and Cain their son coetaneous unto both.

Now that conception that no man did ever attaine unto a thousand yeares,

yeares, because none should ever be one day old in the sight of the Lord, unto whom according to that of David, A thousand yeares are but as one day, doth not advantage Methuselah; and being deduced from a popular expression, which will not stand a Metaphysicall and strict examination, is not of force to divert a serious enquirer; for unto God a thousand yeares are no more then one moment, and in his sight Methuselah lived no neerer one day then Abel, for all parts of time are alike unto him, unto whom none are referable, and all things present, unto whom nothing is past or to come; and therefore, although we be measured by the Zone of time, and the flowing and continued instants thereof, do weave at last a line and circle about the eldest; yet can we not thus commensurate the sphere of Trismegistus, or summe up the unsuccessive and stable duration of God.

CHAP. IV.

That there was no Rainebow before the Flood.

THat there shall no Rainebow appeare forty yeares before the end of the world, and that the preceding drought unto that great flame shal exhaust the materials of this Meteor, was an assertion grounded upon no solid reason: but that there was not any in sixteene hundred yeares, that is, before the flood, seemes deduceable from holy Scripture, Gen. 9. I do set my bow in the clouds, and it shall be for a token of a Covenant betweene me and the earth. From whence notwithstanding we cannot conclude the nonexistence of the Rainebow; nor is that Chronology naturally established, which computeth the antiquity of effects arising from physicall and settled causes, by additionall impositions from voluntary determinators. Now by the decree of reason and Philosophy, the Rainebow hath its ground in Nature, and caused by the rayes of the Sunne, falling upon a roride and opposite cloud; whereof some reflected, others refracted beget that semicircular variety we generally call the Rainebow; which must succeed upon concurrence of causes and subjects aptly prædisposed. And therefore, to conceive there was no Rainebow before, because God chose this out as a token of the Covenant, is to conclude the existence of things from their signalities, or of what is objected unto the sense, a coexistence with that which is internally presented unto the understanding. With equal reason we may inferre there was no water before the Institution of Baptisme, nor bread and wine before the holy Eucharist.

Again, while men deny the antiquity of one Rainebow, they anciently concede another. For, beside the solary Iris which God shewed unto Noah there is another Lunary, whose efficient is the Moone, visible

visible onely in the night, most commonly at full Moone, and some degrees above the Horizon. Now the existence hereof men doe not controvert, although effected by a different Luminary in the same way with the other; and probably appeared later, as being of rare appearance and rarer observation, and many there are which thinke there is no such thing in Nature. And therefore by casuall spectators they are lookt upon like prodigies, and significations made not signified by their natures.

Lastly, we shall not need to conceive God made the Rainebow at this time, if we consider that in its created and predisposed nature, it was more proper for this signification then any other Meteor or celestiall apparency whatsoever. Thunder and lightning had too much terrour to have beene tokens of mercy; Comets or blazing Stars appeare too seldome to put us in minde of a Covenant to be remembered often, and might rather signifie the world should be once destroyed by fire, then never againe by water. The Galaxia or milky Circle had beene more probable; for, (beside that unto the latitude of thirty it becomes their Horizon twice in foure and twenty howres, and unto such as live under the Equator, in that space the whole Circle appeareth) part thereof is visible unto any situation, but being onely discoverable in the night and when the ayre is cleere, it becomes of unfrequent and comfortlesse signification. A fixed Starre had not beene visible unto all the Globe, and so of too narrow a signality in a Covenant concerning all. But Rainebowes are seene unto all the world, and every position of sphere; unto our owne Elevation it may appeare in the morning while the Sunne hath attained about forty five degrees above the Horizon, (which is conceived the largest semidiameter of any Iris) and so in the afternoone when it hath declined unto that altitude againe; which height the Sun not attaining in winter, Rainebowes may happen with us at noone or any time. Unto a right position of spheare it may appeare three howres after the rising of the Sun, and three before its setting; for the Sun ascending fiftene degrees an houre, in three attaineth forty five of altitude. Even unto a parallell sphere, and such as live under the pole, for halfe a yeare some segments may appeare at any time and under any quarter, the Sun not setting, but walking round about them.

But the propriety of its Election most properly appeareth in the naturall signification and prognostick of it selfe, as contayning a mixt signality of raine and faire weather; for being in a roride cloud and ready to drop, it declareth a pluvius disposure in the ayre; but because when it appeares the Sun must also shine, there can bee no universall showres, and consequently no deluge. Thus when the windowes of the great deepe were open, in vaine men lookt for the Rainebow, for at that time it could not be seene, which after appeared unto Noah. It was

was therefore existent before the flood, and had in Nature some ground of its addition; unto that of Nature God superadded an assurance of his promise, that is, never to hinder its appearance, or so to replenish the heavens againe as that we should behold it no more. And thus, without disparaging the promise, it might raine at the same time when God shewed it unto Noah; thus was there more therein then the Heathens understood, when they called it the *Nuncia* of the gods, and the laugh of weeping heaven; and thus may it be elegantly said, I put my Bow, not my Arrow in the clouds, that is, in the menace of Raine the mercy of faire weather.

Laudable is the custome of the Jews, who upon the appearance of the Rainebow, doe magnifie the fidelity of God in the memory of his Covenant, according to that of Syracides, Looke upon the Rainebow, and praise him that made it. And though some pious and Christian pens have onely symboliz'd the same from the mystery of its colours, yet are there other affections which might admit of Theologicall allusions; nor would he finde a more improper subject that should consider, that the colours are made by refraction of light, and the shadows that limit that light; that the Center of the Sun, the Rainebow, and the eye of the beholder must be in one right line; that the spectator must be betweene the Sun and the Rainebow; that sometime three appeare, sometime one reversed; with many others, considerable in Meteorologicall Divinity, which would more sensibly make out the Epithite of the Heathens, and the expression of the son of Syrach, very beautifull is the Rainebow, It compasseth the heaven about with a glorious circle, and the hands of the most High have bended it.

CHAP. V.

Of Sem, Ham and Japhet.

Concerning the three sons of Noah, Sem, Ham and Japhet, that the order of their nativity was according to that of numeration, and Japhet the youngest son, as most beleeve, as Austin and others account, the sons of Japhet and Europeans need not grant; nor will it so well concord unto the letter of the Text, and its readiest Interpretations: For, so is it said in our Translation, Sem the father of all the sons of Heber, the brother of Japhet the elder; so by the Septuagint, and so by that of Tremellius; and therefore when the Vulgar reads it, *Fratre Japhet majore*, the mistake, as Junius observeth, might be committed by neglect of the Hebrew accent, which occasioned Jerom so to render it, and many after to beleeve it. Nor is that argument contemptible which is deduced from their Chronology; for probable it is, that

X x 2

Noah

Rifus plantantis Olympi.

Thaumantias.

Noah had none of them before, and begat them from that yeare when it is said hee was five hundred yeares old and begat Sem, Ham, and Japhet; Againe, it is said he was fixe hundred yeares old at the flood, and that two yeares after Sem was but an hundred, therefore Sem must be borne when Noah was five hundred and two, and some other before in the yeare of five hundred and one.

Gen. 11.
Gen. 28.

Now whereas the Scripture affordeth the priority of order unto Sem, we cannot from thence inferre his primogeniture; for in Sem the holy line was continued, and therefore however borne, his genealogy was most remarkeable. So is it not unusuall in holy Scripture to nominate the younger before the elder; so is it said, That Tarah begat Abraham, Nachor, and Haram; whereas Haram was the eldest. So Rebecca is termed the mother of Jacob and Esau. Nor is it strange the younger should be first in nomination, who have commonly had the priority in the blessings of God, and been first in his benediction. So Abel was accepted before Cain, Abraham the younger, preferred before Ismael the elder, Jacob before Esau, Joseph was the youngest of twelve, and David the eleventh son, and but the cadet of Jesse.

Lastly, though Japhet were not elder then Sem, yet must we not affirme that he was younger then Cham, for it is plainly delivered, that after Sem and Japhet had covered Noah, he awaked, and knew what his youngest son had done unto him. *vis & virtutes*, is the expression of the Septuagint, *Filius minor* of Jerome, and *minimus* of Tremellius. And upon these grounds perhaps Josephus doth vary from the Scripture enumeration, and nameth them Sem, Japhet, and Cham, which is also observed by the Annian Berosus; *Noah cum tribus filiis, Semo, Iapeto, Chem*. And therefore although in the priority of Sem and Japhet there may be some difficulty, though Cyrill, Epiphanius, and Austin have accounted Sem the elder, and Salian the Annalist, and Petavius the Chronologist contend for the same, yet Cham is more plainly and confessedly named the youngest in the Text.

CHAP. VI.

That the Tower of Babel was erected against a second deluge.

AN opinion there is of some generality, that our fathers after the Flood attempted the tower of Babel to secure themselves from a second Deluge. Which however affirmed by Josephus and others, hath seemed improbable unto many who have discoursed hereon. For, (beside that they could not be ignorant of the promise of God never to drowne the world againe, and had the Rainebow before their eyes to

to put them in minde thereof) it is improbable from the nature of the Deluge, which being not possibly causable from naturall showres above, or watery eruptions below, but requiring a supernaturall hand, and such as all acknowledge irresistible; wee must disparage their knowledge and judgement in so successe attempts.

Againe, they must probably heare, and some might know, that the waters of the flood ascended fiftene cubits above the highest mountaines. Now, if as some define, the perpendicular altitude of the highest mountaines bee foure miles, or as others, but fiftene furlongs, it is not easily conceived how such a structure could bee effected; except wee receive the description of Herodotus concerning the Tower of Belus, whose first tower was eight furlongs higher, and eight more built upon it; except we beleve the Annian Berosus, or the traditionall relation of Jerome.

It was improbable from the place, that is a plaine in the land of Shinar. And if the situation of Babylon were such at first as it was in the dayes of Herodotus, it was rather a seat of amenity and pleasure, then conducing unto this intention; it being in a very great plaine, and so improper a place to provide against a generall Deluge by towers and eminent structures, that they were faine to make provisions against particular and annuall inundations by ditches and trenches, after the manner of Egypt. And therefore Sir Walter Raleigh accordingly objecteth; If the Nations which followed Nimrod, still doubted the surprise of a second flood, according to the opinions of the antient Hebrewes, it soundeth ill to the care of Reason, that they would have spent many yeares in that low and overflowne valley of Mesopotamia. And therefore in this situation, they chose a place more likely to have secured them from the worlds destruction by fire, then another Deluge of water, and as Picrius observeth, some have conceived that this was their intention.

Lastly, the reason is delivered in the Text. Let us build us a City and a Tower, whose top may reach unto heaven, and let us make us a name, lest wee be scattered abroad upon the whole earth, as wee have already began to wander over a part. These were the open ends proposed unto the people, but the secret designe of Nimrod, was to settle unto himselfe a place of dominion, and rule over the rest of his brethren, as it after succeeded, according to the delivery of the Text, The beginning of his kingdome was Babel.

CHAP. VII.

Of the Mandrakes of Leah.

WEE shall not omit the Mandrakes of Leah, according to the History of Genesis. And Reuben went out in the dayes of Wheat-harvest and found Mandrakes in the field, and brought them unto his mother Leah; then Rachel said unto Leah, Give me, I pray thee, of thy sonnes Mandrakes, and she said unto her, Is it a small matter that thou hast taken my husband, and wouldest thou take my sons Mandrakes also? and Rachel said, therefore he shall lye with thee this night for thy sonnes Mandrakes; from whence hath arisen a common conceit, that Rachel requested these plants as a medicine of fecundation, or whereby she might become fruitfull; which notwithstanding is very questionable, and of incertaine truth.

Cant. 7.

For first from the comparison of one Text with another, whether the Mandrakes here mentioned, be the same plant which holds that name with us there is some cause to doubt; the word is used in another place of Scripture, when the Church inviting her beloved into the fields, among the delightfull fruits of Grapes and Pomegranats, it is said, the Mandrakes give a smell, and at our gates are all manner of pleasant fruits. Now instead of a smell of delight, our Mandrakes afford a papaverous and unpleasant odour, whether in the leafe or apple as is discoverable in their simplicity or mixture; the same is also dubious from the different interpretations: for though the Septuagint and Josephus doe render it the Apples of Mandrakes in this Text yet in the other of the Canticles the Chaldy Paraphrase tearmeth it Balsame. R. Solomon, as Drusius observeth, conceives it to be that plant the Arabians named Jeseimin. Oleaster and *Georgius Venetus* the Lilly; and that the word *Dudaim*, may comprehend any plant that hath a good smell, resembleth a womans breast, and flourisheth in wheat harvest; Junius and Tremellius interpret the same for any amiable flowers of a pleasant and delightfull odour: but the Geneva Translators have been more wary then any; for although they retaine the word Mandrake in the Text, they in effect retract it in the Margine, wherein is set downe, The word in the originall is *Dudaim*, which is a kinde of fruit or flower unknowne.

Nor shall we wonder at the dissent of exposition, and difficulty of definition concerning this Text, if we perpend how variously the vegetables of Scripture are expounded, and how hard it is in many places to make out the species determined. Thus are we at variance concerning the plant that covered Jonas, which though the Septuagint doth render Colocynthis, the Spanish Calabaca, and ours accordingly a gourd, yet the vulgar translates it Hedera or Juice; and, as Grotius ob-

serveth,

serveth, Jerome thus translated it, not as the same plant but best apprehended thereby. The Italian of Diodati and that of Tremellius have named it Ricinus, and so hath ours in the Margine; for *palma Christi* is the same with Ricinus. The Geneva Translators have herein been also circumspect; for they have retained the originall word *Kikaion*, and ours hath also affixed the same unto the Margine: nor are they indeed alwayes the same plants which are delivered under the same name, and appellations commonly received amongst us; so when it is said of Solomon that hee writ of plants from the Cedar of Lebanon, unto the Hyssop that groweth upon the wall, that is from the greatest unto the smallest, it cannot be well conceived our common hyssop; for neither is that the least of vegetables, nor observed to grow upon walls; but rather as Lemnius well conceiveth some kinde of the capillaries, which are very small plants and only grow upon walls and stony places; nor are the faire species in the holy oyntment, Cinnamon, Myrrhe, Calamus and Cassia; nor the other in the holy perfume, Frankincense, Stacte, Onycha, and Galbanum, so agreeably expounded unto those in use with us, as not to leave considerable doubts behinde them; nor must that perhaps be taken for a simple unguent, which Matthew onely tearmeth a pretious oyntment, but rather a composition, as Marke and John imply by pistick Nard, that is faithfully dispensed; and as Mathioli observeth in his Epistles, may be that famous composition described by Dioscorides, made of oyle of Ben, Malabathrum, Juncus odoratus, Costus, Amomum, Myrrhe, Balsam and Nard; which Galen affirmeth to have been in use with the delicate Dames of Rome, and that the best thereof was made at Laodicea, from whence by Merchants it was conveyed unto other parts; but how to make out that Translation concerning the Tithe of Mint, Anise, and Cumin, we are still to seek; for we finde not a word in the Text that can properly be rendered Anise, the Greeke being *Ανδαν*, which the Latines call *Anethum*, and is properly Englished Dill.

Again, it is not deducible from the Text or concurrent sentence of Comments, that Rachel had any such intention, and most doe rest in the determination of Austine, that she desired them for rarity, pulchritude or suavity; nor is it probable shee would have resigned her bed unto Leah, when at the same time she had obtained a medicine to frustrate her selfe, and therefore Drusius who hath expressly and favourably treated hereof, is so farre from conceding this intention, that he plainly concludeth *hoc quo modo illis in mentem venerit conicere nequeo*; how this conceit fell into mens minds it cannot fall into mine, for the Scripture delivereth it not, nor can it be clearly deduced from the Text.

Thirdly, if Rachel had any such intention, yet had they no such effect, for she conceived not many yeares after of Joseph; whereas in the

the meane time Leah had three children, Isachar, Zabulon, and Dinah.

Lastly, although at that time they failed of this effect, yet is it mainly questionable whether they had any such vertue either in the opinions of those times or in their proper nature; that the opinion was popular in the land of Canaan it is improbable, and had Leah understood thus much she would not surely have parted with fruits of such a faculty, especially unto Rachel who was no friend unto her. As for its proper nature, the Ancients have generally esteemed it Narcotick or stupefactive, and is to be found in the list of poyson set downe by Dioscorides, Galen, Aetius, Aegineta, and severall Antidotes delivered by them against it. It was I confesse from good Antiquity, and in the dayes of Theophrastus accounted a philtre, or plant that conciliates affection, and so delivered by Dioscorides; and this intent might seem more probable, had they not been the wives of holy Jacob, had Rachel presented them unto him, and not requested them for her selfe.

Now what Dioscorides affirmeth in favour of this effect, that the graines of the Apples of Mandrakes mundifie the Matrix and applied with sulphur stop the fluxes of women, he overthrowes by qualities destructive unto conception; affirming also that the juice thereof purgeth upward like Hellebore, and applyed in pessaries provokes the menstruous flowes and procures abortion. *Petrus Hispanus*, or Pope John the twentieth speakes more directly in his *Thesaurus pauperum*; wherein among the receits of fecundation, he experimentally commendeth the wine of Mandrakes given with *Triphera Magna*: but the soule of the medicine may lye in *Triphera magna*, an excellent composition, and for this effect commended by Nicolaus. And whereas Levinus Lemnius that eminent Physitian doth also concede this effect it is from manifest causes and qualities elementall occasionally producing the same; for he imputeth the same unto the coldnesse of that simple, and is of opinion that in hot climates, and where the uterine parts exceed in heat, by the coldnesse hereof they may bee reduced into a conceptive constitution, and Crasis accommodable unto generation; whereby indeed we will not deny the due and frequent use may proceed unto some effect, from whence notwithstanding wee cannot inferre a fertilizing condition or property of fecundation: for in this way all vegetables doe make fruitfull according unto the complexion of the Matrix; if that excell in heat, plants exceeding in cold doe rectifie it, if it be cold, simples that are hot reduce it, if dry moist, if moist dry correct it, in which division all plants are comprehended; but to distinguish thus much is a point of Art, and beyond the method of Rachels or feminine Physicke. Againe, whereas it may be thought that Mandrakes may fecundate since Poppy hath obtained the Epithite of fruitfull, and that fertility was hieroglyphically described, by Venus with

with an head of poppy in her hand; the reason hereof, was the multitude of seed within it selfe, and no such multiplying in humane generation. And lastly, whereas they may well have this quality, since Opium it selfe is conceived to extimulate unto venery, and for that intent is sometimes used by Turkes, Persians, and most orientall Nations; although Winclerus doth seem to favour the conceit, yet Amatus Lusitanus, and *Rodericus a Castro* are against it, *Garcias ab Horto* refutes it from experiment; and they speake probably who affirme, the intent and effect of eating Opium, is not so much to invigorate themselves in coition, as to prolong the Act, and spinne out the motions of carnality.

CHAP. VIII.

Of the three Kings of Collein.

A Common conceit there is of the three Kings of Collein, conceived to be the wise men that travelled unto our Saviour by the direction of the Star; wherein omitting the large Discourses of Baronius, Pineda, and Montacutius, That they might be Kings, beside the ancient Tradition and authority of many Fathers, the Scripture also implyeth. The Gentiles shall come to thy light, and Kings to the brightness of thy rising. The Kings of Tharsis and the Isles, the Kings of Arabia and Saba shall offer gifts, which places most Christians and many Rabbines interpret of the Messiah. Not that they are to be conceived potent Monarchs, or mighty Kings, but Toparks, Kings of Cities or narrow territories, such as were the Kings of Sodome and Gomorrah, the Kings of Jericho and Ai, the one and thirty which Joshua subdued, and such as some conceive the friends of Job to have been.

But although we grant they were Kings, yet can we not bee assured they were three: for the Scripture maketh no mention of any number, and the number of their presents, Gold, Myrrh and Frankincense, concludeth not the number of their persons; for these were the commodities of their Country, and such as probably the Queen of Sheba in one person had brought before unto Solomon; and so did not the sons of Jacob divide the present unto Joseph, but are conceived to carry one for them all, according to the expression of their father, Take of the best fruits of the land in your vessels, and carry downe the man a present: and therefore their number being uncertaine, what credit is to be given unto their names, Gaspar, Melchior, Balchazar? what to the charme thereof against the falling sicknesse? or what unto their habits, complexions, and corporall accidents, wee must relye on their uncertain

certain story, and authentick portraits of Collein. Lastly, although we grant them Kings, and three in number, yet could we not conceive that they were Kings of Collein. For though Collein were the chiefe City of the *Phii*, then called *Phiolis*, and afterwards *Agrippina*, yet will no history informe us there were three Kings thereof. Beside these being rulers in their Countries, and returning home would have probably converted their subjects; but according unto Munsters report, their conversion was not wrought untill seventy yeares after by Maternus a disciple of Peter. And lastly, it is said that the wise men came from the East; but Collein is seated West-ward from Jerusalem, for Collein hath of longitude thirty foure degrees, but Jerusalem seventy two.

The ground of all was this, these wise men or Kings, were probably of Arabia, and descended from Abraham by Keturah, who apprehending the mystery of this starre, either by the Spirit of God, the prophesie of Balaam, the prophesie, which Suetonius mentions, received and constantly believed through all the East, that out of Jury one should come that should rule the whole world; or the divulged expectancy of the Jewes from the expiring prediction of Daniel, were by the same conducted unto Judea, returned into their Country, and were after baptised by Thomas; from whence about three hundred yeares after, by Helena the Emperesse their bodies were translated to Constantinople, from thence by Eustathius unto Millane, and at last by Renatus the Bishop unto Collein, where they are beleaved at present to remaine, their monuments shovne unto strangers, and having lost their Arabian titles, are crowned Kings of Collein.

CHAP. IX.

Of the food of John Baptist, Locusts and wilde hony.

Concerning the food of John Baptist in the wilderness, Locusts and wilde hony, lest popular opiniatrity should arise, we will deliver the chiefe opinions; the first conceiveth the Locusts here mentioned to be that fruit the Greeks name *κακθον*, mentioned by Luke in the dyet of the Prodigall sonne, the Latins *Siliqua*, and some, *Panis Sancti Iohannis*, included in a broad Cod, and indeed of taste almost as pleasant as honey. But this opinion doth not so truly impugne that of the Locusts; and might rather call into controversie the meaning of wilde honey.

The second affirmeth they were the tops or tender crops of trees; for so *Locusta* also signifieth: which conceit is plausible in Latin, but will not hold in Greek, wherein the word is *Αχις* except for *αχιδες*, we read *αχις*.

αχις, or *Αχιδες*, which signifie the extremities of trees, of wch belief have divers been; more confidently Isidore Pelusiota, who in his Epistles plainly affirmeth they thinke unlearnedly who are of another beliefe; and this so wrought upon Baronius that he concludeth in a newtrality, *Hac cum scribat Isidorus definiendum nobis non est, & totum relinquitur lectoris arbitrio; nam constat Græcam dictionem Αχις, & Locustam insecti genus, & arborum summitates significare. Sed fallitur, sicut Montacutius, nam constat contrarium, Αχις apud nullum authorem classicum Αχις signicare.* But above all Paracelsus with most animosity promoteth this opinion, and in his book *de melle*, spareth not his friend Erasmus. *Hoc à nonnullis ita explicatur ut dicant Locustas aut cicadas Iohanni pro cibo fuisse; sed hi stultitiam dissimulare non possunt, veluti Ieronimus, Erasmus, & alii propheta Neoterici in Latinitate immortui.*

A third affirmeth that they were properly Locusts, that is a sheath-winged and six-footed insect, such as is our Grasshopper; and this opinion seems more probable then the other: for beside the authority of Origen, Jerome, Chrysostome, Hillary, and Ambrose to confirme it, this is the proper signification of the word, thus used in Scripture by the Septuagint, Greeke vocabularies thus expound it; Suidas on the word *Αχις* observes it to be that animall whereon the Baptist fed in the desert, in this sense the word is used by Aristotle, Dioscorides, Galen, and severall humane Authors. And lastly, there is no absurdity in this interpretation, or any solid reason why we should decline it; it being a food permitted unto the Jewes, whereof foure kinds are reckoned up among cleane meats. Beside, not onely the Jewes, but many other Nations long before and since, have made an usuall food thereof. That the *Æthiopians*, *Mauritanians*, and *Arabians*, did commonly eat them is testified by Diodorus, Strabo, Solinus, Alian and Plinie; that they still feed on them is confirmed by Leo, Cadamustus and others. John therefore as our Saviour saith, came neither eating nor drinking, that is farre from the dyet of Jerusalem and other riotous places; but fared courselly and poorely according unto the apparrell he wore, that is of Camells haire; the place of his abode, the wilderness; and the doctrine he preached, humiliation and repentance.

CHAP. X.

That John the Evangelist should not dye.

The conceit of the long living or rather not dying of John the Evangelist is not to be omitted; and although it seem inconsiderable, and not much weightier then that of Joseph the wandering Jew, yet being deduced from Scripture, and abetted by Authors of all times, it

John 21.

shall not escape our enquiry. It is drawne from the speech of our Saviour unto Peter after the prediction of his martyrdom; Peter saith unto Jesus, Lord, and what shall this man do? Jesus saith unto him, If I will that he tarry untill I come, what is that to thee? follow thou me; then went this saying abroad among the brethren that this disciple should not dye.

Now the apprehension hereof hath been received either grossely and in the generall, that is not distinguishing the manner or particular way of this continuation, in which sense probably the grosser and undiscerning party received it; or more distinctly apprehending the manner of his immortality; that is, that Iohn should never properly dye, but be translated into Paradise, there to remaine with Enoch and Elias untill about the comming of Christ, and should be slaine with them under Antichrist, according to that of the Apocalyps. I will give power unto my two witnesses, and they shall prophesie a thousand two hundred and threescore dayes cloathed in sackcloth, and when they shall have finished their Testimony, the beast that ascendeth out of the bottomelesse pit, shall make warre against them, and shall overcome them and kill them. Hereof, as Baronius observeth, within three hundred yeares after Christ, Hippolytus the martyr was the first assertor, but hath been maintained by many since; by Metaphrastes, by Freulphus, but especially by Georgius Trapezuntius, who hath expressly treated upon this Text; and although he lived but in the last Centurie, did still affirme that Iohn was not yet dead.

As for the grosse opinion that he should not dye, it is unto my judgement sufficiently refuted by that which first occasioned it, that is the Scripture it selfe, and no further of, then the very subsequent verse: yet Iesus said not unto him he should not dye, but if I will that he tarry till I come, what is that to thee? and this was written by Iohn himself whom the opinion concerned, and as is conceived many yeares after when Peter had suffered, and fulfilled the Prophecie of Christ.

For the particular conceit the foundation is weake, nor can it bee made out from the Text alleadged in the Apocalyps: for beside that therein two persons are onely named, no mention is made of Iohn a third Actor in this Tragedy; the same is overthrowne by History, which recordeth not onely the death of Iohn, but assigneth the place of his buriall, that is Ephesus a City in Asia minor; whither after hee had bene banished into Patmos by Domitian hee returned in the reigne of Nerva there deceased, and was buried in the dayes of Trajan, and this is testified by Ierome *de Scriptoribus Ecclesiasticis*, by Tertulian *de Anima*, by Chrysostome, and by Eusebius, in whose dayes his Sepulchre was to be seen; and by a more ancient Testimony alleadged also by him, that is of Polycrates Bishop of Ephesus, not many successions after Iohn; whose words are these in an Epistle unto Victor Bishop

Bishop of Rome, *Iohannes ille qui supra pectus Domini recumbebat Doctor optimus apud Ephesum dormivit*; many of the like nature are noted by Baronius, Jansenius, Estius, Lipellous, and others.

Now the maine and primitive ground of this error, was a grosse mistake in the words of Christ, and a false apprehension of his meaning; understanding that positively which was conditionally expressed, or receiving that affirmatively which was but concessively delivered; for the words of our Saviour runne in a doubtfull straine, rather reprehending then satisfying the curiosity of Peter; that is, as though he should have said, Thou hast thine owne doome, why enquirest thou after thy brothers? what reliefe unto thy affliction will be the society of anothers? why pryest thou into the secrets of Gods judgements? if he stay untill I come, what concerneth it thee? who shalt bee sure to suffer before that time? and such an answer probably he returned because he foreknew Iohn should not suffer a violent death, but goe unto his grave in peace; which had Peter assuredly knowne, it might have cast some water on his flames, and smothered those fires which kindled after unto the honour of his Master.

Now why among all the rest Iohn only escaped the death of a Martyr, the reason is given; because all other fled away or withdrew themselves at his death, and he alone of the Twelve beheld his passion on the Crosse; wherein notwithstanding, the affliction that he suffered could not amount unto lesse then Martyrdome: for if the naked relation, at least the intentive consideration of that passion, be able still and at this disadvantage of time, to rend the hearts of pious contemplators; surely the neare and sensible vision thereof must needs occasion agonies beyond the comprehension of flesh, and the trajections of such an object more sharply pierce the martyr'd soule of Iohn, then afterward did the nayles the crucified body of Peter.

Againe, they were mistaken in the Emphaticall apprehension, placing the consideration upon the words, If I will, whereas it properly lay in these, when I come: which had they apprehended as some have since, that is, not for his ultimate and last returne, but his comming in judgement and destruction upon the Iewes; or such a comming as it might be said, that that generation should not passe before it was fulfilled: they needed not, much lesse need we suppose such diuturnity; for after the death of Peter, Iohn lived to behold the same fulfilled by Vespasian: nor had he then his *Nunc dimittis*, or went out like unto Simeon; but old in accomplit obscurities, and having seen the expire of Daniels prediction, as some conceive, he accomplished his Revelation.

But besides this originall, and primary foundation, divers others have made impressions according unto different ages and persons by whom they were received; for some established the conceit in the disciples

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ciples and brethren, which were contemporary unto him, or lived about the same time with him; and this was first the extraordinary affection our Saviour bare unto this disciple, who hath the honour to be called the disciple whom Iesus loved. Now from hence they might be apt to beleve their Master would dispence with his death, or suffer him to live to see him returne in glory, who was the onely Apostle that beheld him to dye in dishonour. Another was the beleife and opinion of those times that Christ would suddenly come; for they held not generally the same opinion with their successors, or as descending ages after so many Centuries, but conceived his comming would not be long after his passion, according unto severall expressions of our Saviour grossely understood, and as we finde the same opinion not long after reprehended by St. Paul; and thus conceiving his comming would not be long, they might be induced to believe his favourite should live unto it. Lastly, the long life of Iohn might much advantage this opinion; for he survived the other Twelve, he was aged 22 yeares when he was called by Christ, and 25 that is the age of Priesthood at his death, and lived 93 yeares, that is 68 after his Saviour, and dyed not before the second yeare of Trajane. Now having outlived all his fellows, the world was confirmed he might live still, and even unto the comming of his Master.

The grounds which promoted it in succeeding ages were especially two; the first his escape of Martyrdome: for whereas all the rest suffered some kinde of forcible death, we have no history that he suffered any; and men might thinke he was not capable thereof, for so, as History hath related, by the command of Domitian he was cast into a Cauldron of burning oyle, and came out againe unsinged. Now future ages apprehending hee suffered no violent death, and finding also the means that tended thereto could take no place, they might be confirmed in their opinion that death had no power over him, and easily beleve he might live alwayes who could not be destroyed by fire, and resist the fury of that Element which nothing shall resist. The second was a corruption crept into the Latine Text, reading for *Si, Sic cum manere volo*, whereby the answer of our Saviour becommeth positive, or that he will have it so, which way of reading was much received in former ages, and is still retained in the vulgar Translation; but in the Greek & original, the word is *εἰ*, signifying *Si* or *if*, which is very different from *εἰς*, and cannot be translated for it: and answerable hereunto is the translation of Iunius and Tremellius, and that also annexed unto the Greeke by the authority of *Sixtus quintus*.

The third confirmed it in ages farther descending, and proved a powerfull argument unto all others following; that in his tombe at Ephesus there was no corps or relique thereof to be found; whereupon arised divers doubts, and many suspicious conceptions, some be-

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leaving he was not buried, some that he was buried, but risen againe; others, that he descended alive into his tombe, and from thence departed after. But all these proceeded upon unveritable grounds, as Baronius hath observed, who alledgeth a letter of Celestine Bishop of Rome, unto the Councell of Ephesus, wherein he declareth the reliques of John were highly honoured by that City, and a passage also of Chrysostome in the Homilies of the Apostles. That John being dead did cures in Ephesus, as though he were still alive. And so I observe that Esthius discussing this point concludeth hereupon, *Quod corpus ejus nunquam reperitur, hoc non dicerent si veterum scripta diligenter perlustrassent.*

Now that the first ages after Christ, those succeeding, or any other should proceed into opinions so farre devided from reason, as to thinke of Immortality after the fall of Adam, or conceit a man in these later times should out-live our fathers in the first, although it seeme very strange, yet is it not incredible, for the credulity of men hath beene deluded into the like conceits, and as Ireneus and Tertullian have made mention, one Menander a Samaritan obtained beleife in this very point, whose doctrine it was that death should have no power on his disciples; and such as received his baptisme, should receive Immortality therewith: 'Twas surely an apprehension very strange; nor usually falling either from the absurdities of Melancholy or vanities of ambition; some indeed have beene so affectedly vaine as to counterfeit Immortality, and have stolne their death in a hope to be esteemed immortal; and others have conceived themselves dead: but surely few or none have falne upon so bold an error, as not to thinke that they could dye at all. The reason of those mighty ones, whose ambition could suffer them to be called gods, would never be flattered into Immortality, but the proudest thereof, have by the daylie distates of corruption convinced the impropriety of that appellation. And surely, although delusion may runne high, and possible it is that for a while a man may forget his nature, yet cannot this be durable, for the inconcealeable imperfections of our selves, or their dayly examples in others, will hourly prompt us our corruptions, and lowdly tell us we are the sons of earth.

CHAP. XI.

More compendiously of some others.

Many others there are which we resigne unto Divinity, and perhaps deserve not controversie. Whether David were punished onely for pride of heart in numbring the people, as most doe hold, or whether

Exod. 30.

Exod. 38.

whether as Josephus and many maintaine, he suffered also for not performing the commandment of God concerning capitation, that when the people were numbred, for every head they should pay unto God a shekell, we shall not here contend. Surely, if it were not the occasion of this plague, wee must acknowledge the omission thereof was threatned with that punishment, according to the words of the Law. When thou takest the summe of the children of Israel, then shall they give every man a ransom for his soule unto the Lord, that there be no plague amongst them. Now, how deeply hereby God was defrauded in the time of David, and opulent State of Israel, will easily appeare by the summes of former lustrations. For in the first, the silver of them that were numbred was an hundred Talents, and a thousand seven hundred threescore and fiftene shekels; a Bekah for every man, that is, halfe a shekel, after the shekel of the Sanctuary; for every one from twenty yeares old and upwards, for six hundred thousand, and three thousand and five hundred and fifty men. Answerable whereto wee reade in Josephus, Vespasian ordered that every man of the Jews should bring into the Capitoll two dragmes, which amounts unto fiftene pence, or a quarter of an ounce of silver with us, and is equivalent unto a Bekah, or halfe a shekell of the Sanctuary. For, an Attick dragme is seven pence halfe penny, or a quarter of a shekell, and a didrachmum or double dragme, is the word used for Tribute money, or halfe a shekell; and a stater the money found in the fishes mouth was two Didrachmums, or an whole shekell, and tribute sufficient for our Saviour and for Peter.

We will not question the Metamorphosis of Lots wife, or whether she were transformed into a reall statua of salt: though some conceive that expression Metaphoricall, and no more thereby then a lasting and durable column; according to the nature of salt, which admitteth no corruption; in which sence the covenant of God is termed a Covenant of Salt; and it is also said, God gave the kingdome unto David for ever, or by a covenant of Salt.

That Abialon was hanged by the haire of the head, and not caught up by the neck, as Josephus conceiveth, and the common argument against long hair affirmeth, we are not ready to deny. Although I confesse a great and learned party there are of another opinion; although if he had his Morion or helmet on, I could not well conceive it; although the Translation of Jerome or Tremellius do not prove it, and our owne seemes rather to overthrow it.

That Judas hanged himselfe, much more that he perished thereby, we shall not raise a doubt. Although Jansenius discoursing the point, produceth the testimony of Theophylact and Euthymius, that he died not by the Gallows, but under a Cart wheele; and Baronius also delivereth this was the opinion of the Greeks, and derived as high as Papias,

Papias, one of the Disciples of John, although how hardly the expression of Mathew is reconcilable unto that of Peter, and that he plainly hanged himselfe, with that that falling headlong he burst asunder in the midst, with many other, the learned Grotius plainly doth acknowledge. And lastly, although as hee also urgeth the word ἀπ' ἡγέας in Mathew, doth not onely signifie suspension, or pendulous illaqueation, as the common picture describeth it, but also suffocation, strangulation or interception of breath, which may arise from griefe, despaire, and deepe dejection of spirit, in which sence it is used in the history of Tobit concerning Sara, ἐλοπήθη σφόδρα ὥστε ἀπ' ἡγέας. *Ita tristitia est ut strangulatione premeretur*, saith Junius; and so might it happen from the horreur of mind unto Judas. And so doe many of the Hebrewes affirme, that Achitophell was also strangled, that is, not from the rope, but passion. For the Hebrew and Arabick word in the Text not onely signifies suspension, but indignation, as Grotius hath also observed.

Many more there are of indifferent truths, whose dubious expositions worthy Divines and Preachers doe often draw into wholesome and sober uses, whereof neverthelesse we shall not speake; with industry we decline such paradoxies, and peaceably submit unto their received acceptions.

CHAP. XII.

Of the cessation of Oracles.

THAT Oracles ceased or grew mute at the comming of Christ, is best understood in a qualified sence and not without all latitude; as though precisely there were none after, nor any decay before. For what we must confesse unto relations of Antiquity; some pre-decay is observable from that of Cicero urged by Baronius; *Cur isto modo jam oracula Delphis non eduntur, non modo nostra aetate, sed jam diu, ut nihil possit esse contemptius*. That during his life they were not altogether dumbe, is deduceable from Suetonius in the life of Tiberius, who attempting to subvert the Oracles adjoyning unto Rome, was deterred by the Lots or chances which were delivered at Preneste; After his death wee meet with many; Suetonius reports, that the Oracle of Aetium forewarned Caligula to beware of Cassius, who was one that conspired his death. Plutarch enquiring why the Oracles of Greece ceased, excepteth that of Lebadia; and in the same place Demetrius affirmeth the Oracles of Mopsus and Amphiloehus were much frequented in his dayes; In brieft, histories are frequent in examples, and there want not some even to the reigne of Iulian.

That therefore wee may consist with history; by cessation of Oracles,

cles, with Montacutius we may understand their intercision, not abfission or consummate defolation; their rare delivery not a totall dereliction: and yet in regard of divers Oracles, we may speake strictly, and say there was a proper Cessation. And thus may wee reconcile the accounts of times, and allow those few and broken Divinations, whereof we read in story and undeniable Authors. For that they received this blow from Christ, and no other causes alledged by the Heathens, from oraculous confession they cannot deny; whereof upon record there are some very remarkable. The first that Oracle of Delphos delivered unto Augustus.

*Me puer Hebrans Divos Deus ipse gubernans
Cedere sede jubet, tristemq; redire sub orcum;
Aris ergo dehinc tacitus discedito nostris.*

An Hebrew child, a God all gods excelling,
To hell againe commands me from this dwelling.
Our Altars leave in silence, and no more
A resolution 'ere from hence implore.

A second recorded by Plutarch, of a voyce that was heard to cry unto Mariners at the Sea, Great Pan is dead; which is a relation very remarkable, and may be read in his Defect of Oracles. A third reported by Eusebius in the life of his magnified Constantine; that about that time Apollo mourned, declaring his Oracles were false, and that the righteous upon earth did hinder him from speaking truth. And a fourth related by Theodoret, and delivered by Apollo Daphnes unto Julian, upon his Persian Expedition, that he should remove the bodies about him, before he could returne an answer, and not long after his Temple was burnt with Lightning.

All which were evident and convincing acknowledgements of that power which shut his lips, and restrained that delusion which had reigned so many Centuries. But as his malice is vigilant, and the sins of men do still continue a toleration of his mischiefs, he resteth not, nor will he ever cease to circumvent the sons of the first deceived, and therefore expelled his Oracles and solemn Temples of delusion, he runnes into corners, exercising minor trumperies, and acting his deceits in Witches, Magicians, Diviners, and such inferiour seductions. And yet (what is deplorable) while we apply our selves thereto, and affirming that God hath left to speake by his Prophets, expect in doubtfull matters a resolution from such Spirits; while we say the Divell is mute, yet confesse that these can speake; while we deny the substance, yet practise the effect; and in the denyed solemnity maintaine the equivalent efficacy; in vaine we cry that Oracles are downe, Apollos alter yet doth smoake, nor is the fire of Delphos out unto this day.

Impertinent it is unto our intention to speake in generall of Oracles, and

and many have well performed it. The plainest of others was that recorded by Herodotus and delivered unto Cræsus; who as a tryall of his omniscience sent unto distant Oracles, and so contrived with the messengers, that though in severall places, yet at the same time they should demand what Cræsus was then a doing. Among all others the Oracle of Delphos onely hit it, returning answer, hee was boyling a Lambe with a Tortoyse, in a brazen vessell with a cover of the same metall. The stile is haughty in Greeke, though somewhat lower in Latine—

*Aënoris est spatium & numerus mihi notus arena,
Mutum percipio, fantis nihil audio vocem.
Venit ad hos sensus nidor testudinis acris,
Qua semel agnita coquitur cum carne lebetes,
Aere infra strato, & stratum cui desuper as est.*

I know the space of Sea, the number of the sand,
I heare the silent, mute I understand.
A tender Lambe joynd with Tortoise flesh,
Thy Master King of Lydia now doth dresse.
The sent thereof doth in my nostrills hover

From brazen pot closed with brazen cover. Hereby indeed he acquired much wealth and more honour, and was reputed by Cræsus as a Diety: and yet not long after, by a vulgar fallacie he deceived his favourite and greatest friend to Oracles into an irreparable overthrow by Cyrus. And surely the same successe are likely all to have that relie or depend upon him; 'twas the first play he practised on mortality, and as time hath rendred him more perfect in the Art, so hath the inveteratenesse of his malice more ready in the execution. 'Tis therefore the soveraigne degree of folly, and a crime not onely against God, but also our owne reasons, to expect a favour from the Divell, whose mercies are more cruell then those of Polyphemus; for hee devours his favourites first, and the nearer a man approacheth, the sooner he is scorched by Moloch. In briebe, his favours are deceitfull and double headed, he doth apparent good, for reall and convincing evill after it, and exalteth us up to the top of the Temple; but to humble us downe from it.

CHAP. XIII.

Of the death of Aristotle.

THAT Aristotle drowned himselfe in Euripus as despairing to resolve the cause of its reciprocation, or ebbe and flow seven times a day, with this determination, *Si quidem ego non capio te tu capies me,*

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was the assertion of Procopius, Nazianzen, Iustine Martyr, and is generally beleev'd amongst us; wherein, because we perceive men have but an imperfect knowledge, some conceiving Euripus to be a River, others not knowing where or in what part to place it, wee first advertise, it generally signifieth any strait fret, or channell of the Sea, running betweene two shoares, as Julius Pollux hath defined it, as wee reade of Euripus Hellepontiacus, Pyrrhaeus and this whereof we treat, Euripus Euboicus or Chalcidicus; that is, a narrow passage of Sea deviding Attica and the Island of Eubaea, now called *Golfo de Negroponte*, from the name of the Island and chiefe City thereof, famous in the warres of Antiochus, and was taken from the Venetians by Mahomet the great.

Now that in this Euripe or fret of Negropont, and upon the occasion mentioned, Aristotle drowned himselfe, as many affirme, and almost all beleve, we have some room to doubt. For without any mention of this, we finde two wayes delivered of his death by Diogenes Laertius, who expressly treateth thereof, the one from Eumolus and Phavorinus, that being accused of impiety for composing an Hymne unto Hermias, (upon whose Concubine he begat his sonne Nichomachus) he withdrew into Chalcis, where drinking poyson he dyed: the Hymne is extant in Laertius, and the fifteenth booke of Athenæus. Another by Apollodorus, that he dyed at Chalcis of a naturall death and languishment of stomach, in his sixty three, or great Climactericall year; and answerable hereto is the account of Suidas and Censorinus.

Againe, beside the negative of Authority, it is also deniable by reason, nor will it be easie to obtrude such desperate attempts unto Aristotle, upon a non ability or unsatisfaction of reason, who so often acknowledged the imbecility thereof; who in matters of difficulty, and such which were not without abstrusities, conceived it sufficient to deliver conjecturalities; and surely he that could sometimes sit downe with high improbabilities, that could content himselfe, and thinke to satisfie others, that the variegation of Birds was from their living in the Sunne, or erection made by deliberation of the Testicles, would not have beene dejected unto death with this; He that was so well acquainted with *ἡ ὄρις*, and *ἡ ὄρις*, *nirum*, and *An Quia*, as we observe in the Queries of his Problemes; with *ἡ ὄρις* and *ἡ ὄρις*, *fortasse* and *plerumq;*, as is observable through all his Workes; had certainly rested with probabilities, and glancing conjectures in this: Nor would his resolutions have ever runne into that mortall Antanacclasis, and desperate piece of Rhetorick, to be compriz'd in that he could not comprehend. Nor is it indeed to bee made out he ever endeavoured the particular of Euripus, or so much as to resolve the ebbe and flow of the Sea. For, as Vicomercatus and others observe, he hath made no mention hereof in his Workes, although the occasion present it selfe in his

Meteors.

Meteors; wherein hee disputeth the affections of the Sea: nor yet in his Problemes, although in the twenty third Section, there be no lesse then one and forty Queries of the Sea; some mention there is indeed in a Worke of the propriety of Elements, ascribed unto Aristotle, which notwithstanding is not reputed genuine, and was perhaps the same whence this was urged by Plutarch, *De placitis Philosophorum*.

Lastly, the thing it selfe whereon the opinion dependeth, that is, the variety of the flux and reflux of Euripus, or whether the same doe ebbe and flow seven times a day, is not incontrovertible; and for my own part, I remaine unsatisfied therein. For, though Pomponius Mela, and after him Solinus, and Pliny have affirmed it, yet I observe Thucydides, who speaketh often of Eubaea, hath omitted it. Pausanias an ancient Writer, who hath left an exact description of Greece, and in as particular a way as Leandro of Italy, or Cambden of Great Britaine, describing not only the Country Townes, and Rivers, but hills, springs, and houses, hath left no mention hereof. Aelchines in Ctesiphon onely alludeth unto it; and Strabo, that accurate Geographer speaks warily of it, that is, *ἡ ὄρις*, and as men commonly reported. And so doth also Maginus, *Velocis ac varii fluctus est mare, ubi quater in die, aut septies, ut alii dicunt, reciprocantur aestus*. Botero more plainly, *Il mar cresce e cala con un impeto mirabile quatro volte il dì, ben che communemente se dica sette volte, &c.* This Sea with wondrous impetuosity ebbereth and floweth foure times a day, although it be commonly said seven times, and generally opinion'd, that Aristotle despairing the reason, drowned himselfe therein. In which description by foure times a day, it exceeds not in number the motion of other Seas, taking the words properly, that is, twice ebbing and twice flowing in foure and twenty howres; and is no more then what *Thomaso Porcacchi* affirmeth, in his description of famous Islands, that twice a day it hath such an impetuous flood, as is not without wonder. Livy speakes more particularly, *Haec facile infestior classis statio est & fretum ipsum Euripi, non septies die, (sicut fama fert) temporibus certis reciprocatur, sed temere in modum venti, nunc huc nunc illuc verso mari, velut monte precipiti devalutus torrens raptur*. There is hardly a worse harbour, the fret or channell of Euripus not certainly ebbing or flowing seven times a day, according to common report, but being uncertainly, and in the manner of a winde carried hither and thither, is whirled away as a torrent downe a hill. But the experimentall testimony of Gillius is most considerable of any, who having beheld the course thereof, and made enquiry of Millers that dwell upon its shoare, received answer, that it ebbed and flowed foure times a day, that is, every fixe howres, according to the Law of the Ocean; but that indeed sometimes it observed not that certaine course. And this irregularity though seldome happening, together with

with its unruly and tumultuous motion might afford a beginning unto the common opinion; thus may the expression in Ctesiphon be made out; and by this may Aristotle be interpreted, when in his Problemes he seemes to borrow a Metaphor from Euripus; while in the five and twentieth Section he enquireth, why in the upper parts of houses the ayre doth Euripize, that is, is whirled hither and thither.

Now the ground, or that which gave life unto the assertion, might be his death at Chalcis, the chiefe City of Eubæa, and seated upon Euripus, where tis confessed by all he ended his dayes. That he emaciated and pined away in the too anxious enquire of its reciprocations, although not drowned therein, as Rhodiginus relateth some conceived, was a halfe confession thereof not justifiable from Antiquity. Surely the Philosophy of flux and reflux was very imperfect of old among the Greeks and Latins; nor could they hold a sufficient theory thereof, who onely observeth the Mediterranean, which in some places hath no ebbe, and not much in any part. Nor can we affirme our knowledge is at the height, who have now the Theory of the Ocean and narrow Seas beside. While we referre it unto the Moone, we give some satisfaction for the Ocean, but no generall salve for Creeks, and Seas which know no floud; nor resolve why it flowes three or foure foot at Venice in the bottome of the Golfe, yet scarce at all at Ancona Durazzo, or Corcyra, which lye but by the way. And therefore old abstrusities have caused new inventions; and some from the Hypotheses of Copernicus or the Diurnall and annuall motion of the earth, endeavour to salve the flowes and motions of these seas, illustrating the same by water in a boale, that rising or falling to either side, according to the motion of the vessell; the conceit is ingenuous, salves some doubts, and is discovered at large by Galilæo in his Systeme of the world.

However therefore Aristotle died, what was his end, or upon what occasion, although it be not altogether assured, yet that his memory and worthy name shall live, no man will deny, nor gratefull schollar doubt: and if according to the Elogie of Solon, a man may be onely said to be happy after he is dead, and ceaseth to be in the visible capacity of beatitude: or if according unto his owne Ethicks, sence is not essentiall unto felicity, but a man may be happy without the apprehension thereof; surely in that sence he is pyramidally happy, nor can he ever perish but in the Euripe of Ignorance, or till the Torrent of Barbarisme overwhelme all.

A like conceit there passeth of Melefigenes, *alias* Homer, the father Poet, that he pined away upon the Riddle of the fishermen. But Herodotus who wrote his life hath cleared this point; delivering that passing from Samos unto Athens, he went sicke ashore upon the Island Jos, where he dyed, and was solemnly enterred upon the Sea side; and so decidingly concludeth, *Ex hac agritudine extremum diem clausit*

fit Homerus in Io, non, ut arbitrantur aliqui, Enigmatis perplexitate encensus, sed morbo.

CHAP. XIV.

Of the Wish of Philoxenus.

THat Relation of Aristotle and conceit generally received concerning Philoxenus, who wished the neck of a Crane, that thereby he might take more pleasure in his meat, although it pass without exception, upon enquiry I finde not onely doubtfull in the story, but absurd in the desire or reason alledged for it. For though his Wish were such as is delivered, yet had it not perhaps that end to delight his gust in eating, but rather to obtaine advantage thereby in singing, as is declared by Mirandula. Aristotle (saith he) in his Ethicks and Problemes, accuseth Philoxenus of sensuality, for the greater pleasure of gust in desiring the neck of a Crane; which desire of his, assenting unto Aristotle, I have formerly condemned; But since I perceive that Aristotle for this accusation hath beene accused by divers Writers; for Philoxenus was an excellent Musician, and desired the neck of a Crane, not for any pleasure at meate, but fancying thereby an advantage in singing or warbling, and deviding the notes in musick. And indeed, many Writers there are which mention a Musician of that name, as Plutarch in his booke against Usury, and Aristotle himselfe in the eight of his Politicks, speakes of one Philoxenus a Musician, that went off from the Dorick Dytherambicks unto the Phrygian Harmony.

Again, be the story true or false, rightly applied or not, the intention is not reasonable, and that perhaps neither one way nor the other. For, if we rightly consider the organ of taste, we shall finde the length of the neck to conduce but little unto it. For the tongue being the instrument of taste, and the tip thereof the most exact distinguisher, it will not advantage the gust to have the neck extended, wherein the Gullet and conveying parts are onely seated, which partake not of the nerves of gustation or appertaining unto sapor, but receive them onely from the sixth payre; whereas the nerves of taste descend from the third and forth propagations, and so diffuse themselves into the tongue. And therefore Cranes, Hernes, and Swans, have no advantage in taste beyond Hawkes, Kites, and others of shorter necks.

Nor, if we consider it, had Nature respect unto the taste in the different contrivance of necks, but rather unto the parts contained, the composure of the rest of the body, and the manner whereby they feed. Thus animals of long legs, have generally long necks; that is, for the conveniency of feeding, as having a necessity to apply their mouths unto

unto the earth. So have Horses, Camels, Dromedaries long necks, and all tall animals, except the Elephant, who in defect thereof is furnished with a Trunck, without which he could not attaine the ground. So have Cranes, Hernes, Storks, and Shovelards long necks; and so even in Man whose figure is erect, the length of the neck followeth the proportion of other parts; and such as have round faces, or broad chests and shoulders, have seldome or never long necks. For, the length of the face twice exceedeth that of the neck, and the space betwixt the throat pit and the navell is equall unto the circumference thereof. Againe, animals are framed with long necks, according unto the course of their life or feeding: so many with short legs have long necks, because they feed in the water, as Swans, Geese, Pellicans, and other fin-footed animals. But Hawkes and birds of prey have short necks and trussed legs; for that which is long is weake and flexible, and a shorter figure is best accommodated unto that intention. Lastly, the necks of animals doe vary, according to the parts that are contained in them, which are the weazon and the gullet. Such as have no weazon and breathe not, have scarce any neck, as most sorts of fishes, and some none at all, as all sorts of pectinals, Soales, Thornback, Flounders; and all crustaceous animals, as Crevises, Crabs, and Lobsters.

All which considered, the Wish of Philoxenus will hardly consist with reason. More excusable had it beene to have wished himselfe an Ape, which if common conceit speake true, is exacter in taste then any. Rather some kinde of granivorous bird then a Crane, for in this sense they are so exquisite, that upon the first peck of their bill, they can distinguish the qualities of hard bodies, which the sense of man discernes not without mastication. Rather some ruminating animall, that he might have eate his meate twice over; or rather, as Theophilus observed in Athenæus, his desire had beene more reasonable, had hee wished himselfe an Elephant, or an Horse; for in these animals the appetite is more vehement, and they receive their viands in large and plenteous manner. And this indeed had beene more surable, if this were the same Philoxenus whereof Plutarch speaketh, who was so uncivilly greedy, that to engrosse the messe, he would preventively deliver his nostrils in the dish.

As for the muscicall advantage, although it seeme more reasonable, yet doe we not observe that Cranes and birds of long necks have any muscicall, but harsh and clangous throats. But birds that are canorous and whose notes we most commend, are of little throats, and short necks, as Nightingales, Finches, Linnets, Canary birds and Larkes. And truly, although the weazon, throtle and tongue be the instruments of voice, and by their agitations doe chiefly concurre unto these delightful modulations, yet cannot we assigne the cause unto any particular formation; and I perceive the best thereof, the Nightingale hath some

some disadvantage in the tongue; which is not acuminate and pointed as in the rest, but seemeth as it were cut off; which perhaps might give the hint unto the fable of Philomela, and the cutting off her tongue by Tereus.

CHAP. XV.
Of the Lake Asphaltites.

Concerning the Lake Asphaltites, the Lake of Sodome, or the dead Sea, that heavy bodies cast therein sinke not, but by reason of a salt and bituminous thicknesse in the water floate and swimme above, narrations already made are of that variety, we can hardly from thence deduce a satisfactory determination, and that not onely in the story it selfe, but in the cause alledged. For, as for the story men deliver it variously; some I feare too largely, as Pliny, who affirmeth that bricks will swim therein. Mandevill goeth farther, that Iron swimmeth, and feathers sinke. Munster in his Cosmography hath another relation, although perhaps derived from the Poem of Tertullian, that a candle burning swimmeth, but if extinguished sinketh. Some more moderately, as Josephus, and many other; affirming onely that living bodies floate, nor peremptory averring they cannot sinke, but that indeed they doe not easily descend. Most traditionally, as Galen, Pliny, Solinus and Strabo, who seemes to mistake the Lake Serbonis for it; few experimentally, most contenting themselves in the experiment of Vespasian, by whose command some captives bound were cast therein and found to floate as though they could have swimmèd: divers contradictorily, or contrarily, quite overthrowing the point. Aristotle in the second of his Meteors speaks lightly thereof, *ὡς ἐν μυθολογίαις*, and esteemeth thereof as a fable. Biddulphus devideth the common accounts of Judea into three parts, the one saith he are apparent truths, the second apparent falsehoods, the third are dubious or betwene both, in which forme hee ranketh the relation of this Lake. But Andrew Thevet in his Cosmography doth ocularly overthrow it; for hee affirmeth, he saw an Asse with his saddle cast therein, and drowned. Now of these relations so different or contrary unto each other, the second is most moderate, and safest to be embraced, which saith, that living bodies swim therein, that is, they doe not easily sinke: and this, untill exact experiment further determine, may be allowed, as best consistent with this quality, and the reasons alledged for it.

As for the cause of this effect, common opinion conceives it to be the salt and bituminous thicknesse of the water. This indeed is probable, and may bee admitted as farre as the second opinion concea-deth. For, certaine it is that salt water will support a greater burden then fresh, and we daylie see an egge will descend in salt water, which

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will swimme in brine. But that Iron should floate therein, from this cause is hardly granted; for heavy bodies will onely swim in that liquor, wherein the weight of their bulke exceedeth not the weight of so much water as it occupieth or taketh up. But surely no water is heavy enough to answer the ponderosity of Iron; and therefore that metall will sinke in any kinde thereof, and it was a perfect miracle which was wrought this way by Elisha. Thus wee perceive that bodies doe swim or sinke in different liquors, according unto the tenuity or gravity of those liquors which are to support them. So salt water beareth that weight which will sinke in vinegar, vinegar that which will fall in fresh water, fresh water that which will sinke in spirits of Wine, and that will swimme in spirits of Wine which will sinke in cleere oyle, as wee made experiment in globes of waxe pierced with light sticks to support them. So that although it be conceived an hard matter to sinke in oyle, I beleve a man should finde it very difficult, and next to flying to swimme therein. And thus will Gold swim in Quicksilver, wherein Iron and other metals sinke; for the bulke of Gold is onely heavier then that space of Quicksilver which it containeth; and thus also in a solution of one ounce of Quicksilver in two of *Aqua fortis*, the liquor will beare Amber, horne and the softer kinds of stones, as we have made triall in each.

But a private opinion there is which crosseth the common conceit, maintained by some of late, and alledged of old by Strabo, that is, that the floating of bodies in this Lake proceeds not from the thicknesse of the water, but a bituminousebullition from the bottome, whereby it wafts up bodies injected, and suffereth them not easily to sinke. The verity thereof would be enquired by ocular exploration, for this way is also probable; so we observe, it is hard to wade deep in baths where springs arise, and thus sometime are bals made to play upon a spouting streame.

And therefore, untill judicious and ocular experiment confirme or distinguish the assertion, that bodies doe not sinke herein at all we doe not yet beleve; that they not easily or with more difficulty descend in this then other water we shall already assent: but to conclude an impossibility from a difficulty, or affirme whereas things not easily sinke, they doe not drowne at all; beside the fallacy, is a frequent addition in humane expression, and an amplification not unusuall as well in opinions as in relations; which oftentimes give indistinct accounts of proximities, and without restraint transcend from one unto another. Thus for as much as the torrid Zone was conceived exceeding hot, and of difficult habitation, the opinions of men so advanced its constitution, as to conceive the same uninhabitable, and beyond possibility for man to live therein. Thus, because there are no Wolves in England, nor have beene observed for divers generations, common people have proceeded

proceeded into opinions, and some wise men into affirmations, they will not live therein although brought from other Countries. Thus most men affirme, and few here will beleve the contrary, that there be no Spiders in Ireland; but wee have beheld some in that Country, and though but few, some cobwebs we behold in Irish wood in England. Thus the Crocodile from an egge growing up to an exceeding magnitude, common conceit, and divers Writers deliver, it hath no period of encrease, but groweth as long as it liveth. And thus in briebe, in most apprehensions the conceits of men extend the considerations of things, & dilate their notions beyond the propriety of their natur es.

CHAP. XVI.

Of divers other relations.

1. **T**He relation of Averroes and now common in every mouth, of the woman that conceived in a bath, by attracting the sperme or seminall effluxion of a man admitted to bathe in some vicinity unto her, I have scarce faith to beleve; and had I beene of the Jury, should have hardly thought I had found the father in the person that stood by her. 'Tis a new & unseconced way in History to fornicate at a distance, & much offendeth the rules of Physick, which say, there is no generation without a joynt emission, nor onely a virtuall but corporall and carnall contaction. And although Aristotle and his adherents doe cut off the one, who conceive no effectuall ejaculation in women, yet in defence of the other they cannot be introduced: For, as he delivereth, the inordinate longitude of the organ, though in its proper recipient, may be a meanes to impropagate the seed, surely the distance of place, with the commixture of an aqueous body, must prove an effectuall impediment, & utterly prevent the successe of a conception. And therefore that conceit concerning the daughters of Lot, that they were impregnated by their sleeping father, or conceived by seminal pollution received at distance from him, wil hardly be admitted. And therefore what is related of Devils, and the contrived delusions of wicked spirits, that they steale the seminall emissions of man, and transmit them into their votaries in coition, is much to be suspected, & altogether to be denyed, that there ensue conceptions thereupon, however husbanded by Art, and the wisest menagery of that most subtile impostor. And therefore also that our magnified Merlin was thus begotten by the Devill, is a groundlesse cōception, & as vain to think from thence to give the reason of his propheticall spirit. For if a generation could succeed, yet should not the issue inherit the faculties of the Devill, who is but an auxiliary & no univocal Actor, nor will his nature substantially concurre to such productions.

2. The relation of Lucillius, and now become common, concerning Crassus the grandfather of Marcus the wealthy Roman, that hee never laughed but once in all his life, and that was at an Asse eating Thistles,

Thistles, is something strange. For, if an indifferent and unridiculous object could draw his habituall austeritise unto a smile, it will bee hard to beleeve hee could with perpetuity resist the proper motives thereof: for the act of laughter which is a sweet contraction of the muscles of the face, and a pleasant agitation of the vocall organs, is not meere voluntary, or totally within the jurisdiction of our selves: but as it may be constrained by corporall contaction in any, and hath beene enforced in some even in their death; so the new unusuall or unexpected jucundities, which present themselves to any man in his life, at some time or other will have activity enough to excitate the earthiest soule, and raise a smile from most composed tempers. Certainly the times were dull when these things happened, and the wits of those Ages short of these of ours, when men could maintaine such immutable faces, as to remaine like statues under the flatteries of wit, and persist unalterable at all effortes of Jocularity. The spirits in hell, and Pluto himselve, which Lucian makes to laugh at passages upon earth, will plainly condemne these Saturnines, and make ridiculous the magnified Heraclitus, who wept preposterously, and made a hell on earth; for rejecting the consolations of life, he passed his dayes in teares, and the uncomfortable attendments of hell.

3. The same conceit there passeth concerning our blessed Saviour, and is sometimes urged as an high example of gravity. And this is opinioned, because in holy Scripture it is recorded he sometimes wept, but never that he laughed. Which howsoever granted, it will be hard to conceive how he passed his younger yeares and childhood without a smile; if as Divinity affirmeth, for the assurance of his humanity unto men, and the concealement of his Divinity from the Divell, he passed this age like other children, and so proceeded untill he evidenced the same. And surely no danger there is to affirme the act or performance of that, whereof we acknowledge the power and essentiall property; and whereby indeed hee most neerely convinced the doubt of his humanity. Nor need we be afraid to ascribe that unto the incarnate Son, which sometimes is attributed unto the uncarnate Father, of whom it is said, He that dwelleth in the heavens shall laugh the wicked to scorn. For, a laugh there is of contempt or indignation, as well as of mirth and Jocosity; And that our Saviour was not exempted from, the ground hereof, that is, the passion of anger, regulated and rightly ordered by reason, the Schooles do not deny: and besides the experience of the money-changers, and Dove-sellers in the Temple, is testified by S. John when he saith, the speech of David was fulfilled in our Saviour.

Now the Alogic of this opinion consisteth in the illation; it being not reasonable to conclude from Scripture negatively in points which are not matters of faith, and pertaining unto salvation; and therefore al-

*Zelus domus
tua comedit
me.*

though

though in the description of the creation there be no mention of fire, Christian Philosophy did not thinke it reasonable presently to annihilate that Element, or positively to decree there was no such thing at all. Thus whereas in the brieve narration of Moses there is no record of wine before the flood, can we satisfactorily conclude that Noah was the first that ever tasted thereof? And thus because the word Braine is scarce mentioned once, but Heart above an hundred times in holy Scripture, will Physitians that dispute the principality of parts be induced from hence to bereave the animall organ of its priority; wherefore the Scriptures being serious, and commonly omitting such Parergies, it will be unreasonable from hence to condemne all laughter, and from considerations inconsiderable to discipline a man out of his nature; for this is by a rusticall severity to banish all urbanity, whose harmelesse and confined condition as it stands commended by morality, so is it consistent with Religion, and doth not offend Divinity.

4. The custome it is of Popes to change their name at their creation, and the Author thereof is commonly said to be *Bocca di Porco*, or Swines face, who therefore assumed the stile of Sergius the second, as being ashamed so foule a name should dishonour the chaire of Peter; wherein notwithstanding from Montacutius and others, I finde there may bee some mistake: For Massonius who writ the lives of Popes, acknowledgeth he was not the first that changed his name in that Sea; nor as Platina affirmeth, have all his successours precisely continued that custome; for Adrian the first, and Marcellus the second, did still retaine their Baptismall denominations, nor is it proved, or probable that Sergius changed the name of *Bocca di Porco*, for this was his surname or gentilicious appellation, nor was it the custome to alter that with the other; but he commuted his Christian name Peter for Sergius, because he would seem to decline the name of Peter the second. A scruple I confesse not thought considerable in other Seas, whose originalls and first Patriarchs have been lesse disputed, nor yet perhaps of that reality as to prevaile in points of the same nature. For the names of the Apostles, Patriarchs and Prophets have been assumed even to affectation; the name of Jesus hath not been appropriate, but some in precedent ages have borne that name, and many since have not refused the Christian name of Emanuel. Thus are there few names more frequent then Moses and Abraham among the Jewes; The Turkes without scruple affect the name of Mahomet, and with gladnesse receive so honourable cognomination.

And truly in humane occurrences there ever have beene many well directed intentions, whose rationalities will never beare a rigid examination; and though in some way they doe commend their Authors and such as first began them, yet have they proved insufficient to perpetuate imitation in such as have succeeded them. Thus was it a wor-

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vulgar Latine
Judg. 9. 53.

thy resolution of Godfrey, and most Christians have applauded it. That hee refused to weare a Crowne of gold where his Saviour had wore one of thornes. Yet did not his Successors durably inherit that scruple, but some were anointed, and solemnly accepted the Diademe of Regality. Thus Julius Augustus and Tiberius with great humility or popularity refused the name of *Imperator*; but their Successors have challenged that title, and retaine the same even in its titularity. And thus, to come neerer our subject, the humility of Gregory the Great, would by no meanes admit the stile of Universall Bishop; but the ambition of Boniface his immediate Successor made no scruple thereof; nor of more queasie resolutions have bene their Successors ever since.

5. That Tamerlane was a Scythian Shepherd, from Mr. Knolls and others, from Alhazen a learned Arabian who wrote his life, and was spectator of many of his exploits, wee have reasons to deny: not onely from his birth; for he was of the blood of the Tartarian Emperours, whose father Og had for his possession the Countrey of Sagathay, which was no slender Territory, but comprehended all that tract wherein were contained Bactriana, Sogdiana, Margiana, and the Nation of the Massagetes; whose capitall City was Samarcand; a place though now decayed, of great esteeme and trade in former Ages: but from his Regall Inauguration; for it is said, that being about the age of fiftene, his old father resigned the Kingdome, and men of warre unto him. And also from his education; for as the story speakes it, he was instructed in the Arabian learning, and afterward exercised himselfe therein: Now Arabian learning was in a manner all the liberall Sciences, especially the Mathematicks, and naturall Philosophy; wherein not many Ages before him, there flourished Avicenna, Averrhoes, Avenzoar, Geber, Almanzor and Alhazen cognominall unto him that wrote his history; whose Chronology indeed, although it be obscure, yet in the opinion of his Commentator, he was contemporary unto Avicenna, and hath left sixteene bookes of Opticks, of great esteeme with Ages past, and textuare unto our dayes.

Now the ground of this mistake was surely that which the Turkish historian declareth. Some, saith he, of our historians will needs have Tamerlane to be sonne of a Shepherd; but this they have said, not knowing at all the custome of their Countrey; wherein the principall renewes of the King and Nobles consisteth in cattell; who despising gold and silver, abound in all sorts thereof. And this was the occasion that some men call them Shepherds, and also affirme this Prince descended from them. Now, if it be reasonable, that great men whose possessions are chiefly in cattell, should beare the name of Shepherds, and fall upon so low denominations, then may wee say

say that Abraham was a Shepherd, although too powerfull for foure Kings; that Job was of that condition, who beside Camels and Oxen had seven thousand Sheepe; and yet is said to bee the greatest man in the East. Surely it is no dishonourable course of life which Moses and Jacob have made exemplary, 'tis a profession supported upon the naturall way of acquisition, and though contemned by the Egyptians, much countenanced by the Hebrewes, whose sacrifices required plenty of Sheepe and Lambs. And certainly they were very numerous; for, at the consecration of the Temple, beside two and twenty thousand Oxen, King Solomon sacrificed an hundred and twenty thousand Sheepe; and the same is observable from the daylie provision of his house, which was ten fat Oxen, twenty Oxen out of the pastures, and an hundred Sheepe, beside rowe Buck, fallow Deere, and fatted Fowles. Wherein notwithstanding (if a punctuall relation thereof doe rightly informe us) the grand Signior doth exceed: the daylie provision of whose Seraiglio in the reigne of Achmet, beside Beeves, consumed two hundred Sheepe, Lambs and Kids when they were in season one hundred, Calves ten, Geese fifty, Hens two hundred, Chickens one hundred, Pigeons an hundred payre.

CHAP. XVII.

Of some others.

1. **W**EE are sad when wee read the story of Belisarius that worthy Cheiftaine of Justinian; who, after the Victories of Vandals, Gothes and Persians, and his Trophies in three parts of the World, had at last his eyes put out by the Emperour, and was reduced to that distresse, that hee beg'd reliefe on the high way, in that uncomfortable petition, *Dædolum Belisario*. And this we do not only heare in discourses, Orations and Themes, but finde it also in the leaves of *Petrus Crinitus*, *Volateranus* and other worthy Writers.

But, what may somewhat console all men that honour vertue, wee doe not discover the latter Scene of his misery in Authors of Antiquity, or such as have expressly delivered the story of those times. For, Suidas is silent herein, Cedrenus and Zonaras, two grave and punctuall Authors, delivering onely the confiscation of his goods, omit the history of his mendication. *Paulus Diaconus* goeth farther, not onely passing over this

this act, but affirming his goods and dignities were restored. Agathius who lived at the same time, declareth hee suffered much from the envie of the Court, but that hee descended thus deepe into affliction, is not to bee gathered from his pen. The same is also omitted by *Procopius* a contemporary and professed enemy unto Justinian and Belisarius, and who as Suidas reporteth, did write an opprobrious booke against them both.

And in this opinion and hopes wee are not single; but Andreas Alciatus the Civilian in his *Parerga*, and *Franciscus de Cordua* in his *Didascalis*, have both declaratorily confirmed the same. Certainly, sad and Tragicall stories are seldome drawne within the circle of their verities; but as their Relators doe either intend the hatred or pittie of the persons, so are they set forth with additionall amplifications. Thus have some suspected it hath happened unto the story of Oedipus; and thus doe wee conceive it hath fared with that of Judas, who having sinned beyond aggravation, and committed one villany which cannot bee exasperated by all other; is yet charged with the murder of his reputed brother, parricide of his father, and Incest with his owne mother, as Florilegus or Matthew of Westminster hath at large related. And thus hath it perhaps befallen the noble Belisarius, who, upon instigation of the Emperesse, having contrived the exile, and very hardly treated Pope Severius, Latin pens, as a judgement of God upon this fact, have set forth his future sufferings: and omitting nothing of amplification, they have also delivered this, which notwithstanding *Iohannes* the Greeke, makes doubtfull, as may appeare from his Iambicks in Baronius.

2. That *fluctus Decumanus*, or the tenth wave is greater and more dangerous then any other, some no doubt will be offended if we deny; and hereby we shall seeme to contradict Antiquity; for, answerable unto the literall and common acception the same is averred by many Writers, and plainly described by Ovid—

*Qui venit hic fluctus, fluctus supereminet omnes,
Posterior nono est, undecimoq; prior.*

Which notwithstanding is evidently false, nor can it bee made out by observation either upon the shoare or the Ocean, as wee have with diligence explored in both; and surely in vaine wee expect a regularity in the waves of the Sea, or in the particular motions thereof, as in its generall reciprocations, whose causes are constant and their effects therefore correspondent; whereas its

its fluctuations are but motions subservient, which winds, stormes, shoares, shelves, and every interjacency irregulates. With sembla- ble reason wee might expect a regularity in the windes; where- of though some bee statary, some anniversary, and the rest doe tend to determinate points of heaven; yet do the blasts and undula- ry breaths thereof maintaine no certainty in their course: nor are they numerally feared by Navigators.

Of affinity hereto is that conceit of *Ovum decumanum*, so cal- led, because the tenth egge is bigger then any other, according unto the reason alledged by Festus, *Decumana ova dicuntur, quia ovum decimum majus nascitur*. For the honour wee beare unto the Clergy, wee cannot but wish this true; but herein will bee found no more of verity then in the other: and surely few will assent hereto without an implicate credulity, or as Pythagoricall submission unto every conception of number.

For, surely the conceit is numerall, and though not in the sence apprehended, relateth unto the number of ten, as *Franciscus Syl- vius* hath most probably declared. For, whereas amongst simple numbers or Digits, the number of ten is the greatest, therefore what- soever was the greatest in every kinde, might in some sence be named from this number. Now, because also that which was the greatest, was metaphorically by some at first called *Decumanus*, therefore whatsoe- ver passed under this name, was literally conceived by others to respect and make good this number.

The conceit is also Latin, for the Greeks to expresse the greatest wave, do use the number of three, that is, the word *τρεῖς*, which is a concurrence of three waves in one, whence arose the proverb, *τρεῖς καὶ ἑνὶ*, or a trifluatation of evils, which Erasmus doth render, *Mola- rum fluctus Decumanus*. And thus, although the termes be very diffe- rent, yet are they made to signifie the selfe same thing; the number of ten to explaine the number of three, and the single number of one wave the collective concurrence of more.

3. The poyson of Parysatis reported from Ctesias by Plutarch in the life of Artaxerxes, whereby anointing a knife on the one side, and therewith dividing a bird, with the one halfe shee poysoned Statira, and safely fed her selfe on the other, was certainly a very subtile one, and such as our ignorance is well content it knowes not. But surely we had discovered a poyson that would not endure Pan- doraes Box, could wee be satisfied in that which for its coldnesse nothing could containe but an Asses hoofe, and wherewith some report that Alexander the Great was poysoned. Had men derived so strange an effect from some occult or hidden qualities, they might have silenced contradiction; but ascribing it unto the

manifest and open qualities of cold, they must pardon our believe, who perceive the coldest and most Stygian waters may be included in glasses, and by Aristotle, who saith, that glasse is the perfectest worke of Art, wee understand they were not then to be invented.

And though it be said that poyson will breake a Venice glasse, yet have wee not met with any of that nature. Were there a truth herein, it were the best preservative for Princes, and personages exalted unto such feares: and surely farre better then diverse now in use. And though the best of China dishes, and such as the Emperour himselfe doth use, bee thought by some of infallible vertue unto this effect, yet will they not, I feare, bee able to elude the mischiefe of such intentions. And though also it bee true, that God made all things double, and that if wee looke upon the workes of the most High there are two and two, one against another; that one contrary hath another, and poyson is not without a poyson unto its selfe; yet hath the curse so farre prevailed, or else our industry defected, that poysons are better knowne then their Antidotes, and some thereof doe scarce admit of any. And lastly, although unto every poyson men have delivered many Antidotes, and in every one is promised an equality unto its adversary; yet doe wee often finde they faile in their effects: Moly will not resist a weaker cup then that of Circe; a man may bee poysoned in a Lemnian dish, without the miracle of John, there is no confidence in the earth of Paul; and if it bee meant that no poyson could worke upon him, we doubt the story, and expect no such successe from the dyet of Mithridates.

Terra Melita.

4. A story there passeth of an Indian King, that sent unto Alexander a faire woman fed with Aconites and other poysons, with this intent, either by converse or copulation complexionally to destroy him. For my part, although the designe were true, I should have doubted the successe. For, though it be possible that poysons may meet with tempers whereto they may become Aliments, and wee observe from fowles that feed on fishes, and others feed with garlick and onyons, that simple aliments are not alwayes concocted beyond their vegetable qualities; and therefore that even after carnall conversion, poysons may yet retaine some portion of their natures; yet are they so refracted, cicurated, and subdued, as not to make good their first and destructive malignities. And therefore the Storke that eateth Snakes, and the Stare that feedeth upon Hemlock, though no commendable aliments, are not destructive poysons. For, animals that can innoxiously digest these poysons become antidotall

antidotall unto the poyson digested; and therefore whether their breath be attracted, or their flesh ingested, the poysonous reliques goe still along with their Antidote, whose society will not permit their malice to be destructive. And therefore also animals that are not mischiefed by poysons which destroy us, may bee drawne into Antidote against them; The bloud or flesh of Storks against the venome of Serpents, the Quaille against Hellebore, and the dyet of Starlings against the draught of Socrates. Upon like grounds are some parts of Animals Alexipharmacall unto others, and some veines of the earth, and also whole regions, not onely destroy the life of venomous creatures, but also prevent their productions. For, though perhaps they containe the seminals of Spiders, and Scorpions, and such as in other earths by fuscitation of the Sun may arise unto animation, yet lying under command of their Antidote, without hope of emergency they are poysoned in their matrix by those powers, that easily hinder the advance of their originals, whose confirmed formes they are able to destroy.

5. The story of the wandring Jew is very strange, and will hardly obtaine believe; yet is there a formall account thereof set downe by Matthew Paris, from the report of an Armenian Bishop; who came into this kingdome about foure hundred yeares agoe, and had often entertained this wanderer at his Table. That he was then alive, was first called Cartaphilus, was keeper of the Judgement Hall, whence thrusting out our Saviour with expostulation for his stay, was condemned to stay untill his returne; was after baptised by Ananias, and by the name of Joseph; was thirty yeares old in the dayes of our Saviour, remembred the Saints that arised with him, the making of the Apostles Creed, and their severall peregrinations. Surely were this true, he might be an happy arbitrator in many Christian controversies; but must impardonably condemne the obstinacy of the Jews, who can contemne the Rhetorick of such miracles, and blindly behold so living and lasting conversions.

Vade quid moraris? Ego vado, tu autem morare donec venio.

Bbb a

CHAP.

CHAP. XVIII.

More briefly of some others.

Other relations there are, and those in very good Authors; which though we doe not positively deny, yet have they not beene unquestioned by some, and as improbable truths doe stand rejected by others. Unto some it hath seemed incredulous what Herodotus reporteth of the great Army of Xerxes, that dranke whole Rivers dry. And unto the Author himselfe it appeared wondrous strange, that they exhausted not the provision of the Countrey, rather then the waters thereof. For, as he maketh the account, and *Budem de Asse* correcting the miscompute of Valla, delivereth it; if every man of the Army had had a chenix of Corne a day, that is a sextary and halfe, or about two pints and a quarter, the Army had daylie expended ten hundred thousand and forty medimna's, or measures containing six Bushels. Which rightly considered, the Abderites had reason to blesse the heavens, that Xerxes ate but one meale a day, and Pythius his noble hoste might with lesse charge and possible provision entertaine both him and his Army. And yet may all be exsolved, if we take it hyperbolically, and as wise men receive that expression in Job, concerning Behemoth, or the Elephant; Behold, hee drinketh up a River and hasteth not, he trusteth that hee can draw up Jordane into his mouth.

2. That Anniball eate or brake through the Alpes with Vinegar, may bee too grossly taken, and the Author of his life annexed unto Plutarch affirmeth, onely hee used this artifice upon the tops of some of the highest mountaines. For, as it is vulgarly understood, that hee cut a passage for his Army through those mighty mountaines, it may seeme incredible, not onely in the greatnesse of the effect, but the quantity of the efficient: and such as behold them, may thinke an Ocean of Vinegar too little for that effect. 'Twas a worke indeed rather to be expected from earthquakes and inundations, then any corrosive waters, and much condemneth the judgement of Xerxes, that wrought through Mount Athos with Mattocks.

3. The received story of Milo, who by daylie lifting a Calfe, attained an ability to carry it being a Bull, is a witty conceit, and handsomely sets forth the efficacy of Assuetudine. But surely the account had beene more reasonably placed upon some person not much

much exceeding in strength, and such a one as without the assistance of custome could never have performed that act; which some may presume that Milo without precedent artifice or any other preparative, had strength enough to performe. For, as relations declare, he was the most pancraticall man of Greece, and as Galen reporteth, and Mercurialis in his Gymnasticks representeth, he was able to persist erect upon an oyled planks, and not to bee removed by the force or protrusion of three men; and if that bee true which Atheneus reporteth, he was little beholding to custome for this ability. For, in the Olympick games, for the space of a furlong, he carryed an Oxe of foure yeares upon his shoulders; and the same day hee carried it in his belly; for as it is there delivered he eate it up himselfe: Surely he had beene a proper guest at Grandgousiers feast, and might have matcht his throat that eate sixe pilgrims for a salad.

4. It much disadvantage the Panegyrick of Synesius, and is no small disparagement unto baldnesse, if it bee true what is related by *Ælian* concerning *Æschilus*, whose balde pate was mistaken for a rock, and so was brained by a Tortoise which an Eagle let fall upon it. Certainly, it was a very great mistake in the perspicacity of that Animall; and some men critically disposed, would perhaps from hence confute the opinion of Copernicus, never conceiving how the motion of the earth below should not wave him from a knock perpendicularly directed from a body in the ayre above.

5. It crosseth the proverb, and Rome might well bee built in a day; if that were true which is traditionally related by Strabo, that the great Cities Anchiale and Tarsus, were built by Sardanapalus both in one day, according to the inscription of his monument, *Sardanapalus Anacyndaraxis filius, Anchialen & Tarsum unâ die edificavit, In autem hospes Ede, Lude, Bibe, &c.* which if strictly taken, that is, for the finishing thereof, and not onely for the beginning, for an artificiall or naturall day, and not one of Daniels weeks, that is, seven whole yeares; surely their hands were very heavy that wasted thirteene yeares in the private house of Solomon; it may bee wondred how forty yeares were spent in the erection of the Temple of Jerusalem, and no lesse then an hundred in that famous one of Ephesus. Certainly, it was the greatest Architecture of one day, since that great one of sixe; an Arte quite lost with our Mechanicks, and a work not to be made out, but like the walls of Thebes, and such an Artificer as Amphion.

6. It had beene a sight onely second unto the Arke, to have beheld the great Syracusia, or mighty Ship of Hiero, described in Atheneus; and some have thought it a very large one, wherein were to be found ten stables for horses, eight Towers, besides fishponds, Gardens, Tricliniums, and many faire roomes paved with Agath, and precious stones;

In Rabelais.

Who writ in the praise of baldnesse.

stones; but nothing is impossible unto Archimedes, the learned contriver thereof; nor shall wee question his removing the earth, when he findes an immoveable base to place his engine upon it.

7. The relation of Plutarch of a youth of Sparta, that suffered a Fox concealed under his robe to teare out his bowels, before he would either by voice or countenance betray his theft; and the other of the Spartan Lad, that with the same resolution suffered a coale from the Altar to burne his arme; although defended by the Author that writes his life, is I perceive mistrusted by men of judgement, and the Author with an *aim*, is made to save himself. Assuredly it was a noble Nation that could afford an hint to such inventions of patience, and upon whom, if not such verities, at least such verisimilities of fortitude were placed. Were the story true, they would have made the onely Disciples for Zeno and the Stoicks, and might perhaps have beene perswaded to laugh in Phaleris his Bull.

8. If any man shall content his beliefe with the speech of Balams Ass, without a beliefe of that of Mahomets Camell, or Livies Oxe; if any man make a doubt of Giges ring in Justinus, or conceives hee must bee a Jew that beleeves the Sabbaticall river in Josephus. If any man will say he doth not apprehend how the taile of an African weaver outweighth the body of a good Calfe, that is, an hundred pound, according unto Leo Africanus; or desires before beliefe, to behold such a creature as is the Ruc in *Paulus Venetus*, for my part I shall not be angry with his incredulity.

9. If any man doubt of the strange Antiquities delivered by historians, as of the wonderfull corps of Antæus untombed a thousand yeares after his death by Sertorius; whether there were no deceit in those fragments of the Arke so common to bee seene in the dayes of Berofus; whether the pillar which Josephus beheld long agoe, Tertullian long after, and *Bartholomæus de Saligniaco*, and *Borchardus* long since be the same with that of Lots wife; whether this were the hand of Paul, or that which is commonly shovne the head of Peter, if any doubt, I shall not much dispute with their suspicions. If any man shall not beleeve the Turpentine betwixt Jerusalem and Bethlem, under which the Virgin suckled our Saviour, as she passed betweene those Cities; or the figtree of Bethanie shewed to this day, whereon Zacheus ascended to behold our Saviour, I cannot tell how to enforce his beliefe, nor doe I thinke it requisite to attempt it. For, as it is no reasonable proceeding to compell a Religion, or thinke to enforce our owne beliefe upon another, who cannot without the concurrence of Gods Spirit, have any indubitable evidence of things that are obtruded; so is it also in matters of common beliefe; whereunto neither can we indubitably assent, without the cooperation of our sense or reason, wherein consist the principles of perswasion. For, as the habit of faith in Di-

vinity

vinity is an argument of things unseene, and a stable assent unto things inevident, upon authority of the divine Revealer; So the beliefe of man which depends upon humane Testimony, is but a staggering assent unto the affirmative, not without some feare of the negative. And as there is required the Spirit of God, and an infused inclination unto the one, so must the actual sensation of our senses, at least the non opposition of our reasons procure our assent & acquiescence in the other. So when Eusebius an holy writer affirmeth there grew a strange and unknowne plant neere the statue of Christ, erected by his hemarroidall patient in the Gospel, which attaining unto the hemne of his vesture, acquired a sudden faculty to cure all diseases. Although he saith he saw the statua in his dayes, hath it found in many men so much as humane beliefe; some believing, others opinioning, a third suspecting it might be otherwise. For, indeed in matters of beliefe the understanding assenting unto the relation, either for the authority of the person, or the probability of the object; although there may be a confidence of the one, yet if there be not a satisfaction in the other, there will arise suspensions; nor can we properly believe untill some argument of reason, or of our proper sense convince or determine our dubitations.

And thus it is also in matters of certain and experimented truth: for, if unto one that never heard thereof, a man should undertake to perswade the affections of the Loadstone, or that Jet and Amber attracteth strawes and light bodies, there would be little Rhetorick in the authority of Aristotle, Pliny, or any other. Thus, although it be true that the string of a Lute or Violl will stirre upon the stroake of an unison or Diapazon in another of the same kinde; that Alcanna being Greene, will suddenly infect the nailes and other parts with a durable red; that a candle out of a Musket will pierce through an inch board, or an Urinall force a naile through a planke, can few or none believe thus much without a visible experiment. Which notwithstanding fals out more happily for knowledge; for these relations leaving unsatisfaction in the hearers, doe stirre up ingenuous dubiosities unto experiment, and by an exploration of all, prevent delusion in any.

CHAP. XIX.

Of some relations whose truth we feare.

LAstly, as there are many relations whereto we cannot afford our assent, and make some doubt thereof, so are there divers others whose verities we feare, and heartily wish there were no truth therein.

1. It is an unsufferable affront unto filiall piety, and a deepe discouragement

agement unto the expectation of all aged Parents, who shall but reade the story of that barbarous Queene, who after she had beheld her royall parents ruine, lay yet in the armes of his assassine, and carrouled with him in the skull of her father; for my part, I should have doubled the operation of antimony, where such a potion would not worke; 'twas an act me thinks beyond Anthropophagy, and a cup fit to be served up onely at the Table of Atreus.

Who tied dead
and living bod-
ies together.

2. While we laugh at the story of Pygmalion, and receive as a fable that he fell in love with a statua; wee cannot but feare it may bee true, what is delivered by Herodotus concerning the Egyptian Pollinors, or such as annointed the dead, that some thereof were found in the act of carnality with them; from wits that say 'tis more then incontinency for Hylas to sport with Hecuba, and youth to flame in the frozen embraces of age, we require a name for this: wherein Petronius or Martiall cannot relieve us. The tyranny of Mezentius did never equall the vitiosity of this Incubus, that could embrace corruption, and make a Mistresse of the grave; that could not resist the dead provocations of beauty, whose quick invitements scarce excuse submission. Surely, if such depravities there be yet alive, deformity need not despaire; nor will the eldest hopes be ever superannuated, since death hath spurres, and carcasses have beene courted.

3. I am heartily sorry and wish it were not true, what to the dishonour of Christianity is affirmed of the Italian, who after he had inveigled his enemy to disclaime his faith for the redemption of his life, did presently poyniard him, to prevent repentance, and assure his eternall death. The villany of this Christian exceeded the persecution of Heathens, whose malice was never so Longimanus as to reach the soule of their enemies, or to extend unto the exile of their Elysiums. And though the blindness of some ferities have savaged on the dead, and beene so injurious unto wormes, as to disenterre the bodies of the deceased; yet had they therein no designe upon the soule; and have beene so farre from the destruction of that, or desires of a perpetuall death, that for the satisfaction of their revenge they wisht them many soules, and were it in their power would have reduced them unto life againe. It is great depravity in our natures, and surely an affection that somewhat savoureth of hell, to desire the society, or comfort our selves in the fellowship of others that suffer with us; but to procure the miseries of others in those extremities, wherein we hold an hope to have no society our selves, is me thinks a straine above Lucifer, and a project beyond the primary seduction of Hell.

4. I hope it is not true, and some indeed have strongly denyed, what is recorded of the Monks that poysoned Henry the Emperour, in a draught of the holy Eucharist. 'Twas a scandalous wound unto Christian Religion, and I hope all Pagans will forgive it, when they shall reade

reade that a Christian was poysoned in a cup of Christ, and received his bane in a draught of his salvation. Had I believed Transubstantiation, I should have doubted the effect; and surely the sinne it selfe received an aggravation in that opinion. It much commendeth the Innocency of our forefathers, and the simplicity of those times, whose Laws could never dreame so high a crime as parricide: whereas this at the least may seeme to outreach that fact, and to exceed the regular distinctions of murder. I will not say what sinne it was to act it; yet may it seeme a kinde of martyrdom to suffer by it: For, although unknowingly he dyed for Christ his sake, and lost his life in the ordained testimony of his death. Certainly, had they knowne it, some noble zeales would scarcely have refused it, rather adventuring their owne death, then refusing the memoriall of his.

Many other accounts like these we meet sometimes in history, scandalous unto Christianity, and even unto humanity; whose verities not onely, but whose relations honest minds doe deprecate. For of sinnes heteroclitall, and such as want either name or president, there is oft times a sinne even in their histories. We desire no records of such enormities, sinnes should be accounted new, that so they may be esteemed monstrous. They omit of monstrosity as they fall from their rarity; for, men count it veniall to erre with their forefathers, and foolishly conceive they divide a sinne in its society. The pens of men may sufficiently expatiate without these singularities of Villany; For, as they encrease the hatred of vice in some, so doe they enlarge the theory of wickednesse in all. And this is one thing that may make latter Ages worse then were the former; For, the vicious examples of Ages past, poyson the curiosity of these present, affording a hint of sin unto seduceable spirits, and solliciting those unto the imitation of them, whose heads were never so perversely principled as to invent them. In this kinde we commend the wisdom and goodnesse of Galen, who would not leave unto the world too subtile a Theory of poysons; unarming thereby the malice of venomous spirits, whose ignorance must be contented with Sublimate and Arsenick. For, surely there are subtiler venenations, such as will invisibly destroy, and like the Basilisks of heaven. In things of this nature silence condemneth history, 'tis the veniable part of things lost; wherein there must never rise a Pancirollus, nor remaine any Register but that of hell.

And yet, if as some Stoicks opinion, and Seneca himselfe disputeth, these unruly affections that make us sinne such prodigies, and even sinnes themselves be animals; there is an history of Africa and story of Snakes in these. And if the transanimation of Pythagoras or method thereof were true, that the foules of men transmigrated into species

Who writ
de Antiquis
deperditis, or
of inventi-
ons lost.

species answering their former natures; some men must surely live over many Serpents, and cannot escape that very brood whose fire Satan entered; and though the objection of Plato should take place, that bodies subjected unto corruption, must faile at last before the period of all things, and growing fewer in number, must leave some soules apart unto themselves; the spirits of many long before that time will finde but naked habitations; and meeting no assimilables wherein to react their natures, must certainly anticipate such naturall desolations.

F I N I S.



Some errors in interpunctions or poyntings the advertency of the Reader may correct: what others, by reason of the obscurity of the Copy have most materially escaped, wee desire him thus to rectifie.

Page 2. line. 22. for posterity, reade posteriority. p. 14. l. 21. for understood, misunderstood. p. 21. l. 10. for lives, lines. p. 33. l. 22. for 25, 20. p. 35. l. 8. for induce, to induce. p. 38. l. 41. for miserable, miserablest. p. 59. l. 39. for Iron, from. p. 61. l. 28. for interest, intersect. p. 62. l. 13. read which with alacrity. p. 67. l. 41. for any, and. p. 76. l. 29. for yet, it. and after, for the Art, by the Art, for incision, infition. p. 95. l. 16. for it, yet. p. 105. l. 16. for without, not without. p. 107. l. 24. for whose, whole. p. 117. l. 24. for conceded, concealed. p. 134. l. 21. for among, within. p. 140. l. 24. for Elychinons, Elychnious. p. 150. l. 30. for pervinum, perulium. p. 159. l. 40. reade corpulency, and dele it. p. 180. l. 15. for sight, site, and reade in angular. p. 194. l. 17. for matter, water. p. 199. l. 14. for our, Cur. p. 202. l. 10. for India, Judea. p. 204. l. 15. reade amited. p. 216. l. 34. reade in confirmed. p. 222. l. 33. for seven, seventeene. p. 226. l. 28. for Longitude, Declination. p. 235. l. 15. reconveyed. p. 238. l. 1 with the mischiefe. p. 259. l. 17. for are, or. p. 269. l. 29. for about, above. p. 271. l. 1. r purged. p. 285. l. 14. r grafting. p. 287. l. 8. dele of. p. 292. r convexity. p. 308. l. 15. for are, or. p. 320. l. 31. r minious.