Gassendi's Life of Epicurus (Thomas Stanley) - Partial Transcription

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Epicurus – His Life And Doctrine – Written By Petrus Gassendus - Translated by Thomas Stanley, Published 1660

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Epicurus – His Life And Doctrine – Written By Petrus Gassendus

1. The Life of Epicurus

1.1. Chap 1. Epicurus – His Country, Parents, Brethren

Epicurus is by some considered to be a Samian; for Timon (in [1] *Laertius*) saith, He was the last of the Natural Philosophers that came out of *Samos*. And [2] *Constantinus Porphyrageneta* conceives that he derived his originall from *Samos*, as well as *Pythagoras*. But the occasion of this was, for that he passed the first part of his younger years at *Samos*, with his father and brethren; for thither came his father, *Agripeta*, as [3] *Cicero* terms him, (that is, one who claimeth a portion in the division of lands.) Upon the like ground [4] *Strabo* conceives him a *Lampsacene*, for he lived at *Lampsacum*, and conversed with the chief personages there. But Epicurus indeed was by country an Athenian, as [5] Laertius, [6] Suidas, and infinite other Writers affirm; whence [7] Laertius, about to praise him, begins thus.

First Ceres-gifts to human indigence,

Renowned Athens did long since dispence,

And mens disordered waies by Laws redrest,

And firsbour life with greatest comfort blest,

When it produc'd a person of such worth,

Whose breast contain'd, whose lips allerush brought forth.

Now forasmuch as the Athenian people, being distinguished by Tribes, were dispersed into ??? ??????, the adjacent Towns, which were made free Corporations, even from the time of Theseus; Epicurus was born at Gargettus, a Town (as [8] Helschius and Phavorinus describe it) belonging to the Ægean Tribe, where Theseus (saith [9] Plutarch) overcame the Pallantide, who conspired against him and Ægeus; and where Eurystheus, (as [10] Stephanus relates) was buried. For this reason; he is said, by [11] Laertius to have been ?????? ?????????; by [12] Stecius termed, the *Gargettick Author*, and the *Gargettick old man*; by [13] Cicero, [14] *Ælian*, and others, simply the *Gargettian*.

[15] Laertius (out of Metrodorus, in his Treatise of Nobility) writes, that Epicurus was of the family of the Philaiad; the Philaide were denominated from Phileus, the second son of Ajax, who dwelt in Melite, and is mentioned by [16] Plutaroh; who addes, that Pisistraius also was of the Philaidae. Of this family was the father of Epicurus, (according to [17] Laertius and others) named Neocles, his mother Chaerestrasa. He is also frequently cited, after the Greek-fashion, Epicurus Neoclis, sometimes simply termed Neoclides, as when compared by [18] Menander with Themistocles, whose father was Neocles also. I omit, that his father was (according to [19] Strabo) one of the two thousand Citizens, whom the Athenians sent to Samus, to share the land by lots, whither they had before sent Pericles and Sophocles, who strictly besieged the revolted Samians. I omit also, that he was a School-Master, which (besides Strabo) [20] Cicero observes, when proceeding to reproach him, *But his little Farm*, saith he, *not being sufficient to maintain him, as I conceive, he became a School-master*.

[21] Suidas mentions onely two brethren of Epicurus, Neocles and Cheredemus; but [22] Laertius (out of Philodemus the Epicurean) adds a third, Aristobulus, whom [23] Plutarch sometimes seems to call Agathobulus. By what care and benevolence Epicurus gained their reverence and affection, is excellently declared by [24] Plutach, who conceives it worthy admiration, how he came so to win them, and they to be won. That all these died before Epicurus, may be inferred from his Will, wherein he ordereth nothing, either to

them, or of them, as alive; but onely appointed a day to be celebrated for his brethren in the Month Posideon. And though of Cheredemus there is no further testimony, yet of Aristobulus it is more apparent from [25] Plutarch, who writes, that Epicurus was wholly taken up about Metrodorus, Polyemus, and Aristobulus, tending them in their sicknesse, and mourning for them when they died. But of Neocles it is most manifest, from the same [26] Plutarch, relating, that Epicurus broke forth into a kind of joy, mixt with tears, upon the remembrance of the last words of Neocles. Of how great and painfull sicknesses they dyed, is sufficiently aggravated by [27] Plutarch and [28] Suidas.

1.2. Chap 2. The Time of His Birth (page

Epicurus was born (as [29] Laertius relates out of the Chronology of Apollodorus) in the 3rd year of the 109th Olympiad, the 7th day of the month Gamelion; at whose birth, [30] Pliny saith, the Moon was twenty daies old. Hecatombeon (the first month) this year falling in the Summer of the year 4372. of the Julian Period, (now used by Chronologers) it is manifest, that Gamelion the same year, being the 7th month from Hecatombeon, fell upon the beginning of the year 4373, which was before the ordinary computation from Christ 341 compleat years. Now forasmuch as in January, in which month the beginning of Gamelion is observ'd to have fallen, there happened a new Moon in the Attick Horizon, by the Tables of Celestiall Motions, the fourth day, in the morning, (or the third day, according to the Athenians, who as [31] Censorinus saith, reckon their day from Sun-set to Sun-set) and therefore the twentieth day of the Moon is co-incident with the three and twentieth of January; it will follow, that Epicurus was born on the 23rd of January, if we suppose the same form of the year extended from the time of Cefar, upwards. And this in the old style, according to which the cycle of the Sun, or of the Dominical letters for that year, (it being Biffextile) was BA, whence the 23rd day of January must have been Sunday. But if we suit it with the Gregorian account, which is ten daies earlier, (now in use with us we shall find, that Epicurus was born on the 2nd of February, which was Sunday, (for the Dominicall Letters must have been ED.) in the year before Christ, or the Christian computation, 341. and consequently in the 1974th year, compleat, before the beginning of February this year, which is from Christ 1634. Some things here must not be passed by.

First, that [32] Laertius observes Sosigenes to have been Archon the same year, wherein Epicurs was born, and that it was the 7th year from the death of Plato. Moreover, it was the 16th of Alexander, for it was, as the same [33] Laertius affirms, the year immediately following that, in which Aristotle was sent for to come to him, then 15 years old.

Secondly, that [34] Eusebius can hardly be excused from a mistake, making Epicurus to flourish in the 112th Olympiad; for at that time, Epicurus scarce had pass'd his childhood, and Aristotle began but to flourish in the Lyceum, being returned the foregoing Olympiad out of Macedonia, as appears from [35] Laertius.

Thirdly, that the error which is crept into [36] Suidas, and hath deceived his Interpreter, is not to be allowed, who reports Epicurus born in the 79th Olympiad. I need not take notice, how much this is inconsistent, not onely with other relations, but even with that which followeth in Suidas, where he extends his life to Antigonus Gonotas: I shall onely observe, that, for the number of Olympiads, Suidas having doubtlesse set down ??, which denote the 109th Olympiad, the end of the ? was easily defaced in the Manuscript, so as there remained onely ?, by which means of ??, was made the 79th Olympiad.

Fourthly, that it matters not that the Chronicon Alexandrinum, Georgius Sincellus, and others, speak too largely of the time wherein Epicurus flourished, and that we heed not the errous of some person, otherwise very learned, who make Aristippus later then Epicurus, and something of the like kind. Let us onely observe what [37] St. Hierom cites out of Cicero pro Gallio; a Poet is there mentioned, making Epicurus and Socrates discoursing together, *Whose times,* saith Cicero, *we know were disjoyned, not by years, but ages.*

Fifthly, that the birth-day of Epicurus, taken from Laertius and Pliny, seems to argue, that amongst the Athenians of old, the Civill months and the Lunary had different beginnings. This indeed will seem strange, unlesse we should imagine it may be collected, that the month Gamelion began onely from the full Moon that went before it; for, if we account the 14th day of the Moon to be the first of the month, the first of the Moon will fall upon the 7th of the month. Not to mention, that Epicurus seems in his Will to appoint his birth to be

celebrated on the first Decad of the dayes of the month Gamelion, because he was born in one of them; and then ordaineth something more particular concerning the 20th of the Moon, for that it was his birth-day, as we shall relate hereafter. Unlesse you think it fit to follow the [38] anonymous Writer, who affirms, Epicurus was born on the 20th day of Gamelion; but I know not whether his authority should out-weigh Laertius. Certainly, many errours, and those very great, have been observed in him, particularly by Meurfius. I shall not take notice, that the XXXX of Gamelion might perhaps be understood of the 20th of the Moon, happening within the month Gamelion, from Cicero, whose words we shall cite hereafter. But this by the way.

1.3. Chap. 3. Where He Lived In His Younger Time (page 9)

[39] Laertius, out of Heracles, in his Epitome of Sotion, relates, that a Colony being sent by the Athenians to Samos, Epicurus was bred up there till the 18th year of his age, in which he went to Athens; Xenocrates living in the Academy, Aristotle at Chalcis. [40] Strabo adds, that being first brought up, partly at Samos, partly at Teos, he spent the first part of his youth at Athens, growing up together with Menander, the Comick Poet. [41] Laertius further relates, that Alexander dying, and the Athenians being opprest by Perdiccas, he went to Colophon to his father, (about the 23rd year of his age) and that he lived a while there. And adds afterwards out of Apollodorus, that from the 32nd year of his age to the 37th he lived partly at Mitylene, partly at Lampsacum, (whither he made a dangerous voyage, as [42] Plutarch observes. [43] Suidas sets down, how much time he bestowed in each of these places, one year at Mitylene, four at Lamsacum. Laertius adds, that he returned to Athens, when Anaxicrates was Archon. Now forasmuch as Anaxicrates (who succeeded Charinus, in the year of whose Magistracy, as [44] Seneca notes, Epicurus writ to Polyaenus) was Archon in the 2nd year of the 118th Olympiad, and consequently the 36th of Epicurus's age, there must necessarily be here a metachronism of one year.

Hitherto of the places where Epicurus lived in his younger times, partly learning, partly teaching, before he setled at Athens, where he instituted a Sect.

1.4. Chap 4. His Masters (page 10)

As for the Masters which he had, we read in [45] Laertius, that some relate, Epicurus was Auditor of Pamphilus the Platonick; [46] Suidas saith the same; [47] Cicero also mentions Epicurus, himself acknowledging, that he heard him at Samus, but exceedingly fleighted his doctrin. Others also report the same.

Moreover, [48] Clemens Alexandrinus and others, report Nausiphanes the Pythagorean, disciple of Pyrrho, to have been his Master, though [49] Sextus Empiricus writes, that he himself deny'd he had been disciple to Nausiphanes. Apollodorus, in his Chronology, reports that Epicurus heard Lyciphanes and Praxiphanes; but this, saith [50] Laertius, he doth not himself acknowledge, in his Epistle to Euridicus.

He might indeed have heard Xenocrates, and *some there are* (saith [51] Cicero) *who think, he did hear him*, (as Demetrius the Magnefian in Laertius) but Epicurus himself will not allow it.

I would mention Democrates, with whom, [52] Plutarch saith, Epicurus contested *about Syllables and Accents*; but that I suspect Democrates to be falsly read instead of Democritus, even from this, that Plutarch adds, that Epicurus stole all his opinions from him, which was the common objection concerning Democritus, as shall be shewn hereafter.

I should mention also Metrodorus, whom [53] Stobaeus calls, ?????????, his Interpreter; *Doctorem, the Master* of Epicurus; and should suspect he were the same with him, whom [54] Solinus makes contemporary with Diogenes the Cynick; did not the opinion, attributed to him of the infinity of Worlds, and of Atoms, argue, that this was Metrodorus the Chian, disciple of Democritus, whom Epicurus might have, not as *Doctorem*, a *Teacher* by word of mouth; but as *Ductorem*, a *Leader*, by writing.

Thus also is Lucian to be taken, when he saith sportingly, that Epicurus was disciple to Democritus, making him to be disciple of Aristippus also, by reason of his opinion of Pleasure, wherein yet there was great difference between them, as we shall show in its due place. But notwhitstanding all we have alledged, [55]

Cicero, Plutarch, Empericus, and others, write, that Epicurus used to boast, that the never had any Master, but was ???????????, his own Teacher, and attained Philosophy by his own wit and industry. And though they seem to mention this, not without some disparagement of him, yet it will easily be granted, that he found out many things of himself, since this was that wherein he too most delight at his last end; and withall, seeing he writ so many books, filled onely with his own sayings, as we shall show hereafter. And indeed [56] Athenaus, delivering in an Epigram an excellent sentence of his, concludes, as if Epicurus learnt it not from any other, than from the Muses and Apollo. Hither also conduce these commendations of Laertius:

Dispencing gifts acquir'd by his own breast.

And,

He rous'd his soul to break the narrow bonds,

Which fetter Nature.

And others of the same kind.

As for those whom Epicurus particularly esteem'd, [57] Laertius (citing Diocles) affirms, he was chiefly addicted to Anaxagoras, (though in some things he contradicted him) and Archelaus, who was master to Socrates. Of Democritus we shall speak hereafter. I onely add, that Epicurus much admiring the conversation of Pyrrho, continually question'd his disciple Nausiphanes concerning; as [58] Laertius saith, in the life of Pyrrho.

1.5. Chap 5. When, and upon what occasion, he addicted himself to Philosophy, and instituted a Sect (page 11)

[59] Suidas saith, that he began to apply himself to Philosophy in the 12th year of his age, which is confirmed by others, who wrote his life, as [60] Laertius relates. But Epicurus himself (alledged by the same [61] Laertius) attesteth, that he did not addict himself to Philosophy till he was fourteen years old. Hermippus (in [62] Laertius) saith, that, lighting accidentally upon the books of Democritus, he betook himself to Philosophy; but Apollodorus the Epicurean, in the first book of the life of Epicurus, affirms, he applied himself to Philosophy upon dislike of the Sophists and Grammarians, for that they could not explain what Hesiod meant by *Chaos*. [63] Sextus Empiricus having related this more fully, it will not be amiss to transcribe his words. Having proposed some doubts concerning these Verses of Hesiod,

First, Chaos, next broad-breasted Earth was made,

The seat of all

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he addes, and some affirm, that this was the occasion of Epicurus's sudden applying himself to Philosophy; for being yet very young, he asked a Grammarian, who read to him [Chaos was first made]: Of what was Chaos made, if it was first made? The other answering that it did not belong to him to teach such things, but to those who were called Philosophers. Then, saith Epicurus, I must goe to those, for they are the persons that know the truth of Beings.

To omit, what some affirm, that he was, as Hermippus ([64] in Laertius) relates, before he addicted himselfe to Philosophy, a School-master: and though the [65] Stoicks, who were much his enemies, reproached him that with his Father he taught Boyes for a small stipend, and that with his Mother he went from house to house reading expiatory praiers; I observe that after he had applyed himself to Philosophy, he instituted a School, being thirty two years old, as [66] Laertius relates, and this first at Mitylene afterwards at Lampsacum, as may be collected from the relation of Suidas, but had Disciples also from Colophon, as [67] Laertius relates.

Returning to Athens in the 36 or 37th yeare of his age, *he awhile discours'd* (saith [68] Laertius) *of Philosophy in publick with others, but afterwards instituted a Sect in private dominated by him*. At first indeed, admiring the doctrine of Democritus, he professed himselfe a Democritian as [69] Plutarch relates; but afterwards, for that he changed or added many things, his followers were from him called Epicureans.

1.6. Chap 6. His School (Page 12)

Whereas other Professors of Sects made choice of particular places in Athens, as the Academy, the Lycaeum, and the like, he purchased a very pleasant Garden, for fourscore Minae, where he lived with his friends and disciples, and taught Philosophy. Thus, amongst others, [70] Laertius citing Apollodorus. [71] Pliny writes, that Epicurus first brought into Athens the custome of having under the name of Hortus a garden, the delight of fields and Country-mansions within the citty it felt, whereas, untill his time, 'twas not the fashion to have those kinds of mansions (*rura*) in townes.

Hence we may conjecture that this was the place which [72] Pausanias reports to have been called, even in his time, the Gardens, adding that there was in it a Statue of Venus made by Alcamenes, one of the most eminent things in Athens, (as may be gathered also from [73] Lucian) and that the Temple of Venus, with the statue of caelestiall Venus, did joyn to it. This Garden is often mentioned in the Plurall number by [74] Cicero, [75] Juvenal, and others, and sometimes diminutively, Hortulus, as Virgil; but howsoever it be us'd, it is commonly taken for the Sect or Doctrine delivered in that place by Epicurus and his Schollers. Whence Sextus Empiricus calls the Epicureans, the *Philosophers of the Gardens* (as the Stoicks, the Philosophers of the Stoa or cloister), and Apollodorus, being in his time the Master of the Gardens, was, as Laertius affirms, called ???????????, *the Garden King*.

Besides this Garden, which, with houses belonging to it, joyned upon the City, Epicurus had a house in Melite, which was a Town of the Cecropian Tribe, as [76] Suidas affirms, inhabited by Philaeus, one of the Ancestors of Epicurus, as was formerly said, having (according to Phavorinus) a famous temple dedicated to Hercules. Hither Epicurus sometimes retired with his Disciples, and at last bequeathed it to his Successors, as we shall declare hereafter. [77]

1.7. Chap 7. How He Lived With His Friends 12

Epicurus after his return to Athens, at what time Anaxicrates was Archon, went onely twice or thrice to Ionia, to visit his friends, but lived all the rest of his time at Athens, unmarried, nor would never forsake his Country, though at that time reduc'd to great extremities, as [78] Laertius observes. The worst of which was when Demetrius besieged Athens, about the 44th year of Epicurus's age. How great a famine at that time oppress'd the Citty is described by [79] Plutarch. But it is observable, that having related a story of the contest between a Father & his Son about a dead mouse which had fallen from the top of a house, he adds, *They say that Epicurus the Philosopher sustain'd his friends with Beans which he shared equally amongst them.*

Epicurus therefore lived all the rest of his time at Athens, together with so many friends and Disciples whom he conversed with and instructed, as that whole Cities were not sufficient to contain them (they are the words of [80] Laertius) who resorted to him, not onely from Greece but all other parts, and lived with him in his gardens, as he cites out of Apollodorus; but especially from Asia, and particularly from Lampsacum, and from AEgypt as may be collected out of [81] Plutarch. Of the temperance and frugality of his diet we shall speak hereafter. As to his living with his friends, it is remarkable what Diocles, in Laertius, and others, relate. That Epicurus did not, as Pythagoras, who said the goods of Friends ought to be in common, appoint them to put their estates into one joynt-Stock, (for that imply'd a distrust, not a friendship) but that any one upon occasion should be freely supply'd by the rest. This will appeare more manifest hereafter. In the mean time, we must not omit an eminent place of [82] Cicero; *Neither* (saith he) *did Epicurus approve friendship in discourse onely, but much more by life, actions, and manners, which how great a thing it is, the fables of the Ancients declare. For amongst the many various stories repeated from utmost antiquity, there are hardly found three paire of Friends, from Theseus his time down to Orestes. But how many great companies of friends, and how unanimously-loving did Epicurus keep in one house, and that very little? which is done even unto this day by the Epicureans.* Thus Cicero.

Amongst the rest of his friends, [83] Laertius mentions Polystratus, who seems to be the same, of whom together with Hippoclides another Epicurean [84] Valerius Maximus gives a strange account. I shall insert the words of Valerius, the rather because they will serve to illustrate part of Epicurus's Will hereafter concerning communication of the goods of his Disciples: they are these. *Hither may aptly be referred Polystratus & Hippoclides, Philosophers, who, born the same day, followers of the sect of the same Master, Epicurus, joyned together in the common possession of estate and maintenance of that School, died very old, in the same moment of time. So equall a society of fortune and friendship, who thinks not have been begotten, bred, and ended, in the bosome of celestiall Concord?* Thus hee.

1.8. Chap 8. His Friends And Disciples 13

Being now to give a Catalogue of the chiefest of his Friends and Disciples, we must not in the first place passe-by the three Brethren of Epicurus,

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mention'd in the beginning, for they by his advice studied Philosophy with him, as Philodemus (in [85] Laertius) affirms. [86] Plutarch addes, that they took-in the Philosophy of their Brother, as greedily as if they had been divinely inspired, believing and professing from their first youth, that there was not any man wiser than Epicurus. The most eminent of the the three was Neocles: hee declaring from a boy, that his Brother was the wisest of Mortalls, added, as a wonder, that his Mother could contain so many and so great atome, as, by their convention, made up such a wise man; as [87] Plutarch relates. Hence it appearing that Neocles followed not any Philosophy of his own, but that of his Brother, I know not why [88] some affirme that he introduced a Sect like that of his Brother, unlesse perhaps they ground it upon that place of [89] Suidas, where he saith that Neocles writ concerning his Sect: but who sees not, it may be understood, that he writ concerning the Sect which he himselfe professed, but was instituted by another, especially for that there is nothing said any where of the Sect of the Neoclidae.

Observe by the way, that this saying ???? ??????, Live closly (which [90] Plutarch, oppugnes, and is brought in [91] amongst the proverbial speeches) did belong to this neocles, as the same [92] Suidas affirmeth.

To his three Brethren, may be added those three Friends, who, (as we read in [93] Seneca) became great persons, through the conversation of Epicurus.

Metrodorus is to be first nam'd; for he was, as [94] Cicero saith, almost another Epicurus. [95] Strabo plainly declareth, he was of Lampsacum. For whereas Laertius seems to say he was an Athenian, the place is very corrupt; especially seeing it is manifest he was not an Athenian, from this Antithesis of [96] Cicero, *How much was Epicurus happier for being in his Country, than Metrodorus for being at Athens*; because Athens was not the Country of Metrodorus: the text of [97] Laertius is this, He *had many Disciples but the most eminent were Metrodorus ????????, and Timocrates, and Sandes a Lampsacene, who from his first acquaintance with the man never left him,* etc. For my part I am of opinion, that these words ???????? ? ?????????? ? ?????? should be quite expunged, for if you take them away, the rest joyns together very well; if you admit them, they will not hang together: for it was Metrodorus that was indeed a Lampsacene, and with whom all the rest that follows agreeth, not Sandes, whom, besides other things, it is false that Epicurus shoulc mention in his Will. And though [98] Casaubon conceaves, that ???????? may be the proper name of a Man, yet is it strange that we heare nothing elsewhere, as well of Athenaeus as of Sandes, as Epicureans; since Laertius in this place reckons up his most eminent disciples: but taking these away, the three viz; Metrodorus, Polyaenus, and Hermarchus are described in a continued series; who, as we said, are put together by Seneca, as most eminent. As for Timocrates, he is mentioned afterwards by the way, when he comes to name Metrodorus as his Brother, and seems here to be inserted amisse. The occasion upon which these names crept into the Text I suspect to be, that, perhaps, some Transcriber had noted in the margent that what is delivered in the Text was confirmed also by Athenaus (author of the Deipnosophistae; for in him there is something concerning the Epicureans) and by Timocrates (for he also is cited by Laertius), and by one Sandes (perhaps Suidas or some other). That many things have hererofore been inserted out of the margents into the texts themselves by carelesslesse of the Transcribers, is most manifest.

Metrodorus therefore was by country a Lampsacene (not the same with that friend of Anaxagoras, whom [99] Laertius mentions of the same name) born in the 12th year of Epicurus's age; for, dying in the 53rd year of his age, (the coherence of the words and sense makes me think it should be read XXXXXXXXX XXXXX) and that being the 7th before the death of Epicurus, who lived to the 72nd year, it is evident, that the year of his birth must fall upon the 12th of Epicurus's. From the first time that Metrodorus became acquainted with Epicurus, (which might happen in the 22nd year of his age, at which time Epicurus lived at Lampsacum) he never (as we began to say out of Laertius) parted from him, but one six months, in which time he was absent at home, and thence returned to Epicurus. He had a sister, Batis, whom he married to Idomeneus, and a concubine named Leontium. He had children, whom Epicurus recommended in his Will, and in the Epistle which he writ dying; and particularly a son, named Epicurus. He was a very good man, undaunted with troubles, or death itself, as Epicurus himself, in Laertius, attests. He had the Dropsie; [100] for Cornelius Celsus writes, that whilst he was sick of that disease, and could no longer abstain, as was convenient, from drinking; he used, after he had forborn a great while, to drink, and cast it up again. But whether it was of this disease, or of some other, that he dyed; is not certain. The books which he writ are, by Laertius, reckoned to be these; Against Physicians III. Of the Senses, to Timocrates. Of Magnanimity. Of the Infirmity of Epicurus. Against the Dialecticks. Against the Sophists IX. Of the way to Wisdom. Of Alteration. Of Riches. Against Democritus. Of Nobility. Besides which, [101] Plutarch cites his Books, Of Philosophy. Of the Poets. Against Timarchus. Likewise [102] Clemens Alexandrinus cites a Treatise, *That the cause of felicity which comes from our selves is greater, than that which comes from other things*. But of Metrodorus, enough.

Polyaenus was son of Athenodorus, a Lampsacene also. He was *a great Mathematician*, [103] to use the words of Cicero, and (to comprise much in little) modest and amiable, as Philodemus (in [104] Laertius) saith.

Hermarchus was son of Agemarchus, a Mitylean, his father of mean quality. At first he studied Rhetorick, but afterwards became so knowing in Philosophy, that Epicurus dying, committed the government of the School to him. He dyed at Lysias. There is a great mention of him in Epicurus's Will. His Writings, which Laertius commends for excellent, these. Epistolicks, concerning Empedocles, XXII. Of Disciplines, (for Casaubone well reads not ???????, but ????????) two Books. Against Plato. Against Aristotle.

To these must be added [105] Leontius, a Lampsacene, whom Plutarch calleth, one of the most eminent disciples of Epicurus; adding that this was he who writ to Lycophron, that Epicurus honoured Democritus.

Moreover, Colotes and Idomeneus, Lampsacenes also. Of the former we shal have occasion to speak oftner, especially because of the two Books which Plutarch writ against him. [106] Laertius elsewhere writes that Menedeamus the Cynick was his disciple, (unlesse perhaps there were some other Colotes of Lampsacum). The same Colotes it is, who, cited by [107] Macrobius, argues, that Plato ought not to have invented the fable of *Erus*, because no kind of fiction agreeth with the professor of truth. The latter, Idomeneus, Epicurus design'd to make famous by his Letters, as indeed he did, which appears from [108] Seneca: *I will alledge*, saith he, *Epicurus for an example, who writing to Idomeneus, (the a minister of State, employ'd in great affairs) to persuade him, from a specious kind of life, to true setled glory. "If, saith he, "you affect glory, my Epistles will make you more famous, than all those things" which you esteem, and for which you are esteemed. Who would have known Idomeneus, if Epicurus had not graved his name in his Letters? All those Magistrates and Princes, even the King himself, from whom Idomeneus derived his Title, are now suppressed by a deep oblivion*. Thus he, *And these* (saith Laertius) *were the more eminent disciples*.

But to these may be added two out of Valerius, already mentioned, Polystratus and Hippoclides; especially seeing Laertius reckons Polystratus as successor to Hermarchus; unless the Polystratus who is joyned to Hippoclides, were not the same with him that succeeded Hermarchus.

We might adde Timocrates of Lampsacum, Brother of Metrodorus; but he seems to have fallen off, not brooking the reprehensions of his Brother. We shall therefore rather joyn to these Mus, the servant of Epicurus, who, as Laertius affirms, became an eminent Philosopher, not omitted by [109] Agellius, and [110] Macrobius, in reckoning up those, who, of servants, became famous for Philosophy.

To omit Apelles, somewhere derided by Plutarch, we must here mention three Women, who together with others of the same sex, learnt Philosophy of Epicurus. One, Leontium, who studied Philosophy under Epicurus, as [111] Athenaus recites, and may also be collected from [112] Cicero, who saith, she wrote a Book against Theophrastus, in an elegant style, and in the Attick dialect. The second, Themista, Daughter of Zoilus, a Lampsacene, Wife of the forementioned Leontius. Of he, besides the testimonies which we shall hereafter alledge, [113] Clemens Alexandrinus taketh expresse notice. The third, Philenis, whom [114] Athenaeus affirms to have written many things; adding that the obscene books ascribed to her, were put forth under her Name, by Polycrates the Sophist, to discredit the Woman.

To these may be added Herodotus, to whom Epicurus writ a little Epitome of Physick, extant in Laertius, writ a book *of the youth of Epicurus*.

Pithocles, to whom Epicurus writ of Superiour things, extant in Laertius, and who affirmed, that when he was 18 years old, he had not his equall for ingenuity in all Greece, as Plutarch relates.

Menaeceus, to whom Epicurus writ that Epistle concerning Morality, which is extant in Laertius, its beginning recited also by Clemens Alexandrinus.

Timocrates, son of Demetrius, a Potamian, and Amynomachus, son of Philocrates of Bate, whom Epicurus made the Executors of his Will.

Nicanor, whom Epicurus recommended to the care of the said Executors.

Eurydicus, on the those to whom, as Laertius saith, he writ Epistles.

Dositheus, and his Sons Pyrrho, and Hegefianax, to whom Epicurus wrote wrote a consolatory letter, upon the death of their Father, as we find in Plutarch.

I omit Polymedes, Antidorus, and others, to be mentioned hereafter in treating of his Books.

1.9. Chap 9. How Much He Wrote 16

Neither did Epicurus, spend the time in giving his Disciples only Oral Instructions, but bestowed much pains in composing severall books. But to understand how much he laubour'd herein, by comparison with other Philosophers, hear but Laertius in his [115] preface; *Many things*, saith he, *Zeno writ; more, Xenophanes; more, Democritus; more, Aristotle; more, Epicurus; more, Chrysippus*. Where we see that Epicurus, as to multitude of writing came short onely of Chrysippus. But observe, that elsewhere [116] Laertius; to show, he may be thought to have exceeded Chrysippus herein; cites Apollodorus the Athenian, *who*, saith he, *to show that what Epicurus writ of himselfe, not borrowed from any other, did far exceed the books of Chrysippus, saith expresly thus: If a man should take out of the books of Chrysippus, the things which he hath burrowed of others, the paper will be left blank*. But that his may not seem strange, the same [117] Laertius elsewhere relates that Chrysippus for his emulation of Epicurus in writing much, was called by Carneades, the *Parasite of his books*, because, *if Epicurus writ any thing, (read ?????? not ??????) he would affect to write as much. Whence it came to passe, that he often wrote the same things over again, and whatsoever came next to hand, and presently thrust it in for haste, without correction; and brought in so many testimonies of other Writers, that his books were filled up onely with them, as may be found in Zeno also, and Aristotle*. Thus Laertius, of Chrysippus, but of Epicurus not so: for [118] he relates that his volumes amounted to three hundred, *in which*, saith he, *there is no testimony of any other Author, but the are all the very words of Epicurus*. Which I observe to show (seeing Epicurus wrote so many things, [119] *a great Writer*, as he termes him, and exceeding for multitude of Books, so as [120] Origen charging Celsus with temerity, objects as a thing he conceives impossible, *There is not any of us, who*, saith he, *knowes all that Epicurus writ*) his fluent vein, and how he was chiefly employ'd.

1.10. Cha 10. What Writings of His Are, Particularly, Mentioned By Authors 17

Here it is fit, we give a kind of Catalogue of his Books, not of all he wrote, but of those whose Titles are extant in other Authors. I say their Titles, for the books themselves have so miscarried by the injury of time, that besides some few compendiums preserv'd by Laertius, and some fragments scatter'd up and down amongst severall Writers, there is not any thing of them remaining, at least, as yet known to us.

To begin with those, which Laertius accounts the best, they are ranked thus.

Of Nature, XXXVII. They are sometimes cited simply, Of Nature, sometimes with the number of the Books, as when Laertius hereafter in his Life, cites the I. the XI. XII. XIIII. XV. [121] Galen also mentions the Title and number of the Books.

Of Atoms, and Vacuum, so usually cited, [122] Cleomenes seemeth to mean the same under another name, Of the Principles of all things.

Of Love.

An Epitome of things appertaining to Naturall Philosophers. This Epitome was twofold, great and little; both are cited by Laertius; the lesser, that which is written to Herodotus.

Against the Megarick (or Dialectick) Philosophers, Doubts. These Doubts, seem chiefly to have concerned certain Moral Arguments, as concerning Justice, Marriage, and Dower: for this seems to be the same which, and [123] Plutarch, cite under the name of Doubts, without adding, To the Megaricks.

?????? ?????, *Maxims*, or, as [124] Cicero interprets, Maxime rata Sententiae, *because*, saith he, *they are sentences briefly expressed, which conduce exceedingly to living happily*. He [125] elsewhere calls them select, and short Sentences. [126] Sextus seems to call them *Memorable Sayings*. Laertius hath put them at the end, and [127] Lucian some where commends them, as [128] Cicero the Book of Crantor, *which is*, saith he, *not great indeed, but golden, and, as Panaetius advised Tubero, to be gotten by heart*. He was in opinion different from Suidas, who calls them *Wicked notions*.

???? ????????, Of Elections, so I conceive it ought rather to be rendered, then Of Sects; because in this book Epicurus, seems not to design a History of Sects, but Morall Institutution, which is conversant about the choice of things, as Laertius declares at the end of Epicurus's Epistle to Menaeceus. Not to mention, that the teacheth the Ethick kind to consist onely of election and avoidance. For which reason, the Book, which is ordinarily and next to this cited,

???? ?????, Of Plants, ought rather be entituled, ???? ???????, Of things to be avoided; as well for coherence of the title, as for that Epicurus, almost wholly taken up with Morall Philosophy, scarce treated of any particular subject in Physick, unless they were such as conduced to take away vain terrours from the minds of men; of which kind, this of Plants could not be. Moreover, because in Manuscripts, this title is connected to the former by the conjunction ???, we may conjecture, that the Inscription was, ???? ????????, ?? ?????; Of Election and Avoidance. Yet might the Inscription have been in the plurall number, forasmuch as it is afterwards said, *Elections and avoidance are dijudicated from pleasure and grief*.

Of the End; So this Book is generally cited, as, amongst others, by [129] Plutarch. Neither doth Cicero seem to mean any other, though he cite a Book Of the Ends of Good and Evill.

Of the Criterie, or the Canon; or, as [130] Cicero translates it, Of the Rule, and of Judgement. But if instead of Judgment we render it Judicatory, the force of the word will be more fully express'd.

Chaeredemus; or Of the Gods. This is one of those Books, which Epicurus entituled by the names of his brethren and friends, that, being dead, their names might not be forgotten, as [131] Plutarch observes.

Of Sanctity, or Hegesianax. This perhaps is he, whom [132] Plutarch terms Hegetoanax, concerning whose death, Epicurus wrote to his Parents; unless perhaps it were he who wrote Histories, and Troica, cited by [133] Athenaeus; for he was of Alexandria, and Epicurus had friends out of AEgypt.

Of Lives IV, which is all one as if the Inscription had been, Of Life and Manners. Neither doth Epicurus seem in these Books to relate the story of some eminent persons, as Plutarch and Laertius have done in their Books of Lives; but to give rules, whereby to lead a quiet life, as may plainly enough be collected from the catalogue of the Morall Treatises, and the places cited out of this by Laertius. The word Lives seems here to be taken in the same sense, as with [134] Plutarch, when he speaketh of The Difference of Lives and Politicks, which the Interpreter well renders, Of Manners and Publick Institutes. Of these Books, are hereafter cited by Laertius, the first and second.

Of Just Action.

Neocles to Themista. This seems to have been that Neocles who was brother to Epicurus, not his father; for in like manner he called other of his books after the names of his brothers.

The Banquet, cited by [135] Plutarch, [136] Athenaeus, and others. [137] Plutarch mentions Questions handled in it, concerning the heat of Wine, the time of Coition. Laertius, concerning troubles about Marriage, &c.

Eurylochus to Metrodorus. I guess, that this Eurylochus was the same with that Eurydicus, to whom, as we said formerly, Epicurus writ; but the thing is uncertain.

Of Seeing.

Of the Angle which is in the Atome.

Of Touching; or perhaps, Of the tangibility of Atoms: for [138] Epicurus called Vacuum ?? ???????, *that which cannot be touched*.

Of Fate.

Of Passions. Sentences to Timocrates.

???????????, Praecognitorium; so I render it, because he seemeth in this to have discoursed of the Praecognitive faculty.

Protreptick, (exhortatory) that is, Discourse; for so Isocrates and Clemens, expresly.

Of Images, ??????, simulacra, imagines, species, formae, spectra; so several persons variously interpret them, which are now commonly tearmed *Intentionall species*.

Of Phantasie, or the impression thereof, which appeareth in the knowing faculty; for neither did Epicurus, nor most of the ancient Philosophers, understand by this word, as we now for the most part do, the faculty is felt.

Aristobulus; this book bears the name of Epicurus's third brother.

Of Musick; viz. as it conduceth to Manners; for this may be collected from [139] Plutarch and [140] Empiricus.

Of Gifts and Gratitude, mentioned by [141] Empiricus, who cites something Grammaticall out of it.

Polynaedes; he seems to have been some friend or disciple of Epicurus.

Timocrates, III. Whether meaning the brother of Metrodorus, or the Executor of his Will, or some other. Hence I should believe, that by Laertius was cited the third book of Timocrates, or written by Timocrates; but that instead of ??????????, I suspect it should be written ??????????, relating to the third book, which, by Epicurus, was so entituled. This text seems to confirm.

Metrodorus V. That this was the same Metrodorus, of whom we have spoken formerly, cannot be doubted. From the first book, cited by Laertius, may be collected, that Epicurus related the story of Metrodorus's life.

Antidorus II. This Antidorus is mentioned by [142] Plutarch, and perhaps by [143] Laertius also, in the life of Heraclides, if we there read Antidorus for Autodorus.

???? ????? ????? ???? ??????, Of the South-winds, Sentences, to Mithres. But perhaps the Title ought rather to be read, ???? ?????, Of Diseases, as well for the reasons alledged about the Title, ???? ?????, as for that these Sentences seem not to have been severall opinions, concerning some particular Winds, as Morall Sentences to moderate the pain of diseases. This seems to be the same Mithres a Syrian, whom Metrodorus relieved, as [144] Plutarch hath severall times delivered; and the same whom [145] Laertius relates to have been the Steward of Lysimachus's house; adding, that Mithres saying to Theodorus, Thou seemest not onely not to acknowledge gods, but Kings also. Theodorus repli'd, How can I but acknowledge gods, who think thee an enemy to the gods?

Callistolas; who, it may be presumed, was some friend of Epicurus's.

Of a Kingdom, mentioned by [146] Plutarch.

Anaximenes; perhaps the same Lampsacene who is mentioned by [147] Strabo, and whom both [148] Plutarch, and [149] seem to mean; for though he were one of Alexander's Masters, yet did he survive him, (for he wrote his actions) and was, according to Suidas, disciple to Diogenes the Cynick, and consequently younger than he; whereas Diogenes died in

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the eighteeth year of Epicurus's age, viz. in the beginning of the 114th Olympiad.

Epistles. Of these, four are extant in Laertius; one, to Herodotus, which was, as we said, the lesser Epitome, and under that name cited by [150] Achilles Tatius; Of Naturall Things. The second, to Pythocles, Of Meteors, or superiour things, as well Celestiall, as all others above the earth. The third, to Menaeceus, Of Manners. The last is very short, which he writ dying, to Idomeneus. That, besides these, he writ innumerable others, may be collected from [151] Plutarch, [152] Laertius, and others. For Plutarch, for example, cites an Epistle of his, To Anaxarchus; [153] Laertius his Epistle, To Aristobulus; also an Epistle, To his friends at Mytilene. This seems to be the same with that, which [154] Sextus Empiricus cites thus, To the Philosophers at Mitylene. But Laertius implyeth, there were more which bore that inscription, ?? ???? ???? ???? ???????? ?????????; so as there might be one of them suppositious. In the same ranck may be reckoned his Epistles, concerning severall institutions of life, hinted by [155] Laertius, cited by [156] Athenaeus and [157] Eusebius. I omit, that the same [158] Athenaeus mentions his Epistles to Hermarchus; and, not to enquire after any more, the highest in repute were those written to Idomeneus, as we may understand from [159] Seneca, who also citeth something excellent out of his Epistles to Polyaenus. Amongst those to Idomeneus was that, out of which [160] Michael Apostolius, cites a fragment, containing the originall of the Proverb, *These shall be to thee both Pythian and Delian*, apply'd to those that shall dye within a short time; though Erasmus affirms, the Proverb it self to be cited out of Menander.

As to the Epistles, we shall by the way observe, that Epicurus used to write, by way of salutation in the beginning of his Epistles, sometimes ???????, joy; sometimes , well to do; sometimes , sometimes , well to life; sometimes , Health. For that which we read in [161] Laertius, , is defective, there seems some word wanting to the sentence; neither doth the word X seem to belong to the form of salutation. And besides these words, X, exclude X from the Epicurean form of Salutation; whereas his word is not onely put before his Epistles, extant in Laertius, but it is rendred by [162] Cicero also, when he alledgeth that which he wrote at his death. For this reason, when heretofore I would, in the room of these two words, have put X, (as a lesse alteration, than if I should have substituted X X, or the like) the learned Puteanus approved it; but withall conceive X ought to be retained; but the excellent Menagius was of opinion, that since a word is wanting, for X should be read X, used on the like occasion by Laertius; but that X X ought to be retainded, forasmuch as Epicurus seemeth not to have used the word X, it being mentioned as proper to Cleon, both by [163] Lucian and [164] Laertius himself. Or whether instead of X might we not put X, or, with the least alteration, X, signifying, that for salutation, he was best pleased with those words, X X, and X X; or might not X X be

retained, implying, that he did not quite cast aside the word X, but instead of it sometimes used the other two, as if X were either wanting or imply'd. Indeed, [165] Lucian seems not-obscurely to hint as much, when relating, that Epicurus was exreanly delighted with the word X, he addes, that sometimes he used other words, and that sometimes in his more accurate and profound Epistles, (which yet he saith were not many) or when he writ to his most intimate friends, he chiefly used X. Laertius therefore attributing the word X to him, may as well be thought to have intended X, as used by him; since, attributing X X to him also, he makes X X as peculiar to Plato, as X to Cleon.

This Catalogue of his Books is compiled by Laertius; but besides these, there are others, cited both by Laertius himself, and other Writers. Laertius formerly cited his Book, Of Rhetorick, mentioned also by the Scholiast of Hermogenes. But that which is cited, Of Perspicuity requisite to Discourse, belongs to Canonick, which he substituted in the room of Dialectick.

He likewise seems to cite his X, Antecedentia, or Praecipua; things precedent or preferred, in the sense of the Stoicks. I should think it meant of some of the Books before cited, if amongst them there were any, wherein that which is alledged were written by Epicurus.

There are cited also Staecheioses, Institutions or Elements, XII.

There seems also to be cited, Of Worlds, XII. For, describing severall Worlds, he is said to have done it in the XIIth. X, or, as the Manuscripts, X X, upon this very subject; the rather, because it seems not meant of those XXXVII which are constantly cited, Of Nature.

I should add his Physicall Problemes, and Ethicall Doctrines; but that under these names may be comprised, all that Epicurus wrote concerning Nature and Morality.

Moreover, [166] Cicero cites his Book, Of the Chief Good; unlesse it be the same with that, Of the End, already mentioned.

By the [167] same also is cited his Book, Of Pleasure; this perhaps Laertius meant, when he said, It was objected by some against Epicurus, that he usurped the Treatise of Aristippus concerning Pleasure, as if it had been his own.

Besides these, [168] Cicero cites his Book, Of Piety towards the Gods, distinct, as it seems, from that, Of Sanctity, reckoned by Laertius. *Of Sanctity*, saith he, *Of piety towards the gods, he wrote Books.*

Again, Plutarch declares, that he wrote Books against Theophrastus: for, the second of them, he saith, contained a discourse concerning Colours. Hitherto of his Books.

1.11. Chap 11. His Will

Epicus having employed his life in Teaching and Writing, and being no grown old, made, as the custom was, his Will, which being preserv'd entire by [169] Laertius, we shall not need to have recourse to those fragments of it, which lye dispersedly in Cicero, and other Writers. It was in this form.

Thus I bequeathe. I give all my Estate to Amynomachus, son of Philocrates, of Batis, (a Town of the AEgean Tribe, as [170] Hefychius describes it) *and to Timocrates son of Demetrius, a Potamian,* (of Potamus, a Town belonging to the Leontian Tribe, [171] Phavorin.) *according to the donation which hath already been made, and is recorded among the Deeds in the Metronum,* (a Temple of the great goddesse at Athens, seated upon the Haven, in which the Lawes, Judgments, and other Acts were preserved, as Athenaeus, Suidas, and others affirm) *with this condition, that they bestow the Garden and all that belongs*

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to it, on Hermarchus, son of Agemarchus, a Mitylean, and those that shall study Philosophy with him; and on those, whom Hermachus shall leave his successors in Philosophy, and to those who shall succeed us in the

profession of Philosophy, for ever. And, that it may be preserved with all possible care, I assign the School to Amynomachus and Timocrates, and to their heirs, according to the surest form of Law, that they may keep the Garden and deliver it to those who shall professe Philosophy after us. The house which is at Melite, let Amynomachus and Timocrates deliver to Hermachus, and to those that study Philosophy with him, to dwell in it as long as he shall live. Of the Revenues made over by us to Amynomachus and Timocrates, let them set apart as much as shall be sufficient (advising with Hermachus) to celebrate the exequies of my father, mother, and brethren; and to keep, as they have done hitherto, my birth-day, in the first Decad of the month Gamelion; as also to provide a Feast for entertainment of all those, who study Philosophy with us, every month, on the twentieth day of the moon, in commemoration of us, and of Metrodorus. Let them also keep a day in memory of my brethren in the month Posideon, as we used to do; and another to Polyaenus, in the month Metagirnion. Let Amynomachus and Timocrates take care of Epicurus, son of Metrodorus, and of the son of Polyaenus; and let them study Philosophy, and live with Hermachus. In like manner, let them take care of the daughter of Metrodorus, and as soon as she shall be Marriageable, bestow her upon him of the students of Philosophy, whom Hermachus shall choose; provided she be modest, and obedient to Hermachus. Let Amynomachus and Timocreates, out of our Revenues, bestow yearly so much as shall be sufficient, for their maintenance, with the consent of Hermachus. For let them so esteem Hermachus, having an equall share in our Revenues, and grown old in studying Philosophy under us, and left by us Guide of those that studied Philosophy under us, that all things be done by his advice. As for her portion, when she shall come to be marriageable, let Amynomachus and Timocrates take as much as they shall think convenient, with the consent of Hermachus. Likewise, let them take the same care of Nicanor as we did, that all they who studying Philosophy with us, have communicated the use of their Estates, and expressing all friendship, have chosen to grow old with us in Philosophy, want not any necessaries to the utmost of our power. All my Books I bequeath to Hermachus; but if any thing of mortality happen to Hermachus, before the children of Metrodorus arrive at full age, let Amynomachus and Timocrates take care, that all necessaries be decently provided for them, as much as shall be necessary, out of the Revenues left by us. Let all the rest be ordered as we have appointed, as much as is possible. I manumit of my servants, Mus, Licias, Lycon; Phaedria also, I set free.

1.12. Chap 12. The Manner of His Death

As concerning his last sicknesse, and death, we must know that Epicurus was of a constitution not very strong. This is implied even by the Title of the Book, written by [172] Metrodorus, Of the infirmity, (or unhealthfullnesse) of Epicurus. It is implied also by the envious exaggeration of [173] Suidas, that Epicurus could not endure to put on his Cloaths, nor to rise out of bed, nor to look upon the Sun, and the fire, and the like. These may at least perswade, that Epicurus was of a complexion not strong, and as in the whole course of his life, he had not a constant health, so at last he died of a painfull disease, the Stone, whereof it is probable he had many fits. [174] Laertius, out of Hermachus, in his Epistles, relates that he died of the Stone stopping his urine, having lyen sick 14 dayes.

It is memorable, that being near death, he writ that Epistle which Laertius mentions, as written to Idomeneus; [175] Cicero, to Hermachus; perhaps it was sent to both, because of the ??????: or to Idomeneus, rather then to Hermachus, because the children of Metrodorus were sufficiently recommended to Hermachus, by his Will. Moreover it is not likely likely that Hermachus, his next successor, was absent at that time, especially seeing he sen a relation of Epicurus's death in Letters, not to presse, that he from his youth was more addicted to Rhetorick, then Philosophy, as appeareth from Laertius. The Epistle is this.

Leading a most happy life, and withall dying, we writ this to you, seized by the Strangury and Dysentery beyond expression; but all these were counterpoised by the joy of mind, which I conceived in remembring out discourses and inventions. But thou, as becomes the good will which thou hast had from thy youth to me, and Philosophy, take care of the children of Metrodorus.

[176] Laertius adds (out of Hermippus) that Epicurus went into a bath of warm water, called for wine, drunk it off, and exhorting his friends to be mindfull of his Doctrine, whilst he was discoursing, died. Upon which Laertius hath this Epigram:

Farewell, and bear my Doctrine in your minds;

Said dying Epicurus to his Friends:

Into a warm bath going, wine he quaft,

And then from Pluto took a colder draft.

1.13. Chap 13. The Time of His Death

Epicurus, died in the 2nd year of the 127th Olympiad, Pytharatus being Archon. After ??????? ????, which [177] Laertius cites out of Apollodorus's Chronology, Casaubone rightly reads ??? ??????? ? ??? ?? ??? ????????; for in the ordinary reading ??????? being wanting, Who could imagine that Epicurus, being born in the 109th Olympiad could dye in the 107th. And indeed, the 72nd year of Epicurus, in which he is said to have dyed, falls upon the 127th Olympiad.

The month and day of the year, in which Epicurus, died, is told by [178] Clemens Alexandrinus, who saith, that Antilochus from the time of Pythagoras to the death of Epicurus, reckoned 312 years, adding that the death of Epicurus happened on the tenth of the day of the Month, Gamelion. Where observe, if the time of Pythagoras be reckoned from the 60th Olympiad, in which Laertius saith, he flourished; there will be found to be but 270 years, from thence to the death of Epicurus, and consequently the account of Antilochus will fall short 42 years. Wherefore this ?????? must be taken from the birth of Pythagoras, who began to flourish in the 40th year of his age.

Now whereas Apollodorus saith, that Epicurus lived 72 years, which is confirmed also by [179] Cicero, saying, *It always was true, that Epicurus shall dye, having lived 72 years: Pytharatus being Archon* (whence some conjecture Epicurus died in his Climactericall year, which is commensurated by 9) the last, or 72nd year, is not to be understood as complear, for Epicurus had but newly entred into it, there being but three daies over and above the 71 years; for he was born on the 7th and dy'd on the 10th of the Month Gamelion, there being between the time of his Birth, and his Death, 18 compleat Olympiads, except one year. Wherefore, this is in the same manner, as when [180] Pliny, [181] Lucian, and [182] Censorinus affirm the Sicilian (or Leontine) Gorgias did life 108 years, whereas [183] Cicero, and [184] Valerius Maximus say, the compleated but 107. Here is observable, the comparison which [185] Plutarch makes between Epicurus, and Gorgias; for after he had said that Alexis the Comick Poet, (son of Menander, and Father of Stephanus the Comick Poet, as [186] Suidas relates) lived double the time of Metrodorus, that is 106 years, Metrodorus living according to [187] Laertius, 53. he addes, that Gorgias the Sophist, out-lived Epicurus; ????? ? ????????? more then one third; for if we take the number 36 it will be the same which Epicurus lived double, Gorgias treble; and whereas Plutarch saies *more*, perhaps he reflected upon the opinion which [188] Quintilian and [189] Suidas afterwards followed, that Gorgias lived 109 years.

I see not why the [190] Interpreter of Clemens Alexandrinus, should render Gamelion, October; for though there be some controversie about the order of the Greek months, yet shall we not find any, but make Gamelion the 6th, 7th, or 8th, from Hecatombaeon; which seeing it cannot begin higher then June, certainly Gamelion will be far distant from October. But since by many argument it is evince, that Gamelion is the 7th from Hecatombaeon, it ought rather to be reduced to January. Now because the 2nd year of the 1217th Olympiad began in Summer, in the 4443rd year of the Julian period, the Gamelion of that year must fall upon January, in the beginning of the 4444th year of the Julian Period. Upon what day of January, the tenth of Gamelion might fall, it is not easie to determine. But if we may make Gamelion commence, (as is done in the time of the nativity) from the 14th Moon, or from the 7th full Moon after the Summer Solstice, for as much as the new Moon happened upon the 30th of December, and consequently the 14th Moon upon the 12th of January, hereupon if we make that the 1st of Gamelion, the 10th will fall upon the 21st of January, upon which the death of Epicurus might fall. Where we must further observe, that whereas Epicurus is said to have lived 72 years, it must be understood of the Grecian years, not Julian, for so it would fall short two daies, it being already proved, he was born on the 23rd of January. Now, to reduce the death of Epicurus to our account, is easie: for if we substract ten daies, and for the cycle of the Sun that year which is 20 and, for the

Dominicall Letter D according to the old style, put G according to our owne, it will appear that Epicurus died the 31st of January, it being the 4th day of the week, or Wednesday, before the computation of Christ, 270 years.

1.14. Chap 14. How Dear His Memory Was To His Followers

It remains, that we briefly tell how the memory of Epicurus, after his death, was respected by his followers. For, to omit, that his Country honoured him with brasen Statues, as [191] Laertius writes; I observe, that the set-dayes, and ceremonies appointed in his Will, were punctually kept by his Followers. [192] Pliny, (writing 350 years after upon this thing) *On his birth-day*, saith he, *the twentieth Moon, they sacrifice, and keep feasts every Month, which they call Icades*; whence it may be conceived, that Epicureans were by Greek Writers, as [193] Athenaeus, termed ?????????, from observing ???????, as Rhediginus also takes notice. Although [194] some there are who think, they were called Icadistae, from ????? an image, because there was not one of them, but had the picture of Epicurus. And of these images, [195] Pliny also, thus; *They keep* (saith he) *the countenance of Epicurus in their chambers, and carry it up and down with them*; and [196] Cicero, in the person of Atticus, *Neither*, saith he, *can we forget Epicurus of any man; whose representation we have not onely in pictures, but in cups, and rings also*. [197] There are who adde, that *some took great care to have Pictures of Epicurus not onely in Rings, but in Cups, as conceiving it a fortunate Omen, to the nation, and their owne name*. As for the affection which they bare to him, hear Patro, *Honour*, saith [198] Cicero, *Office, right of Wills, the authority of Epicurus, the attestation of Phaedrus, the seat, house, foot-steps of excellent Persons, he saith that we must preserve*; but especially [199] Torquatus, *Owe we not much to him, saith he, who, as if he had heard the voice of Nature her selfe, did so firmly and soundly comprehend her, as that he brought all ingennous persons into the way of a peacefull, calm, quiet, happy life?* And [200] again, *Who*, saith he, *I think onely saw truth, and freed the minds of men, from the greatest errours, and delivered all things appertaining to well and happy living*.

And because Epicurus dying, advised his friends to be mindfull of his Doctrines, [201] Cicero saith, that all of them got by heart, his *Maxims* and some there were who learned without book, all his Doctrines, as particularly Scyro, mentioned in his Academicks. But let it suffice, to alledge some few verses of [202] Lucretius, by which we may perceive how affectionate they were, to the memory, and doctrines of their Master. He begins his Third Book, thus:

Who first from darknesse couldst a light so clear

Strike forth, and make life's benefits appear,

Great ornament of Graecia, I am lead

By thee, and in thy sacred foot-steps tread:

Not to contend, but kindly imitate.

For how can chatt'ring Swallowes emulate

The Swan? or tender kids keep equall pace,

With the stout well-breath'd Steed's imperious race?

From thee, O Father, every thing receives

Invention, thou giv'st precepts, from thy leaves

As Bees skip up and down, and sweetly suck

In frow'ry groves, we golden sayings pluck;

Golden, deserving an eternall life.

And again;

By these a pleasure I receiv'd from Thee

Divine; withall a reverence, to see

That Nature every way thou hadst unvaild.

And afterwards,

Great Epicurus died, his lives race run,

Whose wit mankind exceeded, as the Sun

Eclipseth by his rising all the Stars.

1.15. Chap 15. With What Constancy, And Unanimity, the Succession of His School Flourished

It deserves to be taken notice of, not onely that the succession of his School was constant, but that his successors and followers did alwayes so agree, as was indeed wonderfull. As concerning the constancy, it is known that the Presidents of the Gardens, or Masters of the School, from the death of Epicurus, to the time of Julius Caesar, and Augustus, succeeding one another in a continued Series, were, according to [203] Suidas, XIV and that for 237 years: In which latter times, how many Epicureans there were, eminent persons, and of great account in the State, appears from Cicero. [204] Lucian also writes, that in his time, there was a stipend allowed to the Epicureans, by the Emperour, no lesse then to other Philosophers; adding, that, when any one of them died, he whom they most approved of, was substituted in his room. [205] Laertius, who lived after Lucian, declares, that whereas the succession of the other Philosophers did almost quite faile, yet the succession of Epicurus did constantly persevere, so many succeeding one another in government of the Disciples, as could not be reckoned up. Numenius, (cited by [206] Eusebius) adds, that this succession lasted till his time, and that so perfectly, as it was likely to endure a great while after. After these [207] Lactantius; *The Discipline of Epicurus, saith he, was much more celebrious*. In a word, as long as Learning flourished in Greece, and Rome was preserved from the Barbarians, the School, and discipline of Epicurus, continued eminent.

As for their unanimity, to omit that of [208] Cicero, *I will maintain the Epicureans who are so many, my Friends, men that are so loving to one another*, and the like places; and shall rather observe, that whereas other Sects almost at their very beginning were distracted with intestine dissentions, the Epicurean was far from suffering any such thing. For [209] Themistius writes, that *the Opinions of Epicurus, were kept by all the Epicureans, as Lawes of Solon of Lycurgus*. And, as if they had all one Soul amongst them, saith [210] Seneca, *whatsoever Hermachus affirm'd, whatsoever Menodorus, is referred to one. All things that any man delivers in that Society, go under one mans name*; This will appear more plainly, if we alledge the words of Numenius, the Pythagorean, in [211] Eusebius; who after he hath complain'd, that the successors of Plato did not preserve that unanimity, for which the Pythagoreans we esteemed, addes, *after this manner the Epicureans being instituted (though unworthy) seeming not in any thing to dissent from Epicurus, and professing to have the same tenents with their wise Master, have not unjustly attained their scope. Hence it hath happened to the Epicureans for a long time, that they never, in anything worth notice, contradicted either one another, or Epicurus. Amongst them it is an offence, or rather impiety, and sin, to bring in any innovation, wherefore none dares attempt it. Hence, by reason, of their constant agreement among themselves, they enjoy their doctrines peacably and quietly, and this Institution of Epicurus resembles the true state of a perfect Common-wealth; which being far from sedition, is governed by one joynt mind and opinion. For which reason, there have not, nor are not, nor, in likelyhood, will be wanting, those, that shall willingly follow it; but amongst the Stoicall faction, &tc*. One would think, there were nothing wanting to this testimony, but, to say of all the Epicureans, as [212] Valerius (before cited) did of two of them, that *Such a Society might be thought, to have been begotten, nourish'd, and terminated, in the bosom of celestiall Concord*.

1.16. Chap 16. The Successors and Followers of Epicurus

It remains, that we give a Catalogue of those who were eminent in that Sect, after the death of Epicurus. We have already said, that Hermachus succeeded Epicurus, and Polystratus Hermachus. It also is manifest from Laertius, that Dionysius succeeded Polystratus; and Basilides, Dionysius. But, who those ten Successors were from Basilides, to him who govern'd the School in the time of Augustus, we cannot easily say. Perhaps after Basilides, succeeded Protarchus Bargyleites, whom [213] Strabo terms an illustrious person. The same Strabo saith, that disciple to Protarchus was Demetrius, surnamed Lacon, who is mentioned also by [214] Laerius, and was, as [215] Sextus Empiricus saith, eminent amongst the followers of Epicurus. Perhaps after him succeeded Diogenes of Tarsus, Author of the Select Schools, where of Laertius mentions XX Books. He also cites an Epitome of Morall Doctrine, written by the same person. Laertius mentions also (but whether they belong to this series of Successors, is uncertain) two Pealomies of Alexandria; whether from differences of complexion, or some other respect, one surnamed black, the other white. He mentions also Orion, and seems to mention one Democritys, who, in his Timocrates, takes notice of Pleasure after Epicurus's doctrine.

There follow two out of this rank, named by [216] Athenaeus; the first, Diogenes of Seleucia near Babylon, whom he describes to have been eloquent, but of an ill life; the other, Lysias, who, as he saith, governed at Tarsus; and being chosen by the Country Stephanophorus (Priest of Hercules) he enjoy'd the supream government, and wore Regall Ornaments. This is he, who distributed the estates of the rich amongst the poor, and put many of them to death for refusing to part with them. At what time he lived, we cannot certainly determine; but Diogenes, being contemporary with Alexander King of Syria, and Antiochus his Successor, may be referred to the 155th Olympiad.

About the same time seemeth to have flourished Eucratidas, to whom belongs this inscription, recited by Janus Gruterus, *At Brundufium, before the gase of Diomedes Athenaeus, a Physician, on the bafis; EUCRATIDAS son OF PISIDAMUS, A RHODIAN, AN EPICUREAN PHILOSOPHER. THIS PLACE APPOINTED FOR BURIALL BY THE SENATE OF BRUNDUSIUM*.

Not long after seems to have flourished in the School that Apollodorus, whom Laertius termeth *eminent*, ???????????, for that (as I conceive) he bore such sway in the Garden, as Demosthenes is said to have done in Courts of Judicature. He wrote above 300 Books, amongst which were some concerning the life of Epicurus, cited by Laertius. It may be conjectured, that he was the same, whose Chronology is cited by Laertius and others.

Auditor of Apollodorus was Zeno the Sidonian, according to [217] Laertius, who adds, that the wrote much, and that he was famous both for Philosophy and Rhetorick; whence I conjecture, it is the same Zeno, of

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whom [218] Cicero saith, He spoke distinctly, gravely, and neatly, and that he was chief of the Epicureans; unlesse both he and Apollodorus lived earlier: which if it were so, this other belongs to the times of the Emperours, for [219] Cicero heard him, and writing concerning him to [220] Atticus; *Zeno*, saith he, *I love as well as thou dost*.

1.17. Chap 17. Laertius, His Vindication of Epicurus

Dlotymus the Stoick much maligning Epicurus, traduced him exceedingly, producing fifty Epistles very lascivious, as written by Epicurus; to which he added, as Epicurus's also, the short Epistles, commonly ascribed to Chrysippus. No lesse disaffected to him were Pofidonius the Stoick, and Nicolaus, and Sotion, in the 12th of his *Dioclean Confutations*, (which are in all XXIV) and Dionysius Halicarnassaeus. For they say,He went from house to house with his mother reading expiatory prayers, and that with his father he taught children for a small stipend; that one of his brothers was a pander; that he himself used the company of Leontium a Curtezan; that he ascribed to himself the Books of Democritus concerning Atomes, and of Aristippus concerning Pleasure; that he was not a true Native of the City, as Timocrates acknowledgeth, and Herodotus, in his Book of the Youth of Epicurus; That he basely flattered Mithres, Steward of Lysimachus,

calling him in his Epistles, Apollo and King; That Idomeneus, Herodotus, and Timocrates, who published some obscure Pieces of his, did commend and flatter him for the same; That in his Epistles, he writes to Leontium thus; *O King Apollo, my dear little Leontium; how were we transported and filled with joy at the reading of thy Letter!* To Themista wife of Leontius, thus; *If you come not to me, I shall roll to you whithersoever you call me*. And to Pithocles, a handsome youth; *I consume in the expectation of your amiable and divine company*. And again, writing to Themista, he thinks to perswade her: as Theodorus affirms, in his fourth Book against Epicurus. That he wrote to many other Curtezans, especially to Leontium, with whom Metrodorus also was in love. That in his Book concerning *the End*, he writes thus, *Neither know I what is this good, if we take away the pleasures of the Taste, if we take away those of Coition, if we take away those of Hearing, if we take away those of Sight*. That in his Epistle to Pithocles he writes; *Happy Youth, fly as fast as thou canst from all Discipline*. Epicurus calls him, Cinaedologum, and rails at him exceedingly. Timocrates, brother of Metrodorus, who was a while a disciple of Epicurus, but at last forsook the School, saith; That he vomited twice a day, upon over-charging his stomack, and that he himself had much ado to get away from their Nocturnall Philosophy, and conversation in secret. That Epicurus was ignorant of many things belonging to Discourse, but much more of those which belonged to Life. That he was of such a miserable constitution, that he was not able of himself for many years, to get out of bed, or rise out of the chair in which he was carried. That he spent every day a Mina at his Table, as he himself writeth in his Epistle to Leontium, and in his Epistles to the Philosophers at Mitylene. That he and Metrodorus also used the company of Curtezans; amongst others, Marmarium, Hedia, Erotium, Nicidium. That in the thirty Books which he writ concerning Nature, he saith most of the same things over and over; and that in them he writes against many persons, and, amongst the rest, against Nausiphanes, and that in these very words; *But this man, if ever any, had a way of seeming a Sophistick brag, like many other slaves*. And that in his Epistles, he writes concerning Nausiphanes; *This so far transported him, that he railed at me, and called himself my Master*. Likewise, that he called Nausiphanes, *Lungs* (as senslesse), and unlearned, and deceitfull, and lascivious. The disciples of Plato, *Dionysius's Parasites*; Plato himself, *Golden*; Aristotle, a *Prodigall*, that, having wasted his Patrimony, was fain to turn Souldier and Apothecary; Protagoras, a *Basket-carrier*, an Amanuensis to Democritus, and a high-way School-master; Heraclitus, ???????, a *causer of confusion*; Democritus, ??????????, purblind; Antidorus, ?????????, a *fawner upon gifts*; the Cyrenaicks, *Enemies of Greece*; the Dialecticks, *Envious*; Pyrrho, *Unlearned and unmanner'd*.

But these men are mad; for, of the excellent candor of Epicurus towards all men, there are many witnesses; his Country, which honoured him with Statues of Brasse; his Friends, who were so many, that whole Cities could not contain them; his disciples, who were also taken with his Sirenicall doctrine, except Metrodorus the Stratonicean, who, perhaps over-burdened with his excessive goodnesse, revolted to Carneades; the Succession of his School, which, when all the rest were almost quite worn out, remained constant, and ordained so many Masters one after another, as cannot be numbered; his piety towards his parents, his kindnesse towards his brethren, his meeknesse towards his servants, (as may appear by his Will, and their studying Philosophy with him, amongst whom, Mus, formerly mentioned, was most eminent); and in general, his humanity towards all, his devotion to the gods, and love to his Country, was beyond expression. He would not accept of any publick Office, out of an excessive modesty; and, in the most difficult troublesome times, continued in Greece, where he lived constantly; except that twice or thrice he made a journey to his friends on the borders of Ionia. But to him they resorted from all parts, and lived with him (as Apollodorus relates) in the Garden, which he purchased with 80 Minae. Diocles, in his third Book, De Incursione, saith, *They used a most frugall spare diet, for they were contended with a pint of small wine, and for the most part they drunk nothing but water*. And that Epicurus would not have them

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to put their Estates into one common stock, as Pythagoras ordained, saying, *The goods of friends are common*; for this argued distrust, and where there is distrust, there is no friendship. As for himself, in his Epistles, that he was contented with water onely, and coose bread; *And send me*, saith he, *a little Cytheridian Cheese, that I may feast my self when I have a mind*. Such was he, who professed, that Pleasure is the End, or chief Good; for which, Athenaeus, in an Epigram, thus commends him:

Man's most unhappy race for worst things toils,

For wealth (unsatiate) raiseth wars and broils.

Nature to wealth a narrow bound assign'd,

But vain opinions waies unbounded find.

Thus Neoclided; whom the sacred Quire

Of Muses, or Apollo did inspire.

But this we shall understand better from his own doctrine and words. Hitherto Laertius in vindication of Epicurus; which subject is more fully and rhetorically handled by the learned Gassendus, *De vita & Moribus Epicuri*, in the six last Books.

2. The Doctrine of Epicurus

2.1. Of Philosophy In Generall

[221]*Philosophy (or, the love of wisdom) is an exercising of the reason; by which, in meditating and discoursing, it acquireth happy life, and enjoyeth it. For,* [222] *Philosophy hath this propriety above other Arts, that its end is the end also of reason, which so tends to it, that it may rest in the enjoyment of it.*

Now, happy life consisting in the tranquillity of the mind, and indolency of the body, but especially in the former, (in regard, the goods of the mind are better then those of the body, and the ills thereof worse); it comes to pass, that Philosophy is chiefly the medicine of the mind, in regard it both makes and preserves it found, its foundnesse or health being nothins else but its tranquillity.

Hence it followeth, [223] that *neither ought a young man to delay Philosophizing, nor an old man to be wearied therewith; for, to rectifie and cure his mind, no man is too young; and he who pretends, that the time of Philosophizing either is not yet, or is past, doth, as he who saith, the time to live well and happily either is not yet come, or is quite gone*.

Both young and old therefore must Philosophize; the one, that whilst he is growing old, he may persevere to advance himself in good things, to continue the excellence of his former actions; the other, that, though aged in years, he may yet be youthfull in mind, remaining secure from future eminent harms.

For it is Philosophy alone which breeds in its followers and assurednesse and immunity from all vain fears, whence we ought to devote our selves to it that we may be truly free.

Happy they, who are of such a disposition of body or mind, or born in such a Country, as they can either of themselves, or by the instigations of others, addict themselves to Philosophy, and pursue truth; by attainment whereof, a man is made truly free or wise, and absolute Master of himself.

They who apply their minds hereto, are of three sorts; some address themselves to enquire after truth, without the assistance of any; some require help, and would not go, if non had gone before, but follow well; some may be compelled and driven to the right, who need not so much a leader, as an assistant, and, as I may call it, a Driver.

The first are most to be commended; yet the ingenuity of the second is excellent likewise; and the third, not to be contemned. Of the second was Metrodorus; of the third, Hermachus. As I highly praise the fortune of the former, so I no lesse admire and value the later; but although both of them arriv'd at the same end, yet he deserv'd the greater praise, who, their performances being equall, broke through the greater difficulties.

Now whereas to a Philosopher nothing ought to be more valuable then Truth, let him proceed to it in a direct way, [224] and neither feign any thing, nor admit any thing that is feigned by another; [225] for no kind of fiction beseemeth Professors of truth. Neyther is that perpetual Irony of Socrates to be approved, whereby he extolled to the skies {Anaxagoras}, Hippias, Prodicus, Gorgias, and the rest, but pretended himselfe rude and

ignorant of all things.

226 How much lesse was it becoming a 227 Philosopher to have feign'd that Fable concerning Erus Armenius; for why (If he had an intent to teach us the knowledge of celestiall things, and the disposition of souls) did he not perform this by a naked plain instruction, but rather chose to introduce a person; by which carriage the newnesse of the invention, and the formall scene of fiction represented on the stage, contaminated the very way of seeking truth with a falshood?

For this reason, 228 a wise man will neither hearken to the Fables of Poets, nor will himself labout in composing fabulous poems; nay rather, 229 he will have an aversion from the jugling tricks & sophistications of Oratours; and as he exacts no more from Grammar then congruity, so neither will he exact more from Rhetorick then perspicuity of speech, but will use a plain familiar style; whether he professe to teach or write bookes, or, explicate to the multitude any thing already written, he will be wary that he do it not panegrically and hyperbolically.

But seeing that, of Philosophers there are some, who assert nothing certaine of truth, but doubt of all things; others, who imagine they know all things, and assert without any distinction: A wise man ought not to behave himself so, as that he assert not all, but 230 only maintain some positive Maxims which are indisputable.

For when there are divers ways whereby some things may be performed, as the eclipses of the starrs, their rising setting and other superiour things, so to approve one way as to disapprove the rest; is certainly ridiculous. But when we speak of things that cannot be any way but one (such as are these Maxims, *Of nothing is made nothing; the Universe consist of body and Vacuum; The principles of things are indivisible*, and the like; then is it very absurd not to adhere firmely to them.

Hence, it is proper for a wise man to maintain both the manifold ways in those, and the one single way in these, and not to stagger nor recede from science once obtained; not like those, who as if prescribed by a law, Philosophize concerning Nature, not in such manner as the things themselves require; but goe out of the right way and run into fables, never considering that to vent, or vainly boast our own opinions, conduceth nothing to happy life, but disturbeth the mind.

Now whereas, 231 the principall parts of Philosophy are held to be two; one, Physick, consisting in contemplation of nature; the other, Ethick, which treats of directing of manners in order to happy life, it is manifest, either that Ethick comprehends all Philosophy, or that Physick comes to be a part therefore, only in as much as it conduceth to happy life.

For 232 if those things, which we suspect and dread from the Superiour bodies & even from death it selfe, breed no disturbance in us, as things unconcerning our condition; if also we could sufficiently comprehend what are the just bounds of our desires, and to what degree the grief which springs from them is to be asswaged, there were no need of Physiology, or the explication of Nature.

But because 233 it is not possible we should arrive at so great a good without having first surveyd the nature of things, but, 234 as children in the dark tremble and are afraid of every thing; so we miserable groping in the darknesse of ignorance, fear things that are fabulous, and no more to be dreaded then those which children feare in the dark, and fancy to themselves will happen. It is therefoer necessary that this terrour and darkenesse of the minde be dispelled, not by the beams of the Sun, but by impressions from Nature and Reason, that is by Physiology. Whence also Physick is to be esteemed a part of Philosophy.

Dialectick, which some adde as a third part, is to be rejected, because, as ordinarily taught, it doth nothing but beget thorny questions, being an empty bubbling, and forge of cavills. Moreover, because it is superfluous to that end which they propose, that is, to the perception and dijudication of the reasons of Naturalist; for there needs no more thereto, the, like the naturall Philosophers themselves, to use termes ordinary and perspicuous.

If, besides this, there may seem any thing of use, it can bee nothing but a coollection of some few *Canons* or *Rules both concerning term*, and the *Criteries* whereby we use to dijudicate.

Thus may this short Canonick, or treatise of rules, serve instead of a laborious and prolixe Dialectick, and be reputed either a distinct part of Philosophy (though least considerable); or [235] *an addition to Physick*, by way of Introduction.

2.2. The First Part of Philosophy -- Canonick, of the Criteries

For asmuch as [236] every question in Philosophy is either of the Thing or of the Word, to solution wereof many Canons may be given; hence the first part of Philosophy which compriseth them, may be termed *Canonick*.

But because, [237] of the Word nothing more is sought then the use or *signification*, but of the thing the truth, which is of an abstruse Nature; therefore we will, in the second place, comprehend in a few Canons all that belongs to the use of the words; but in the first place lay down those of truth and its criteries (which in number exceed the other), premising some few notes concerning them.

2.2.1. Chap 1. Of Truth and Its Criteries

First the truth is twofold, one of *existence*, the other of *Enunciation* or judgement.

Truth of *existence* is that, whereby every thing which exists in the nature of things is that very thing which it is, and no other. Whence it comes to passe that there is no falsity opposite to this truth (for, Orichalcum, for example, is not false gold, but true Orichalcum) and therefore: *it is all one whether we say a thing is existent, or true*.

Truth of Enunciation, or judgement, is nothing else but a conformity of an enunciation pronounced by the mouth, or of a judgement made in the mind, with the thing enunciated or judged.

This is that truth to which falshood is opposite; for as [238] *it is true that the thing is so as it is said to be, so is it false that it is not so as it is said to bee*.

As for that which they call a future contingent, [239] *those disjunctions which are made of contraries*, (or rather those complexions which are made by disjunctive particles) *are true*; as if we should say, [240] Either Hermachus will live to morrow, or will not live; but [241] *neither of the parts is in this disjunctive proposition, taken singly, is true*; for neither is there any necessity in nature that Hermachus shall live to morrow; nor, on the contrary, that he shall not live.

Moreover, because as the thing whose truth is sought, belongs either to speculation onely, or to action, (the first of which appertains to Physick, the latter to Ethick); we must for this reason have a Criterie, or Instrument of judging, whereby it may be examined, judged, and discerned, in order to both these.

But forasmuch as naturall things affect the *Sense* or *Intellect*, and morall things the *Appetite* or *Will*; for this reason, Criteries are to be taken from both these.

From the *Sense*, nothing can be taken more basic than its function, Sensation, which likewise is called sense.

From the *Intellect*, forasmuch as besides the function which it hath, whilst like the sense it contemplateth the thing, as if it were present and apparent, (whence the perception of a thing appearing, which appeareth to be as well to the intellect, as to the sense, is called a phantasie or appearance); forasmuch, I say, as besides this function, it is proper to the Intellect; to ratiocinate or discourse, there is therefore required a pre-notion or anticipation, by looking upon which, something may be inferred.

Lastly, from the *Will* or *Appetite*, whose property it is to pursue or shun something, nothing else can be taken, but the affection or passion it self, and that either *allective*, as pleasure; or *aversive*, as pain or grief.

242 There are therefore in all, three Criteries; Sense, or sensation; Prenotion, or anticipation; and Affection, or passion. Concerning each of these, some Canons are to be prescribed.

2.2.2. Chap 2. Canons of Sense – The First Criteria 243

To begin with the Canons which concern Sense; of these there may be laid down four.

Canon 1 – Sense is Never Deceived, and therefore every sensation, and every perception of an appearance, is true. 244

This is proved, first, because 245 *all sense is void of ratiocination, and wholly incapable of reminiscense. For neither being moved by it self, nor by any other, is it able to add or detract any thing; or to joyn or disjoyne by enynciating or concluding, so as thereby it might think any thing, and be mistaken in that thought*. The Intellect indeed can do this, but the Sense cannot, 246 *whose property it is onely, to apprehend that which is present, and moveth it; as the sight, colour presented to it; but not to discern, that what is there presented is one thing; what there, another*. Now where there is a bare apprehension, not pronouncing any thing, there is no errour or falshood.

Next, because 247 *there is nothing that can refell or convince the Senses of falshood (for neither can sense of a like kind refell sense of a like kind*; as, the sight of the right eye the sight of the left, or the sight of Plato the sight of Socrates; *and this, by reason of the equality of their credits) or that there is the same reason for both*. For a pur-blind man doth not lesse see that which he sees, then Lyncetis seeth that which seeth. *Neither can that which is of an unlike kind refell that which is of an unlike kind*, as the sight the hearing, and the taste the smelling: *because they have different objects, and serve not to give judgment of the same things. Neither can one sensation of the same sense refell another, because there is not any sensation wherewith we are not affected*; and *to which*, whilst we are affected with it, *we do not adhere*, and assent; as whilst we see a staffe one while streight, out of the water; another time, part under water, crooked, for we cannot by any meanes see it crooked in the former condition, or streight in the latter. Lastly, *neither can reason or ratiocination, refell the senses; because all ratiocination depends upon previous senses*, and it is necessary the senses first be true, before the reason which is founded on them can be true.

This is confirmed; for as much as sense is the first of the Criteries, to which we may appeal from the rest, but it self is self-evident, and of manifest truth. For 248 if you say, every sense is deceived, you will want a criterie to determine and make good, even that very saying upon any particular sense; or, 249 if some one onely, you will entangle your selfe in an intricate dispute, when you shall be demanded, Which sense, how, and when it is deceived, or not deceived? So as the controversie not being determinable, you must necessarily be deprived of all Criterie. Whence may be inferred, that, if any appearance to sense be false, nothing can be perceived, or, (to expresse it in other termes) unlesse all appearances, and bare perceptions of a thing be true, there were no credit, constance, and judgement of truth. For, 250 *they who alledge the contradiction of appearances one with another, can never prove even this contradiction of them, or, that some are true, others false; they cannot prove it by any thing that is apparent, for the question is of things apparent; nor by any thing unapparent, for that which is unapparent, is to be demonstrated by something else that is apparent*.

Again, this is confirmed; because, taking away the certainty of the senses, and by that means the genuine knowledge of this, we take away all rule of life and action. 251 For as in a bulding, if the first rule be amisse, the square untrue, the plummet faulty, all things must necessarily be defective, and awry, and disproportioned: so, must all things in life be praeposterous, and full of trouble and confusion, if that which is to be esteemed, as it were the first rule, square, and plummer, for the discerning things good and bad, done or not to be done, be unsincere or perverse that is, if it want the certainty which is, as it were it's rectitude. Whence it cometh to passe, that though reason, (for example) cannot explain the cause why things neer at hand are square, but seem round afar off; yet is it better to haesitate and alledge some wrong cause, rather then to overthrow the first faith and foundations, whereon the constancy, and security of life is so grounded, that unlesse you dare credit sense, you will not have any way to shun precipitation, and destruction.

Thirdly, 252 *because the truth of the senses is manifest even from this, in that their functions exist in nature, or really and truly are. For that we see and hear, is, as truly something indeed existing, as out very feeling*

pain; and there is no differences, (as even now we said) between saying, a thing is existent, and true.

To speak more fully, [253] *As the first affections, pleasure and pain, depend upon some causes which produce them, and are by reason of those causes existent*

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in nature, (that is, pleasure depends on pleasant things, pain on painfull, and it neither cometh to passe, that, what produceth pleasure is not pleasant, nor that what causeth pain is not painfull, but that which produceth pleasure, must necessarily be pleasant, that which pain, painfull, and offensive to nature) in like manner, as to the affections of the appearances produced in us, whatsoever is the efficient cause of them, is undoubtedly such as make this appearance; and being such, it cannot come to passe, that it can be any other then such as that is conceived to be, which makes this appearance: The same is to be conceived of all the rest in particular, for that which is visible, not onely seems visible, but is such as it seems; and that which is audible, not onely seem audible, but is indeed such; and so of the rest: Wherefore all appearances are true, and conformable to reason.

[254] *Hence it is manifest, that the Phantasies even of those who doat and dream, are, for this reason, conceived to be true, for that they truly and really exist, seeing that they move the faculty, whereas, that which is not, cannot move any thing*. So that there is a necessity in nature, that the species of things which are received in the intellect, or imagination, being in this manner, moved, mingled, and disturbed; that such Phantasies cannot but be, whatsoever opinion follows them, whereby things are judged to be such in themselves: Of which we are to speak next.

Canon 2 – Opinion Follows Upon Sense, and is Superadded to Sensation, and Capable of Truth or Falsehood. [255]

This is proved, because, when a Tower (for example) appeareth round to the eye, the sense indeed is true, for that it is really affected with the species of roundnesse, which species is truly such, and hath a necessary cause for which it is such, at such a distance: and withall it is not deceived, for it does not affirme that the Tower is such, but onely behaves it selfe passively, receiving the species, and barely reporting that which appeareth to it. But Opinion, or the mind, whose office it is to conceive or judge, in as much as it adds, as it were from it selfe, that, what appeareth to the sense is a Tower, or that, the Tower, really and in it selfe, is round; Opinion, I say, is that which may be true or false.

Whence may be inferred, that [256] *all phantasies* (or sensations) *whereby Phaenomena's* (things apparent) *are perceived, are true; but opinions admit a difference; for some are true, others false, in as much as they are our own judgments superadded to the appearances; and we judge somethings aright, others amisse, by reason that something is added, and imputed to the appearances, or something detracted from them: and generally sense which is incapable of ratiocination charged with falshood.*

But some are deceived by the diversity of those appearances, which are derived from the same sensible object, as in a thing visible, (for example) according as the object seemeth to be either of another colour, or of another figure, or some other way changed; for they conceive that of contrary appearances, one must necessarily be true, and the other which is opposite thereto false. Which certainly is very foolish, and proper to such men as consider not the nature of things. For (to continue our instance of things visible) it is not the whole solid, or the whole solidity of the body which we see; but the colour of the solid body. Now of the colour, that which is in a solid body, and appeareth in those things which are seen nigh at hand, is one; that which is without the solid body, as a species, or image flowing from it, and is received into places scituate one beyond another, such as appeareth in those things which are beheld at a great distance, is another. This latter being changed in the intermediate space, and assuming a peculiar figure, exhibits such an appearance as it selfe indeed is.

Whence, neither the sound which is in the brasse that is struck, nor the voice which is in the mouth of him who crieth aloud, is heard, but that sound of voice which lights upon our sense; for the same thing cannot be in two distant subjects. And as no man saith, that he hears falsly, who perceiveth the sound to be but small at distance, because coming nigher, he perceiveth it, as if it were greater; so neither can we say, that the sight

is deceived, for that afar off, it seeth a Tower, little and round; neer, great and square; but rather that it is true. For when the sensible object appeareth to it little, and of such a figure, it is in that place little indeed, and of such a figure, the extremities of those images being broke off, whilst they are conveigh'd through the aire, and thereupon coming into the eye in a lesser angle. And again, when it appeareth great and of another figure, there it is great and of another figure, it not being the same in both places; for here the extremities of the images are more entire, and come into the eye in a greater angle; but it is a great mistake to think, that it is the same thing which appeareth to sight, and affecteth the eye, neare and a farre off.

257 Neither can we say that the sight is deceived, when we see a shadow in the Sun-shine to move, to follow our foot-steps, and imitate our gestures. For shadow being but air deprived of light; and the earth as we go, being now here, now there, successively deprived of the Sun's light, and successively recovering that whereof it was deprived; it comes to passe, that the shadow seems to change place, and to follow us: but the eyes are not therefore deceived, it being onely their office to see the light and to see the shadow in whatsoever place it is. But to affirm, that the very light or shadow which is here, is the same, or distinct from that which even now was there; this belongs not to them, but to the mind, whose office it is to determine and judge. So that whatsoever of falsity happens to be here, it is to be attributed to Opinion, not to Sense.

258 The same answer may be given to a thousand other objections, as of a ship which seems to stand still, and the land to move; of the starres, which seem to rest; of mountains far a-sunder, which yet seem to be nigh; of boyes, who, having made themselves giddy by turning, think the roof it selfe runs around; of the Sun appearing to be near the mountains, when as so great spaces divide them; of the appearance of a space under water, as large, as from above it to the sky; of a River which to those who passe over it, seemeth to flow back towards the spring; of a Gallery, which seems narrow at the further end; of the Sun, who seems to rise out of the water, and to go down into the water; of Oars, which seem crooked or broken; of Starrs in the night, which seem to glide over the clouds; of things, which by drawing the eye on one side, seem double.

Canon 3 – All Opinion Attested, or not contradicted by the evidence of sense, is true 259

Evidence of sense, I here call that kind of sensation, or appearance, which, all things obstructive to judgement being removed, as distance, motion, indisposition of the medium and the like, cannot be contradicted. Whence to this question, Whether a thing be such as it appears, we ought not to give a sudden answer, but to observe 260 that which I call ???????????? *expectable*, in regard that we must stay, untill the thing be fully examined and sifted out, according to all the wayes that it can possibly happen.

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261 *Attestation, I call comprehension, mady by evidence, that the thing conceivable, is such as we before conceived it; as, Plato coming towards me, from a far off, I conjecture, and think, as far as I can quesse at such a distance, that it is Plato; but when he drawes nigher, and the distance is taken away, by the evidence of the thing, then, is there made an attestation that it is Plato*.

Not-contradiction is said to be the finding out of a thing not manifest, which we suppose, and conceive by reflecting on something manifest or evident; as when I say, there is Vacuum, which indeed is unmanifest, I am induced thereto by something manifest, that is, by motion; for if there were no vacuum, there would be no motion, seeing the body that should be moved, would not have any place to go into; all things being full, and close pack'd together. Whence that which is apparent or manifest doth not contradict that which is unmanifest, since indeed there is motion.

Thus Attestation and Not Contra-diction, is the Criterie, whereby a thing is proved to be true.

Canon 4 – An Opinion, Contradicted or Not Attested by Evidence of Sense, is False 262

In which words, 263 *Contradiction is something opposite to Not-attestation, it being the joint destruction of a manifest thing together with another supposed unmanifest; as for instance, Some affirm, there is not Vacuum; but together with this supposition must be subverted a thing manifest, viz: motion. For if there be no Vacuum, Notion likewise cannot bee, as we have already showed*.

In like manner, Contradiction is opposed to Attestation; for it is a subversion, whereby it appeareth that the thing conceivable is not such as it was conceived in the opinion; as a man coming towards us from a far off, we at that distance guesse he is Plato, but the distance being taken away, it appeareth to us by evidence that he is not Plato. This is contradiction; for the thing manifest contradicts the preconceived opinion. Thus an Attestation and Not-contradiction is the Critery by which a thing is proved to be true; so contradiction and not-attestation is the Critery by which a thing is evinced to be false, Evidence being the basis and foundation upon which all right opinion of true and false is grounded.

To omit that evidence is sometimes had by one sense, as about some proper sensible; sometimes by many, as when the sensible is common, as magnitude and figure, distance and position, rest and motion and such like, which may be perceaved both by the sight and touch, and become manifest, if not to one sense, at least to the other. Whereupon it sometimes happens, that by reason of severall qualities, severall senses may be summoned, that the evidence which cannot be got by one may be obtaind by the other; as when we cannot discern by sight, whether the bread that is offer'd to us be true or counterfeit, we may summon our Taste, whereby it will evidently appear which of the two it is.

But this I advise, that, after we have exactly considered all, we adhere to those things which are obvious to us: using our senses, either the common about common sensibles, or the proper about the proper. Since we must hold generally to all evidence which is freely presented to us by every criterie but especially by this: *and tenaciously Stick to it, as to an infalible principle, lest either the criteries which are established by Evidence be overthrowne, or errour being established as strong as truth, turn all things upsidedown*.

I need not repeat or give particular advice what is to be done about the instance alledged of a Tower; which at distance seems round, but neerer, square: for, from what is deduced it is manifest, that before we assert any thing we must expect or pause, and approach nigher and examine, and learn whether the Tower be such when we come at it, as it appeared farr off.

I shall onely give this generall rule. That unlesse (the truth of the senses being preserved after the manner aforesaid) you distinguish that which is opinable or conceivable into that which is expectable or requireth time, before it be asserted what it is, as being not yet duely perceaved, and into that which is present and proposed to us and throughly examined, it will caome to passe, that you will perpetually be disquieted with deceitfull or vaine opinions. But if, when the things opinable are agitated in you mind, you firmly esteem all that is here called expectable as such indeed, and passe not lightly by it, as if that which is false, not having the attestation of any evidence were firm, and allowable; in this case you will behave your selfe as one that is cautious of all ambiguity, and follicitously takes heed to every judgement, which is rightly or falsely passed of an opinable thing.

2.2.3. Chap 3. Canons of Praenotion or anticipation, the Second Criteria

Of Praenotion or anticipation may be given four Canons.

Canon 1 – All Anticipation or Praenotion which is in the mind depends on the senses, either by Incursion, or Proportion, or Similitude, or Composition [264]

I mean that the notion (or Idea and form as it were which being anticipated is called praenotion) is begotten in the mind by *Incursion* (or incidence) when the thing is incurreth into the sense directly and by it selfe, as a man just before your eyes. By *Proportion*, when the praenotion is amplified or extenuated, but the number, scituation and figure of the parts with a convenient bignesse of each is retaind; as when having seen a man of due magnitude, we from thence form in our mind the species of a Gyant, by amplification; or of a pigmey, by extenuation. By *Similitude*, when according to a thing first perceaved by the the sense we fancy another like it; as when we imagine a Citty unseen like to some that we have seen. Lastly, by Composition, when we put as it were into one the distinct notions which we have of two or more things, as when we so unite the notions of a horse and a man, as that the notion of a centaure ariseth out of them, but [265] *not without some assistance of ratiocination*.

Canon 2 – Anticipation is the very notion, and (as it were) definition of the thing, without which, we cannot enquire, doubt, think, nor so much as name any thing

For [266] *by the word Anticipation* or praenotion, *I understand a comprehension of the minde, or a suitable opinion or understanding fixed in the mind, and as it were a certain memory or monument of that thing which hath often appeared from without* (which the mind hath represented in it selfe after some one of the forementioned manners): *Such for example is the idea or form and species, reflecting upon which, we say to our selves that thing is Man. For assoon as ever we hear this word Man pronounced, immediately the image of a man is understood according to the anticipation formed in the mind by the foregoing sensations*.

Wherefore that thing which is primarily and chiefly meant by and coucht under every word, and so apprehended by the minde, is somthing perspicuous and manifest: for when we enquire after anything or doubt of it or think it or think something; we should not do it, unlesse wee already had a praenotion of that thing; as when we enquire whether that which appeareth a fat off, be a hors or an oxe it is requisite that we should first have seen and know by anticipation the figure of a horse and oxe. Indeed we could not somuch as name any thing, unlesse we first had some image thereof known by Anticipation.

Hence it comes to passe, that, if it be demanded what anything is, we define or describe it in such maner as it is, according to the anticipation thereof which we have in our mind: Neither do we thus only, being demanded, what some singular thing is, as what Plato is; but also, what an universall is, as Man, not this or that, but considered in generall; this is brought to passe according as the mind, having seen many singulars, and set apart their severall differences, formeth and imprinteth in her selfe the anticipation or that which is common to them all, as an universall notion, reflecting upon which we say, Man (for example) is something animate and endued with such a form.

Canon 3 – Anticipation is the principle in all discourse, as being that to which we have regard, when we infer that one is the same or divers, conjoyned or disjoyned from another

For, [267] *whilst we conceave any thing*, either by enunciation or ratiocination, *it depends upon something first evident, unto which thing we having regard and referring our thought, infer that thing of which the question is, to be such or not to be such*, that is, the same or another, coherent, or not coherent with it. Thus, if we are to prove that this thing which we behold is a man, we so look back upon the praenotion which we have of Man, as that without any stop wee say, Man is something animate and endued with such a form; this that I see, is animate and endued with such a form; therefore this that I see is Man. Or, It is not animate, nor endued with such a forme, therefore it is not Man.

But it is not necessary to confirme all things with exquisite reasons or arguments, and scrupulous forms of reasoning which are cried up by the Dealecticks: for there is this difference betwixt an argument and the conclusion of the reason, and between a slender animadversion and an admonition; that in one, some occult and (as it were) involved things are unfolded and opened; in the other, things ready and open are judged. But where there are such anticipations as ought to be, then what will follow or not follow from them, or what agrees or disagrees with them is perspicuously discerned, & naturally inferred without any artifice or dialectick construction. Wherefore we need only take care that the ancipattion which we have of things be cleare and distinct.

Canon 4 – That which is unmanifest ought to be demonstrated out of the anticipation of a thing manifest

This is the same we said even now, that the anticipations of things from which we inferre something, and thinking upon which we make sumptions or propositions, which are maxims or principles, by which that which is inferred or concluded is conceaved to be demonstrated, be perspicuous and manifest. For, [268] *demonstration is a speich which collectiing by granted sumptions (or propositions) brings to light a truth not manifest before*. Thus to demonstrate that there is Vacuum, which is not manifest, supposing the anticipation of vacuum, & the anticipation of a manifest thing (Motion) these sumptions are premised, If there is motion, there is vacuum, but there is motion, and then is inferred, therefore there is also vacuum.

In this place, Motion is taken for the argument, medium, or signe, which properly ought to be a sensible thing: for the sense is that, according to which it is necessary to make a conjecture by ratiocination, ultimately to that which is unmanifest, although such a signe or medium hath not allwayes a necessary connexion with that which is inferred, but is sometimes only contingent, or probable, and might be otherwise.

Of this kind are many from which we argue chiefly in superiour things, those being such, as may be brought to passe not one way only but many, as was hinted formerly.

269 Hither also may be referred that which I use to term ????????, equivalence by which it is inferred, that one of the contraries being, the other also must be; and when I argue thus. If the multitudes of mortalls be so great, that of immortalls is no less; and, if those things which destroy be innumerable, those which preserve ought also to be innumerable.

Against those who deny there is any demonstration may be brought this argument; 270 Either you understand what demonstration is, or you understand it not; if you understand and have the notion thereof, then there is demonstration: but if you understand it not, Why do you talke of that whereof you have not any knowledge?

271 They who take away the credit of the senses, and professe that nothing can be known being in the same rancks, do they not, when they confesse that they know nothing, imply they know not this very thing, Whether any thing can be known? We should not therefore contend against them, that they walk backwards upon their head; Yet if they affirm they do, and I thereupon grant that this is known by them, I have a fair occasion to aske them, How, since before they saw nothing true in the things themselves, they came to understand what was to Know, and what to be Ignorant.

2.2.4. Chap 4. Canons of Affection of Passion; the Third Criteria

Lastly, concerning affection (or passion,) which is, as I said, pleasure and pain, there may be four 272 Canons.

Canon 1 - All Pleasure which hath no pain joined with it is to be embraced

Canon 2 - All Pain, which hath no pleasure joined with it, is to be shunned

Canon 3 - All Pleasure, which either hindreth a greater Pleasure, or Procureth a Greater Pain, is to be Shunned

Canon 4 - All Pain, which either putteth away a greater pain, or procureth a greater Pleasure, is to be embraced

Of these we shall speak more largely in the Ethicks. In the mean time, I shall give this generall advertisement concerning Pleasure: Pleasure is desirable of it self, because it is Pleasure; Grief or Pain is alwaies abhorred and avoidable, because it is Pain; whence I conceive, a wise man will have an eye to this exchange or recompence, that he shun pleasure, if it procure a pain greater then it self; and undergo pain, if it produce a greater pleasure. As, for my own part, I should forsake pleasure, and cover pain, either if remorse were annexed to the pleasure; or a lesser pain might be taken instead of a greater.

2.2.5. Chap 5. Canons Concerning the Use of Words

I Shall add something concerning the use of words, (which I design'd to speak of last) and especially that which concerns discourse; for which, two Canons may seem sufficient, one for the speaker the other for the hearer: They are these,

Canon 1 – When thou speakest, make use of words common and perspicuous, lest either thy meaning not be known, or thou unnecessarily waste time in explication

Canon 2 – When thou hearest, endeavor to comprehend the power and meaning of the words, lest either their obscurity keep thee in ignorance, or their ambiguity lead thee into error

Above all, [273] *we must know what things the words signifie; that we may have something, reflecting upon which, we may safely discern, whatsoever we either conceive, or seek, or doubt; otherwise, if all things should escape us undetermined, they who would demonstrate any thing to us, will proceed to infinite, and we our selves gain nothing by our discourse, but words and empty sounds. For it is necessary, we have regard to the notion and primary signification of every word, and that we need not any demonstration to understand that thing, in case we can pitch upon any thing, to which we may refer that point, about which our enquiry, doubt, or opinion, are busied*.

Hence it is, that the method of enquiring after truth, which is performed by a certain orderly procedure, ought first to prescribe certain rules, by which that affair may be performed, that so the discoursers may agree, what it is concerning which they discourse. So that if any man shall not first agree to this, but hath a mind rather to cavill and trifle in wordish equivocation, he is not to be discoursed with, or still to be prest to explain himself, what 'tis he would be at; for by this means, his jugling will be discover'd, and his cavills will solve themselves; Nor will he be able to intangle his adversary, but rather discover himself a ridiculous sophister.

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2.3. The Second Part of Philosophy -– Physick , or, of Nature

We now come to *Physick*: which I usually tearm *Physiology*, for that it is a discourse and ratiocination about the nature of things, in the contemplation whereof it is wholly employ'd.

We have already said our scope to be, that, though perspection of the nature of things, nothing of disturbance, either from Meteors, or from Death, or from the unknown ends of Desires, or any other way, may arise unto us. Now the things which this contemplation fathoms being so many and so various, it seems very profitable, that (some being engag'd in the more profound study of the liberall Disciplines, or, through some other business, not having leasure to know every thing particularly and exactly we have ready at least [274] *some proper compendium of the whole Science of Nature, that whensoever they will apply their minds to the chief arguments of things, they may be assistant to themselves, according to the measure of their knowledge, in contemplation of Nature*.

Besides, to those who have made a greater progresse in the speculation of all things, whereof Physiology treateth, it is very usefull, by some compendious Idea, to preserve the memory of the things themselves digested under heads. For it often happens, that we need a generall inspection of things, but not a particular disquisition. This way therefore is to be observed, and this kind of study continually used in exercising the memory, that our attention to things may be constant and ready, and, in the forms of things or notions, generally comprehended and imprinted in the mind and else-where throughly examined, according to the first principles, and the terms whereby they are explained; if any thing be particularly enquired, it may be found. For where such a constancy and readinesse is gotten, and the mind is endu'd with a generall and exquisite information, we are able to understand of a suddain whatsoever we please. I add, according to the words; *Forasmuch as it is not possible, that a coherent sum of generall heads can be frequently repeated by heart, unlesse it so contain every thing, as that it may be explicated in few words, even if any thing come to be examined particularly*.

Hence it is, this course being most profitable to those, who are inclined and addicted to Physiology, that I would advise them therein, (especially if they enjoy a happy life) that they frame to themselves some such Epitome, and information by generall heads. But if they are not able of themselves, that they get one else-where, of which kind we have freely composed, for the benefit of the studious; hoping, that if what we have laid down be exactly remembred, as much as possible, although a man runs not out into all particular arguments that may be discussed, yet shall he obtain a copious knowledge of Physiology, incomparably beyond other men; for he will of himself understand many things in the more generall work, and, committing those to memory, will help himself, and continually profit.

For these are of a such a kind, that such as have made no little discussion of particulars, and addicted themselves perfectly to these contemplations, may thereby be enabled to raise and compleat more

dissertations of all nature; and whosoever of them are throughly vers'd in these, revolving them tacitely within themselves, may be able in a moment, and quietly, to over-run whatsoever is most considerable in Physiology.

But not to stay longer in the entry, there being so many (as I say) and various things contained in Physiology, it will be convenient to divide them into some principall *Sections*, which may afterwards be pursued particularly; and every thing, which especially belongs to any one of them, may be referred to it.

These Sections may be four. The first of the *Universe*, or the nature of things, which compriseth this world, and all other things that are beyond it. The second, of the *World*, this wherein we are, and by which we may conjecture of the innumerable others. The third, of *Inferiour things*, the earth, to which we adhere, and of the things in it. The fourth of *Sublime things*, which are seen and produced above the earth, and upwards from it.

2.3.1. Sect. 1 – Of the Universe, or the Nature of Things

To begin then with the *Universe*, it is manifest, that it is so named, forasmuch as it containeth all things, even others besides this world; whence it is also tearmed, *the whole*, and, *the All*; and we usually call it, the Sum of things, and the Nature of things.

We must first speak generally of *the things whereof the Universe consists*; next, of what *the so many things in the Universe are made*; thirdly, *by what they are made*; fourthly, *what kind they are of when made*; fifthly, *how they are made*; lastly, *how they perish*.

Chap 1 – That the Universe Consists of Body and Vacuum, or Place

First therefore, [275] *the Universe consists of Body and Vacuum*; [276] neither can there be conceived any third nature besides these.

Now, [277] *Body is understood by conceiting a certain vast heap (as it were) of magnitude* (or bignesse), *likewise of figure, resistance*, (that is, solidity and impenetrability) *and gravity*; withall, to be such, as it onely can touch and be touched.

[278] *Emptinesse, or Vacuum*; which is opposed to body, and *onely*, or properly, and in it self, *is incorporeall*, is understood by negation of these, and chiefly from being of an intactile nature and void of all solidity, and *can neither suffer nor act any thing, but onely affords a most free motion to bodies passing through it*.

For this is [279] *that Nature which being destitude of body, is called Vacuum, taken up by a body, Place; passed through by a body, Region*; considered as diffused, Intervall or Space.

[280] *That there are bodies in the Universe, sense attests; whence it is necessary to deduce conjecture from other principles, to that which is unmanifest, as I formerly touched*. Certainly, all these things which we behold, which we touch, which we turn up and down, which we our selves are, are nothing but bodies.

But that there is Vacuum also, is hence manifest, that if it were not in nature, bodies would neither have where to be, nor any way to perform their motions; whereas that they are moved, is evident.

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[281] Doublesse if all were full, and the matter of things crouded, as it were, together, it could not be, but that all things must be immovable; for neither would any thing be moved, but it must thrust forward all things, nor would there be place left, whereinto any thing might be thrust. For whereas some answer, that Fishes therefore can move, because they leave a place behind them, into which the waters, being thrust forward, and giving place, are received; they observe not, that the first impulsion forwards could never begin, because there is not yet any place, neither behind, nor beside, whereinto the water may be received. So as it is necessary, there should be little empty intervalls of space within things, especially the fluid, into which the little particles being driven, may be so received, that, by the compression, place may be made, towards which, the impelling body may be moved forward, and, in the interim, leave place behind, into which the

compressed fluid may dilate it self, and, as it were, flow back.

282 I passe by other arguments, as, that Thunder or Sound were not able to passe through Walls, nor Fire to penetrate into Iron, Gold, and the rest of mettalls; unlesse in these there were some vacuous little spaces intermingled. Besides, forasmuch as gravity is proper to bodies, the weight of things could not be made greater or lesser, if it were not according to their having more or lesse vacuity intermixed.

Now Vacuum being incorpereall, is so penetrated by bodies, whether existing in it, or gliding by it, that it remains unchang'd, and preserves the same dimensions to which it is adequate. Whence a streight line taken in Vacuum, is indeed streight, but not so, that it becomes crooked with the body which fills it, because Vacuum is neither movable in whole nor in part.

Whence it comes, that whereas the notion of place is, to receive the things placed to be coextended with it; not to be moved with it, nor to forsake it; lest either the body be moved, yet not change place; or change place, yet not be moved: It therefore is onely competible to Vacuum, to have the nature of place, forasmuch as it onely, both by its corporeall dimensions, length, breadth, and depth, is coextended with the thing placed in length, breadth, and depth, and exactly adjusted to it. Besides, it is so immovable, that whether the body come to it, or go from it, or stay in it, it continueth the same and unvariable.

That I said, 283 *No third Nature besides can be conceived*, it is for this reason, that, whether we take to be conceived *comprehensively*, (in which manner the things, which by themselves, and directly, fall into our knowledge are perceived) *or comparatively to those things which are conceived*, (after which manner those things are understood, which are known onely by proportion, as was said about anticipation) whatsoever it be that is conceived, either it hath some bulk and solidity, and so is a body; or it is void of all bulk and solidity, and so it is vacuum: which is to be understood, *in case you conceive it a certain by-it-self existent, subsistent, coherent, nature; and not as some adjunct or accident thereof*.

For since 284 an adjunct is a property, which cannot be taken from the thing to which it belongs, without destruction of the thing; as tactility from body, intactility from vacuum; and, in a more familiar example, as weight from a stone, heat from fire, moisture from water: but an accident is that, whose presence or absence violates not the integrity of the nature, as liberty and servitude, poverty and riches, was and peace, &c. Therefore they constiture not some third nature, distinct from corporeall and incorporeall, but onely are as something appertaining to one of these.

Chap 2 – That the Universe is Infinite, Immoveable, and Immutable

Now 285 *the Universe* consisting of Vacuum, and body, *is infinite; for that which is finite hath a bound, that which hath a bound, is seen from some other thing*; or may be seen from out of an intervall beyond, or without it. *But the universe is not seen out of any other things beyond it*; for there is no intervall, or space, which it containeth not within it selfe, otherwise it could not be an universe, if it did not contain all space; *therefore neither hath it not any extremity. Now, that which hath not extremity hath no end, and that which hath no end, doubtlesse is not finite, but infinite*.

This is confirmed; 286 for if you imagine an extremity, and suppose some man placed in it, who with great force throwes a dart towards its utmost surface, the dart will either go forward, or not, but be forced to stay. If it go forward, there is place beyond, wherefore the extremity was not there, where we design'd it: if not, therefore there is something beyond, which hinders the motion, and so again, the extremity was not in the fore-designed place.

Moreover, 287 *this infinity belonging to the Universe, is such, both in the multitude of bodies, and the magnitude of Vacuum*; nay, in infinities thrusting themselves forward mutually, alternately, or in order. *For if Vacuum were infinite, and bodies finite, then bodies*, which are in perpetuall motion, (as we shall anon declare) *would rest no where, but be dispersedly carried through the infinite Vacuum, as having nothing to stop them, and restrain them by various repercussions. But if the Vacuum were finite, the bodies infinite, then there would not be place large enough for the infinite bodies to exist in*.

Hence [288] *we ought not so to attribute to* the Universe, or *infinite space, the being above or below, as if there were any thing in the Universe highest, or any thing lowest; the former, by conceiving the space over our head, not to be extended to infinite; the latter, by imagining that which is under our feet, not to be of infinite extent, as if both that which is above, and that which is below, were terminated with some one, and the same point*, as it happens with us, or the middle of this world, one of its extreame parts being imagin'd highest, the other lowest; for in infinite, which hath neither extreams nor middle, this cannot be imagin'd.

Wherefore it is better to assume some one motion, which may be undestood, to proceed upwards into infinite, and in like manner another which downwards; although that moveable, which from us is carried up towards the places over our heads, meet a thousand times the feet of those who are above, and (conceiting other worlds) think it comes from below; *or which from us is carried towards that quarter, which is under our feet, to the heads of those who are below us*, and who are thence apt to imagine, that it comes from above; *notwithstanding which imagination of theirs, either of these opposite motions taken intirely, is rightly conceived to be of infinite extent*.

To these is consentaneous, *that* [289] *the Universe was ever such, as it now is, and such as it now is, shall ever be, for there is nothing into which*, losing the nature of the Universe, *it may be changed; and, besides the Universe*, which containeth all things, *there is nothing, which by a assaulting it, can cause an alteration in it*.

Rightly therefore, is the Universe esteemed, as [290] *immoveable, there being no place beyond it, into which it may be moved*; so also immutable, forasmuch as it admits, neither decrease, nor increase, and is void of generation and corruption, and therefore is eternall, not having beginning, nor end of duration.

And indeed, many things in it are moved and changed, but whatsoever motions and mutations you conceive, they bear no proportion, if compared with the immensity of the Universe it selfe. Nor is therefore the whole Universe either moved into any other place, or changed into any other thing; does it therefore not persevere, to be ever the same, which it ever was? for the motions and mutations in it were alwayes alike, so as it may be said, that [291] *there is nothing new done in the Universe, more then what was already done in the infinity of time*.

Chap 3 – Of the Divine Nature in the Universe.

But before we speak of the things in the Universe, which are generated and corrupted, and of the principles whereof they are made, it is fit to premise, and put, as a by-discouse, a Treatise concernin divine Nature; as well for the excellency of that nature, as for that, although it be of the same with corporeall nature, yet is it not so much a body, as a certain thing like a body, as having nothing common to it with other bodies, that is with transitory, or generated, and perishable things. Now it first being usually question'd concerning the divine Nature, whether there be any in the Universe, yet the thing seems, as if it ought not at all to be called in question, for as much as nature her selfe hath imprinted a notion of the Gods in our minds. For what nation is there, or what kind of men, which without learning have not some praenotion of the Gods?

Wherefore, seeing it is an opinion not taken up by any institution, Custom, or Law, but the firme consent of all men, none excepted, we must necessarily understand, that there are Gods; because we have the knowledge of them ingrafted, or rather innate in us. But that concerning which the nature of all men agreeth, must necessarily be true; therefore, it is to be acknowledged, that there are Gods.

[292] Indeed, men may seem, when they beheld the course of the Heavens, and the various seasons of the year, to wheel about, and return in certain order, and were not able to know by what causes it were performed; to have recurr'd to this refuge, to attribute all things to the Gods, and make them obey their beck, placing them withall in Heaven, for that they beheld in Heaven the revolution of Sunne, Moon, and Starrs; but how could they attribute these to the Gods, unlesse they had first known that there were Gods?

[293] *Did they not rather derive a knowledge of the Gods, from the apparitions of dreams? certainly, they might be some great images incurring to them, under human forms, by dreams, conceive that there are indeed some Gods endued with such a human form*; they might, I say, not so much in sleep, as, when awake, they

called to mind, that those excellent images had appeared to them in sleep, so majestick, of so suttle acomposure, and so well proportion'd in shape, conceive that there is no repugnance, nay, that there was a necessity, that somewhere there should be things of like nature with these, capable also offense or understanding, [294] because they fancied them moving their limbs and speaking; and those also immortall, because their shape was alwaies present to their apprehensions, because their form remain'd still the same, and was of such grandeur, that they seem'd not easily convincible, but there were such: moreover Blessed, forasmuch as they neither fear death, nor take any pains in effecting their works.

[295] They might also by discourse use that ????????, or *equivalence*, by which, when we treated of the Criteries, we affirmed it was concluded, that *if the multitude of Mortalls were so great, that of Immortalls was was not lesse; and if those things which destroy the innumerable, those which preserve ought also to be innumerable*.

[296] Which way soever it came, we have this certainly by prenotion, that we think the gods are blessed and immortall: *For the same nature which gave us information of the gods themselves, imprinted also in our mind, that we esteem them blessed and eternall*; which if it be so, our opinion is truly laid down, [297] *what is eternall and blessed, neither is troubled with any businesse it self, nor troubles any other; therefore not possessed with favour or anger; for all such are weak*.

And if we sought no further than to worship the gods piously, and to be free from superstition, what we have said were sufficient; for the excellent nature of the gods is worshipped by the piety of men, as being eternall and most blessed. For to whatsoever is excellent, veneration is due; and all fear, proceeding from the power and anger of the gods, would be expelled, for it is understood, that anger and favour are far separate from a blessed immortall nature; which being removed, no fears hang over us as to the gods. But for confirmation of this opinion, the soul enquires after the form and the life, and the action of mind, and agitation in God.

[298] *As to the form, nature partly instructs us, partly reason; for by nature, all of us, of all Nations, have no other form, but human, of the gods. For what other forms ever occur to any man, waking or sleeping? But not to reduce all things to their first notions, Reason it self declares the same. For seeing it is proper to the most excellent nature, either because it is blessed, or because it is sempiternall, that it be most beautifull, what composition of limbs, what conformity of lineaments, what figure, what form can be more beautifull, than the human?*

Now if the figure of men excelleth the form of all things animate, and God is animate, certainly he is of that figure which is them most beautifull of all. And forasmuch as it is manifest, that the gods are most blessed, and none can be blessed without vertue, nor vertue consist without reason, nor reason consist in any figure but that of Man; we must acknowledge, that the gods are of human form.

But when I say, that the gods are of the form of a man, and of an animate being, Do I therefore attribute such a body to them, as ordinarily men and animate beings have? By no means; for *God is not a thing, as Plato saies, meerly incorporeall; because what kind of thing that is, cannot be understood, for then he must necessarily want sense, he must want prudence, he must want pleasure; all which we comprehend together with the notion of the gods*. But neither is he therefore a grosse body, no not the most subtle that can be coagmentated of Atoms; but he is altogether a body of his own kind, which indeed is not seen by sense, but by the mind; nor is he of a certain solidity, nor composed of number, but consists of images, perceived by comparison, and which, compared with those that ordinarily occur, and are called Bodies, may be said *to be (not body, but)* as before I said, *resemblance of a body; and (for example) not to have blood, but a certain resemblance of blood*.

In the mean time, I must intimitate by the way, that [299] he is not such a kind of body as is coagmentated of Atoms, for then he could not be sempiternall, and upon his generation would follow corruption; upon his concretion, dissipation, and so he could not be sempiternall. Thus there are four things to be esteemed *eternall* and *incorruptible*, the *Universe*, which hath no place into which it can fall; *Vacuum*, which cannot be touch'd, nor receive any blow; the *Matter* of things, which unlesse it did subsist unchanged, those things which are dissolved would go away into nothing; and the *divine Nature*, which is inconcrete, and by reason of

its tenuity, cannot be touched nor struck.

Hence on of the naturall Philosophers was in a great errour, when he said, That the nature of the gods is such, as to diffuse and send forth images out of it self; for in this manner, some-what might be so taken out of it, as that it might be admitted dissolvable. But [300] some have mis-interpreted our meaning, when, upon our admitting many worlds, and saying, that there are *Intermundia*, that is, intervalls between the worlds, they affirm, we place the gods in the *Intermundia*, lest they should receive any injury by the world's ruines. For, as [301] Vacuum, so is the nature of the gods more subtle, than to fear any harm from bodies; which if it did fear, in no place were it more to be feared than in the *Intermundia*, when the world should come to be dissolved.

Neither can we defign in what places the gods live, seeing that this our world is not a seat worthy of them; but we can onely say in generall, such as the Poets describe Olympus, suc are, wheresoever they be, the blessed and quiet seats of the gods.

Where showers not fall, nor winds unruly blow, [302]

Where neither blasting frost, nor hoary snow

Risle the place; but Heaven is ever bright,

Spreading his glorious smiles with cheerfull light.

[303] *Hereupon it being further demanded, what kind of life that of the gods is, and what state of age they enjoy, it may be answered, That, certainly, than which nothing more happy, nothing more abundant in all goods, can be imagined. For God doth nothing, he is not intangled in any employments, he undertakes no works, but joyeth in his own wisdom and vertue. He knowes for certain, that he shall ever be in pleasures, both greatest and eternall. This God we justly style Blessed, who our selves place a blessed life in security of mind, and in disengagement from all businesse; but not, such as others describe him, laborious, involved in great and troublesome employments*.

Chap 4 – Of First Matter, Or, Of the Principles of Compound Things in the Universe

Now to resume and pursue our discourse, forasmuch as in the first place ‘tis manifest by sense, that, in nature, many things are generated, and many corrupted; therefore we must conclude, that hereto is required Matter, of which things may be generated, and into which they may be resolved; for,[304] *of nothing, nothing is made, and into nothing, nothing goes away. For if something were made of nothing, everything might be produced from any thing, as not requiring seeds; and if that which perisheth did go into nothing, all things would perish absolutely, there not remaining those things into which they were dissolved*.

Besides, forasmuch as we affect to know the nature of any thing, generated or made, it is first demanded, whether it be something one and simple, or compounded of some things which themselves are simple and precedent. It is manifest, that nothing generated or made, can be one and simple, seeing that it hath parts of which it was made up, and into which again it may be dissolved, which therefore are precedent and more simple; and if they still be compounded, they may be conceived to consist of those, which at length are the first and most simple.

Thus again it appears, that,[305] *of bodies some are concretions*, or (if you like it better) concrete or compounded bodies; *others, of which concretions*, or compounded bodies, *are made*. These, if first and simple, are the first matter of things, and are termed Principles, and, by the later Authors, Elements also.

These *Principles*, or first things of all, must be simple and uncompounded bodies, (or rather atoms) and *indivisible*, or not resolvable by any force, and consequently *immutable*, or in themselves void of all mutation. I mean, *if it shall so come to passe*, as that in the dissolution of compounds, *all things go not into nothing, but that there consist and persevere a certain nature, full, or void of vacancy*, and therefore solid; *which*, being such, *it cannot in any part, or by any means, admit a division, and so be dissolved.*

Wherefore it is necessary, that those which are called the Principles of compounded bodies, be, as of a nature, full, solid, *and immutable, so* wholly *indivisible;* whence we use to call them *Atoms*. We term it an Atom, not as being the least, that is, as it were a Point, (for it hath magnitude) but for that it cannot be divided, it being incapable of suffering, and void of vacuity. So that he who saith, *Atom*, names that which is free from a blow, and can suffer nothing; and which is invisible indeed by reason of its littleness, but indivisible by reason of its solidity.

Chap 5 – That there are Atoms in Nature, Which are the Principles of Compound Bodies

306 That there are Atoms, the reason alledged sufficiently convinceth; for, seeing that nature makes nothing of nothing, and reduceth nothing to nothing, there must remain in the dissolution of compound bodies, something that is capable of further dissolution. Certainly, if you say, that it is still dissolvable, or divisible, it will be necessary, by subdividing, to come at last to something that is solid, and incapable of division; since that neither Nature it self doth dissolve things infinitely, but staies in some last thing; nor can Body admit of an infinite division.

307 *In a finite body, doubtlesse there cannot be parts of infinite either multitude or magnitud; wherefore there cannot be understood to be performed in it, not onely that division into infinite which is made into lesse, or by parts alwaies lesser, and proceeds ever observing the same proportion of division; but also that progression into infinite, which is made by proceeding not alwaies by lesser*, but by equall, or those which are called determinate, parts. For since infinite parts must needs be admitted, to serve for an infinite division, how can there be infinite of them in a finite body?

He certainly who once hath said, that in every thing there are parts infinite in number, is not able further to understand and declare, how that magnitude whereof he speaks, comes to be finite. For whether the parts, that a division or progression may be made into infinite, be determinate, (that is, equall among themselves) *or indeterminate*, (that is, alwaies lesser) *it is manifest, that the magnitude, whose parts they are*, and which conflicts and is compounded of them, *must indeed be infinite*.

And since on the other side, a finite magnitude manifestly hath an extream,

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or last part, easie to be perceived and shewn, *unlesse this part may be seen by it selfe, and as the last, we cannot*, although we should subdivide it, *understand any other part, which should be thought the last*, rather then this; for that with as much reason will be divisible. *Whence* it will come, that *by proceeding* further, *and consequently towards an extreame part into infinite, we can never arrive, not even by thought, to that part which is the last*, nor be able to over-run, by progression, even the least space.

308 Adde to this, that unlesse in dissolutions there did remain little bodies so solid, as that they cannot be dissolved by any force, the difference between body and vacuum, could not be sufficiently understood, in as much as nothing of body, by infinite attenuation, would be capable to resist; by which means too, all things would become weak, or soft, and nothing could be made hard, seeing that solidity onely is the foundation of hardnesse. Neither need we scruple, as if, because Atoms are solid, soft things cannot be made of them, for they may be made soft by intermission onely of Vacuum, into which the compressed parts retire, and yeild to the touch.

309 Adde also the diverse sorts of constancy in nature, as in carrying on Animals alwayes to certain bounds of strength, augmentation, and life; in imprinting alwayes the same distinctions and marks of every particular kind; which she could not do, if she did not use principles, certain, and constant, and therefore not obnoxious to dissolution and mutation.

Chap 6 – Of the Properties of Atoms; And First, of their Magnitudes

Although all Atoms by reason of this solidity, may seem to be of one and the same nature, yet have they some adjuncts or properties and certain 310 *qualities*, by which they may differ among themselves, such

onely are *magnitude, figure, and weight, and if there be any beside which are necessarily ally'd to figure*, as roughnesse, and smoothnesse, for *Colour, Heat*, Cold, and the rest of the qualities, *are not such as are proper to Atoms*, but to Compounds, and arising partly out of the adjuncts, partly the accidents of Atoms, of which we shall speak hereafter.

This in brief, at present; 311 If colour (for example) we in the atoms themselves, it would be as intransmutable as they are; and so the things consisting of Atoms, that are of one colour, could not change that, and appear under another; whereas we observe, the contrary happens, for the Sea foaming looks white, it being otherwise of a green colour, which doubtlesse, if it were in it by reason of green Atoms, could not be changed into a white colour. For wereas some say, that contraries are made of contraries, it is so far from being so, that white will sooner be produced out of no colour at all, then out of black. Better they who conceive, The matter of things, that it may undergoe variety of colours, and other qualities, ought to be void of them; as we choose that oile, which is most free from any scent, to make perfumes of.

But to touch a little, every property of the Atoms: whereas in the first place, I attribute magnitude to them, I mean not any magnitude; for the largest Atome is not so great as to be perceptible by sight, but that magnitude which, although it be below the reach of sense, yet is of some bignesse, (for if Atoms were points void of all magnitude, no body of any magnitude could be made up of them.) Whence I use to say of an Atome, that it is some small thing; thereby, as it were not excluding all magnitude from it, but the larger cize onely.

312 Neither can it be objected, that the magnitude of Atoms is not perceived by the senses, since we must necessarily confesse, there are innumerable things invisible; for can we see the Wind, Heat, Cold, Odor, Sound, or the little bodies, by whose arrivall to the sense these are perceived? Can we see the little bodies of moisture, by which garments hung by the water side, are moistened, yet being spread abroad, are dried? Can we see those which are rubb'd off from a ring long worm, from a wheel that turns round, from a Plough share in ploughing, from a stone which a drop hollowes, which a tread dimisheth, or those by which a plant or animal growes in its youth, decaies in its old age, and the like?

313 *Yet wee must not think that all Atoms are of the same magnitude, it is more consonant to reason, that amongst them there be some greater, others lesser; and, this admitted, a reason may be given of most things that happen about the passions of the mind, and about the senses*.

314 That there may be an incomprehensible variety of magnitudes beyond the reach of sense, may also be understood even from this, for as much, as there are some little animals, whose third part, if we imagine them divided, would be invisible, neverthelesse, to the composition of them, an incomprehensible number of parts is necessary. For how many must there be to make the entrails, the eyes, the joynts, the soul; to constitute all parts, without, which we cannot understand there should be any living, sensitive, moving Animal?

Whether may not (to use a grosse example) this variety be comprehended from those dusty motes, which the beams of the Sun coming in at a window discover? For whereas without such beams, all things are alike dark, yet they coming in there appeareth an innumerable company of little bodies, in such manner, as that there is an evident difference between the greater, and the lesser; neverthelesse, I say not, (as some conceive) that these kinds of little bodies are Atoms, for in the least of them are contained many Myriads of Atoms, I onely use them by way of comparison, that whereas the whole nation (as it were) of Atoms is impervious, and dark even to the sharpest sight, yet we may understand it, to be so illustrated by the beams of reason; that the Atoms may be perfectly seen by the mind, and that we may conceive, there are severall degrees of magnitudes in them.

315 Hence it happens, that, as in a great and measurable magnitude, we take something, which, that it may be the common measure, must have the proportion of the least, as a foot, a digit, a barly-corn; and in sensible magnitude, we take also something which is accounted the least, as to sense, as the little Creature called *Acaris*; so in intelligible magnitude, such as in that of the Atome, we may take something which in it is esteemed, (as it were) the least; such as in an Atome may be conceived, the very point in which a sharp angle is terminated.

316 But this difference there is between the least, under the notion of measure, and the least of those which are sensible and intelligible, that the former, by its repetition, may be understood to be adaequated to the whole magnitude; but these latter are conceiv'd as certain individuall points, which either are bounds of magnitudes, or certain connexures (as it were) so interpos'd between the parts, as that they have onely certain respects to the parts, connected on each side, though they are such, that a beginning of measuration cannot be made from them. For nothing hinders but that we may, by the mind, frame some dimensions in an Atom.

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Although, when as we say, there are parts or connexures in an Atom, it is not so to be understood, as if at any time they were disjoyned, and afterwards united; but we do it to declare, that, in an Atome, there is a true magnitude, consisting of parts, though withall they have that difference from compound-things, that their parts can onely be distinguished by designation, not by separation; forasmuch as they cohere by a naturall, indivisible, and perpetuall connexion.

Chap 7 – Of the Figure of Atoms

317 As concerning *Figure*, which is the bound of magnitude, it is first necessary, that, in Atoms, it be manifold; or, that Atoms amongst themselves be variously figured. This is proved, forasmuch as all naturall things framed of them, Men, Beasts, Birds, Fishes, Plants, &c. are variously figured, not onely in respect of their genus, but of every particular species or individuum; for there are not any two so like one another, but that if you mind them exactly, you will find some differences, by which they are distinguished.

Again, 318 *forasmuch as the kinds of figures in Atoms are incomprehensible for number*, for they are round, ovall, lenticular, flat, gibbous, oblong, conicall, hooked, smooth, rough, bristly, quadrilaterall, &c. as well regular as irregular, without any determination possible to the Intellect; yet are they not to be esteemed simply infinite in number: *For there would not be so many and so great differences in concrete things, if, in the Atoms, of which they are compounded, there were such a diversity of figure, as could be comprehended by the mind. Yet the diversities of Atoms cannot be absolutely infinite, unlesse a man conceive in Atoms a magnitude*, which is not onely so small as to escape sense, but is in reality infinitely little: *For in magnitude*, or the superficies of magnitude, *which is finite, cannot be understood diversities, which are infinite*.

But thirdly, although the kinds of figure be not infinite, *yet are there in every figuration, or kind of figure, Atoms simply infinite in number*; that is, there are infinite round Atoms, infinite ovall, infinite pyramidall; *for otherwise the Universe would not be infinite in multitude of Atoms*, as was already declared; *unlesse the Atoms which are like to one another in figure, were absolutely infinite in number*.

319 But take notice, that though there are Atoms corner'd and hooked, yet can they not be conceived to be worn away or broken, because both the corners and hooks, as also the middle little bodies themselves, are of one nature, and kept together with equall solidity and necessity, insomuch as not force whatsoever can compress an Atom, either as to the whole, or as to its parts, even to its very points.

Chap 8 – Of the Gravity (or Weight) and Manifold Motions of Atoms

Lastly, I attribute to Atoms *Gravity*, or Weight; for, whereas they are perpetually in motion, or striving to move, it is necessary that they be moved by that internall impulse, which is called gravity, or weight.

320 There first presents it self to us in the atoms, a two-fold motion, one of the gravity or weight it self, whereby the atome is carried after its own way; the other, by percussion or reflection, whereby one atome, being driven upon another, is beaten back again. And as for the motion of gravity or weight, that motion is first conceived, whereby the atome is carried on in a *streight* or perpendicular line. By this motion are all heavy things moved. But because, if all atomes should be moved in a streight line, or downwards, and, as it were, streight on, it should come to passe, that one could never overtake the other; It is therefore necessary, that atoms should go a little *aside*, the least that may be, that so may be produced the complications, and adhesions, and copulations of atoms to one another, of which may be made the world, and all the parts of the

world, and all things in it.

321 When I say, that otherwise the atoms would not overtake one another, and consequently not meet, the reason is, that the Universe being infinite hath no middle or center, towards which they may tend, and so meet; but onely there may be conceived, according to what hath been said, some region above, out of which without any beginning, all atoms by their gravity would descend like drops of rain, that is, by motions in themselves parallel; the other below, into which all, without any bound, would be carried by the same motions.

322 Motion from reflection may be understood to be made, as well when the atome rebounds by great leaps, as when being impell'd and repell'd within short spaces, it doth, as it were, quake and tremble. Whence also 323 *it comes to passe, that while it happeneth, that the atoms run into certain meetings and complications*, of many obviating to, and entangling one another, (which is chiefly done in those compounds where they seem to rest) yet then are they still unquiet, and, as much as they can, *and according as they are further from, or nearer to, one another, they get an agitation, or kind of palpitation, being bent down, or repressed, by the rest, which make up that association*.

The cause of this, not onely longer rebounding, but also shorter agitation, or, as it were, inward palpitation, continuing still in those compounds, is, partly the nature of Vacuum, which being intercepted even within the most compact bodies, plucks all the atoms asunder from one another, either in whole or in part, not having power to stay or fix them; partly the solidity connaturall to the atoms, which by collision and repercussion, cause a trembling, as much as that complication will suffer that motion to be kept still continued, by the stroke of the descending atoms. Now since weight or gravity is a certain vigour, or energy, as it were, ingenerate in atoms; and, as I said, and impulsion, whereby they are fitted for motion, we must therefore take it for certain, that 324 *atoms are moved* (even with both kinds of motion, of weight, and reflection) *continually, and through all eternity*, because there is no first instant, since which they began to be made; not onely atomes, but also vacuum, which serves for both motions, being eternall.

We must also take it for certain, that 325 *that motion of atomes, to which nothing occurs, which may divert it by beating against it, is of so great swiftnesse, as it over-runs any imaginable space*, in a moment, that is *in time unimaginably short*; for they ought in velocity to out-run those beams of the Sun, which makes not their course through pure vacuum. I say, to which nothing occurs that beats it back; *for otherwise, this frequent reverberation makes a kind of slownesse, as want of reverberation makes a kind of swiftnesse*.

326 *Yet doth not hereupon the atome, which suffers several repulsions, arrive at divers places in such times as may be discerned by the mind, for to discern those times is not within the power of the mind. Besides, it may so happen that the same atom, though diverted by several repulses, may be so carried, as that from whencesoever it comes, out of that immensity of space, we shall not be able to assigne any place or term, which in that time it hath not over-passed. For the repercussion may be such*, (that is, so little, frequent, and so little diverting) *that it may in some measure equall the swiftness of that motion, which is free from repercussion*.

327 *We must lastly take it for certain, that atomes are equally swift, forasmuch as they are carried through vacuum, neither is there any thing that resists their progresse: For neither are the heavy carried on more swiftly, that those which are conceived leight, seeing nothing occurs that may hinder either; nor the lesser more then the greater, forasmuch as the passage is equally free to all, according to their severall magnitudes. Neither do the motions which are made, either upwards, or obliquely by collisions, or downwards by their naturall gravity, differ in swiftness; since an atome, as long as it is not thrust on either side, so long keeps on its way, and that by a swiftness equall to thought, untill being driven on, either extrinsecally, or by its own gravity, it meets with the resistance or assault of the atome that strikes it*.

328 *Moreover, as concerning compound bodies, forasmuch as atomes are in their own nature equally swift, therefore one cannot be said to be swifter than another; as if the atomes that are in compounds, and hurried away by the common motion of them, were carried away, sometimes into one place, by a sensible motion, and that continuous, and in successive time, as whilst such motion is slow; sometimes whether into one or*

more places, they should be carried in times so short, as can onely be conceived by reason, as when the motion is most rapid. But we shall onely say, that, which way soever the atomes are carried with the compounds, they are all the while exagitated with intestine, most frequent, or rather innumerable, and therefore, not-sensible, repercussions; untill the perpetuity of succession of the motion of the whole body come to be such, as that it may fall under the reach of sense.

329 *For what we fancy concerning the imperceptible motion of atomes, as if times conceived by reason might reach the most swift succession of their parts, is no way true; but rather, whatsoever our mind, attending to the very nature of the thing, apprehends, that is to be esteemed true*.

Chap 9 – That Atomes (Not the Vulgar Elements or Homoiomera's) Are the First Principles of Things

This premised concerning Atomes, we now must show, how they are the principles, or first matter of things; but because that cannot be done without treating, at the same time, of generation and corruption; and that cannot be performed, unlesse we first speak of the qualities of things, and even before that, of the first causes which produce these; it is sufficient in this place to take notice, that atomes are the principles and first matter of things, because they are that first and most simple, of which all generated things are compounded; as also the last and most simple, into which all corruptible things are resolved.

I say, the first and the last; for besides other greater bulks, of which that which is generated may more neerly be compacted, and into which that which is corrupted may be resolve, there are little lumps, or certain small thin compounds, which being made by some more perfect and indissoluble coalitions, are, as it were, long durable seeds of things; so that things may also be said to be generated of seeds, not as of first principles, because even theses seeds are generated of things precedent, that is, of Atoms. And likewise things may be said to be resolved into seeds, but not ultimately, because, even these may still further be dissolved into Atoms.

330 In like manner, the four vulgar elements commonly admitted, Fire, Aire, Water, Earth, may be called Principles, but not the first; they may also be called Matter, but not the first matter, for as much as they have Atoms precedent to them, of which even they themselves are compounded.

331 And they, who assigne one Element onely for principle, will that, of it, by rarefaction, and condensation, the three other be made, and of these afterwards, the rest of things. But how, if it be one, and nothing mixt with it, can any thing be generated? For, of fire, (for instance) rarify'd nothing else will be produced, but a more languid or a stronger fire.

332 And besides, that they, who teach this, admit not vacuum, without which neither rarefaction nor condensation can be made, they seem not to observe, that fire cannot be said to be changed by extinction, into some other thing; because that which is simple cannot be changed, unlesse by going away into nothing. Or at least, if they admit, that something common remains, which is first Fire, afterwards Aire; since this something is the first and common matter, the first matter is not of it selfe, either Fire or Aire, but rather those Atoms which, being put together on one fashion, may make Fire, being put together after another fashion, may make Aire.

333 They who admit many, or all things to be equally first, run moreover into this inconvenience, that, making them contrary to one another, they by consequence make them such, as either can never joyne to make one compound, or, if they do, must destroy one another.

334 There was a naturall Philosopher, who conceived that all things are generated of tenuious little-bodies, which he called *Homoiomera's*, *similar*, or *like* parts, (as it were) *viz*. to the things generated; so as those (for example) of which hot things are made, are hot; those of which fleshy things fleshy; those of which bloody things, bloody; and so of the rest. But if principles were of the same nature with the things generated, they might, as well as they, be altered and lose their qualities, and so be changed, and, being of a simple nature, go into nothing.

335 Not to presse, that if the things, whereby something is made hot, must be hot; as if thins alike be not generated but of their like, there must also be things laughing, that a laughing Animal may be made of them; and things weeping, that a weeping Animal; and the like.

Chap 10 – Of the First, And Radicall Cause of Compounds, That Is, Of the Agent, Or Efficient

It followeth, that we speak of *Causes*, since to the making of any thing is necessary, not onely, matter, *of which*, but a cause, *by which* it may be made; wherefore to say a Cause, is no other, then to say, that which in the production of a thing is the Agent, or Efficient.

Now of the things that are made, no other first and radicall Cause is to be required, than the same Atoms themselves as they are endued with that vigour, by which they are moved, or continually tending to motion. Neither is it absurd to make matter active, it is rather absurd to make it unactive, because they who make it such, and yet will have all things to be made out of it, cannot say, from whence the things that are made, have their Efficient power, since they cannot have it elsewhere, than from matter.

Therefore, as the first little-compounds, made up of Atoms, have in themselves a certain energy, or power to move themselves, and to act, consisting of the vugours of each severall Atom, but variously modify'd, as some of them mutually entangling one another, are carried hither, others thither; so the greater compounds, made up of the lesser, have some power also, and that modified according to their variety; and every naturall body, consisting of those greater and lesser compounds, and Atoms, have a particular energy, or power of moving themselves, and acting, modified by a certain reason. Thus, motion or action ascends to, and proceeds from, its very principles.

Yet we must observe, that though all Atoms are moved alike swiftly, yet, within the compounds themselves, those which are more corner'd, and hooked, are entangled, and hindred, and so made as it were more sluggish and dull, then the smoother and rounder. Wherefore the energy, or power of acting, which is in compound bodies, chiefly comes of these. And because those, of which Fire, the Soul, and, those which are more generally termed, Spirits, consist, are of this nature, hence it comes, that the chiefest energy in bodies, is from those very spirits; which as they have liberty of running up and down, so they have also dominion within those bodies.

336 But forasmuch, as all effection, or action, whereby something is made, is either from an internall, or externall principle, it is manifest, that artificiall things, whose nature is sluggish, and meerly passive, owe all their production to the Efficient, or externall agent. But naturall things, although they borrow some part of themselves, or some principle, of acting from and extrinsecall cause, yet they owe their production to the principles contained within themselves, as from which intrinsecally, according to all their parts, they are ordered, and co-apted.

Moreover, the very action of the externall agent is from its owne internall principles, which alwaies so turn and direct the action, as that it may with greater strength sustain the violence of most things. For even in sensitive Creatures, where there is a kind of voluntary action, it is therefore such, and carried rather this way, then that way, because there occurs to the mihd a species inviting it, rather this way, then that way; and the mind, through the dominion, whereby it ruleth the spirits contained in the body, leads them this way, and not that way; and, together with them, the members in which they are.

Chap 11 – Of Motion, Which is the Same With Action, Or Effection; And of Fortune, Fate, End, and Sympathetical and Antipathetical Causes

In the mean time, I shall not need to make any excuse, for that I confound the action or effection of a Cause with motion; since it is known, that both of these are one with motion, and onely adde the connotation, and for that it must be terminated to the thing done or effected.

I understand, here, no other motion then that which is migration from place to place, which for the most part is called lation, and transient motion, and locall motion. For thus they name it in distinction from that motion, which some use to call mutation, and alteration; that whereby a thing remaining unmoved according to its

internall nature, is, as they conceive, changed or altered through acquisition, or losse, of some quality, as Heat, or Cold.

This mutation or alteration is not a species of motion, distinct from that which is called locall motion or transition. Locall motion or transition is the genus, this mutation or alteration is nothing but a species thereof, to wit, that whereby movables are carried through short and undiscernable intervalls. [337] *For, whatsoever compound body is changed according to quality, is changed altogether by the locall and transitive motion of the atoms and little bodies, creating a quality*; whether they be transposed in place and scituation in the body it self, or come into it, or passe out of it.

[338] *For example: That of sweet, something bitter be made; or of white, black; it is requisite, the little bodies, which constitute it, be transposed, and one come into the ranck of another. But this could not happen, unless those little bodies themselves were moved by transient motion. Again, that of hard something soft be made; and of soft, hard; it is requisite, those particles, whereof it consists, be moved locally, forasmuch as by extension of them it is softned, and by condensation hardned; whence the motion of mutation is not generically different from the motion of transition*.

But to return to that motion, which is proper to the cause or efficient, we may observe, that, to some things, the name of cause is attributed, for that they excite motion. For *Fortune*, which is a cause of some things, can no other way be admitted, then as it is the same with the self-moving and agent cause, and onely denotes ignorance of the effect connected with it, and intended by it. Otherwise, so far is it from being fit to make it a goddesse, as the ordinary sort of men do, (for by God, nothing is done disorderly) that it is not to be esteemed so much as an unstable cause.

Even *Fate* also is no other than the self-moving causes, that act by themselves, as they are connected among themselves, and the latter depend of the former, albeit this connexion and dependance be not of that dependance and necessity, which some Naturall Philosophers would perswade; for there is no such necessity in nature, since the motion of the declination of atoms, of which already we spoke, breaks it off, so as it intercurs neither in a certain line, nor in a certain region of place.

Likewise an *End* is said to be a Cause, forasmuch as it produceth something, or not produceth it, no otherwise then because it moveth. It moveth, I say, by sending a species into the soul, which drawes and allures it, by invisible, yet physicall, little hooks and chains, as it were, by which, for the most part, together with the soul, the body also is attracted. Certainly, no such attraction can be understood to be made, unless by some reboundings, and entanglings of atoms.

Insomuch as even all those things, which are said to be done by sympathy or antipathy, are perform'd by physicall causes, that is, by some (unseed indeed, but) very small organs, which intervening, some things, are as truly attracted to, or repelled from one another, as thos things which are wrought upon by sensible and grosser organs, are attracted and repelled.

For to explain this by an example. [339] How, think we comes it to passe, that a Lion is not able to endure the sight of a Cock, but, as soon as he sees him, runs away? unlesse there are some little bodies in the body of the Cock, which being, as in looking-glasses, immitted into the eyes of the Lion, so pierce his eye-balls, and cause so sharp pain, that he is not able

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to withstand or endure it, how fierce and furious soever he be. But in our eyes, those bodies produce nothing like this, they being of a different contexture, as shall be shewed when we come to discourse of the Senses.

Chap 12 – Of the Qualities of Compound Things In Generall

As concerning the qualities belonging to compound things, it is known, that under this tearm are comprehended all, as well adjuncts as accidents of things, but chiefly the adjuncts, whether they be properly adjuncts, that is, constantly abiding in a compound body, as long as it perseveres, and not separable from it

without destroying; or more properly and largely taken, that is, as a mean between adjuncts, properly so tearmed, and accidents, forasmuch as, like these, they exist in them; but in those, they come and go, may be with or from a body, without the corruption thereof.

The most obvious question concerning them, is, How it comes to pass, that they are in compound things, when, as we said before, they are not in atomes, of which compound-things consist? That they are not in atoms, is already shown; forasmuch as every quality that exists in atoms, as magnitude, figure, and weight, is so naturall to them, that it can no more be changed, than the very substance of the atomes; and this, because in the dissolution of compound things, there must needs remain something solid and undissolved; whence it comes, that all motions which are made, are neither into nothing, nor out of nothing.

We answer, that qualities arise in compound things, as well from the transposition that is made of the atomes, now fewer, now more; which in one position afford one quality; in another, another; as from the accession that is made of some atomes wholly new, and the discession of some pre-existent. Whence these qualities again are varied, or seem different from what they were at first.

For as Letter give divers representation of themselves, not onely those which are of different figure or form, as A and N, but even the same Letters, if their position or order be changed; position, as in N and Z; order, as in A N, and N A; So, not onely atomes, which are of divers figures, (aa also of different bulk and motion) are naturally apt to affect divers senses, and, in one, to exhibit colour; in another odor; in a third, fapor; in a fourth, another; but also those which are of the same, if they change the position or order among them, affect the senses in such manner, that those (for example) which now exhibit one colour, presently exhibit another, as we before instanc'd in the water of the sea, which, being still, seemeth green; troubled, white; and, as is ordinarily instanc'd, the neck of a Pigeon, which, according as it is variously placed towards the light, receiveth a great variety of colours.

And as there is made a diversity, not onely when the same letter which compose one word are so transposed, as that they exhibite divers forms, but much more, when some are added to them, and some taken away from them; in like manner it is necessary, that colours, odors, and other qualities, be changed, not onely when the same atomes change their position and order, but likewise when some come to them, some depart from them, as is manifest from the softning, hardning, crudefaction, ripening of things, and the like.

Briefly, as it is of great concernment amongst Letters, with what other Letters they are joyned, and in what position and order they are among themselves, since, by so small a number of Letters, we signifie the Heaven, the Earth, the Sun, the Sea, Rivers, Fruits, Shrubs, living creatures, and innumerable such like; so is it of great concernment amongst atoms, with what others they are joyned, and in what other position, and in what intervalls and connexions, what motions amongst one another they give or receive; forasmuch as by this means they are able to exhibit the variety, as of all things, so of all qualities in them.

To speak more particularly, some qualities first seem to arise out of atoms, as consider'd according to substance; and being in such position amongst themselves, as that they have a greater or lesser vacuum intercepted or excluded. Other qualities are made of them, as they are endued with their three properties, some from a single property, others from a conjuncture of more.

Chap 13 – Qualities from Atoms Considered, According to their Substance, and Interception of Vacuum

And after the first manner arise *Rarity* and *Density*; for it is manifest, that no dense thing can be made rare, unless the atoms thereof, or the parts of which it is compounded (they themselves being compounded of atoms) be so put asunder from one another, that, being diffused into a larger place, they intercept within it more and larger vacuities. Neither can any thing rare be made dense, unless its atoms or parts be so thrust up together, as that, being reduced into a narrower place, they comprehend in it fewer, or more contracted vacuities. Moreover, it is manifest, that, according to the more or lesser vacuity which is intercepted, the air (for example) or light is said to be rare; but stone, iron, and the like, said to be dense.

Together with these seem to arise *Perspicuity* and *Opacity*; for every thing is so much more perspicuous, (other respects being equall), by how much more it is too rare; so much more opacous, by how much it is more dense: because the more is the more patent to lucid and visible beams; the more dense, the more obstructive of them. But I say, (other respects being equall) a more thick body, as glasse, may have little vacuous passages placed in so streight a line, that the beams may passe more easily through it, than through a rarer body; as a leaf of Cole-wort, whose small pores are pester'd with little bodies variously permixt; even the beams themselves are cut off unless they passe through strait holes, such as are in glasse.

Again, there ariseth also *fluidity*, *liquidity*, and *firmness*; for a body seemeth to be fluid for no other reason, then because the atomes or parts whereof it conflicts, have little vacuities lodg'd within them, and are withall so dissociated from one another, as that they are easily movable one in order to another, through the not-resistance of the little vacuities: neither doth any thing seem to be firm from any other cause, than the contrary hereof; that is, the atoms and parts touch one another so closely, and are so coherent to one another, that for the same reason they cannot be moved out of their scituation: for such atoms there may be, as, being more hooked, and, as it were, more branching, may hold the body more closely compacted. How water, in particular, being liquid, becomes hardned into ice, shall be said hereafter.

Likewise, those qualities which depend on these, *Humidity* and

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Siccity. Humidity is a kind of fluidnesse, onely it superadds this, that the parts of a humid thing, touching some body, or penetrating into it, are apt to stick to it, thereby, rendring it moist. Siccity is a kind of firmnesse, adding onely this, that a dry body is void of humidity.

Moreover, *Softnesse* and *Hardnesse*, which cohere with these, and, upon another account, agree also with Rarity and Density, in as much as (other respects being equall) every body is so much the more soft, by how much the more rare, and so much the more hard, by how much the more compact; I say, (other respects being equall) because dirt is soft, and pumice hard, by reason of the greater cohesion of the parts, which pester the cavities, and resist the touch, and cannot retire into the hindermost cavities, as otherwise they would.

There are others, which depend upon these; as *flexility*, *tractility*, *ductility*, and others, from softnesse; their opposites, from hardnesse; but 'tis enough to have hinted them.

Chap 14 – Qualities Springing from Atoms, Considered According to the Properties Peculiar to Each

In the second manner, and as far as the properties of Atoms are considered particularly, in the first place, the magnitude, quantity, or bulk of every thing, ariseth no other way then from the coacervate magnitude of the Atoms, of which it is compounded. Whence it is manifest, that *augmentation*, and *diminution* of of bodies is therefore made, because Atoms, wheresoever they arrive, give to the things and increase; wheresoever they go away, they diminish them.

Not to mention, that, according as the Atoms are greater or lesser, may be made, that which we call *bluntnesse* and *acutenesse*. And thence a reason may be given, why the fire of lightning is more penetrative than that of a taper: or how it comes, that light passeth through horn, which resists rain and the like.

Besides, the very figure of things, though it did not depend upon the figure of Atoms, (whereas it seems to depend upon them, in all things, which are constantly produced in the same figure) yet it is, generally at least, true, that every body is therefore figured, because it consists of parts terminate and figurate; for figure is a terme, or bound.

Thus, though out of smoothnesse, and roughnesse, (which as I said are allied to the figure of Atoms) it doth not necessarily follow, that things smooth, are made of smooth, rough things, of rough: yet in generall, nothing can be conceived to be smooth, but whose parts, to the least of them, are smooth; nor rough, but whose parts are rough.

Here observe, that as well from the figure, as from the magnitude, the reason may be given, Why wine floweth easily through a strainer, but oile more slowly, which is, that the oile may consist, not of greater Atoms onely, but also of more hooke, and much entangled among themselves.

Lastly *weight*, or the motive faculty, which is in every thing, can arise no other way, then from the weight or mobility of Atoms. But that being declared formerly, we shall here onely observe, that all Atoms are heavy, and none leight; wherefore every compound body is heave, there is none that is leight; or that is not of it selfe ready to tend downwards. Here presently come in Fire for an Objection; but although it fore-goeth not its propensiton downwards, yet it therefore tendeth upwards, forasmuch as it is driven that way by the ambient aire: after the same manner, as we see with great force the water resists loggs and beams, things otherwise heavy; and the deeper we plunge them, the more eagerly it casts them up, and sends them back. Whence it comes that those things, which we call leight, are not absolutely leight; as if, of their own accord, they did tend upwards, but onely comparatively, that is, as they are lesse heavy and extruded by the more heavy, which presse themselves down before them. So as Earth being the most heavy, water lesse heavy, aire yet lesse heavy then that, and fire least of all, the water will come to the middle; if the water, the aire; if the aire, the fire.

Chap 15 – Qualities from Atoms, Considered According to their Properties, Taken Together

But the properties of Atoms, being taken together, and those things especially of which we have hitherto spoken, rarity, density, and the rest, being commixt and varied, there arise faculties of things, which, being active and motive, have it from the weight and mobility of the Atoms. And whereas some act one way, some another, they must of necessity have it, as well from the peculiar magnitude, and figure of the Atoms, as from their various order and position amongst themselves, as from their loosenesse, compactednesse, connexion, sejunction, &c.

Of this kind, are not onely, in Animals, the faculties of Sense, Sight, Hearing, Smelling, Tasting, Touching, wherewith they can perceive sensible thing, but also, in the things themselves, those very qualities which are called sensible. These are, in things, the faculties of striking, and affecting the senses, after a certain manner, to the end they may be perceived by them; as colour, and light, the sight; sound the hearing; odor the smell; sapor the taste; heat and cold (above the rest) the touch. Whence it comes, that being to speak of those hereafter, we ought not here to omit these: To treat of which, will be worth our pains.

To begin from Heat: we cannot treat of it, without joyning light to it, for without light there are no colours, the variety of colours being taken away by night; whence in the infernall region, all things are said to be black. But though in darknesse, all things are alike dis-colour'd, neverthelesse in themselves, or in their superficies, there are dispositions of extream particles, by reason of which the affused light is so variously modify'd, that, together with this modification reflected on the eye, it exhibits various colours in the eye, as white, for example, when the ball receiveth into it selfe, one kind of blow or stroak; black, when another, &c.

For though colours are not coherent to bodies, but generated according to some respective sights, orders, and positions, yet are they not generated, unlesse light also be adjoyned to the disposure of their superficies, to compleat or make up the perfect nature of colour. Neither, setting this aside, do I see how it can be said, that bodies, which are, in the dark, invisible, have colour.

And indeed, since not onely a Pidgeon's neck, a Pea-cock's train, and the the like, exhibit severall colours, according to their severall positions to the light, but also even all other things appear, sometimes in some colours, sometimes in others, according as they are place in severall degrees of light, what else should we conceive, but that generally it is light, by whose coming, things put on colours, and by it's departure lose them.

in the mean time, Light it self, being nothing else but a substantiall effluxion from a lucid body, is not visible of it self, but onely in colour, as that is a part of it; for neither is it seen through a pure or liquid medium, neither when we imagine that we see it, either in a lucid or an illuminate body, is it beheld as a thing distinct from the colour of the thing lucid or illuminate. In fine, neither is shadow (the privation thereof) in any other manner,

then as because it is withall the privation of colour in a thing shadowed, which loseth colour alwaies by the same proportion as it loseth the light. How it comes to passe that shadow, though it be a meer privation, yet seems to be moved, was declared in the Canonick [340].

Sound is nothing but an effluxion of tenuious little bodies, sent out from the thing speaking, sounding, or what way soever making a noise, and apt, by entring into the ear, to affect the hearing.

That it is a corporeall effluxion, is proved, in that it moveth the sense, and that either by touching it smoothly and delightfully, or roughly and unpleasantly, according to the smoothnesse or roughnesse of the little bodies. Also in that it is moved through the aire, and being driven against solid bodies, leaps back, whence Echo is made; viz. by reason of the solidity of the little bodies; also in that it is diminished,and becomes confused, in regard of the long train of little bodies, when it goes forward, or their swerving while they go over-thwart, through some thicker partition, and the like.

If you demand why Sound can passe, where Light and the species of colour cannot, as when we speak, the doors being shut; the reason is, because light, or the images of colour, cannot passe but in a direct line; but Sound can insinuate it self through oblique tracts. For being excited, it leaps forward in little bodies, which turn upwards, downwards, forwards, backwards, on the right side, on the left side, and every way; in like manner as a spark of fire, sometimes scatters it self into little sparkles, which take a direct course towards all sides.

The same may be said of *Odor*. For this also is an effluxion, which going out of the odorous thing, is diffused every way, and, arriving at the nostrills, moveth the sense of smelling, either by stroaking or pricking it. This is corporeall also, even more then Sound, in that it passeth more slowly through space, and commeth not from so great a distance, and penetrates not through those partitions, through which Sound doth penetrate.

As concerning *Sapor*, there is this difference, that, though it consist in little bodies, contained in the thing styled Sapid; yet they issue not forth into the tongue and palate at a distance, but then onely, when the thing sapid is applied to the tongue, they so insinuate themselves into it, that they affect the contexture of it, either mildly, and then make a sweet taste; or roughly, and so they make a sour taste.

As for *Heat* and *Cold*, that sensation which they cause is to be referred to the *Touch*. But though many of the foresaid qualities properly appertain to the Touch, as hardnesse, softnesse, humidity, ficcity, and the rest, which require application of the thing touched to the hand, or to some other part of the body; yet these two may be felt, not onely when the hot or cold thing is applyed to the hand, or some other part; but also when it is remote, and at such a distance, as it can transmit some little bodies out of it self into it.

Heat indeed is chiefly an effluxion of little bodies or atoms, in bulk slender, in figure round, in motion swift. For as they are slender, there is no body so compacted, that they find not little pores, through which they insinuate into it; as they are round, they are easily moved, and insinuate themselves every where; as they are swift, they rapidly are impelled, and enter into the body, and, more and more still succeeding one another, they are so pressed, as that they penetrate through the whole; and if they proceed in acting, they sever and dislocate the parts thereof, and at last dissolve the whole. Such are the effects of Heat, and chiefly the fiery, (for fire is nothing but intense heat) towards all bodies; and in a living creature is onely added the sense of the heat, which is from the plucking asunder, and loosening what before was continued.

Cold is an effluxion also, but of atoms, whose bulk is greater, their figure more corner'd, their motion slower; for, the effects being contrary, the principles must also be contrary. So that whereas heat disgregates and disperses, cold compresseth and constipates; and, in a sensitive creature, it doth this with a particular kind of sensation; for, entring into the pores of the skin, it keeps back and drives in again the little bodies of heat, by opposing the bodies of cold, and with its little sharp corners, it tears and twingeth all things wheresoever it passes.

Chap 16 – Of Those Qualities Which Are Esteemed the Accidents of Things; and Particularly, of Time

It remains, that we a little touch those qualities, which are not so much adjuncts as accidents, and therefore affect not the thing internally, but externally onely, and qualifie them with a certain kind of respect to some extrinsecall thing. Not but that within the things themselves also there are some accidents, (such are position, orders, intervalls or parts or particles, and the like) but that being such, they are accidents of the parts themselves, not of the whole which consists of them.

Accidents of this kind are all those generally, out of which ariseth some relation, for which every thing is said to be such or such, in order to another; as like, unlike; greater, lesser; many, few; superiour, inferiour; tight, left; cause, effect; giving, receiving; and innumerable of the same kind.

But it is known, that Relation is a work of the mind, referring and comparing one to another; so that, setting aside the mind, every thing is that onely which it is in it self, but not that which it is in respect of another. Whence, to accidents, we formerly referred liberty and health, riches and poverty, &c. because, setting the mind aside, a man is nothing but a man; not free, or subject; rich, or poor, &c.

Now of all accidents, there is one which may be termed the *accident of accidents*, that is, *Time*, from which all things are denominated, either present, or past, or future; lasting, or little durable, or momentary; sometimes also swift or slow.

For first, that Time is an accident, is manifest, in that it is not any thing by it self, but onely attributed to things by cogitation, or the mind, as they are conceived to persevere in the stare in which they are, or to cease to be, and to have a longer or shorter existence, and to have it, or to have had it, or be to have it. Whence it comes, that *Time is not to be enquired after the same manner as we enquire after other things, which are in some subject, setting aside the minde; and therefore neither to understand what it is must it be referred to the praenotions of things, which occur to our sight; but we ought to aiscXXrse of it according to evidence, using familiar speech*. And not entangling our selves in circumlocutions, we say, Time is long or short.

Moreover, we call it the *accident of accidents*, because, whereas some things cohere by themselves, as a body, and as a vacuum or space; others happen, or are accident to the coherent, as daies, nights, hours; as also passions and exemptions from them, as motion, rest, &c. Time, by the assistance of the mind, presupposeth all these accidents, and supervenes to them.

For day and night are accidents of the ambient aire; day happens by the Sun's illumination; night, by privation of the solar illumination. Hour being a part of night or day, is an accident of the aire also, as likewise are night and day; but Time is coextended with every day, and night, and hour; and for this reason, a day or night is said to be long or short, whilst we are carried by thought to time that supervenes to them, according to the former notions.

In the same manner happen passions, and indolencies, and griefs, and pleasures to us; and therefore they are not substances, but accidents of those things which are affected by them; to wit, by sense, of delectation or of trouble. But these accidents happen not without time.

Moreover, motion and rest, as we have already declared, are accidents of bodies, neither are they without time; therefore we measure the swiftness and slownesse of motion by time, as also much or little rest. And forasmuch as none understand time by it self, or separate from the motion and rest of things; therefore by understanding things done, as the Trojan War, and the like, which are done with motion, and are accidents partly of the men acting, partly of the places in which they are acted; together with them is understood their time, as they are compared to our affairs, and the existence of the things intervening betwixt those and us.

Chap 17 – Of the Generation and Corruption of Compounds

It remains that we add, how things are generated and corrupted, either of which is some kind of mutation or alteration, but whereas by other mutations, a body is not made and exists new, but only that which now is acquires a new quality, and a new denomination from it. *Generation* is a mutation, whereby every body is first produced, and begins in nature to be, and to be denominated such. *Corruption* is a mutation, whereby it is at last dissolved, and ceases to be in nature, and to be denominated such; for thus fire, a plant, an animal, and

whatsoever is in a determinate genus of bodies, when it first ariseth into the light, and beginneth to be denominated such, is said to be *generated*; when it goeth out of the light, and can no longer be denominates such, to be *corrupted*.

When I say, that a body is first produced, or beginneth to be, I mean not but that whatsoever is in it of substance, body, or corporeal, was before; for all the atoms, and little bulks or seeds, of which it is compounded, were before. As when a house is said to be made, the stones; wood, and the rest, whereof it is said to be built, are understood to be pre-existent. But I onely mean, that the atoms and seeds therefore are so commixt, and so united, as that they are in a new manner, or in a new form, wherein they were not before; and therefore a body resulting thence, then first begins to be, and be denominated such.

Hence because there ariseth not so much a new substance, as a new quality, in compounds, it cometh to passe, that generation is a species of mutation or alteration; and so is corruption likewise, but in a contrary manner. Wherefore also it comes to pass, that Generation and Corruption are performed onely, by conjoyning and disjoyning those principles, and not by changing them, because the Atoms, as we said, are incapable of change.

341 *And indeed, seeing all change, (as we have already said, and shall shortly say again) is performed, either by transposition, adding, or taking away of parts; it followeth that Atoms, being so compact and solid, as that none of their particles can be transposed, added, or taken away, are immutable, and incorruptible, and such also are their properties, of which sort are those little magnitudes, and little figures peculiar to them, for it is necessary, that these also remain with the substance of the Atom, when the compounds are dissolved: and with good reason; seeing that also in things which we transforme at our pleasure, as when a man, of standing, or upright, becomes sitting, or bowed, (or, if you will, black or hot) it is ever understood, that the same magnitude, figure, and order or parts are in them. But the qualities, that are not in them, nor proper to them, as standing, straightnesse, white, cold, &c. remain not in the subject, after its transmutation, as the others do, but perish , or are lost to the whole body, or to the part wherein they were.*

Since therefore, Principles are intransmutable, and, in generation, are no other then mingles, and put together, it followes that no such mixture can be made, as is a perfect confusion by coalition; but onely that, which is a compounding by apposition; and this, whether those little bulks made of Atoms, are onely mingles, or whether also the Atoms themselves be mingles with those little bulks, resolved into their Atoms, or first principles, whence it followes, that the destruction of those little bulks, and of the bodies, consisting of them, as wine, and water, honey, and the like, goeth accompanied with the generation of the mixt body, and of the other little bulks, which are proper to it; not as if water and wine (for example) but as if aquifying, and vinifying Atoms, (as I may say) were mingled together.

And to the generation, which is made in an infinite Vacuum, we must conceive, that the Atoms severed from one another, and differing amongst themselves in figure, magnitude, position, and order, are carried through the Vacuum, and, where they concurre, being mutually entangled, are condensed; whence it happens, that a different temperature of the thing results, for they are conjoyned according to proportion of magnitude, figures, positions, order, and by this means, the generation of compound things, come to be perfected.

But where the generation of one, is made out of the corruption of another, that usually happens after a threefold manner, which we touched, speaking of alteration; either onely by *transposition* of the parts or Atoms, as when a frog is generated of dirt, a mite of cheese; or by *addition* of things accessory, as when, by accession of the seed, to the greater masse, (as of rennet into milk, or of leaven into dough) there is begotten a plant, or Animal; after which manner, also augmentation is made, by which the generated thing becomes bigger; or lastly, by *taking away* something præexistent, as when fire is generated, by the severing of watery, ashy, or other parts which were in wood; waxe, by the severing, of honey, which was in the combe; and so of the rest.

Here the former comparison of Letters, will serve to make us understand two things. One, that the particular manners of generation, and their opposite corruptions, which may be comprehended under any of

these three manners, are (if not infinite, at least) innumerable, inexpressible, and incomprehensible, since, of four and twenty Letters onely, which are in the Alphabet, there may be produced a multitude of words almost incomprehensible.

The other is, that as words, accommodated to pronunciation and reason, are not made of every combination of Letters; so in natural things, all things are not made of all things, nor are all Atoms fit, by being joyned together, to constitute any species of compound things. For every thing requires such a disposition, as that the Atoms constituting it, match and as it were associate themselves with those which are agreeable to them, but pass by, and as it were reject others. Whence again it comes to passe, that when a thing is dissolved, all the agreeing Atoms draw one another mutually, and disengage themselves from those which are disagreeing. This is manifestly seen in nutrition, which is aggeneration, and is evident even from this, that otherwise Monsters would be ordinarily generated, as half-men, half-beasts; Chimeras; and Zoophyts.

In a word, Certainly he never had the least tast of Physiology, who conceiveth, that any thing which is generated, can be eternall; for what composition is there, which is not dissolvable? Or what is there, that hath a beginning, and no end? Though there were no externall causes to destroy its frame, yet wants there not an intestine motion, and, even within the most compact and durable bodies, and unvanquishable inclination of Atoms downwards, whence their dissolution must necessarily follow.

Yet, this dissolution is not alwayes immediately made into Atoms, but for the most part into little bulks, or parts compounded of them; which are certain kinds of compound bodies, as when there is a dissolution of wood, partly into fire, partly into smoak, partly into some waterish moisture, partly into ashes. But what way soever it be done, we must alwayes hold, that, in generation, there is no new substance made, but præexistent substances are made up into one; so in corruption, no substance absolutely ceaseth to be, but is dissipated into more substances, which remain after the destruction of the former.

Chap 18 – Whence it Comes, That A Generated Body Is in a Certain Kind of Things, And Distinguished From Other Things

Moreover, seeing that every body is generated onely of the aggregation of matter, or of materiall, and substantiall principles, knitting-together in a certain order and position; therefore, that which is concrete or generated, is understood to be nothing else, but the principles themselves, as they are knit tighter in such an order or position, and thereupon are exhibited in such a form or quality.

This form or quality, whereby a thing generate, is established in such a certain kind of things, as of metall, or of stone, or of plant, or of Animal, and is distinguished from all the species, and individuums of the Genus, wherein it is; this form, I say, is not one and simple, but rather as it were an aggregation and collection of many, which collection cannot be found in any thing, but in this.

342 *Wherefore we must here observe, that the figures of things, their colours, magnitude, gravity, and (in a word) all other qualities, which are usually predicated of a compound body, as its accidents, (whether perceived by sight, or by other senses) are so to be understood; not as if they were certain natures or substances, existent by themselves, (for our understanding cannot reach this) nor, on the other side, as if truly they did not exist, or were absolutely nothing; neither again, as if they were such, as are those other incorporeal things, which are accident to it; nor, lastly, as if they were parts of the body. But they are thus to be esteemed, that whereas a body may be disposed after severall manners, the whole complex gains, by the aggregation of them, a certain nature, proper and peculiar to its kind*.

Not that a body comes to be such, as is a greater bulk made up out of a lesser, whether these be the first, least, greatest, or in generall made up of others more minute; but onely, as I said, that of all these joyned together, and by this conjunction differencing it from others, it possesses a nature proper to itself, and distinct from any other.

All these are comprehended by speciall notions and conceptions, but so, that still the body which results out of them, as a certain whole, and is not divided in itself, but conceived as one undivided thing, obtains the

denomination of a body, which is reckoned up in such a certain kind of things.

The same may in a manner, be conceived to happen by the concurrence of certain accidents, which are found the same in no other body; that is, the things indeed, to which those accidents agree, may be distinguished and denominated from the notion of them, but yet onely then, when each of those accidents is conceived to be there. For these are not of that kind of accidents, which, existing in the thing, become therefore necessary and perpetually conjoyned to it, and consequently bestow on it a perpetuall denomination.

Here it may be demanded, whether, if we were dissolved by death, it might happen in process of time, that the very same principles, of which we consist, might by some odd chance, be ranged and ordered again in the same manner as they are now, and so we come to be denominated the same which we are at this present? To which we answer, that it is doubtlessly true; but still so, that, to have been formerly would nothing appertain to us, because, in our very dissolution, every disposition which we had, and all memory of those things which compound us, and which we were, would utterly be lost; by which means, all our remembrance too would so have been totally decayed, that it were impossible it should come into our minds that we had ever had a beeing. Thus much concerning Universe.

2.3.2. Sect. 2 – Of the World

It followeth that we speak of the World, which is a portion of the Universe, or infinity of things, and may not unfitly be described, *The whole circumference of heaven, containing the Stars, the Earth, and all things visible*.

When I say, the *Circumference of Heaven*, I imply, that heaven is the outmost part of the world, which may also be called Æther, and the Region of fire from the stars which it containeth, and are, as it were, fires lighted there.

When I say, the *Earth*, I mean the lowest, or, as it were, the middle part of the world, in which also there is the Water, and next over it the Aire, immediate to the Region of Fire. And, because the things which we see created of these, and in these, are various; therefore we

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comprehend them under the name of *things visible*.

But seeing it may, and useth to be demanded concerning the World, What from it hath within, what figure without? whether it be eternall, or had a beginning? whether it require any other author, than Nature or fortune? in what manner was the production of the whole, and of its parts? whether it require any Ruler, or perform its vicissitudes by itself? whether, how, and when it shall perish? whether it be One, or, besides it, there be innumerable? We must therefore speak a little of each.

Chap 1 – Of the Form and Figure of the World

And as to the first head, the world by its internall form or constitution is not animate, much less a god, as some think; but whereas what is conceived to be one in its form or constitution, is such, either for that its parts are contained under one disposition, as a plant or animal; or that they are artificially joyned one to another, without mingling their tempers, as a house, or ship; or that they are discreetly distinguished from one another, yet have some mutuall relation to each other, as an Army, and a Common-wealth; the World is onely to be conceived One, partly the second way, partly the third.

The second way it may be esteemed one, in regard between the Sun, the Moon, and the rest of the more solid and compacted parts of the World, there is intercepted either aire or æther diffusive, whereby a kind of coherence is made. It may also be esteemed one the third way, in regard the Sun, Moon, Earth, and other compacted bodies, are so separated from one another, that, after a determinate order, they possesse the scituations or seats of superiours and inferiours, antecedents and consequents, things illustrating and things

illustrated.

But to say that the World is one the first way also, How can it be made good? since that if it were so, that the world, as some will, were animate, nothing could be thought inanimate; not a stone, not a carcase, not anything whatsoever; that same disposition called Soul being dispersed through all things.

Neither do they who assert the world to be animate and wise, sufficiently mind and understand what kind of nature that must be, to which such expressions are proper, since as a tree is not produced in the aire, nor a fish on dry ground, nor blood in wood, nor moysture in a pumice; so neither can the mind or the soul be produced, or be, indifferently in any kind of body. But seeing it must be determinately ordered, where every thing shall grow and inexist, the nature of the soul must be looked for about the nerves and blood, not in putrid globes of earth, in water, in the Sun, in the sky, &c.

Now whereas some hold, that the world is not onely endued with mind and senses but also it is a round burning god, and ever-moving with restlesse circumvolutions; these are prodigies and monsters, not of Philosophers discoursing, but dreaming. For who can understand what this ever-moving and round god is, and what life is ascribed to him, to be turned about with so great swiftnesse, as is unimaginable to be equalled; with which I see not how a constant mind and a happy life can consist?

But granting the world to be a god, not onely the Sun, Moon, and the rest, are parts of god, but even the earth itself, as being a part of the world, must be also a part of god. Now we see there are very great regions of the earth unhabitable, and uncultivated, part of them being burnt up by the approach of the Sun, part being oppressed with snow and ice through his distance from it. If then the World be god, these being the parts of the world, are to be termed, some, the burning; some, the frozen members of god.

As to its externall form or figure, it seems in the first place certain, that there is some extremity of the world, because the world is a kind of segment of the infinite Universe; but what that is, who is able to tell, unless he came thence?

For whereas it seems to be Heaven, there is nothing in all apparent things hinders, but that it may be rare, nor nothing hinders but that it may be dense; rare, forasmuch as the stars which are in it, and appear to be moved, perform their motions through it; dense, forasmuch as it self is able to move the stars fixed in it.

Again, nothing hinders, but that it may be either quiescent, if the stars are moved through it; or circularly moved, if the stars are carried round about with it.

Besides, nothing hinders, but that I may be round, ovall, or lenticular, especially if it be moved. Again, nothing hinders, but that it may be triangular, pyramidall, square, hexaedricall, or of any other plain figure, especially if it be unmoved.

As for them, who, being persuaded by some arguments, assert the world so to have one determinate figure, as that it can have no other, we cannot but wonder at their stupidity. For most maintain the world to be, as immortall and blessed so also round, because Plato denyeth any figure to be more beautifull than that. But, to me, that of the cylinder, or the square, or the cone, or the pyramid, seem, by reason the variety, more beautifull.

Chap 2 – Of the Late Beginning of the World

As for the second head; The world is not eternall, but began to be at some time.

For first, seeing that the nature of the whole and of the parts is the same; and we observe, that the parts of the world are obnoxious, both to generation and corruption, it followes, that the whole world must be subject to generation and corruption. That the parts of the world are generated and corrupted, is demonstrated even by the sense, and shall be proved hereafter.

Neither let any say, that the mutations which are made in the parts of the world are not of the more principall parts, as of the Sun, the Moon, the Earth, and the rest; but of the lesser onely, which are but particles, whereof the principall consist; for he ought to conceive, that if the principall parts consist of parts subject to mutation, those whole parts themselves are subject to mutation; and though ordinarily there occur not causes so powerfull as to change them, neverthelesse nothing hinders, but that such may sometimes occur, as even among the lesser parts, some continue safe a great while, which at last, in progresse of time, find causes of mutation.

Besides, seeing that the most ancient Histories of all things exceed not the *Theban* and *Trojan Wars*, what is the reason of this, but because the world is not old, so far it is from being eternall? For if eternall, why did not other Poets celebrate other things? How came the memorable acts of so many eminent persons to perish? why are the records of eternall fame nowhere extant?

In like manner, seeing that we have all arts newly invented, and their inventors are not unknown, (for, that daily many arts are advanced and received increase, is very manifest) how comes this to passe, but because the world had not its beginning long ago; for the world could not be so long without arts, which are of so great importance to life.

If you believe that in time past, there were such Records and Arts as now, which perished by some great conflagrations, deluges, earth-quakes, being subverted together with the Cities and Nations themselves, do you not acknowledge it necessary, that there must be at some time to come a destruction of earth and heaved, as it had happened, if in those cases some greater causes had lighted; for we ourselves think ourselves mortal for no other reason, but for that we perceive ourselves to fall into the same diseases, as they whom we see dye.

The world therefore had a beginning; nor was, as may appear by what we said, of very great antiquity. But whensoever it begun, it is most probable it begun in the Spring, because then all things sprout, flourish, and bring forth; and the newness of the world required a temperate heat and cold, for the cherishing of its young brood, before it should passe to either of the extremes.

Chap 3 – Of the Cause of the World

As to the next head: We must first acquit the divine power from the sollicitude and labour of framing the world, for it could not be a cause blessed and immortall that made it.

With what eyes could Plato look upon the fabrick of so great a work, as to conceive the world made and built by God? What designs, what tools, what beams, what engines, what ministers, in so great a task? How could aire, fire, water, earth, obey and serve the will of the Architect? Whence sprung those five forms, of which the rest also are framed, lighting aptly to make up mind and senses? It were too long to repeat all, which are rather in our wish, than in our power to find out.

Again, this God of whom he speaks, either was not in the former age, wherein bodies were either immovable, or moved without any order; or he then slept, or wak'd; or did neither. The first cannot be admitted, for God is eternall; nor the second, for if he slept from eternity he was dead, death being an eternall sleep. But neither is God capable of sleep, for the immortality of God, and a thing near death, are far asunder. Now if he were awake, either something was wanting to his felicity, or he was perfectly happy. But the first would not allow him to be happy; for he is not happy who wants anything to make up his felicity; the latter is absurd, for 'twere a vain action for him who wants nothing, to trouble himself with making anything.

To what end then, should God desire to adorn the world with fair figures and luminaries, as one that dresseth and sets out a Temple? If to the end that he might better his habitation, it seem then, that for an infinite time before, he lived in darknesse as in a dungeon. Again, can we think, that afterwards he was delighted with the variety, wherewith we see the heaved and the earth adorned? What delight can that be to God, which, were it such, he could not so long have wanted it?

But some will say, That these were ordained by God for the sake of men. Do they mean, of the wise? Then this great Fabrick of things was made for a very few persons. Or, of the foolish? There was no reason he should do such a favour to the wicked. Again, what hath he got by doing so, since all fools are even in that regard most miserable, for what is more miserable then folly? Besides, there being many inconveniences in life, which the wise sweeten by compensation of the conveniences; fools can neither prevent the future, nor sustain the present.

Or, Did he make the world, and, in the world, men, that he might be worshiped by men? But what doth the worship of men advantage God, who is happy, and needeth nothing? Or if he respect man so much, as that he made the world for his sake, that he would instruct him in wisdome, that he would make him Lord over all living Creatures, that he would love him as his Sonne, why did He make him mortall and frail? Why did He subject him whom He loveth, to all evills; seeing rather man ought to be happy, as conjoyned with, and next unto God, and immortall as He himselfe is, whom he is made to worship, and contemplate?

For these reasons, ought we to say, that the world rather was made by Nature; or, as one of the Naturall Philosophers said, by chance.

By nature; for such is the nature of the Atoms, running through the immensity of the Universe, that in great abundance running against one another, they can lay hold of, entangle, and engage one another, and, variously commixing themselves, first roll up a great kind of Chaos, in manner of a great Vortex, (clue or bottom) and then after many convulsions, evolutions, and making severall efforts, and as it were attempts, trying all kinds of motions and conjunctions, they came at last into that form, which this world beares.

By chance; for the Atoms concurre, cohere, and are co-apted, not by any designes, but as chance led them. Wherefore, as I said, Chance is not such a Cause, as directly, and of it selfe, tends to mingle the Atoms and dispose them to such an effect; but the very Atoms themselves are called chance, in as much as meeting one another, without any premeditation, they fasten on one another, and make up such a compound, as chanceth thence to result.

Chap 4 – Of the Generation of the World

But to discusse this matter more narrowly, and to come to another head; the world seemeth to have been elaborated, and molded into this round figure, by a certain kind of reason, without bellowes, anvile, or other instruments.

First, whereas the Atoms, by an inconsiderate and casual motion, were continually, and swiftly carried on, when they began to run in multitudes, into this immense place, in the World now is; and to fasten upon one another, they presently became heaped into one rude, and indigested masse, in which great things were mingles with small, round with corner'd, smooth with hooked, others with others.

Then in this confused crowd, those which were the greatest and most heavy, began by degrees to settle down, and such as were thin, round, small, slippery, these in the concurrence of the others, began to be extruded, and carried upwards; as in troubled water, until it rests, and groweth clear, the earthy parts settle downwards, the watery are as it were thrust upwards; but after the impulsive force, which drove them upward, grew languid, nor was there any other stroke, which might tosse them that way, the Atoms themselves, endeavouring to go down again, met with obstacles from others, whereupon they flew about with greater activity, to the utmost bounds, as also did others, which were reverberated by them, and repressed by others, that closely followed them, whence was made a mutuall implication, which did generate Heaven.

But those Atoms, which were of the same nature, (there being as we said many kinds of them) and carried round about in heaps, whilst they were thrust upwards, made the Sun, and Moon, and other Stars. These were chiefly called signifying Atoms; those which they left, as not able to rise to high, produced the Aire.

At length, of those which setled down, the Earth was generated; and seeing there yet remained much matter in earth, and that condensed by the beatings of the winds and gales from the Stars, that figuration of it which consisted of least particles, was squeezed forth and produced Moisture. This being fluid, either run down into

hollow places, fit to receive and contain it, or standing still, made hollow receptacles for it selfe. And after this manner, where the principall parts of the world generated.

To say something of the lesse principall, the particles as it were of the former parts; there seems in that first commission, to have been made the diverse seeds of generable and corruptible things, of which, compounds of diverse natures were first framed, and afterwards in a great degree propagated.

Stones, Metalls, and all other Mineralls were therefore generated within the body of the earth, at the same time it was formed, because that masse was heterogeneous, or consisting of Atoms, and seeds of different natures; and in that the bulks of stones did diversely swell out to the very superficies. Whereupon mountains came to be made, and consequently valleys, and plains must needs have been between them.

Soon after, about the mountains and the hills, and in the valleys, and in the fields grew up Herbs, shrubs, Trees, almost in the same manner, as feathers, haire, bristles, about the bodies, and members of birds, and beasts.

But as concerning Animals themselves, it is likely that the earth, retaining this new genitall seed, brought out of it selfe some little bubbles, in the likenesse of little wombs, and these when they grew mature, (nature so compelling) broke, and put forth young little Creatures. Then the earth it selfe did abound in a kind of humour, like to milk, with which Aliment living Creatures were nourished.

Which Creatures, were so framed that they had all parts necessary for nutrition, and all other uses. For as when Nilus forsakes the fields, and the earth beginneth to grow dry, through heat of the Sun, the Husbandman turning up the blebe finds severall living Creatures, part begun, part imperfect, and maimed, so that in the same Creature one part liveth, the other is mere earth; in like manner, amongst those first efforts of the earth, besides the living Creatures perfectly formed, there were some produces, wanting hands, feet, mouth, and other parts, without which there is no way to take nourishment, or to live long, or to propagate their kind.

What I say of other living Creatures, I hold also in Man, that some little bubbles and wombs, sticking to the roots of the earth, and warmed by the Sun, first grew bigger, and, by the assistance of nature afforded to infants, sprung from it a connaturall moisture called milk, and that those thus brought up, and ripened to perfection, propagated Mankind.

Two things I adde; One, that it is by no means to be allowed, what some affirme, that at the time were produced Centaures, Seyllæs, Chimeræs, and other Monsters consisting of parts, of different kinds. For how in a Centaur (for example) could the limbs of a man and of a horse be joyned together, when at the third year of his age, at what time a child is hardly weaned, a horse is in full vigour; and at what time a horse languisheth with age, a man flourisheth in the prime of his youth.

The other, That in the earth there were created new living creatures, and more and greater than now, by more and more vigorous seeds, and amongst those, Men too; so as that race of men was more hard, as consisting of greater, and more solid bones and nerves: and so at length the Earth, her seeds being exhausted, like a woman too old to bear children, left off to produce voluntarily such living creatures. Whence it comes, that now, men are nowhere generated on this fashion; but both they, and other more perfect and greater animals, spring up onely by way of propagation.

Chap 5 – Of the Vicissitudes In the World

There followeth a question, Whether the world be governed by itself, or by the providence of any Deity?

First therefore, we ought not to think, that the Motion of Heaven or the Summer and Winter, course of the Sun, or the eclipse of the Sun and Moon, or the rising and setting of the Stars, or the like, happen, because there is some ruler over them, who so disposeth, and hath disposed of them, and with all possesseth beatitude and immortality; for with felicity agree not businesse, sollicitude, anger, and favour; these happen through imbecillity, fear, and want of externall help.

Neither ought we (it being a troublesome employment, and wholly averse from a happy state) to think, that the nature which possesseth felicity is such, as that (knowing and willing) it undergoes these commotions or perturbations of mind, but rather to observe, out of respect unto it, all veneration, and to use some kind of addresse to it, suggesting such thoughts, as out of which arise no opinions contrary to veneration.

We should rather think, that, when the world was produced, there were made those complexions of Atoms, involving themselves about one another, that from thence the celestiall bodies being framed, there was produced in them this necessity, whereby they are moved in such a manner, and perform such periods; and after the same manner all the rest perform their task, in order to the course of things once begun.

And why should we not rather think thus? For whether the world itself is a god, as some conceive, What can be less quiet, than uncessantly to roll about the axis, with admirable swiftnesse? But unlesse it be quiet, nothing is happy. Or whether there be some god in the world, who rules, governs, converses the courses of the stars, the mutations of season, the visissitude and order of things, who is present in all places, at all times; and how great soever is the variety, or rather innumerability of all particular things, is distracted by so many cares, by taking order that they be done this way, and no other; indeed he is, as I before objected, involved in businesses troublesome and laborious.

Besides, though it were but onely supposed, that God doth not take care of things, Shall we not find, that all things happen no otherwise, than as if there were no providence? for some fall out well, but the most ill, and otherwise than they ought. To omit the rest, if Jupiter himself did thunder, or guide thunder, he ought to at least to spare Temples, though it were onely not to give occasion of doubting, whether it pro-

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ceed from fortune or divine counsell; that is, all things, in a manner, holding on their course, as it was at first begun.

This also is of no little weight, that they assert a speciall providence in respect of Men. For (not to repeat what I even now said, that a happy and immortall nature cannot be possessed with any anger or favour) put case, that God takes no care of the affairs of men, how can they come to be otherwise than they are? In them there is an equall, or rather greatest imbecillity, than in other creatures, equall inconveniences, equall ills; Some of them making vowes are preserved from shipwreck; how many have made vowes, and yet perished? Many pray for children, and obtain them; how many pray for children in vain?

But, to be brief, Why, if God takes care of the affairs of men, is it ill with the good, well with the bad? Truly it is an argument with me, when I see crosses alwaies happen to the good, poverty, labours, exile, losse of friends; on the other side, wicked persons to be happy, to increase in power, to be honoured with titles; That innocence is unsafe, wicked actions go unpunished; That Death exercises his cruelty without observing manners, without order and distinctions of years; some arrive at old age, others are snatched away in their infancy, others in their full stretch, others in the flower of their youth are immaturely cut off. In war, rather the best are vanquished and perish. But that which prevails most with me, is, that the most religious persons are afflicted with the greatest ills; but to them, who either wholly neglect the gods, or worship them not religiously, happen either the least misfortunes, or none at all.

Moreover, I think it may not be ill argued thus: Either God would take away ills and cannot, or he can and will not, or he neither will nor can, or he both will and can. If he would and cannot, he is impotent, and consequently not God; if he can and will not, envious, which is equally contrary to God's nature; if he neither will nor can, he is both envious and impotent, and consequently not God; if he both will and can, which onely agrees with God, whence then are the ills? or why does he not take them away?

Chap 6 – A Digression, Concerning Genii or Daemons

It is all one, whether God takes care of things by Himself, as some will have it, or (as others hold) by Ministers, whom they generally call *Genii* and *Daemons*; for things happen no otherwise, than as if we should suppose no such Ministers; and though it were granted that there are some, yet can they not be such as they

feign them, that is, of a human form, and having a voice that can reach to us. To omit, since for the most part they are said to be ill and vicious, they cannot be happy and long liv'd, since both much blindnesse, and a pronenesse to destruction, perpetually attends wickednesse.

How much were it to be wished, that there were some who might take care of us, and supply what is wanting to our prudence, and to our strength; especially, how much were it to be wished, by such as are Leaders in War, of most pious and honest attempts, that they might confide not onely in arms, horses, ships, but also in the assistance of the gods themselves?

And indeed, some are said to appear sometimes to some persons; and why may it not be, that they who affirm Daemons to have appeared to them, either lie and feign, or are melancholy, and such, that their distemper'd body either strangely raiseth, or diverts their imagination to extraordinary conceits. It is well known, that nothing is more apt to be moved and transformed into any species, (although there be no reall ground) than Imagination. For the impression made upon the mind is like that in wax, and the mind of man having within it self that which represents, and that which is represented, there is such a power in it, that, taking even the very least of things seen or heard upon some occasion, it can of it self easily vary and transfigure the species, as is manifested by the commutations of dreams which are made in sleep, from which we perceive, that the imaginative faculty puts on all variety of affections and phantasies; so that it is no wonder, it, where the faculty is unsound, they seem to see Daemons or other things, of which they have had any foretaken conceit.

Moreover, they use to alledge divination as an argument, to prove both Providence and the existence of Daemons; but I am ashamed at human imbecillity, when it fetcheth divinations even out of dreams, as if God, walking from bed to bed, did admonish supine persons, by indirect visions, what shall come to passe, and out of all kinds of portents and prodigies; as if chance were not a sufficient agent for these effects, but we must mix God, not onely with the Sun, and with the Moon, and severall other living creatures, but also with all brass and stone.

But to instance in Oracles onely: Many waies may it be evinced, that they are meer impostures of Priests, as may particularly be discover'd, for that the Verses which proceed from them are bad, being for the most part, maimed in the beginning, imperfect in the middle, lame in the close, which could not be, if they came from divine inspiration, since from God nothing can proceed, but what is well and decent.

And I remember, that, when in my younger daies I lived at Samus, that Oracle was much cryed up, by which (as they reported) Polycrates King of that Island, celebrating the Pythian and Delian Games, sent at the same time to Delus, demanding of Apollo, Whether he should offer sacrifice at the appointed time? Pythius answered, *These to thee are the Pythian and the Delian*; whereby (said they) it was signifi'd, that those should be his last, for soon after he happen'd to be slain. But how could it be signifi'd by that answer, that these sacrifices should be the last rather than the middle? but that the vulgar sort of men are most commonly led by hear-say, and are greedy of strange stories.

Chap 7 – Of the End or Corruption of the World

That the world shall perish and have an end, is consequent, forasmuch as it was generated and had a beginning; for it is necessary, that all compounded things be also dissipated, and resolved into those things of which they were compounded, some by some causes, others by others; but still all from some cause, and at some time or other. Whence it is the more to be admired, that there should be some, who, not onely broaching the opinion, that the world was generated, but even in a manner made by hands, thence define, that it shall be ever. For, as I argued before, what coagmentation can there be dissoluble? or what is there that hath a beginning, but no end?

Certainly, the world seems like an animal, or plant, as generated, so subject to corruption, as well because, not otherwise than they, it consists

of Atoms, which by reason of their intestine motion, wherewith they are incessantly moved, at length must cause a dissolution; as also because there may happen both to them, and the world, some extrinsecall cause, which may bring them to destruction; especially, it being known that every thing is produced but one way, but may be destroyed many; as also, because, as there are three Ages in them, youth, middle state, and old age; so the World first began to grow up, (as also after the time of its generation, there came extrinsecally from the Universe, Atoms which insinuated into the pores as it were of the World, and by which Heaven, the Stars, the Aire, the Sea, the Earth, and other things were augmented, the congruous Atoms accommodating themselves to those that were congruous to them) then, because there ought to have been some end, of growing, it rested in a kind of perfect state; and at last began so to decay, as plainly showes, that it declines towards its last Age.

This is first proved, because, as we see, in progresse of time, Towers fall, Stones moulder, Temples and Images decay, whereby at last they come to be dissolved; so we may perceive the parts of the World, sensibly to moulder, and wear away; a great part of the Earth goes away into Aire, (not to say any thing of those greater concussions, which make us fear sometimes, lest the whole should fall, and sinking from under our feet, sink, as it were, into an abysse) the water also is partly exhaled into aire, partly so distributed through the earth, that it will not all flow back again; the Aire is continually changed, many things going forth into it, and many produced again out of it. Lastly the fire, (not onely ours, but the Starry fire also, as that which is in the Sunne) sensibly decayes by the emanation, and casting forth of light. Wherefore, neither is there any reason, to think, that these bodies of the world will continue ever.

Again, because we see there is a continuall fight amongst the bodies of the world themselves, through which sometimes happen conflagrations, sometimes deluges, as it were with equall strength. But, as in wrastling, so is it necessary, that in the world one of the contraries prevaile at last, and destroy all things. If any shall demand, which of the two is the more likely to prevaile, it may be answer'd, The Fire, as being the more active, and receiving particular recruits from the Sun, and Heaven; so as at last, it will come to get the upper hand, and the world thereupon perish by conflagration.

Lastly, because there is nothing indissolvable, but either as it is solid, as an Atom; or intactile, as vacuum; or hath nothing beyond it, whence either a dissolving cause may come, or whither it selfe may go forth, as the Universe. But the world neither is solid, by reason of the vacuum intermix'd; nor intactile, by reason of corporeall nature; nor hath nothing without it, by reason of its extremity; whence it followes, that a destruction may happen extrinsecally, by bodies incurring to it, and breaking it; but, both extrinsecally, and inrinsecally, it is capable of being dissolved.

This I adde, because the world may perish, not onely by conflagration, or if you will by inundation also, but by many other waies; amongst which the chief is, that, as a living Creature, (to which I already compar'd it) the frame of the soul being unty'd, is dissolved into severall parts, and these at length are quite dissolved also, either by being dissipated, and turning into aire, and the most minute dust, or serving again for the production of some other living Creatures; So the walls, as it were, of the world decaying, and falling, the severall pieces of it are dissolved, and goe at length into Atoms, which having gotten into the free space of vacuum, rush downwards in a Tumult, and recommence their first motions; or run forward, far and long; or soon fall upon other worlds; or meeting with other Atoms, joyne with them to the production of new Worlds.

And though indeed, as a living Creature may be sooner or later dissolved by departure of the soul, so may either of these happen to the world; yet it is more probable, that it will so come to passe, as that in a moment of time, nothing thereof shall remain except Atoms, and a desolate space; for which way soever the gate of death, as it were, shall be first opened, thither will all the crowd of matter throng to get out.

That the world, as I said, is declining towards its last age, is probable, for that the teeming earth, as I lately touched, scarse bringeth forth even little Animals, when as formerly she produced large; and that she not without extream labour, brings forth corn and fruits, whereas at first she brought them forth of her owne accord, in great plenty. Whence it comes, that there are frequent complaints, praising the former ages, and accusing the present, for that they perceive not that it is the course of things, that all things should decay by little and little, and, wearied with long space of age, tend as it were to destruction. I wish reason, rather then

the thing it self did perswade, that within a short time, we shall see all things shatter'd in pieces.

Chap 8 – Of Infinite Worlds

Moreover, as to the demand, Whether these are, besides this, not onely other worlds, but many, even infinite: this seems to be the answer, That there are infinite Worlds. For [343] *the Atoms being infinite, as we formerly showed, are carried through infinite spaces, and that severall wayes, in far distances from this world, and there meeting one another in multitudes, may joyne to the production of infinite Worlds. Since the Atoms, being of this nature, that a world may be made up, and consist of them, cannot, by reason of their infinity, be consumed, or exhausted by one, nor any determinate number of Worlds, whether these worlds be supposed, framed after one fashion, or after divers. It is not impossible therefore, but that there may be infinite Worlds*.

[344] And indeed it is, as absurd for a single world, to be made in an infinite Universe, as for one eare of corn, to sprout up in a vast field, sowed with many grains; for as in the field, there are many causes, to wit, many seeds apt to grow up, and places to produce them; so in the Universe, besides places, there are causes, not many, but, infinite, namely Atoms, as capable of joyning, as those, of which this World was made up.

[345] Besides, we see not any generable thing, so one, as that it hath not many like it selfe, in the same kind, (for so men, so beasts, so birds, so fishes are multiplied each under their particular species.) Wherefore, seeing that not onely the Sun, the Moon, the Earth, the Sea, and the rest of the parts of the World were generated; but even the whole World it selfe, which consists of them, we must acknowledge, that not onely the parts, but the World it selfe, are not single, but many, as to number, and (for the reasons alledged) infinite.

Now there being nothing to hinder, but that some Worlds may be like this of ours, others unlike it, for there may be equall, there may be greater, there may be lesser; there may be, that have the same parts, disposed in the same order; there may be, that have the same figure; there may be, that have a different, (for though Atoms cannot have infinite variety of figures, having a determinate space in their superficies, yet may they be of more figures then we can number, as Round, Ovall, Pyramidal, &c.) although I say, there be no repugnance in this, yet all these diversities are onely certain kinds of conditions, which vary the common quality, and nature of the World.

But it seems, that each of the other Worlds, as this of ours, and every compound which is made in that vast vacuity, and hath any resemblance with those things which fall under our observation, is generate apart, and after a fashion peculiar to it selfe, [346] *by certain convolutions, and intertextures of Atoms proper to it*; and this, whether it be generated in the intermundia, (so we term the intervall, included betwixt two or more Worlds, not far distant from one, another) or in a multivacuous place, (that is, in which though there be great and little bodies, yet vacuities take up the greater share of it) or lastly, in a great unmixt, and pure vacuum, though not as some (who assert such a vacuum) describe it.

For we are to understand, contrary to them, that [347] *there floweth together, if not from infinite, at least from one, or more Worlds, or intermundia, some apt seeds, that is a congruous heap of Atoms, or little bodies, which are by degrees mutually adjoyned here and there, and variously formed, and change place diversly, according as it happens, and withall receive from without some irriguous as it were accretions; untill a bulk, consisting of the whole assembly of all these, be made up, and gain a consistency, as much as the principles, of which it was made, can well bear*.

[348] *For it is not sufficient, for the generation of a World, that a great heap of Atoms be thrown together in a Vacuum, and, by the accession of others, grow bigger, till it route into another vacuum; in the same manner, as a heap of Snow, being tumbled upon snow, gathers still more, and growes bigger, as was the opinion of a certain Philosopher, holding a necessity of such a method; since this is repugnant to our daily experience*. For a heap, whose innermost kernell, as it were, is solid, and its outermost shell solid also, can neither be rolled up and down, nor increased, if the part intercepted betwixt the kernell and the shell, be fluid, as in the world it is.

Finally, that the other worlds also are, because generated, subject to corruption, is too manifest, to be mentioned; that some may be dissolved sooner, others later, some by some causes, others by others, is a thing necessarily consequent to the peculiar diversity of every one.

2.3.3. Sect. 3 – Of Inferiour Terrestriall Things

But that (omitting the rest) we may speak more particularly of this our world, since all things in it, are either contained within the compasse of the Earth, or exceed not the height of the ground, or are placed on high, that is eaised above the earth's superficies, and therefore, may generically be divided into the low, or terrestriall sort of things, and those which are sublime, celestiall, or aeriall; let us then so order our discourse, as to speak first of the former, in regard, that as they are neerer, and more familiar to us; so we may thence ascend, by orderly degrees to discourse, and define, what we should most ratinally conjecture of the latter, which are more remote from us, and lesse visible to us.

In the first place, we are to take a generall view of the body of the earth, next of the water, a considerable part of this Masse, and mingled diversly with the earth, partly in its superficies, partly in its very bowells; afterwards of these lesser bodies, with which we see that whole masse replenished, whether inanimate, as minerals, stones, and plants; or animate, usually called animals.

Chap 1 – Of the Earth Scituate In The Midle of the World

First then, as to the Earth, we have already said, how it was framed together with the other parts of the world; for it had been to no purpose to form it fist, beyond the utmost surface of the world, and then convey it into the world already framed, since it was sufficient for that effect, that there were such seeds found in the universall masse, of which it, with the other parts of the world, might be generated; in the same manner as it would be unnecessary, that living creatures should first be separated from, and carried beyond this infinity of things, and be formed there, that, being now perfected, they might be brought thence into this our region. Nor was it needfull that they should first be exactly wrought in heaven, seeing no man can show, why there must needs be found such seeds there, of which animals, plants, and other visible compounds are made up, and could as well be found here; or whence heaven hath this priviledge, of having sufficient conveniences for their generation and nutrition, more then our earth.

It is already said, That the Earth, when the Heaven, and other higher bodies, did fly, as it were, upwards, setled into the middle of the world, and there rested as in the lowest place; we add now, that as it is the middle part of the world, towards which all heavy things fall, it followes not, that there is also a middle part of it, called the Center, towards which, all things that ponderated are directed in a streight line; for all heavy things fall in parallel motions, without any endeavour to meet in any angle, from which all heavy things come, and onely one below towards which they tend.

Whenc, as they are not to be approved of, who say, there are Antipodes, or men so scituated in a strange region of the earth, that they walk with their feet diametrically opposite to ours, in like manner as we see the images of men or other things, either stand or go with their heads downwards under the water; for these Philosophers endeavour to maintain, contrary to the lawes of nature, and of heavy things, that men and other terrestriall bodies placed there tend upwards or towards the earth; and that it is equally impossible they should fall down from the earth to the inferiour places of the sky, as that bodies amongst us here should un-impell'd mount up to heaven: However, upon another account they speak consequently to their hypothesis, that 'tis day with the antipodes when 'tis night with us, and night with them when 'tis our day.

The earth then is framed indeed after a circular figure, but yet as a dish or a drum is, not like a sphear or bowl; for this surface of it which we inhabit, and which indeed is onely habitable, is flat or plain, and not globous, and such as all heavy things are carried to it in a streight line, or perpendicularly, as was formerly declared.

This bein so, here ariseth a great difficulty, how it can then be that it should stand steady, and not fall downwards into that region, into which the Antipodes would slide; but *the reason why the earth falls not, is, because it rests upon the aire, as ally'd to it in nature; nor doth it any more burthen the aire than animals,*

which are of like nature with the earth, burthen the earth.

Nor is it hard to conceive, that in the aire beneath there is a power to sustain the earth, because the aire and the earth, by the generall contexture of the world, are things not of different extraction, but ally's to one another by a certain affinity; whence, as being parts of the same whole, one cannot be burthensome to the other, but are held by a mutuall embrace, as if they had no gravity at all, especially since this earth, however in this upper part of it more compacted and heavy, may, descending lower, be, by degrees, lesse solid, and so lesse weighty; till at length, in its lowest part of all, it approach very near the nature of the aire which supports it.

And for this reason I said, that the earth was not made in some place out of the world, and thence brought into it, because then it would have pressed the aire with its weight, as our bodies are sensible of the least weight, if imposed from without; whereas neither the head nor other parts are heavy to one another, by reason that they are agreeable to one another in nature, and knit to one another by the common law of the same whole.

And that is seem not incredible, a thing so tenuious as is aire should be able to uphold so grosse a bulk, do but consider how subtle a thing the soul or animal spirit is, and yet how grosse and weighty a bulk of the body it upholds and governs, and that onely by this means, because it is a thing joyned to it, and aptly united to it, as the aire is to the earth.

But we must not therefore conceive the Earth to be animate, much lesse a goddesse, for we have formerly proved the contrary; the earth indeed many times brings fort severall living creatures, yet not as being her self animate, but because, containing various atoms, and divers seeds of things, she produceth many things many wayes; of which, animate beeings are formed. Some there are who call the earth, the *great mother of the gods*, and *Berecynthia*. That to the earth these names be attributed, if it be lawfull to make use of divine things thereby to signifie naturall things, may perhaps seem tolerable; but to believe that there is a divinity in the earth, is no way allowable.

Chap 2 – Of Earth-quakes, and the Flames of Aetna

It seems wonderfull, how it comes to passe, That the Earth is sometimes shaken and trembles; but this is an effect which may happen from divers causes, supposing that the Earth, as I see no reason to doubt, is in all parts alike, and that below as well as above; it hath caverns, breaches, and rivers, rolling great billowes, vast stones, &c.

For the water may move the earth, if it hath wash'd or worn away some parts, which being made hollow, it can no longer be held up, as it was whilst they were entire; or, if some wind drive upon channels, and lakes, or standing-waters within the earth, and the [blow] impulsion either shake the earth from thence, or the agitation of the wind increasing with its own motion, and stirring up it self be carried from the bottom to the top, as a vessell cannot stand stedfast, untill the water which hath been troubled in it give over moving.

Likewise the earth may receive a shock, by some part thereof suddenly falling down, and thereby be moved, seeing that some of its parts are upheld, as it were, with columns and pillars, which decaying and sinking, the weight that is laid on them quakes: For we see whole houses shake, by reason of the jumbling and succussion of Carts and Chariots.

Also the very wind it selfe may move the earth, either if the earth (its interiour and lower parts, being full of crannies and chinks) be shaken by some wind variously dispers'd, and falling into those hollow caverns, and so tremble, in such manner, as our limbs by insinuation of cold, tremble, and are moved, whether we will or no; Or, if the wind getting in at the top, and driving downwards, the earth is driven upwards, by the aire under it; which is somewhat grosse and watery, (for it sustains the earth) and shaken as it were from beneath, leaps up, which happens to all things; not onely to those which are forc'd against any thing, hard or firme; or so stretched or bent, that being prest upon, it recoiles; but also against a fluid thing, if it be able to strike it back, as when Wood is plung'd into water.

The force of this wind, if we conceive it turned into fire, and resembling thunder, may be carried on with a great destruction of all things, that oppose its passage. For as lightning, engender'd in a cloud, breaks thorough it, and shakes the Aire with wonderfull violence; in like manner, may the fire generated within the Caverns of the earth, of a coacervate and exagitated wind, break thorough it, and make it tremble.

Now as there appears not any cause, more likely then that which is taken from the wind, and chiefly in this last manner, either by distributing it self into many severall cavities of the earth; it causeth a trembling only, and (as if there were a transpiration through the looser earth) the earth is not so broken thorough, as that there is a breach made, or something overthrown, or turn'd awry; or else by its being heaped up together in greater Caverns, there may follow such a succussion and impulsion, as may heave up, and cleave asunder the Earth, and make gaps big enough to entombe whole Citties, as in divers places it hath often happen'd.

What I say concerning the force of the wind, which being turned into fire, breaks thorough and shakes the earth, may serve to make us understand, that the eruptions of fire which often happen in the same places, as at Aetna, proceed from the same cause.

For this Mountain is all hollow within, and so underpropped with vaults of flint, that the wind shut up in them, groweth hot, and being enkindled, forceth its way thorough the breaches which it finds above, and eats into the sides of those Caverns, whence (together with flame and smoak) it casts up sparkles and pumices.

And the better to bring this to passe, the Sea lies at the foot of the Mountain, which rolling its waves to and from the shore, unto which the Caverns of the Hill extend, thrusts in, and drives forward the aire, whereby, the fire is augmented, and cherish'd, as with the blowing of bellowes.

Chap 3 - Of the Sea, Rivers, Fountains, and the Over-flowing of the Nilus

As for those waters which are on the Earth, (for of those which are generated on high, and thence fall down in rain, we shall speak more opportunely hereafter) first there is a vast body of them, which we call the Sea: for besides those in-land Seas which wash our shores, there is also an extern Sea, or Ocean, which, flowing about all the habitable earth, is believed by some, to be so immediately placed under the Arch of Heaven, that the Sun and other Stars rise from it, and set in it, as we shall have occasion to shew else-where.

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And indeed, the vastnesse of the Sea being such, it may be esteemed not the most inconsiderable reason, why the Sea seems not to be increased by the flowing of so many Rivers into it; for all the Rivers are hardly like a drop, compared to so immense a body. And withall the Sun, who with his beams, so soon dries wet garments; although he suck not up much moisture from every place, yet from so large a compasse, cannot but take away a great deal. Not to mention, how much the winds, which in one night many times dry up the waies, and harden the dirt, may in sweeping along the Sea, consume of it.

But, the chiefest reason seems to be this. The earth being a rare body, and easily penetrated, and withall, washed on all sides by the Sea, the waters, as well as they are poured from the earth into the Sea, so must they also soke down from the Sea into the earth, that they may rise up in springs, and flow again.

Neither need it trouble us, that the water of the Sea is salt, and the waters of springs, and rivers fresh; because the water passing out of the Sea into the earth, is strained in such manner, that it puts off the little bodies of salt, and returned quite strip'd of them. For, the body of the Sea, being commixed of salt, and of water; for as much, as the seed of salt are more hooked, and those of water more smooth, therefore, these glide easily away, whilst the others cannot but be entangled, and are all along left behind.

Hence appeareth the cause, (which seemeth the principall) of the perpetuall flowing of springs: where the rise up, there may indeed be some great quantity of water gather'd together, which may serve for supply; but upon another account, they may be suppli'd, for as much, as there is something continually flowing, from beneath into them. And though these subterraneous rivolets, (as it were) might be made up of the severall seeds, which are dispersed through the earth, yet must these seed be supplied by the Sea, which soaks into

the earth.

Whence it comes to passe, as was said, that those rivolets dispersing themselves into lesser streams, and running down into lower hollow receptacles, and meeting there, at last, joyn together in great Channells, and make large Rivers, which continually supply the immense Sea.

But since, there is not any River more wonderfull then Nilus, for that ever summer, it over-floweth and watereth Aegypt, we must not therefore, omit to say, that this may happen by reason of the Etesian winds, which at that season, blowing towards Aegypt, raise up the Sea to the mouth of Nilus, and drive up sands thither, so as Nilus cannot but stop and swell, and rising above its Channel, over-flow the plaine which lies beneath.

Perhaps also, it happens, for that the Etesian winds blowing from the North, carry the Clouds into the South beyond Aegypt, which meeting at some very high Mountains, are there crowded together, and squeeze forth rain, by which Nilus is increased.

It may happen also, that the exceeding high Mountains of Aethopia, may be cover'd with Snow, which being dissolved by the Sun's excessive heat, fills the Channel of Nilus.

Chap 4 – Of the Properties of Some Waters, and of Ice

But that we may select besides some properties of water, which seem wonderfull to the vulgar, I omit at present that property, which is of kin to those we last mentioned, that although the water so easily dissolves salt, and admits to be imbued by it, yet there are some sweet fountains which spring out of the midst of the sea. For this plainly happens hence, that the water bursting forth from the bottom of the sea, riseth up with so great vehemency, that it drives away on all sides the seawater, and neither suffers it nor its salt to be mingled with it.

Wonderfull is that fountain in Epirus, over which flax or a taper is no sooner put, but it is presently set on fire and flames. It seems, that from the earth which is beneath it, so many seed of heat are breathed forth, as that though they are not able to heat the water in their passage through it, yet as soon as ever they get out of it into the open aire, running into the flax and tapers, they associate themselves with the fiery seeds, wherewith such things abound, and break forth into flame; in the same manner as when putting flame to a candle newly extinguish'd, you may see it light before the flame touches it.

But what shall we say of that fountain, which is reported to be at the temple of Jupiter Hammon, conld in the day time, and hot in the night? Certainly, the earth about this fountain, though it be looser than other earth, yet being compress'd by the cold of night, it strikes out, or squeezeth forth, and transmits into the water many seeds of fire which it contains, whereby the water groweth hot; but being loosened by the heat of day, it sucks back again, as it were, the same seeds, whereby the water becommeth cold.

It may likewise come to passe, that the water which is made hot through the same seeds, which are repressed in the night-time by reason of the cold aire, may become cold in the day time, the beams of the Sun passing so through the water, that they afford to those seeds a free vent into the aire: just as ice is dissolved by the same piercing and rarifying beams; and though the effects of wax, and hardning of clay.

'Tis from the same cause, that water in wells is hot in the winter, cold in the summer. For in summer, the earth is rarify'd by heat, and exhaleth the seeds of heat which are in her, by which means the water which is kept close within her, becomes colder. But in winter, the earth is compress'd and condens'd with cold; whence, if she hath any heat, she squeeseth it forth into the wells.

These put me in mind to speak of Ice, by which the water, forgetting, as it were, its naturall fluidity, growes solid and hard. Here we must conceive, that those bodies onely are capable of being made solid, which are made up of parts or little bodies, that have plain surfaces; because, by exclusion of vacuity, the parts cohere best with one another; whereas if those little bodies be round, or joyned to round, or intermingled with plain, there is a vacuum contained round about them, into which the round may roll, and the plain bend; whence

followeth softnesse and (unlesse there be some hooks that stay it) fluxibility.

Ice therefore is made, either when the round little bodies which cause heat are thrust out of the water, and the plain which are in the same water (part whereof are acute-angled, part obtuse-angled) are thrust up

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close together; or when those little bodies are brought thither from without, (and that for the most part from the aire, when it is made cold by them) which being closely pressed, and thrusting out all the round that they meet, bring solidity into the water.

Chap 5 - Of things Terrestriall Inanimate

Our method leading us to speak of those things which are generated of earth and water, it is in the first place manifest, that those things are either animate or inanimate. Animate things are those which have sense, and are vulgarly called Animals; inanimate things are those which want sense, whence under this name are comprehended all those, to which the name of Animal is not applyed.

Of this sort are, first, certain moist things which are grown consistent, as we see salt, sulphur, and ill-scented bitumen generated in the earth. Now these are the chief cause, not onely of subterraneous heat, and ignivomous eruptions, as that of Aetna, already spoken of, but also of pestiferous exhalations, which being carried on high, cause Avernous lakes and diseases. Wherefore we will speak more amply of these, when we treat of Meteors. Concerning Amber, which attracteth strawes, we shall say something hereafter.

Of this sort also are Metalls, which were first found out upon occasion of some woods, being burnt by lightning, or some other fire, which being quite burnt up, the metalls were melted and stuck to the roots, and thereupon dazled the eye with their splendour, and were observ'd to retain the same figure with the chincxs in which they flowed. Whence men conjectured, that the same metalls being melted by the force of fire, might be formed into any figure, eeven, acute or pointed; and by reason of the solidity they had acquired, might be made fit to malleate, or to strike, or for other uses.

Moreover, not onely Lead, but also Gold and Silver lay neglected, as being found lesse commodious for those uses, and Brasse onely was in esteem, of which were made darts, swords, axes, plough-shares, and the like; untill Iron came to be found out; of which, then, they chose rather to make these things, by reason it was of greater hardnesse.

Of this sort also are stones, whereof many are daily generated, many broke off from rocks, but the main bodies of rocks and stones were made from the beginning; for by this means, as we said formerly, mountains were first occasion'd, and sometimes we find, that the earth encloseth in her bowells, caverns, rocks, and broken stones, as well as rivers, channels, and winds.

Now as Stones are ordinarily discerned by their hardnesse and solidity, so in the first rank, as it were, may be reckoned Adamants, not damnify'd by blowes, (for a tryall of them being made upon anviles, they split the iron) and huge Flints, out of which, by the stroke or iron, fire flyeth, for they contain seeds of fire close hidden in their veins; neither doth the cold force of the iron hinder, but that being stirred up by its stroke, they meet together in one body or spark.

Lastly, of the inanimate kind are Plants, that is, herbs and trees; for the soul is not without sense. And we see, that of animate beeings, which from thence are called animals and living creatures, some have a moving and desiderative soul, others a discursive; but plants neither have sense, nor either of those souls, and therefore cannot be called animate things.

Something indeed they have common with living creatures, that is, nutrition, augmentation, generation; but they perform these things by the impulse of nature, not by the direction of a soul, and therefore are onely analogically, or for resemblance-sake, said to live and die as animals. Whence also whatsoever may be said of them, may be understood by parity, and, in some proportion, by those things which shall be said of living

creatures.

I would add, that the originall of sowing and grafting was, upon the observation men took, that berries and acorns shedding and falling to the ground, sprung up again, and begot new plants, like those of which sort they themselves were. But it is enough to have hinted this.

Chap 6 – Of the Loadstone in Particular

But we must insist a little longer upon a thing, inanimate indeed, yet very admirable; I mean, the Herculean Stone, which we call also Magnet, for that it was first found in Magnesia. It is much wondered at by reason of its singular power (or vertue) in attracting Iron.

To explicate this power, we must suppose three or four Principles; one is, That there is a continuall effluxion of little bodies out of all things; as, out of coloured and lucid bodies, flow such as belong to colour and light; from hot and cold bodies, such as belong to heat and cold; from odorous bodies, such as belong to smell; and so of the rest.

A second is, that there is no bodie so solid, but hath little vacuities contained within it, as is manifest by all bodies, through which passeth moisture, (or sweat) light, sound, heat, or cold.

The third, That these effluent little bodies are not alike adaptable to all things. The Sun, by emission of his beams, hardens clay, melts snow; Fire resolves metall, contracts leather; Water makes hot iron harder, leather softer; the Olive tree is bitter to the taste of man, pleasing to goats; Marjoram is sweet to the smell of man, hatefull to swine, &c.

The fourth, That the little vacuities are not of the same compasse in all things, wherefore neither can the same be accommodated to all little bodies. This is manifest from the contextures of the senses, for the little bodies which affect these move not those, or those which affect some one way, affect others another; as also from the contextures of all things else, for what will penetrate one, will not penetrate another.

From these it is understood, that the Load-stone may attract Iron (and Amber Straw) upon a double account. For first, we may imagine the atoms that flow out of the Stone so to suit with those which flow out of the Iron, that they easily knit together; wherefore being dashed on both sides on the bodies of the Iron and the Stone, and bounding back into the middle, they entangle with one another, and draw the Iron along with them.

But forasmuch as we see, that the Iron which is attracted by the Stone, is it self able to attract other Iron; whether shall we say, that some of the particles flowing out of the Stone, hitting against the Iron, bound back, and these are they which catch hold of the Iron. Others insinuating into it, passe with all swiftnesse through the empty pores, and being dashed against the Iron that is next, into which they could not all enter, although they had penetrated it; from thence leaping back to the first Iron, they made other complications like the former; and if any happened to penetrate farther, they likewise might attract another Iron, and that another, upon the same ground.

Moreover, it may be conceived in this manner, that there flow certain little bodies, as well out of the Magnet, as out of the Iron, but more and stronger out of the Magnet; whereby it comes to passe, that the aire is driven away much farther from about the Magnet, than from about the Iron, whereupon there are many more little vacuities made about it than about the Iron. And because the Iron is placed within the compasse of the dispelled aire, there is much vacuum taken up betwixt it and the magnet. Whence it happens, that the little bodies leap forward more freely, to be carried into that place, and there upon run towards the Magnet; but they cannot go thither in a great and extraordinary company, without enticing along the things that cohere with them; and so the whole masse, consisting of such coherent things, goes along with them.

It may also be said, that the motion of the Iron is assisted by the aire, through its continuall motion and agitation. And that first from the outward aire, which continually pressing, and pressing more vehemently where it most abounds, cannot but drive the Iron into that part where there is lesse, or which is more vacuous, as towards the Magnet. Next from the inward, which in the same manner continually agitating,

moving, and driving, cannot but give it a motion into that part, where there is greatest vacuity.

Chap 7 – Of the Generation of Animals

We now come to speak of Animals, which are of so different natures, some walking, some flying, others swimming, others creeping; some being greater, some lesser; some more perfect, some less perfect (even we ourselves also being Animals) and yet withall still of one nature, that nature discovers an admirable power in the composure of them.

For since nature is, as it were, instructed by the things themselves, and from their orderly procedure, and compelled by a kind of necessity, or by the concentration of motions, to perform these so many and so different effects, which we call the works of Nature; this especially appears in Animals, because the concatenation of motions shows itself to be artificiall, chiefly in them, although proceeding from a substance utterly void of reason.

And although the atoms themselves be not endewed with reason, nor their motion governed by rational conduct, yet the nature of every living creature in the beginning of the world grew to be such, that, according to the temperature of those motions, which the atoms then had, other motions still and others followed, which being caused after the same manner, still produced their like. By which means those motions, which in the beginning were meerly casuall, in processe of time became artificial, and succeeded after a constant and determinate order.

But to discourse more fully hereupon, Divers kinds of Animals being produced in the beginning of the world, it came to passe first, by their receiving congruous aliment, that those atoms which are adaptable to one another were attracted and intangled by their fellow-atoms, which were already in the Animal, (those which were not adaptable being cut off) so that a peculiar nature to every one of them, *viz*. such a compound of such atoms growes up first, and at length becomes confirmed.

Next, that by the perpetuall motion of atoms, and their intrinsicall ebullition, some of them being still thrust out of their places, and running into the genitall parts, meet there from all places, and, there being a disctinction of Sexes, after mutual appetition and coition, are received in the womb.

After this, that the Atoms, or seminall bodies compounded of them, and flowing from all parts, (whence therefore, [349] *the seed may be conceived as something incorporeall*, not in rigour indeed, because only vacuum is truly such, but *in the most familiar sense of the word, by which we term any thing incorporeall, which easily penetrates through the most solid bodies*) that the Atoms I say, or those seminall little bodies, which thus flowed from all parts, did therefore, (this motion continuing) with-draw them from the tumult of others, and, like Atoms drawing their like, therefore those that come from the head, would betake themselves to one place; those from the breast, into the next place; and those which came from every other part, each rank themselves in their distinct scituations; and so at length, a little Animal is formed like that, whence the seed was taken.

Moreover, that this little Animal is nourished, and increaseth by the attraction of like Atoms, or little bodies meeting together in the womb; untill the womb being wearied, and no longer fit to nourish them, slackens its motions, or rather opens the door, and gives them leave to goe out.

Further, that this Animal being after the same manner, fully grown up, and the continuall agitation of the Atoms, pursuing one another, not ceasing, it begetteth another, like thing, and that other consequently another.

At length, that nature being by little and little accustomed hereunto, learneth, as it were, so to propagate Animals like in their kinds, as that from the motion, and the perpetuall series of Atoms, it derives a necessity of operating continually in this manner.

Thus much for the generation of those Animals which are made by propagation; as for those, which we sometimes see produced otherwise, they may be generated after the same manner, as all things at first

were; whether some seeds of them were remaining, formed from the very beginning; or whether daily formed, either within, or without, the Animals themselves; and if within, then thrust out, (as in the generation of worms and flies,) leaving behind them some remainders, either in the earth, or else-where; of which, other Animals, of the same kinds, are begotten.

What I said of the defluxion of seed, I meane not onely, on the parts of the Male, but of the Female also, seeing that she likewise emitteth, having parastatae or testicles, although placed in a contrary way, and therefore, is she desirous of coition.

And this indeed, seems necessary to be granted, towards, giving the reason, why a Male or Female is formed; for nothing can be alledged more proper then this, that whereas, the young one consists of the seeds, both of its sire and its dam, if that of the sire predominate, it proves Male, if that of the dam, Female.

Hence also, may be given a cause of the resemblance which it hath, to either, or both its parents: for if the Female with a sudden force attracts, and snatcheth away the seed of the Male, then the young one becometh like the dam; if both alike, it becometh like both, but mixtly.

If you demand, why children are sometimes like their Grand-fathers, or great-Grandfathers, the reason seems to be this, the seed is made up of many little bulks, which are not alwayes, all of them dissolved into Atoms, or neerest to Atoms, in the first, or next generations, but at length in some one of the following generations, they unfold themselves in such manner, as that, what they might have done in the immediate, they exhibit onely in the remote.

But whence comes barrennesse? From the Seed's being either thinner then it ought; so as it cannot fasten on the place; or thicker, so as it cannot easily be commixed: for there is requisite a due proportion betwixt the seeds of the Male, and of the Female; whence it happens, that many times, the same Man or Woman, who are incapable of having Children by one, may yet have them by another. I omit other reasons, as from the Aliment, since it is manifest, that Aliment by which seed is encreased differs from that, whereby it is attenuated, and wasted.

Chap 8 – Of The Use of Parts In Animals

Hence followes, that the parts of Animals were not from the very beginning, of things framed, after the fashion they have now, for those ends and uses, ewhereto we see them now serve, (for there was no cause to fore-see this end, nor any thing precedent to which that cause attending, and thence taking a conjecturall aime, might designe any such fashion) but because it happened, that the parts were made, and did exist as we now see them; therefore they came to be applied to these uses, rather then to others, and being first made, themselves became afterwards the occasion of their owne usefullnesse, and insinuated the knowledge of it, into the minds of the users.

The eyes therefore, were not made to see, nor the ears to hear, nor the tongue to speak, nor the hands to work, nor the feet to goe, for all these members were made before there was Seeing, Hearing, Speaking, Working, Going; but these became their functions, after they had been made.

For the soul being formed together with, and within the body, and moreover being capable of sense, the eye happened to be made of such a contexture, that the soul being applied unto it, could not but produce the sensitive act of seeing; and the ear of such, as that being joyned to it, it could not but produce hearing; and there being within the body, made together with it, an Animal spirit capable to impell and move, the tongue happened to be framed after such a contexture, as that this spirit coming to it, could not but move it, and break the aire, (which at the same time is breathed forth) into words. In like manner, the hands, the feet, and the rest of the Limbs, were so fashioned, as that this spirit rushing into them, could not but give this motion to one, and that to the other.

As for the tendons, which are plainly the organs, by which the parts are stirred, it is evident, that the actions are not strong, because these are big; nor remisse, because they are small; but the actions are such or such, according to the occasions of frequent, or seldome using them: But the bignesse of the tendons, followes the

quantity of the motion, so that, those which are exercised are in good plight, and grow conveniently bigger, those which lie idle, thrive not, but wast away.

Wherefore, the tendons were not so formed by nature, as if it were better, than they should be strong and big, for the discharge of vehement functions; weak and slender, for the weaker, (for we see even Apes have fingers fashioned like ours) but, as was said before, those which are exercised, must of necessity be big, because they are well nourished, and those which are not exercised, small, because they are lesse nourished.

For confirmation hereof, may be alledged, that most parts are sometimes directed to those uses, for which no man will say they were design'd; and this, when either necessity or occasion, or some conjecture taken elsewhere laies them open to us, as men would not so much as dream of fighting with weapons, if they had not first fought with their hands; nor of holding shields before them, if they had not first felt wounds that were to be avoided; nor of making soft beds, if they had not first slept on the ground; nor of making houses, if they had not been acquainted with the use of caves; and so of the rest.

Chap 9 – Of the Soul, The Intrinsecall Form of Animals

Let us now come to the Soul, by which Animals are, and from it have their denomination. In the first place, we must conceive it to be corporeall, [350] *some most tenuious or subtle body, made up of most subtle particles*. Doubtlesse, *they who affirm it is incorporeal, besides that they abuse the word, play the fools exceedingly*; for, except it were such, it could neither act nor suffer. It could not act, for it could not touch any thing; it could not suffer, for it could not be touch'd by any thing, but *would be as meer vacuity, which, as I said before, is such, that it can neither act nor suffer any thing, but onely affords a free motion to bodies passing through it*.

[351] *Now that the soul acts and suffers something, is manifestly declared by those things, which happen about its senses and affections*; as also by the motions wherewith it impells the members, and, from within, governeth the whole Animal, turneth it about, transports it with dreams, and, in generall, by its union and consent, to mix in one compound with this grosser matter, which usually, upon this occasion, is more particularly termed the body.

I say, it is a most tenuious and subtle body, for that [352] *it is made up of most tenuious or most subtle bodies; which, as they are for the most part, exceeding smooth, so are they very round*; otherwise they could not permeate, and cohere intrinsecally with the whole body, and with all its parts, as with veines, nerves, entralls, and the rest. Which is manifest even from hence, for that when the soul goeth out of the body, we finde not that any thing is taken off from the whole, neither as to its figure nor weight; but like Wine, when its flower or spirit is gone; or Unguent, that hath lost its scent: for the wine and unguent retain the same quantity, as if nothing of them were perished. So that the Soul, if you should imagine her to be rolled up together, might be contained almost in a point, or the very least of places.

Nevertheless, though it be of such a subtle contexture, yet is it mixed and compounded of four severall natures; for we are to conceive it a thing, made up and contemperated of something fiery, something aeriall, something flowous, and a fourth which hath no name; by means whereof, it is endued with a sensitive faculty.

The reason is this, because when a thin breath departs out of the body of a dying person, this breath is mixed with heat, and heat attracts aire, there being no heat without aire. Thus we have three of those things which make up the Soul; and because there is none of these three from which the sensitive motion can be derived, we must therefore admit a fourth, though without a name, whereunto the sensitive faculty may be attributed.

This may be confirmed from hence, for that there is a certain breath of gale, as it were, and wind, which is cause of the bodie's motion; aire, of its rest; something hot, cause of the heat that is in it; there must

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likewise be some fourth thing, the cause of its sense.

Now the necessity of this fourth being manifest, upon another account, Anger, by which the heart boils, and fervour sparkles in the eyes, convinceth, that there is heat in it; fear, exciting horour throughout the limbs, argues a cold or copious breath or wind; and the calm state of the breast, and serenity of the countenance, demonstrates there is air.

Whence it comes to passe, that those animals in which heat is predominant, are angry, as Lions; those in which a cold breath, are timorous, as Harts; those in which an aeriall portion, are more quiet, asn, as it were, of a middle condition between Lions and Harts, as Oxen. The same difference is also to be observ'd amongst Men.

Lastly, although the Soul be a mixt and compounded thing, and this fourth namelesse thing, or sensitive faculty, be the chief of its parts, (it being, in a manner, the soul of the soul, for from it the soul hath that it is a soul, and it distinguishes animals from other things, as their intrinsecall form, and essentiall difference) neverthelesse these parts are so perfectly contemperated, as that of them is made one substance, and that most subtle and most coherent; neither, as long as the soul is in the body, can these four be separated from one another, any more then odor, heat, or sapor, which are naturall to any inward part of the body, can be separated from it.

Now this substance, being contained in the body, and coherent, as it were, with it, is, in a manner, upheld by it, and is likewise the cause of all the faculties, passions, and motions in the body, and mutually containeth the body, and governeth it, and is moreover the cause of its health and preservation, and can no more be severed from the body, without the dissolution thereof, then scent can be divided from frankincense, without destruction of its nature.

I shall not need to take notice, that one of the Naturall Philosophers seems, without any reason, to conceive, that there are as many parts of the soul, as of the body, which are mutually applyed to one another. For the substance of the soul being so subtle, and the bulk of the body so grosse, doubtlesse its principles must be more subtle, and fewer then those of the body; so that every one of these coheres not with another, but each of them to little bulks and heaps, as it were, that consists of a greater number. Whence it comes to passe, that sometimes we feel not when dust, or a gnat light upon the body, nor a mist in the night, nor the spiders thred, nor feathers, nor thistle-down, or the like, when we meet with them; it being requisite, that more of the little bodies, which are mingled with the parts of the soul, be stirred up, before they can feel any thing that toucheth or striketh them.

We must further observe, that there is some internall part of the body of such temperature, as that where the soul adheres to it, it receives and extraordinary perfection. This perfection is the Mind, the Intellect, or that which we call the rationall part of the soul; because (the other part diffused through the whole body being irrationall) this onely discourseth.

Now forasmuch as the irrationall part is two-fold, Sense, and Affection or Appetite, and the Intellect is between both, for it hath the Sense going before it to judge things, and the Appetite comming after it, that by its own judgment it may direct it. We shall therefore, being to speak of each, begin with the Sense.

Chap 10 – Of Sense in Generall, Which is the Soul (as it were) of the Soul

To speak therefore first of Sense in generall: we must observe, that the soul possesseth it after such a manner, as that both to have it, and to use it, it requireth the body, as being the thing wherein it is contained, and with which it operates. [353] *Now the body affording this to the soul, viz. that it hath a principle of sensation, and is able to use it, becommeth it self also participant of this effect, which dependeth upon that principle*, (that is to say, it feeleth or perceiveth) *but not of all things that belong thereto*, as of tenuity, and the like.

Wherefore it is not to be wondered at, that [354] *the body, when the soul is departed, remaineth void of sense; for it did not of it self possesse this faculty, but onely made it ready for the soul, which was congenious with it: which soul, by means of the faculty coeffected in the body, exercising, by a peculiar motion of hers, the act of sensation, giveth sense, not onely to it self, but to the body also, by reason of their neighbourhood, cohesion,*

or union with one another.

Thus it comes to passe, that not the soul alone nor the body alone, perceive or feel, but rather both together; and though the principle of sensation be in the soul, yet who ever holds, that the body doth not perceive or feel together with the soul, and believeth, that the soul intermingled with the whole body, is able of her self to perform this motion of sensation, he oppugns a thing most manifest.

355 And they who say, (as some do) that the eyes see not any thing, but it is the soul onely that seeth through them, as through open doors, observe not, that if the eyes were like doors, we might see things much better if our eyes were out, as if the doors were taken away.

Now that which here seems the greatest difficulty being this, How it comes to passe, that a thing sensitive, or capable of sense, may be generated of principles that are wholly insensitive, or void of sense; we are to take notice, that this is to be ascribed to some necessary and peculiar magnitude, figure, motion, position, and order of those principles, as was before declared when we treated of Qualities, for the faculty of Sense is one of the qualities; which that it appear where it was not, requireth, that there be some addition, detraction, transposition, and, in a word, a new contexture, able to do that which the former could not.

Yet we must not therefore believe, that stone, wood, clods of earth, and such like compounds, perceive or feel; for, as other qualities, so this also, is not begotten of every mixtion, or of the mixtion of any kind of things, but it is wholly requisite, that the principles be endued with such a bignesse, such figures, motions, orders, and the like accidents; whence it comes to passe, that even clods of earth, wood, and the like, when putrifi'd by rain, and heated by the Sun, the position and order of their parts being changed, turn into worms and other sensitive things. This may be understood from the severall aliments, which being applyed to the bodies of living creatures, and variously altered, do, in like manner, of insensitive become sensitive; as wood applyed to fire, of not-burning becommeth burning.

And that it may appear how much some are mistaken, who assert, that the principles whereof sense and sensitive things consist, must be sensitive; consider, that if they were such, they must be soft, forasmuch as no

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hard, or solid thing is capable of sense, and consequently, as we argued before, they must be corruptible; because, unlesse they are solid, they may be diminished, and so lose their nature, whereas the principles of things, as we have often heretofore alledged, must be incorruptible, and permanent.

it may otherwise be proved thus; If we allow the principles to be incorruptible, we cannot conceive them to be sensitive; neither as parts, for parts severed from the whole, feel not; neither as wholes, for then they would be Animals, and consequently mortall, or corruptible, which is contrary to the Hypothesis. Moreover, if we should admit that they are both Animals, and Immortall, it would follow, that no such animals as we now behold, (that is, of a peculiar kind, and agreeing in one species) could be generated; but onely a heap of severall little Animals.

Furthermore, if sensitive things must be generated of sensitive, that is, like of like, it will be necessary, as we said before, that a man, (for example) consist of principles that laugh, weep, ratiocinate, discourse of the mixture of things, and of themselves, enquiring of what things they consist, and these being like to corruptible things, must consist of others, and those likewise of others, into infinite.

Now it being well known, that in the bodies of Animals there are five distinct Organs of sense, by which the soul, (or the sensitive faculty in her) apprehends, and perceives sensible objects, severall wayes, that is by Seeing, Hearing, Smelling, Tasting, Touching, nothing hinders, but that we allow five senses, the Sight, the Hearing, the Smell, the Taste, and the Touch.

All this diversity ariseth from hence, that on one side the species of colours, and visible things, as also sounds, odors, sapors, and other qualities, are made up of little bodies, endewed with particular Magnitudes,

figures, positions, order; and motions. On the other side, the Organs of sight, hearing, and the rest of the senses, are of such contextures, as contain little vacuities, or pores, which have likewise peculiar magnitudes, figures, positions, and orders, and these organs being various, have severall aptnesses and proportions, to which the severall little bodies of the qualities are commensurated, so as some can receive into themselves these, others those, whence it happens, that onely these little bodies of which the species of colour consist, are capable of penetrating into the Organ of sight, and to move, and affect it after that manner: but so are not the little bodies, which are onely capable of piercing, moving, and affecting the organ of Hearing, or those, which can onely affect that of the Touch, and so of the rest.

Hence also, when we observe, that not only Animals of different kinds, but even amongst Men themselves, some are not affected with the same sensible objects, we may understand, that there is not in them the same kind of contexture. And since in all little bodies blended, and mingled together; some will naturally agree with others, some not, therefore, neither can the impression, and apprehensions, or sensation of the same quality, be made in all animals, neither can sensible object affect all animals alike with all its parts, but each one with those qualities onely which are suitable to their senses, and convenient to affect them.

I shall adde nothing concerning the common objects of sense, as magnitude, figure, motion, and the like, which are perceptible by more senses then one; for what we said of them in the Canonick, is sufficient.

Chap 11 – Of Sight, And of the Images Which Glide Into It

Being to speak something of every sense, we must begin with Sight, whose organ manifestly is the eye; nor is it lesse evident, that [356] *the externall appearances, and form of things, are therefore seen by us; because something glides from without, or from the objects, into us, that is, into our eye*. But before we undertake to show, that this is far more probable, then what others assert; we must declare, whether there be any thing, which comes from the things themselves, into our eye, and of what nature it is.

First then we affirm, that nothing hinders but that certain [357] *effluxions of Atoms, perpetually flying in an uninterrupted course, are sent from the surfaces of bodies, in which also the same position, and same order may be preserved, which was found in the superficies, and solids of the very bodies themselves, whence such effluxions are, as it were forms, figures, or Images of these bodies, from which they are derived, and resembling them in all their Lineaments, and moreover, are far more subtle then any of the things themselves, which by them are made visible to us. This then is the nature of those forms or figures, which we use to call Idola, or Images*.

[358] *Nor is it difficult, that such kind of contextures should be found in the middle aire, or ambiently diffused space; nor that there should be in the things themselves, and especially in the Atoms, certain dispositions rendring them, apt to make representations, which are onely meer empty cavities, and superficiall tenuities of no determinable depth*. [359] But in this place, we speak of those effluviums, which are as it were thin films, or skins stript from the remaining bodies.

[360] Nor yet is it difficult, that images of this nature should flow from the out-sides of bodies, as is hence proved, that there slowing ever something from the inner parts of bodies, as smell, heat, cold, (as we hinted formerly) it is far more easie, that something should flow, or be carried away from their out most parts; since the atoms, as well in one as the other, are in a perpetuall endeavour of disentangling themselves to get away, but in the former case, being cover'd with other atoms, they find resistance, whereas in the latter, being placed in the fore-front of the body, they find none. Adde, that hence also they gain the advantage of flying out from the superficies in the same order, and rank which they held there; whereas those which come from within, cannot but change their postures, being often disturbed in the way, by their anfractuous passages.

[361] Now that there are indeed such effluviums, may hence be proved, that if the Sun beams passe thorough curtains, red (for example) or of any other colour, drawn before the Theaters, such subtle emissions are sent from them, as make all things behind them appear so coloured. But the experiment from Looking-glasses, is more then sufficient; for these clearly show, that there are indeed such effluviums emitted from bodies, in regard, the bodies being present, they light upon the glasse; if any thing intervene, they are hindred from

coming thither; if the bodies be moved, they move also; if inverted, they also are inverted; if the bodies retire, they also goe back; if they are taken away, they wholly disappear.

But [362] *forasmuch as there is no point of time, in which these Images flow not into the Medium, doubtlesse, their production must be made in a point of time, and be perpetually flowing out at the superficies, in a continued stream. For the reason, why they cannot be discerned apart, is because, when one image goes away, another coherently succeeds, and supplies its room; and instantly preserves the same order and position of atoms, which is in the superficies of the solid body, and that for a long time, and at a great distance, (although at last they are confounded.*) Whence it comes to passe, that the body alwaies appeareth with the same accidents, and in the same form.

[363] I mean here, that form which is proper to the body, and is conceived to be a collection (as it were) of parts, disposed in a certain order, or (as it were) the superficies left behind by the image, which flies away from it.

It may here seem strange, that the body seemeth no more to be diminished, then as if nothing at all were taken off from it; but this is by reason of their extraordinary tenuity, which cannot be understood, without first conceiving the tenuity of the atoms. Concerning this, we instanc'd formerly, an animal so small, as if we suppose it divided into three parts, each of them will be indiscernable; and yet for performance of those animal functions which it dischargeth, it must necessarily be made up of such parts and particles as can hardly be formed, without innumerable myriads of atoms.

Not to mention, in confirmation of the probability hereof, that there are many odorous things, out of which, though something incessantly flow, yet for a long time nothing appeareth to be diminished, either as to their figure or weight, notwithstanding that the effluviums out of them are far grosser, and more numerous then these images, which flow out along with them; yet are so inconsiderable a part of the things that flow out, as no man can expresse.

Wonderfull also may seem their celerity in flying out; but this must be understood by the celerity of the atoms, formerly declared; for these images, by reason of the tenuity we spoke of, being nothing else but certain contextures of simple atoms, [364] *have a celerity beyond all imagination, and their passage through the transparent place which is round about them, is like that which is through the infinite spaces, there being not much difference, because they meet few or no obstacles in the space which surrounds them*. Certainly, if the light of the Sun and other Stars can come so swiftly (as we observe) from heaven, the celerity of these images ought to be, if not greater, yet not lesse, by reason of the atoms which stand in the surface of the body, ready for motion, and have nothing to retard them.

Chap 12 – That Seeing is Perform'd By Means of Those Images

These things presupposed, some conceive, that [365] *externall and distinct things are therefore seen by us, because they imprint in our eye the image of their colour of figure, the aire intervening between them and us, performing the office of a Seal, by means of which, this impression is made. Others think, that this is effected by the raies or effluviums, sent from us or our eyes to the object; but it is far more probable, that it is performed by those images we spoke of, which comming from the things, or their colour and figure, flow into us, and preserving a congruous magnitude, enter into our eyes, and strike our sight with a very swift motion*.

This sigillation (or imression) indeed is a thing extream hard, and perhaps impossible to be explicated; and as for the emission of raies out of our eyes, it is unimaginable what the Looking-glasses send out of them, that they also should have images painted in them; or what that is, which in a moment is sent from the eye, into the whole vast circumference of the heavens.

To omit, that since in hearing, smelling, tasting, touching, we send nothing out of our selves, but receive something from without, which causeth a sensation of it self, (for of it self voice comes into the ears, odors into the nostrills, sapors into the palate, and things which may be touched are applied to the body) it is obvious to be conceived, that neither is any thing sent out from our eyes, but that something (*viz*. those images) come into our eyes from the things themselves.

But the soul, in as much as it is in the eyes, cannot but see, that is, appprehend the colour and outward form of that thing which is presented to it; for by reason of the polite and perspicuous contexture of the organ, it receiveth the image of the thing, and is struck by it according to all the presented parts.

366 And forasmuch as those things are beautifull which delight the sight, those deformed which offend it; how should we imagine this to be, but that the images which come from the one consist of bodies, which, by their smoothnesse, are gently accommodated to the contexture of the eye; but those which come from the other consist of such, as by their ugly figure rend the contexture.

367 And when the eye is troubled with the Jaundies, how comes it, that all things seem yellow? but that the images, in their application to the eye, receive a tincture; or they may be stain'd also without the eye, coming amongst the yellow little bodies or images, which proceed in like manner from the eye.

368 But how happens it, that we see not onely the colour and form of a body, but we discern its distance also? This proceeds from the air, which the image drives on before it. for though it comes to the eye exceeding swiftly, and in imperceptible time; yet it comes thither, and touches upon it orderly; and by how much the longer it is in doing so, so much more distant the thing appears to be; by how much the sooner, so much the nearer.

369 Hence also may be given a reason, why an image seems to be beyond the Looking-glasse; for as when a man from any place within a house, looks upon a thing that is without doors, as that within from the door: So, to him who looketh in a glasse, commeth successivly, as well that air which is from the glasse to the eye, as that which is from the object to the glasse.

370 Hence also may be given a reason, why, being in the dark, we can see the things that are in the light; but being in the light, cannot see those things that are in the dark. For the enlightned aire succeeding the dark, the eye informed by it is enabled to see; but not when the dark succeedeth the enlightned.

371 How comes it, that the images in a glasse seem to walk as we do? This happens, by reason of the varied parts of the glasse, from which severall parts there must necessarily be made a reflection upon the eye, and thereupon the images seem to walk as we.

372 I you ask, Why the image which goeth from us to the glasse represents not the back side, but the fore-side, and that so, as that the right part is on the left side, and the left on the right; take notice, that this happens on the very same fashion, as if the image of a man made of chalk or clay, not quite dried, should be clapt to a ball or pillar.

373 But if the image be reflected from one glasse to another, and thence to the eye, the scituation of the parts is restored, so as the right parts appear on the right side, and the left on the left, (and by this means it may be brought to passe, especially if there be many glasses, that such things as are hidden behind something, and out of sight, may be brought to view) which may also happen even in one glasse, if it hath little sides, whereof on reflects the image to the other.

Thus much concerning the Sight; to which also some things, formerly hinted in our discourse of the Criteries and of Qualities, have reference.

Chap 13 – Of Hearing

Concerning Hearing, we must repeat what we touched formerly, that, it being confess'd, the ear is the organ of the hearing, As seeing is perform'd by the coming of something into the eye; so 374 *hearing* also *is perform'd in the ear by an emission of something, convey'd thither from the thing that speaks, sounds, makes a noise, or is some other way disposed to stir up the sense of hearing*. This kind of effluvium, as it affects this sense, is called Sound.

Moreover, this *effluvium*, either in the mouth of the speaker, generally in the thing struck upon and making a noise, 375 *is shatter'd there by motion into innumerable little pieces of the same figure*, (376 round, if the

whole effluvium were round; inequilaterall and triangular, if the first effluvium were such) in like manner as we observe, that little drops are made when we pour any thing out of bottles, or when Cloath-workers spurt water upon their cloaths.

377 *These little pieces, or small bulks, are thereupon dispersed in such manner, as that they preserve a certain mutuall conformity to one another, (and strike the hearing of severall persons alike, so as they all seem to hear one and the same sound, though it be not the same, but like onely) and keep fast also within themselves, each by a particular coherence, whereby it comes to passe, that they are known to have reference to that thing, from which they were font forth, and for the most part make such a sensation, as was first made by that which sent forth the sound, (as when the sound comes not from far into the ear, and passeth through a free space.) But otherwise, (as by reason of a great distance, or some partition) something from without bringeth in the sound confusedly onely. For without a kind of conformity and coherence, deduced and preserv'd from the very thing sounding, there could never be any distinct hearing*.

378 *Yet must we not imagine, that when the voice* (for example) *is once sent forth into the aire, the aire is presently imprinted or formed, either by that voice, or by some others made by it*, into like voices, which (as 379 one expresseth it, flye away together, as one Jay with another, as saith the proverb) *It were too great a task, that the aire should be design'd for any such employment; but as soon as ever the blow is made within us when we speak, the voice being articulated out of certain little pieces, of a most spirituall and nimble effluxion, fit for this office, and arriving at the ear, causeth hearing in us*.

380 That these little pieces which insinuate into the ear have a figure, may be argued, by reason that Sound could not affect the hearing pleasantly and unpleasantly, if it had not such a smoothnesse as suits with the contexture of the organ, nor such a roughnesse as rends the organ. This may better be understood, by comparing the grating of a Saw with the sweetnesse of a Lute, or the hoarse cawing of a Crow with the sweet melody of a dying Swan.

381 Not to repeat some things spoken heretofore, which seem to conduce hereunto, I shall onely touch this difficulty, How it onely comes to passe, that sounds in the night-time are both louder and clearer than in the day. To solve this, we must assume what is manifest from our discourse formerly, That Motion is made through Vacuum, and that there is much of vacuum scattered up and down through the little bodies, or bulks of aire, which are made up of atoms; and that in the day-time it being hot, and these little bodies rarify'd, and the atoms diffused, the little vacuities contained in them must necessarily become narrower and straiter; but in the night, it being cold, and these little bodies prest up close, and the atoms crowded together, the vacuities become larger. This is evident from all things, which in a vessel are boiled, softned, and melted; but if they take up a larger place, they cool, return to their temper, and become contracted.

382 Hence therefore it happens, that the sound in the day-time passing through the dilated aire, and lightnin upon many bodies in its way, is either quite stop'd, or torn, and much knock'd and worn away. But when in the night it passeth thorough a space free from bodies, it arrives at the hearing by a full, ready, and uninterrupted cariere, and with that swiftnesse preserves its clearnesse and distinction.

383 From the same ground it springs, that empty vessells being struck, sound, the full sound not; and that the more solid bodies, as Gold, make a low dull nose; the lesse compact, as Brasse, a greater and clearer.

Chap 14 – Of Smelling

As concerning smelling, we must understand that Odor 384 *(as was in proportion declared concerning sound or voice, when we treated of Hearing) would not make any impression or stamp of itself, unlesse from the odorous thing there were deduced some little bodies or bulks, so commensurated to the organs of smelling (the nostrills) as to be able to move and affect it.*

385That odors flow and come out of things, is manifest, forasmuch as all things esteemed odorous have a stronger scent, being broken, pounded, or dissolved by fire, than whilst they are whole. For the stock of these little bodies, which are fit to move the smell, is pent up, as it were, within the odorous body, and bound; but, the body being broken, pounded, or burnt, it leaps forth, and spreads it self like a vapour or cloud, and affects

the smelling, if it can light upon it.

386 it useth to affect the smell two waies; either *unquietly and unsuitably*, whence proceed unpleasant odors; or *smoothly and aptly*, whence pleasant odors. For some of the little bodies of odor having a smooth and even surface, others, more or greater angles than is fit; thence it happens, that some odors affect the organ with delight, as touching it smoothly; others with a kind of pain, as if they tore it.

387There must needs be a difference betwixt the penetrations of these little bodies into the nostrills, when carcases are burnt, and when the Theater is newly strew'd with Saffron. And it may be conceived after this manner. As the hand, if we put Down to it, presseth upon it; but if a Nettle, snatcheth it self back, (for the smoothness of the one, and the roughnesse of the other by its prickles, affect two different waies) in like manner the little bodies which proceed out of the Saffron, are smooth; those which out of the carkase, prickly; so as the first gently stroke and delight the nostrills, the other prick them, and make them draw back.

388 Moreover, there being so great variety of tempers amongst animals, (even amongst men one in respect of another) and the contexture of the organ of smelling being different in severall persons, it ought not to seem strange, that some scents please some; others, others; by reason of the dissimilitudes of the figures of the little bodies, of which they consist;

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nor that Bees delight in flowers, Vultures in carrion; or that Dogs find out by the scent, which way beasts have gone, which we cannot perceive, as if in passing, they left a stream which cannot strike our smell.

Chap 15 – Of Tasting

We come next, to speak of Tasting. Whereas it is manifest, that the organ thereof is the Tongue and Palate; and that 389 we then taste and perceive the sapor in our mouth, when chewing the Meat, we squeeze out the juice. As when we presse with the hand, a spunge full of water, and thereupon, the juice which is squeezed forth, is distributed thorough the pores, or complicated holes of the Tongue and palate, we may in generall assert, that sapor to be sweet, the little bodies, whereof are accommodated to the organ, gently and smoothly; on the contrary, that to be bitter, salt, sharp, acid, sowr, hot, &c. which roughly and unsuitably. For neither could Honey or Milk affect the tongue pleasantly, nor Wormwood or Centory unpleasantly, if it were not, that those consist of smoother and rounder little bodies, these of more harsh, and hooked; so as those touch it gently, these prick and rend it.

390 He therefore not defines the thing amisse, who saith, that the Atoms which make a sweet sapor, are round, and of a convenient cize; Those which a sowr, large; Those which a harsh, mult-angular, and nothing round; Those which sharp; acute, conicall, crooked, not slender, nor round; Those which an acid; round, slender, corner'd, crooked; those which a salt; corner'd, distorted, acquicturall; Those which a bitter; round, smooth, distorted, little; Those which a fat; slender, round, little.

But more particularly, seeing that the tempers, not onely of Animals, but even of Men among themselves, are so various, and that as they differ in the outward lineaments of their bodies, so they cannot but differ also in their inward contextures, hence we may say, that the sapors, that are pleasing to some Animals or men, are displeasing to others, by reason that the little bodies, of which they consist, are suitable and accommodate to the contexture of the organs of those, but unsuitable and unaccommodate to the contexture of the organs of these; since the round pores that are in the organ, can receive the round Atoms smoothly, but the triangular difficulty; and the triangular pores, can receive the triangular smoothly, but the round difficultly.

391 Hereby also is understood, how it comes to passe, that the things which were formerly pleasant to us, are in a feaver distastefull, for the contexture is so disorder'd, and the figures of the pores so altered, that the figures of the little bodies which insinuate into them, though formerly they were adaptable, now become unsuitable, and incongruous.

392 From the same reason it is, that the meat which agreeth with one Animal, is poison to another; as hemlock, or hellebore is destructive to a man, yet it fattens goats, and quails. This happens by reason of the interiour contextures, which differing from one another, that which is accommodate, and adaptable to one, is inadaptable to another.

Chap 16 – Of Touching

393 Lastly concerning the Touch, I mean not that which is common to all bodies, as they are said to touch one another by their superficies, (contrary to the Nature of vacuum, which can neither touch, nor be touched) but that which is proper to Animals, not performed without perception of the soul; and hath not one, but all parts of the body for its organ. Concerning this Touch, I shall onely declare, that what is perceived by it, is perceived three wayes.

394 For first, a thing is perceived by the Touch, when it is extrinsecally applied, or, from without insinuates it selfe; applyed, as when the hand feels a stone clap'd to it; insinuated, as when a hot thing emitting heat, or a cold thing, cold, certain little bodies get into the pores, which according to the state wherein the body is, either refresh or disturb it.

395 Secondly, when a thing which is within, is driven out: which someitmes happens with pleasure, especially, when the thing it selfe was burthensome and incommodius, *ut dum semen excernitur*; sometimes with pain, as when by reason of the angles of the little bodies, it excoriates the passage, as by the strangury or difficulty of urine.

396 Lastly, when some things within the body, take some of these motions, as by impulsion, diduction, distraction, convulsion, compunction, rasure, excoriation, inflation, tension, breaking, and innumerable other wayes, it disturbes the naturall constitution, and confounds, and troubles the sense. Thus all aches and pains of the head, and other parts within, are caused; and the Animal doth in such manner affect it selfe, as if a man should with his owne hand strike a part of his body.

Chap 17 – Of the Intellect, Mind, or Reason, and its Seat

Hitherto of the sense. We must now speak of the Intellect, which is also usually called, Mind, Reason, The rationall and Hegemonick part; sometimes, Cogitation, Imagination, Opinion, Counsell: Its property is when the sense strikes it, to think, apprehend, understand, resolve, meditate, discourse, or deliberate something.

The contexture of the Intellect consists of little bodies, the most subtle smooth and round of all, forasmuch as nothing can be more subtle, nor of quicker motion. Neither is there any thing that can stir up it selfe sooner, or perform any thing quicker then the intellect, which if it designe or begin any thing, brings it to passe in a moment; whence all acknowledge, that nothing can be swifter then (her action) Thought.

And certainly, as Water is much apter to move, and more fluent then Honey, by reason that is made up of little bodies, which are smoother, lesser, and rounder; nothing consequently can consist of rounder, lesser and smoother then the Mind, for nothing can be readier for motion, quicker or more pliant.

And in whatsoever part of the body, the intellect inheres, it so cohereth to the soul, or to that portion of the soul, which coexists with it in that part, as that it is indivisibly conjoyned to it, and constitutes one nature with it, yet it alwayes so preserves and retains its owne nature, as that it is the property of the Intellect to think; of the Soul, to undergo affecti-

ons; though, by reason of their cohaesion, it be conceived, that the soul thinks, and the intellect is affected.

Indeed, the intellect is void of affection or passion; but (because, As the passions depending on sense, are stirred up in the soul about those parts wherein the sense is seated; so those which depend on cogitation, are stirred up in the soul about that part where cogitation is; and in which part, the soul is one thing with the intellect thinking): Hence it commeth to passe, that, as if the aggregate or compound of the intellect and the

soul, residing in that part, made up onely intellect, the passions come to be attributed to the intellect it self.

Thus, whether the intellect be taken distinctly or joyntly, it hath this property beyond the other part of the soul, that, As when the head or eye aketh, we are not thereupon pained all over the body; so sometimes the intellect is affected with grief or joy, when the other part of the soul, which is diffused through the body, is free from this affection. I say, *sometimes*, because it may happen, that the intellect be seiz'd with a fear so vehement, as that the rest of the soul may be struck together with it, and thereby may be caused sweating, palenesse, stopping of the speech, the eyes grow dim, the ears possessed with a humming, the joynts grow faint, and, in a word, the man may fall into a swound.

Moreover, the intellect may be conceived to partake of life more perfectly than the soul, or the other part of the soul, forasmuch as the soul cannot subsist never so little in the limbs, without the intellect; but the intellect, though the limbs round about it were cut off, and thereby a great part of the soul taken away, would neverthelesse subsist and preserve life; like the ball, which conduceth more to sight than all the rest of the eye, because the ball being hurt, though the rest of the parts be sound, the sight is destroy'd; but as long as the ball is sound, though the other parts be destroy'd, the sight continueth.

397 It seemeth not, that there can be any other seat assign'd for the intellect, or rationall part of the soul, than the middle part of the breast, and consequently the entrails, or the heart, which is in the midst of the breast. This is manifest from the affections of fear and joy, proceeding from cogitation, (or the intellect thinking) which we perceive to be in the breast.

Chap 18 – That the Soul Thinketh By Images, Which Glide Into It

398 There is onely this difficulty, How the intellect can be stirred up to think something? But it being manifest, that things are thought by the intellect in the same manner, as they are seen by the eye; it is also evident, that as sight, so thinking or cogitation, is made by images which glide into it.

399 For besides those images which glide into the eye, and being of something a grosser bulk, are accommodated to the contexture of the eye, and produce in it the act of seeing, there must necessarily wander through the air an innumerable company of others, far more subtle, and those either peel'd off from bodies, or form'd in the aire it self, as was formerly said; which penetrating through the body, and being adaptable to the contexture of the intellect, as soon as they arrive at it, move it to think.

400 Whence it comes to passe, that as we see (for example) a Lion, because the image thereof glides into our eyes; so we think a Lion, because the image of a lion glides into our mind. That we think or imagine Centaurs, Syllaes, and the like, which neither are, nor ever were; thins may happen, not so much by images framed on purpose, as for that when the images (for example) of a man and of a horse are presented to us, they, by reason of their tenuity or subtlety, like a cob-web, or a leaf of gold, are joyned together, and made one, such as it attributed to a Centaur.

401But take notice, that when sometimes we persevere in the same thought, whether waking or sleeping, this happens not, for that we use some one image of the same thing, but that we use many images succeeding in a continued fluxion, which if the come to us in the same posture, the thing thought or imagined seemeth unmoved; if in a varied, it seems moved. Which is the reason why, in dreams especially, images seem to us to be moved, and to stir their arms and other limbs one after another.

402 But how comes it to passe, that whatsoever any man would, his mind or intellect immediately thinks that very thing? Because, though there are every where images of all sorts, yet the greatest part passeth by unthought of, and those onely move the mind which she her self takes notice of or would observe, or frames her self to think of. And, Observe we not, that the eyes, when they begin to have a sight of something very little, bend and fix themselves upon it, and, till they see something plainly, all other things are as if they were not, although they receive their images also.

Now as there is some intentivenesse require to the mind, that it may apprehend things distinctly, so much more that it may simply think or give some judgment, by affirming or denying; but most of all, that it may

discourse of them, as if its greatest care were, not to be deceived.

But this we declared formerly, in treating of the Criteries. It will be sufficient, as to the speculation of naturall things, here to observe, that [403] h*uman discourse first admireth the things that are produced by nature, and next enquires into them, and finds out their causes; but in some sooner, in others later; and sometimes evinceth this, or arrives as the full knowledge, in a longer time, sometimes in a shorter*.

Chap 19 – Of the Affections or Passions of the Soul

There is besides sense another part of the irrationall soul, which may be called Affectuous, or Passionate, from the affections or passions raised in it. It is also tearmed the Appetite or desire, from the chief affection which it hath, called appetite or desire; some distinguish it into Concupiscible and Irascible.

Now where as it was already said, that the affections which follow sense are produced in the organs of sense, those which follow opinion in the breast; hereupon there being two principall affections, Pleasure and Pain; the first, familiar, and suitable to the soul; the other, incommodious, and unsuitable to nature: It is manifest, that both these are excited, not in the breast onely, where Pleasure, for the most part, comes under the name of joy, gladnesse, exultation, mirth; and Pain under that of grief, sorrow, anguish, &c., but also in the other parts, in which, when they are removed from their naturall state, there is raised pain or grief; when they are restored to that state, pleasure.

If all the parts could continue in their naturall state, either there would be no affection, or if there were any, it must be called Pleasure, from the quiet and calmnesse of that state. But because either by reason of the continuall motion of principles in the body of an animal, some things depart from it, others come to it; some are taken asunder, others put together, &c. Or by reason of the motion which is in the things round about, some things are brought which insinuate into them, change, invert, disjoyne, &c. pain is caused (from the first occasion, as by hunger, thirst, sicknesse; from the second, as by burning, bruising, wresting, wounding) therefore the affection of pain seems to be first produced; and withall, because it is of an opposite nature, that of aversation or avoidance of it, and of the thing that bringeth it, to which, for that reason, is attributed the name of ill.

Hereupon followeth a desire of exemption from pain, or of that state which is void of pain, and consequently of the thing by which it may be expelled, and to which, for that reason, is given the name of Good; and then the pain being taken away, and the thing reduced into a better, that is, into its naturall state, pleasure is excited, and goeth along with it; so as there would not be pleasure, if some kind of pain did not go before, as is easily observable even from hunger and thirst, and the pleasure that is taken in eating and drinking.

For this pleasure is onely made, because (most of the parts being dissipated by the action of the intrinsecall heat, by which means the body it self becomes rarify'd, all nature destroy'd, and the stomack especially grip'd, or otherwise some little bodies of heat rolling about it, make it glow, whereby is caused pain) because, I say, meat commeth, and supplieth the defect, supports the limbs, stopped the desire of eating, which gapeth throughout the members and the veins; drink comes and extinguishes the heat, moistneth the parts which before were dry, and reduceth them to their first state. And besides, both are made with a smooth and pleasing sense of nature, which, it is manifest is then absent, when a man eats, not being hungry, or drinks, not being a thirst.

Thus the generalll affections of the Soul seem to be these four, Pain and Pleasure, the extream; Aversion and Desire, the intermediate. I say, generall, because the rest are kinds of these, and mady by opinion intervening, and may be reduced principally to Desire and Avoidance.

For Desire is particularly called Will, when the Mind wills that which it thinks, and conceiveth it to be good; and Avoidance is called Aversion, when it turneth away from that which it thinketh, or conceiveth to be ill. Hereupon, Love (for example) is a will, whereby we are carried to the enjoyment of something. Hate is an aversion, whereby we withdraw our selves from conversing with something. Again, Anger is nothing but Desire, whereby we are carried on to vengeance. Fear is an Avoidance, by which we shrink at some future ill, and retire, as it were, within our selves; and so of the rest.

But forasmuch as Desire (as also in proportion Avoidance too) is partly excited by nature, and by reason of some indigence, which must necessarily be supplied, that nature may be preserved; partly is begotten by opinion, which is sometimes conformable to the designe of nature, and so tends to remove her indigence, as that yet it is not necessary it should be quite taken away. Lastly, it sometimes conduces nothing either to nature, or to the taking away of its indigence. Hence it comes to passe, that of desires, some are naturall and necessary; others naturall, but not necessary; others neither naturall nor necessary, but vain.

Naturall and necessary are those, which take away both the indigence, and the pain proceeding from the indigence; such is that of meat, of drink, or clothing to expell the cold. Naturall, but not necessary, are those, which onely vary the pleasure, but are not absolutely necessary to the taking away of the paine, as those which are of delicate meats, even that which is of venereall delight, to which Nature gives a beginning; but from which a mand may abstain without inconvenience. Lastly, neither naturall, nor necessary are those, which contribute nothing to the taking away of any pain, caused by some indigence of Nature, but are begot onely by opinion; such are for instance, those of Crowns, Statues, Ornaments, rich Cloathing, Gold, Silver, Ivory, and the like.

Moreover, it is tobe observed, that whereas pleasure consist in the fruition of good, pain in suffering ill; for this reason, the first is produced with a kind of dilatation and exaltation of the soul, the other with a contraction and depression thereof; and therefore it is not to be wondred at, if the soul dilates her selfe, as much as she can to make way for the good to come into her, and contracts her selfe to prevent the ill.

There is a diffusion, or dilatation; for assoon, as ever the form of a good and pleasing thing, strikes the sense, or mveth the mind, the little bodies of which it consists, so insinuate into the organs of sense, or into the heart it selfe, as that being accommodated as well to the soul,as to the body; they in a more particular manner, gently stroke and delight the soul; and like little chains, allure and draw it towards that thing, out of which they were sent; whereupon the soul being turned towards, and intent upon that thing, gives a great leap, as it were towards it, with all the strength it hath, that it may enjoy it.

One the other sider there is contraction; because as soon, as ever the form of a painfull thing strikes the sense, or the mind, the little bodies of which it consists, as so many little darts or needles, prick the very soul together with the organ, in such manner, that they loosen its contexture, while she, to prevent them as much as she can, shuts her selfe up, and retires to her very Centre, or root, where the heart or intellect is placed.

It will not be necessary to repeat what we formerly said, that it depends upon the contexture of the soul, why one Animal is more inclined to anger, another to fear, a third to calm smooth motions; not to adde, that this difference is found in men also, according as their souls participate, more of a fiery, or of a flatuous, or of an aeriall principle. Or we may observeeven in men that are polished by Learning, these feeds cannot be so rooted out, but that one is more propense to anger, another more subject to fear, a third more prone to clemency than he ought. Moreover the difference of manners, which is observed to be so great, not amongst Animals onely, but in men from one another, is plainly enough derived from the various commistion of these seeds.

Chap 20 – Of Voluntary Motion, and Particularly, of speaking, and imposition of names

Now the soul being naturally stirring, and ready for motion, and able to move the body wherein it exists, and the Members thereof; it is well known, that whensoever she moveth the body, or its members with any motion whatsoever, she therefore doeth it, because she hath a will to move them, and that this will is stirred up by the Intellect, imagining; and that this imagination is caused by the image that strikes it; for the Intellect, or Mind never doeth any thing, but first she fore-seeth it, nor fore-seeth it, unlesse she first have the image of that thing.

404 Thus, when we move (for example) the thighs and walk, this is therefore done because first the images of walking coming to the mind, strike it; thence proceeds a will to walk; then when the Mind hath so mov'd it selfe, as that it wills to walk, it instantly strikes the soul in that part whereto it is joyned; that part strikes the rest of the soul, which is diffused through the whole body, and especially through the thighs and feet. Thus

the whole frame is by degrees thrust forward, and moved; Not to mention that the aire conduceth something thereto, by reason that, as the whole body becomes rarify'd, the aire insinuates into its parts. The body therefore is moved from two causes, like a ship, which is driven on by Oars and Wind.

405 That the beginning of motion proceeds from the heart, where the Mind is seated, is manifest, for that we see sometimes horses (for example) cannot, as soon as ever the barrier is let down, break forth, nor start away so suddainly, as their will prompts them; because the whole substance of the soul diffused thorough all the Limbs, must first be summoned, that, being stirred up, it may follow the designe of the mind. Thus it proceeds first from the will of the mind, and then thorough the body and limbs.

406 I may perhaps seem strange, that so little bodies as those, whereof the Mind consists, should be able to move, wrest, and turn about so great a weight, as is that of the body. But what wonder, when the wind, a thing so subtle, can with so great a force drive forward a vast ship; and one hand, one rudder, turn it about and guide it, though under full sail? And are there not Engines, which by pullies and scrues, move and draw up huge weights, and that with no great force?

But forasmuch, as of the motions, with which we move the parts of the body, as we will our selves, that of the tongue is most considerable, which is called speaking, it seems requisite to say something of this in particular.

407 The Tongue being framed in breathing-Animals after such a manner, as that it can break, and as it were mould the aire which is vehemently breathed forth, and thereupon causeth a sound; hence it happeneth, that, as because every Animal perceiveth its own power, by which it can do somthing, and hereupon the Bull buts with his horns, the Horse strikes with his heels, the Lion teareth with his teeth and clawes, the Bird trusts to her wings; hence it happeneth I say, that Animals, and chiefly Men, perceiving the ability of their tongue to expresse the affections of the mind, (even when they would signifie something, that is without them) they send out a sound which is called Voice, and by the interposition of the tongue, and other parts serving for that variation, bend and mould it in severall fashions.

408 I instance Animals also, because we see, that they likewise send forth severall voice, according as they are joy'd or griev'd, or fear, or pursue any thing; dogs, for example, make severall noises, when they assault furiously, when the bark, when they play with their whelps, when they fawn, when they are hurt, and cry or howl; a horse neigheth after a different manner, when he rouseth himselfe, when he followeth a mare, and when he is spur'd by his Rider. And birds make different cries, when they strive about their prey, and when they perceive change of Weather, and when they sit idly, still.

409 Now Man, above the rest, perceiving the great power of his Tongue, and how he can bend it various wayes, so as to make divers articulate sounds, which may be accommodated to signifie severall things, hence proceeds speech, by which, men ordinarily discourse with one another, expressing the passions of the mind, and other things, no otherwise then as by nodding the head, or pointing with the finger.

Here, because it is usually demanded, How men came at first to impose names on things; we must know, that 410 *names were not imposed meerly by invention of man*, nor by some Law; *but the very natures, or naturall dispositions of men, which were in severall nations, being, upon the presentment of things to them, affected with particular motions of the mind, and compelled by images proper to the things, sent forth the air out of their mouths after a peculiar fashion, and broke and articulated it, according to the impulsion of the severall affections or phantasies, and sometimes according to the difference of places*, as the Heaven and Earth is various in different Countries. The words which were thus pronounced, and particularly with a will of denoting things to others, became the names of things.

411 *Some also desiring to mention some things to others, which were out of their sight, pronounced certain sounds or words, and then were constrained to repeat the same words; whereupon the hearers finding out the thing by some discourse and conjecture, at last, with much use, understood what the others meant*.

And because severall men used severall names, to signifie the same things to others; and thereupon there was a variety of names; for this reason, 412 *Names proper to signifie things were in every nation by degrees,*

and, as it were, with common consent chosen and appointed, so as their mutuall significations might be lesse ambiguous, and things might be explicated by a more compendious way of speaking.

413 For this reason I conclude, that the first man imposed names on things, not out of certain science, or by the command or dictate of any one man; for how should he come by that science, or have power to compell many men to use the words which he dictated? But rather, that they imposed them, being moved by a certain naturall impulsion, like those who cough, sneeze, bellow, bark, sigh. And therefore we may say, that names are not by institution, but by nature, seeing they are the effects and works, as it were, or nature; for, to see and hear things (which are certain effects and works of nature) are of the same kind, as the giving of names to things.

Chap 21 – Of Sleep and Dreams

It rests, that we add something concerning Sleep, and the Death of Animals, two things near of kin; for one is an intermission, the other the extinction of sense; and death is ordinarily tearmed an everlasting sleep.

414 *Sleep caused, when the parts of the soul, which are diffused thorough the whole composition of the body, are either repressed or segregated; or else some little bodies, either from the air, or from food, light upon the dispersed parts, which partly drive them away from the body, partly crowd them into the body, and discompose them*. For hereupon the body, 415 as destitute of its ordinary support and government, becometh weak, and all the limbs grow feeble, the arms and eye-lids hang down, the knees sink, and, in a word, there is no more sense.

416 For it being certain, that sense proceeds from the soul, it is no lesse evident, that when sleep hindereth the sense, the soul is a disturbed and thrown out of doors; not the whole soul, for then it were not sleep, but death; but a part onely, and yet so, as that which is left behind is oppressed within, and buried like fire rak'd up in ashes. And as, if we stir up the fire, it wakes, as it were, and a flame rises from it, in appearance extinguished; so the senses are restored throughout the members, and

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raised again out of a thing in appearance dead.

417 When I say, that little bodies comming from the aire cause this disturbance, I mean, partly the exterior aire, which never ceaceth to beat and drive against the body, (whereby it comes to passe, that the outward part of every animal becomes solid and hard) partly the interiour, or that which is drawn in at the mouth, and blown out again. For the stroke of each of these passing through the little vacuities, to the principles and first elements of the body, their positions are so disordered, that part are cast out, part thrust in, and the rest, which is diffused through the limbs, are not able to discharge their office, by reason that they are intercepted, and not joyned one to another.

418 I add, that this happens from the food also, because the food, being convey'd inwardly by the veines, performs the same thing as the air, and that with more abundant and greater force. Whence it comes to passe, that the sleep which is caused by meat, by reason of the greater disturbance of those particles, is more sound then ordinary, as is that also which proceeds from excessive wearinesse, by reason of their greater dissipation.

419 Now forasmuch as it may seem strange, that dreams should come to us in sleep, we must observe what was said not long since, that every where there are images of innumerable things, continually roving up and down, which, by reason of their subtlety, are able to penetrate into the body, and able to strike and affect the mind, which is seated in the midst of the breast, so as it is stirred up to think of those things, whereof they are the images. Hereupon, forasmuch as these penetrate and strike the mind, no lesse in sleep then in waking, it comes to passe, that we seem to behold things as well in sleep as awake.

420 But it happens, that we receive the things which appear to us in this manner as true, because our senses being stupifyed, nothing can occur to us, that may give us notice of the errour, and convince the falsity by

true things; and besides, out memory being laid asleep, we esteem (for example) those men to be alive who are dead, because their images are present to us, and we remember not their death.

421 If you demand, Why we dream most of those things in which we chiefly delight, or to which we are most particularly addicted when awake, (for Orators plead, Soldiers fight, Mariners contest with the winds, Gamesters play, and so of others; Neither is it thus with men onely, but amongst other animals also; Horses sweat and blow, as if they were running a race; Hounds stretch their legs, cry, and snuff up the aire; and so of the rest.) We must say, that this happens, forasmuch as by reason of the impression lately made in the mind, the passages are left open, into which the same images insinuate, and, above the rest, move the soul again.

422 From the same ground it seems to proceed, that he who is thirsty dreams of a fountain, and that he is drinking; he that hath need to urine dreams of a chamber-pot, and that he is using it. For the intrinsecall motions open, as it were, the wayes, into which the images of things of the same nature insinuating, strike the mind. Hence also it comes to passe, that many images of the same thing meeting together, there are produced certain great motions in the mind, and then he who dreameth, imagines that he possesseth great knowledge, performeth great actions, speaketh excellent things; and sometimes cryeth out as if his throat were about to be cut, or himself to be devoured by a Lion or Panther, and is no lesse affrighted, than if he had cast himself down from a high Mountain, so as when he awakes, he has scarce the use of his reason.

Chap 22 – Of Death

As for death, it is nothing but a privation of sense, by reason of the departure of the soul. By sense heer, I understand not onely the action, of which sleep also is the privation; but the faculty likewise of feeling or perceiving, which perisheth with the soul, and together with these, the mind also; so that the soul going forth, the mind which is joyned with it goeth forth also.

For, 423 *as long as the soul exists in the body, although some other part fail, yet there is not a privation of sense; but sense perishes together with the soul, as soon as ever that wherein it is contained, whether it be the whole body, or some part in which it is seated, happens to be dissolved. Neither can it be objected, that the body remaineth a while undissolved, either in whole or in part; For it is neverthelesse void of sense, as soon as such a company of atoms, as is necessary to constitute the nature of the soul, goeth out of it*.

424 *Moreover, the body being dissolved, the soul it self is dissipated, and hath no longer the same faculties, nor any longer is moved, nor any longer hath sense; for we cannot imagine, that the same thing doth any longer feel or perceive, when it no longer useth the same motions, when it no longer is in the same compound, when those things no longer are by which it was cherished and preserved, and in which existing it performed such kind of motions. It is the same with the soul as with the eye; which, being taken out, and divided from the body in which it was, cannot see any thing*.

When I say, The soul is dissipated, I imply the mind also; since the mind is indivisibly joyned with it, neither can it subsist if the soul perish. So that here it is all one to say, the mind and the soul, for the same dissipation happens to both. Now this dissolution is made, not into nothing, (as they must necessarily affirm, who hold the soul to be harmony, or such a contemperation as health(but in to the principles and little bodies, of which its contexture is made; and this not so much like water, which runneth about when the vessell is broken, as like smoke, or a mist, which goes away into aire, but much more easily; its contexture being more subtle, since it is capable of receiving impression from the images of smoke and mist.

That the soul is dissipated and perisheth, is manifest; for that it is compounded and hath a beginning. Some indeed there are, who conceive it to be eternall, denying it to have a beginning, to avoid its dissolution; and assuming for granted, that it was before the body, and came without into it, that they may maintain, that it survives after the body, out of which it goes entire. I shall omit, that they seem not to observe, that nothing can be durable for ever, unless it be such, either by reason of its solidity, as an Atom; or for that it is uncapable of being struck, as Vacuum; or for that it wants place whereinto it might remove, as the Universe. Neither do they reflect how great a madness it is to conceive, that thing so different as immortall and mortall,

may be joyned together.

I omit this, I say, and demand onely, How it is possible the soul can, from without, be insinuated into the body, and diffused through its parts, and yet not be divided and dissolved, as meat distributed through the limbs? And must it not dwell in the body, as a bird in a cage, rather that be thought to grow, and be coextended with the body? And how then arrives it together with the body, at the flower of age? And why is it, that in old age it fears, not rejoyceth to go out of the body as out of her

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prison, and like the serpent to cast her decay'd skin? And if forsaking the body, it leaves some relicks of it selfe behind, is it not dissolvable? But if it leaves none, how comes it, that so many worms are generated in a carkasse?

For to say, that so many souls flow thither from without, and fly up and down like shadowes, and chuse their own matter, and frame their own bodies, and the like, How absur'd is it? Neither is it lesse ridiculous, that there should be a swarm, as it were of souls, hovering round about a the coition, and birth of Animals, contesting with one another, which shall enter into the body.

And if souls did so often shift bodies, would not their natures, by degrees, become changed, and so the Lion in time not be fierce, the Hart not timerous, the Fox not creafty, the dog afraid of the Hart, the Hawke of the Dove? And if any shall say, that human souls onely passe into human bodies, he cannot give a reason, Why the soul, of wife, becomes foolish; why no children are wise; why we, as the first Author of these Opinions feigned of themselves, never remember our past life, and the actions performed in it.

The soul therefore hath a beginning, from which, as it groweth up, and flourisheth with the body, so must it necessarily tend to an end, growing old, and decaying by degrees, together with it.

This I say likewise of the Mind, which by degrees is perfected, and decayeth; seeing that it not onely bears a share in the diseases, and pains of the body, but suffers diseases, and pains of her owne, and is cured by Medicine; which could not be, if something were not added to, or taken from, or transposed in her contexture. We need not instance, what happens to her by drunkennesse, the falling sicknesse, or dotage.

We must observe, that she is affixed to some certain part of the body, no otherwise then the ear or the eye, so that, accordingly she begins and ends with the whole; and this is manifest, forasmuch as every thing, (trees, fishes, &c.) hath a certain determinate place in which it is produced, liveth, and at last ceaseth to be, and cannot exist out of it.

And forasmuch, as a man dieth limb by limb, and expireth by degrees, the soul being, as it were divisible; who can say, that the Mind (or Intellect) doth not evaporate out of the midst of the breast, but goeth entire out at the throat and mouth? For that the soul her selfe goeth out, sifted as it were, and sever'd thorough the whole body, is argued, even for that the stench which after her departure is in the dead carcase, proceedeth from no other cause, than that its severall parts are got into that place, which was taken up by the severall parts of the soul. Not to mention, that, otherwise, when the body is suddenly cut asunder, into two or more pieces, the soul could not be cut into two or more pieces as the body.

As therefore, the soul was not before the generation, so neither will it be after the dissolution, or death; and as, before that, we did not feel any pain; so neither shall we feel any, after this; as well, for that there will be no longer Touch, or any other Sense, which cannot exist in a separate soul; as for that, it is now without those organs, in which onely the senses reside, and with which onely, they can act and suffer.

Hence it is manifest, that all fears of the Inferi is vain; *Ixion* is not roll'd upon a wheel; *Sisiphus* does not thrust a stone up hill continually; *Prometheus's* liver cannot be devoured and renew's every day. These are but Fables, as are also those which are reported of *Tantalus*, or *Cerberus*, of the *Danaides*, of the Furies, and the like; which if they are made good any where, it is in this life, through the depraved manners of men.

2.3.4. Section 4 – Of Superiour Things, As Well Celestiall, As Aeriall

Hitherto, of *Inferiour* things; we come now to the *Superiour*, which appear in the Region above the Earth; such are the Sun, the Moon, and other Stars, and all that belongs to them, as Risings, Settings, Tropicks, Eclipses, and the like. Moreover Clouds, Rain, Wind, Lightning, Thunder, Thunder-bolts, and the like. For though some make a distinction, and call these latter onely ???????, *Superiour things*, yet is it convenient, to call the former also Meteors, and to include both within Meteorology, that is , a Treatise of superiour things.

Here we must repeat, what was said at first, that [425] *we must not propose any other end of the knowledge of Superiour things, whether they be treated of jointly with others, as here; or separately, and by themselves, as elsewhere we do; than an undisturbed state of mind, and unwavering Judgement; as also in the rest of the things, of which we use to discourse*.

[426] *For Superiour things being such, as that they either have, or may have a manifold cause of generation, and declaration of their being, conformable to that which we perceive by the sense; we ought not to adhere to one particular way, as we do in Mora'l Maxims, or some in Physick, such as are*, The Universe is Body and vacuum; the Principles of things are indivisible, *and the like, which agree onely one way with the Phenomena's: but firmly hold, that these things are indeed explicable, not one, but many wayes, neither ought we to attempt any thing above the reach of human power, by defining one certain way, after which onely the thing may be performed*.

This, I say, we must repeat; for as much as [427] *it is requisite to conceive, that it is the office of Physiology, accurately, to examine the causes of the chief things which are in nature, and that from hence proceedeth all the felicity which consisteth in knowledge of superiour things, and in that especially, that we examine, what kind of things those are, which are discovered in those superiour ones, and whatever has affinity with them. And withall, inviolably to observe this rule, that it is competent to those things*, to be done many wayes, *and* not *necessarily* to one way onely; *but*, that they may be brought about some other way also.

This, I so expresly inculcate; lest, if we adhere onely to one way, and that happen to displease us, we presently recurre, not to some other naturall cause, but to the divine; for this were to acknowledge a manifold manner, where there is but one. Thus, to the divine nature, we should attribute trouble and businesse, whereas *it is simply and absolutely necessary, that in an Immortall and Blessed Nature, there be none of those things which cause dissolution and trouble; for the mind immediately apprehends, and concludes from the consideration of an immortall and blessed condition, that it it absolutely impossible, any such thing should happen to it*.

And doubtlesse, for want of this consideration, it comes to passe, that *the contemplation and observation of rising, setting, solstices, eclipses and the like, make our knowledge nothing the happier, but they who have considered these things, (yet know not what are the natures of those bodies, and what are their chief Causes) fear as much, and perhaps more, than as if they had not contemplated them at all; by reason, that the admiration which ariseth from their consideration, cannot be satisfied, as to the disposition and manner, whereby they are performed. For this reason we endeavour to find out, and alledge many severall causes of solstices, settings, risings, eclipses and the like, conformable to things of the like kind, which happen amongst us on the earth*.

[428] *Besides we must not think, that an accurate enquiry after these things, conduceth to acquisition of tranquillity and felicity. In superiour things, and others that are obscure, we ought to seek out causes, according to the severall wayes by which the like things happen amongst us, despising those who neither know one certain way by which a thing is effected, nor a manifold way, but content themselves onely with the appearance of things as presented at that distance, and yet are ignorant in what consists or not consists imperturbation. Truly, if we conceive it may fall out, that a thing may be done one certain way, and thereupon we are not troubled; truely I say, knowing on the other side, that the same thing may be effected many severall waies, we shall be no lesse undisturbed, then if we knew it could be done by a certain way.*

[429] *But whensoever one has a mind to adhere to, or defend any thing that is likely in it self, that explication is sufficient in this present subject which runs congruously, according to the manifold waies the Phenomena's afford us. Yet is it necessary to derive our conjectures concerning superiour things, from those which are done amongst us; from those, I say, which are obferv'd to resemble those in those which are seen above; for those things are effected severall waies; wherefore also that which appeareth in every superiour thing, is to be considered by those things which agree with it, and which may be effected severall waies amongst us, as severall things may happen.*

But I insist too much hereupon. To come therefore to the businesse. Although the whole Region above Earth is sometimes called Heaven, for even the nearer part of it, the Air, is sometimes called so too; yet by the word Heaven and AEther we will understand the superiour part of the Region, which containeth the Stars; and, by Aire, the inferiour, in which Clouds, Lightning, and the like are generated. We shall begin with the celestiall superiour things, and speak afterwards of the Aeriall.

Chap 1 – Of the Substance and Variety of the Stars

WE must first lay down what was formerly touched, that [430] *the Sun, Moon, and other Stars, were not made apart, and afterwards brought into the world, but received their figure, augmentation, and magnitude, immediately, and together with the world, (as the Earth, the Sea, and whatsoever is in the world) by the coagmentations and convolutions made within it, of some more tenuious natures, and those either aeriall, or fiery, or both; for this our sense suggests to us*.

Hence some Stars seem to be of a more fiery substance, especially the Sun, whose heat is so manifest to sense; but withall, they seem not so much to be pure fires, as some mixed concretions, to which fire is annext.

Or, it may be, they are, as it were, certain glassy smooth dishes, capable to receive the bright, fiery little bodies, which, comming from the aetheriall region thorough which they run, light upon them, and to reflect them, and to show them to us in that form wherein they appear; For the like is done amongst us. Or that they may be clouds, enlightened, and, as it were, enkindled; for those Meteors called the Parelii, are caused no other way.

Or, it may be, they are, as it were, deep vessells, containing fire in their hollow part, like a Lant-horn, or a Chafing-dish, which holdeth coals, or melting mettalls. Or, they may be, as it were, glowing plates, or, as it were, stones burning in a furnace; for there is nothing in all these that implies a contradiction.

In like manner, the Sun in particular may be nothing else, but a thick

kind of clod, which being like a pumice, ora spunge full of pores, and little holes, may, containing fire, dart light out of them.

Onely the most impossible thing seems to be what some assert, that the Stars are animate, or so many Animals, and moreover, so many gods. For though we should grant, that each of them is a kind of World, or rather, as it were, an Earth, which hath not onely an aire, but an aether peculiar to it self. Nevertheless, as this our Earth, though it produceth Animals, is not therefore it self an Animal; so neither would the Stars be, although we should grant, that some Animals may be generated in them.

But if we should admit this, yet what they further presse, that there are such a kind of round and rolling gods, needs to be repeated onely; for we formerly proved that these are prodigious fancies, not of discoursing, but dreaming Philosophers, when expressing immortall beeings by the language proper to mortalls, they pronounce things so contrary to the felicity of the gods, and which seem so far beneath their excellent nature.

The Stars have been already distinguished into two kinds; some are fixed, which observe the fame position from one another, and keep the same course from East to West, never altering it. Others are wandring, whence called Planets or erratick Stars, because they never observe the fame position, neither towards one another, nor to the rest; and sometimes perform their courses nigher the North, sometimes nigher the South.

If you demand from whence this diversity proceeds, I shall say, [431] *that it may be the Stars were from the beginning moved round, with such a necessity, that some took a circular motion uniform and eeven; others, an irregular and unequall one*.

It may also be, that, in the places thorough which they move, there my be some even diffusion of places, which may carry them on the same way one after another, whereby they may move evenly, but that eIsewhere they may be uneven for the same reason; the varieties which we observe in their motions proceeding from thence.

To alledge one onely cause for these, seeing that the Phenomena's argue that the cause may be· many is madnesse, and not rightly considered by those, who dote on vain Astrology, and trivially explain the causes of some things, and in the mean time will not allow the divine nature (to which they ascribe most of these) *to be free from the task of severall troublesome offices*.

Chap 2 – Of the Magnitude and Figure of the Stars

AS concerning the magnitude of the Sun, and of the rest of the Stars, it may be considered, either as to us, or in it self. [432] *As to us, it is so much as is appeareth to be*, for the sense is not deceived; and whatsoever magnitude the eye seeth in them, is such in them, for they have not any other thing immediately encompassing them without, which is visible; nor any thing of their own, which falls not within view of the eye.

But this magnitude considered in it self, or *as to the thing it self, may be either somewhat greater, or somewhat lesser, or exactly so much as it appears to be. For with such variety are fires presented to our senses, seen at a distance, in the day-time, or by night*. For either they are just so big as they seem, as the light of a candle if we look neer it; or lesser, as when we see the same light in the day-time at distance; or greater then indeed they are, as when the same light is seen in the night-time afar off.

I say, somewhat greater or lesser, in regard this diversity betwixt the appearance and the true compasse cannot be very great, as may be evinced from our ordinary fires; for, from what distance soever we perceive the heat of any fire, from the same its just form appeareth to us. In like manner, since we perceive the heat of the Sun here from the place where he seemeth to us to be, his just magnitude cannot be sensibly different.

That nothing perceivable is taken oft from the Stars by this distance, is confirmed; because thole things which we behold at a great distance, and much aire mediating between, are presented to us with a confused circumference; but the Sun, to those who can look upon him, appears to be of an exact compass; nor can any thing be seen more distinctly than the circumference of the Moon. There are indeed some Stars which twinckle, and seem to shoot forth trembling beams; but upon another account this argues they are so near, as to be seen exactly. For fires amongst us seem, in like manner, to wave and tremble, when we behold them at a distance, which, near at hand, seem fixed and constant.

Again, this is confirmed; because, if the Stars did lose their due magnitude by reason of distance, they would much more lose their colour; for we know, that a thing at distance ceaseth to be sesn in its native colour sooner then by reason of its littleness it totally disappears, or comes not to be seen at all. But though there be no distance more capable to effect this, (for there is not any length greater) yet the Stars do not therefore lose their true colour.

[433] *Many things may be objected against this, but they are easily solv'd, if a man stick close to those things which are manifest to us, as we have showed in our Books concerning Nature*, where we bring in this distinction of magnitude, considered in it self, and, according to us, we declared, that neither he did absurdly, who said, The Sun is a foot broad; nor he that said, it was many times bigger than Peloponnesus; nor he who said, It is of equall bignesse with the earth; forasmuch as of things which in themselves are greater and lesser, there may be as to us one magnitude, according as they are nearer or farther off.

As for the figure, I shall onely say, that since it appeareth round to us, it is globous and plain like a plate, and therefore the Stars are either as dishes or as cylinders, or as cones and tops, or as certain nails fixed in the sky. For none of these hath any thing that implyeth a contradiction, nor dissonancy from the Phaenomena.

Chap 3 – How the Stars Move, Out-Run one Another, and Are Turned round

Having said, not long since, that, of the Stars, some are fixed, others erratick, and that this difference proceeds from their having different motions; we must now say, in generall, that the motions of both may be made, [434] *either by the turning about of the whole heaven*, in which one or more of them are, supposing it to be solid, and carrying them about with it, like nails fastned into it; or else, the Heaven standing still, as a fluid or pervious thing, by their being whirled about, and moved thorough it.

Now for as much, as whether it be the motion of the Heaven, or of the Stars, it may have begun from a necessity made at the very time, that the world was generated, and impress'd east-wardly; it might in the first case, (that is, if it be in the whole Heaven) both have begun, and be continued by the hurry of some aire. For there may be a two-fold extrinfecall aire; one, pressing from above, and driving the Heaven towards the West; the other lifting it up as it were, and carrying it on, and that otherwise then the former, which on all sides presses and fixes the Poles. In the second case, (that is, if the motion be in the stars themselves) it may have been, either by hurry of aire, or by the course of the fire.

For it may have been from the very beginning, that a great company of little bodies, evaporating, and diffusing themselves, might break the aire, and force their passage thorough it; and the aire, receiving this motion of the Wind, and hurrying the stars along with it, might carry them about, and cause that continuall circular-Motion, which is still seen above in them. It might also be, that the proper fire of every starre, either being shut up close. and seeking a vent, might begin to turn about, and continue still as it began; or, being at greater liberty, might move in this fashion that way, unto which the food or aliment of each invites them, and so go on, *thorough its heat and desire of aliment to the next bodies which were fuell*, convenient to nourish it.

None of all these is repugnant to the Phenomena's; but otherwise, we cannot easily determine from what cause the motion of the Stars should proceed.

But, How comes it to passe, that some stars anticipate, or get before others, so as that we see the others left behind them? This may happen either because, the others performing the fame diurnall-revolution with them are moved more slowly, as the Moon, which moving more slowly then the rest, towards the Weft, is left as it were behind them east-ward. Or because, being carried about by the diurnall motion towards the West, they are in the mean time slowly carried on, by a contrary motion towards the East, whereby the Moon may not have been left by the rest, East-ward, but rather have left them West-ward. Or because, all things being carried about onely with a diurnall revolution, and equall motion, yet some perform a longer, others a shorter course; and so the Moon, if she be above the fixed starres, as some conceive, will perform its revolution more slowly, and be observed to be left behind.

Certainly, to assert anything absolutely in these matters, becomes those, who affect to make ostentation of something magnificent, and prodigious before the multitude.

Again, How comes it to passe, that the Sun, Moon, and planets, when they come to the Tropicks, or Solstices, run about and go back again? This may happen, either because, such a kind of circular motion was at the beginning impressed upon these stars, as that they should be carried round about after a spirall-manner, limited on each side at the Solstices. Or that they go according to the obliquity of Heaven, which in processe of time, acquir'd a necessity of that indirect position. Or because, they are repell'd by the aire, which driveth them back on, now to this side, now to that, by reason of its coldnesse, density, or some other quality. *Or because, their aliment is conveniently disposed all along that way, kindling backward*, and failing forwards.

All these, and those which are like these, have in them nothing repugnant to the evidence of things; if a man adhering onely to the possibility that is in these things, can reduce each of them to that, which agreeth with the Phenomenas, not fearing the groundlesse contrivements of Astrologers, who forbear not to build, upon and in them, a vast company of concentrick orbs.

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Chap 4 - Of the Rising and Setting of the Stars, and of the Alternate length of Dayes and Nights

THe Rising, and setting of the Sun, Moon, and the reft of the Stars may happen three wayes.

First, [435] *by appearance above, and occultation beneath*: For that the Stars being alwayes bright and never extinguish'd,are so carried about, above, and below the earth; that sometimes they rise, sometimes they go down, or set: and the Sun, in particular, when he goeth down causeth darknesse with us; but returning, he enkindleth as it were the Heaven with his morning-beams. There is not any thing amongst the Phenomena's which contradicts this.

Again, [436] *by being enkindled* in the East quarter, *and extinguished* in the West: For, *there may be such a disposition of the Medium in both these places, as that*, whilst the Stars passe through it, *what I affirm may be effected, there being nothing in the Phenomena's that contradicts it*; seeing, there are not onely fountains, that extinguish, but such also, as enkindle Tapers, as that at *Epire*, formerly mentioned. So that the Ocean compassing the earth, the Sun may be extinguished by it in the West quarter, and return all along it, passing along the north into the East quarter, and from thence arise re-enkindled.

Thirdly, by a new production every day; for nothing hindreth, but that there may every day arise new Suns; for example, there flowing together to the East, severall fires, or seeds of fire, which joyn in one round body, and shine, and are carried on impetuously towards the West. For it is reported, that the like happens in the mountains of *Ida*, and chiefly about the rising of the Dog-star; and that fires may meet in great bodies together at certain seasons, may be understood from what is observed to be done at some determinate time in all other bodies. For, from the confluxion and defluxion of seeds, Trees at a certain time bring forth leaves and fruits, at a certain time shed them; at a certain time teeth are bred, at a certain time cast; and so in other things, which it were too long to instance.

Now the Sun’s continuance above the earth making day, and his absence night; How comes it to passe, that all daies are not equall, and all nights equall, but that in Summer the daies are longer, the nights shorter; in Winter alternately, the nights longer and the daies shorter? This also may happen three waies.

First, [437] *For that the revolutions of the Sun above and beneath the earth, are sometimes performed faster, sometimes slower, according to the alternate lengths of the places*, or waies in which the Sun passeth: [438] And this by reason of the position of the Orb called the *Zodiack*, through which the Sun passeth obliquely, and in two Signes of it makes the nights and the daies equall. But when from thence he declineth to the North or South, as much of his journey as he taketh off from one part, either above or below the earth, so much he adds to the other.

Secondly, *Because there may be certain places in the AEther, which, by reason of their grossness, and the resistance which happens thereupon, cannot be passed thorough so swiftly as others*. Such are those which make the Sun stay long beneath the earth in the Winter, whereby they make the night longer and the day shorter than in Summer. *Some things of the same kind may be observed amongst us, according to which it is convenient to explicate superiour bodies*.

Thirdly, that in the alternate parts of the year, the fires, or seeds of fire aforesaid, flow together in such manner, as that they make a Sun sooner or later; and the Sun rises out of that part from which he begins, a longer or shorter course above the earth.

They who insist and fix upon but some one particular way, to explicate these effects, both contradict things apparent, and deviate from that which fals under human contemplation.

Chap 5 -Of the Light of the Stars, and of the Changes and Spots in the Moon

Let us now say something of the light, not onely of the Sun, but of the rest of the Stars, and particularly of the Moon. First, men admire, that the Sun, being so little, should pour forth so much light out of himself, as sufficeth to enlighten and warm the Heaven, the Earth, the Sea, and yet not be it self exhausted. But the Sun is a kind of fountain, into whicn there flow together from beneath on every side perpetuall rivolets; for the

seeds of heat throughout the whole world flow so into the Sun, as that immediately from him, as from one fountain or head, both heat and light overfloweth everyway.

Moreover, the substance of the Sun may be of such thicknesse, and the light and heat which floweth from him of such thinnesse, that as a little current or a rivolet, streaming from a spring, watereth the meadows and fields round about it, without any losse to it self; so, that of the Sun may be sufficient to irrigate, as it were, the whole world, without any sensible diminution of the Sun.

Moreover, the aire may be of such a nature, as that it may be kindled, as it were, by a little light, diffused from the Sun; as a whole field of corn may be set on fire by one spark.

Likewise, the Sun may have his aliment round about him, which may supply what he loseth, as the flame of a lamp is fed by the oyle which is put to it. It may happen also many other waies.

As to the rest of the Stars, especially the Moon, it may be, that they have their light from themselves, [439] *it may be they borrow it from the Sun; for amongst us we see, that there are many things which shine of themselves, many things which borrow light from others; and there is nothing appearing in the superiour things themselves, which hinders, but that either of these opinions may be true*.

If a man preserve stedfast in his mind the manifold waies, and the suppositions conformable to it, and consider the caufes together with it, lest minding things that are incoherent, he grow vainly proud, and sometimes fall into one particular way, sometimes into another.

As for the Moon, it is in the first place wonderfull, How she comes to have so many changes, or increase or decrease of light. It may be, that being round, and receiving light from the Sun, she is successively so figured, (after the same manner as the aire, when the Sun riseth, is enlightened, and when he setteth is darkened successively) as that going away from the Sun, she seemeth every day to encrease, because she showeth more and more of her enlightned-face to us, untill she presents it at full; and then going towards the Sun, decreaseth every day, because she showeth lesse

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and lesse of it, until at last she turneth no part of it towards us, but is quite unseen.

Moreover, it may be, that the Moon being round, one part of her may be bright, another dark, and as she turneth her body about may discover to us, alternately, more or lesse of each part.

It may also be, that being bright of it self, she may be obscured by an interposition of some opacous body comming under her, which is hemispherical and hollow, and, moved along with her, is continually rolled about her.

Neither doth any thing hinder, but that there may every day (according to what we formerly said) be made a new Moon of a severall form and figure; as in like manner the seasons of the Spring, Summer, Autumn, and Winter, and many things in them, come and go, are produced and perish, at set times.

In fine, it may be any way, wherein those things which appear to us may be applyed to explication of that manner, unlesse some man, being much in love with one singular way, shall vainly reject the rest, not considering what things it is possible for a man to know, and thereupon aims at the knowledge of those things which man cannot attain.

Moreover, they admire in the Moon, that there appear spots in her face; but [440] *her face may appear so, either from the various and different nature of the parts of the Moon, or from the interposition of some body*, not so much opacous as dusky; not rolling about her, but perpetually adhereing to her; and not solid all over, but full of holes like a Racket.

441 *Or it may be any other way of all those which are observed to be conformable to things apparent. This is the courfe to which we must adhere, concerning superiour things; for no man, if he contest against apparent things, can ever partake of true tranquillity*.

Chap 6 – Of the Eclipses of the Stars, and Their Set Periods

But there is nothing which useth to strike a greater terrour into men, then that sometimes they observe Eclipses, and defects of light in the Sun and Moon, to happen on a suddain. Yet why may not this also happen many severall waies?

For first, the Sun may be eclipsed, for that the Moon being interposed, puts her dark orb or opacous body before him, and keeping away his light frim the earth, causeth darknesse in her, untill by her removall the light is restored. The Moon may be eclipsed, for that the earth, being interposed betwixt her and the Sun, takes the Sun off from her, and darkens her, while she comes within the cone of the shadow, untill passing from out of it, she recovereth light.

Again, the Sun may be eclipsed, for that some part of heaven, or some other opacous body, such as is the earth, may move along with the Sun, and at certain times come underneath him, and intercept his light. And the Moon in like manner, for that some other opacous body passing betwixt her and the Sun, keeps off the beams of the Sun from her, or moving together with her, doth not onely perform its phases slowly, bur sometimes overcasts her with a suddain darknesse. Not to mention, that if she be dark on one side and bright on the other, it may happen, that she may sometimes on a suddain turn her dark fide towards us.

Moreover, both the Sun and Moon may suffer Eclipse, for that they may passe thorough places pernicious to fire, and thereby their light become extinguished, untill going beyond them they renew and recover it.

Thus ought the severall ordinary wayes to be heeded, and some of them also put together it being possible, that many causes may concurre.

442 *The periodicall order*, by which eclipses happen at certain times, *is conceived to be kept in like manner as amongst us in some things, as in the vicissitude of seasons. There is no need of recurring to the divine nature for the bringing of these to passe; let us allow that to be free from all businesse, and exquisitely happy* .

Unlesse this be done, all discourse of causes in superiour things will be vaine; as hath already happened to some, who taking an impossible course became frivolous for that they approved only one, and rejected all the rest, though they were possible, and were transported to dream of that which exceeds the capacity of the Intellect, and were neither able to admit, as they ought, apparent signes, nor understand, as they say, how to rejoyce with God.

Chap 7 – Of the Presignifications of the Stars

IT remains, we speak of the presignifications of the changes of the ayre attributed to the starrs, as rain, wind, drought, heat, and the like; which happen according to the time of the rising or setting of certain starrs, as of the Dog, Orion, the Pleiades.

443 *These presignifications may be made either according to the condition of the Seasons, if it happens in those living creatures, which being seen at one time with its, at another with others, passing hither and thither, are signes, not causes of the seasons, for the rising and setting-starrs may be not causes but signes of those mutations; or as it happens not certainly, but casually, at what time the stars rise or set, there are causes of some mutation in the ayre*.

For neither of these is repugnant with things apparent; and what cause there may be, besides these agreeable with things apparent, we cannot perceive.

It is not without some reason what I hinted of presignifications; which are observed in some animals, to be made according to the condition of the season which at that time comes in, so as the motions observed in

Animals only declare tempests, but make them not. As those, for example, which depart from us in Autumne induce not any necessity of the winters being at that time: neither is there any divine nature which fits and marks the departure of living creatures, that it may make good what is foretold by them.

This is a kind of folly that cannot fall upon any animal in which there were the left grain of wit; so far is it from being in that nature which possesseth all felicity.

Chap 8 – Of Comets, And those which are called Falling Starrs

WHat hath been hitherto spoken of the starrs, belongs to the Sun and Moon, and Starrs which having been made from the beginning of the World constantly inhere and appear in heaven. But besides these, there are other stars, which sometimes are generated or newly appear, and after some few dayes or months either perish or lye hid. They are called Comets, *quafi Comatae Stellae* hairy-starres, for that they have a long train like haire.

Some also there are that last but for a moment, vanishing almost assoon as they appear; and, seeming in some kind of excursion to fall down, they are ordinarily termed falling-stars.

As for the Comets, [444] *they may be generated; Either for that some fire is sometimes kindled in some of those superiour places, and being kindled is for a time nourish'd and moved, according to the abundance and disposition of the matter. Or else they appear, for that heaven as to that part which is over our heads, hath some peculiar motion according to severall vicissitudes, so as these starrs are driven to be made manifest. Or else, they come forth by reason of a certain disposition at sometimes; and, assoon as they come lower towards us, they become manifest*.

Comets disappear to our sight through the causes contrary to these: either the matter convenient for them is not placed all along as it is in that place where they are observed to inhere, so as by degrees through want of aliment, they consume as it were and go out, or that some thing opposeth their motion. And that may happen, not only for that this part of the World, round about which the reft is turned, remaineth unmoved as some affirme; but also, for that there may be in the ayre some impetuous gyration which may hinder their moving round, and drive it another way, as may also happen to the other stars which are called Planets at the Tropicks.

Moreover this may happen many other wayes, if we discourse upon that which is conformable to things apparent.

As for those which are called falling-starrs, *they may be made either by pieces broken off from the true stars, or from the falling down of that matter whereof there is a kind of disslation, as may happen also in lightning; or from a company of ignifying atoms, meeting and joyning together to effect it; the motion being made, according as the force of meeting together was from the beginning. Or from the driving of wind up together within certain cloudy bottoms or winings, and setting it a-fire whilst it is rolled up and down, and breaking thorough the bottomes which restrain them, and moving to that part towards which that impulsion carryes them*.

There are other wayes not fictitious, by which this may be done. But of celestiall Meteors, enough.

Chap 9 – Of Clouds

Next these are the aeriall Meteors, which are made neerer us in the aire. We shall begin with the Clouds; than which nothing is generated above in the ayre or seen, more frequently.

[445] *A Cloud therefore may be generated and have its being, by some accumulation as it were of the ayre, the winds driving it, so as that a cloud is nothing but a thickning of the air. Againe, by implication of some atoms cohering mutually to one another, and fit to produce such a compound*; and this when they first come together into little bodyes of clouds, and those are gathered together into greater bulks, so as at last they become greatest of all.

They most commonly seem to rise at the tops of Hills, for that the first little compounds are so subtle as that they escape the sight, and are carryed on by the wind, untill being by little condensed, they appear on the tops of the hills which by reason thereof seem to smoak.

If any shall doubt, From whence there can come so great a conflux of atoms as is sufficient to make such great bulks of Clouds, let him consider, that if no other way, yet they may at least come from without, out of the immensity of the Universe where there is an infinite multitude of them. And this because there is allowed to the principles a free passage in and out, thorough the vents of the World, as was formerly declared.

Moreover, a cloud may be generated *by the gathering together of effluxions and exhalations, out of the earth and water*, and carried upwards. For, that there are many little bodyes drawn out of the whole Sea, appeareth by Garments which being hung upon the shore grow moyst. Besides we see, that every where out of rivers, arise mists and exhalations and vapours in such abundance, as that being carried upwards they darken the skye, and by little and little meeting together turn into clouds.

Neither doth any thing hinder but that these coagmentations may be made many other wayes.

Chap 10 – Of the Wind And of Presters

Wind may be generated, first, [446] *when the atoms or little bodyes leap out of some convenient places and fly thorough the air, there being a more vehement effusion made from some heaps which are proper for such kind of emissions*; [447] When in a narrow vacuum there are many little bodyes, there followeth Wind; and contrary, the air is quiet and calm, when in a great vacuum there are but a few little bodyes.

[448] For, as in a market place or street, as long as the people are but few they walk without any trouble; but when they run into some narrow place, they justle and quarrell with one another; so in this space which encompasseth us, when many bodyes crowd into one little place, they must necessarily justle one another, and be thrust forward, and driven back and entangled and squeezed; of which is made the wind, when they which contested yeeld and having been long toss'd up and down uncertainly shrink: but when a few bodyes stirre up and down in a large space, they can neither drive nor be driven imperuously.

[449] Again, Wind may be caused when the ayr is driven on and agitated either by exhalations comming from the earth and water, or by the Sun's pressing upon it from above, for it is manifest, that where the air is agitated and stirred, there is caused wind, so as wind seems to be nothing else, but the waves of the aire. Whence we may conceive that the wind so newhat refembles water troubled, and that the more violent winds come from being stirred by some more vehement cause, after the some manner as torrents rage and make waste when there happens a vast defluxion of waters by great showrs falling upon the mountains.

Presters are windy whilings (for the fiery, and those which burne, from which the name is taken, are a kind of thunder). They [450] *maybe generated either from the depression of a cloud after various fashions towards inferior places, whilst it is carried down and driven on by abundance of wind, which rouls it self about, and tears away the sides of the cloud, the wind also driveth on the cloud immediately from without, or from the wind standing round about, when as the ayr pressing upon it from above, and withall the air which is driven on and diffused round about hindring by reason of its density, the great abundance of wind knoweth not which way if may spread it self*, and being driven back, as well by the sides as from above, it necessarily thrusts the cloud downwards.

When this Prester is thrust down upon the land, it causeth whirl-winds; when upon the sea, whirl-pools. Whirl-winds are Iesse frequently seen, because the mountains snatch them away before they come within our sight; whirl-pools more frequently, by reason of the wide smoothnesse of the sea, into which we may behold a cloud like a pillar descend from heaven, and push it down, as it were with the force of an arm or fist, untill the violence of the wind breaking thorough it, the sea works and boils, and the ships incur a danger almost inevitable.

Chap 11 – Of Thunder

IT was not without reafon that I faid, there are also fiery Presters, which are not different from Thunder. For, *Thunder seems to be caused by the manifold conglomeration* of blasts, swelling with fiery little bodies, within the bulks of the clowds; *and by the evolution and strong enkindling of them, and breaking of the clowd by the fire, which is so forcibly darted to interiour places, according as that breaking forth is, sometimes directed towards a high mountain, (which kind of places are oftenest struck with thunder) sometimes towards other things*.

451 For that the nature of thunder is fiery is manifest, even because it often burneth the houses upon which it is darted, and for that it leaveth behind it a stench like brimstone. That it is generated within the clowds, is evident, for that it never thunders when the sky is clear; but the clowds first gather together all along the air, and darken the sky, and there ariseth a foul night, as it were, of showers. Lastly, that many little bodies or seeds,as it were, of fire, are contained within a clowd, may be argued, as well from the effect, as for that amongst the little bodies of a cloud rising up from beneath, are intermingled, not onely watery, but fiery also, and of other sorts. Withall, it cannot be, but that the clowd must receive many things from the beams of the Sun.

When therefore the blast or wind which drove the clowds together, hath intermingled it self with the seeds of fire, that are in the bosom, as it were, and cavity of the cloud, there is caused a whirling or vortex within it, which being carried about very rapidly, groweth hot by motion; and either by intension of this heat, or the contagion of some other fire, breakethout into perfect thunder, and tearing the clowd is darted forth. Now the clowd is cleft and broken, by reason that the places round about the whirling or vortex, are taken up, and stuffed thicker with the part of the clowd; neither, by reason of their being squeezed up so close together, is there any chinck open, whereby whilst it is spread with the wind may insinuate it self, and retire, by penetrating into it by degrees. Whereupon it is necessary, that the fire lately made, being dilated by the wind, breaks thorough the clowd with violence, which makes the noise of thunder; and comming forth, shineth and filleth all parts with a glittering light.

It may also be, that the force of the wind may light from without upon the clowd, at such time as the thunder is mature and perfect, and rending the clowd, make way for the fiery vortex to break thorough.

It may also be, that the fiery vortex, though not set on fire when it breaks forth, may be kindled afterwards in its passage through the aire; after the same manner as a leaden flugge passing thorough the aire, growes hot, and takes fire. It may also be, that the fire is made in the very dashing against the thing which it hits, the seeds of fire being struck out of both, in the same manner as they are struck by a flint out of steel.

452 *There are many other waies by which this fire may be kindled, or thunder made, onely let us cast away all fiction; and cast away it will be, if we take our conjecture of things unseen, from that which is conformable to things apparent*.

Hence may be given the reason, Why it comes to passe, that it thuders oftner in the Spring and Autumn, than in other seasons. In Winter, there wants the seeds of fire; in Summer, the blasts and heaps of clowds; in the Spring and in Autumn, all things convenient are ready.

But how comes it to passe, that the motion of Thunder is so swift, and its stroak so violent? This proceeds from the great violence of the eruption, and the tenuity; by reason of which, nothing in the way refills them, and force, which is, as it were, doubled by gravity, and encreaseth by motion.

How comes it to penetrate thorough the walls of houses, to melt metalls in a moment, to draw out all the Wine out of fuIl vessells? This proceeds from the tenuity and quick motion, and violent force of the little bodies, whereby it can in a moment dissipate and disperse those things which the ordinary fire of the Sun cannot under a long time.

Chap 12 – Of Lightning and Thunder-Claps

ALthough I hinted by the way, how Lightning and how Thunder are generated; yet nothing hinders, but that they may be generated many waies besides.

For [453] *Lightning may be made either by the rubbing or striking of the clouds against one another, such a kind of figure issuing from them*; or by such a disposure and conformation of atom's heaped up together, as causeth fire, and generates lightning; after the same manner as we observe it to be done, when iron and a stone are hit against one another.

Or by the winds stirring up one of the clowds those bodies, or little bodies, that is, atoms, *which cause this glittering brightnesse*; for that the wind (and especially if it grow hot like a leaden flugge) strikes off the same little bodies, which are struck by the mutuall attrition of the clowds.

Or by squeezin forth; there being made a compression either by the clowds one with another, or by the winds driving them, which is caused over and above the force of collision.

Or by interception of the light which is diffused by the Stars, which thereupon is driven by the motion of the clowds and winds, and falleth out of the clouds.

Or by the falling down of some most tenious light out of the clowds, whilst the clowds are intrinsecally gather'd together by the fire; and withall, thunder is caused like a kind of bounce by their motion.

Or by the enkindling of a wind, which is caused, as well by a vehement intensuisse, as convolution of motion.

Or by a breaking of the clowds by the winds, and falling down of fiery atoms, which cause lightning to shine.

That lightning may be generated many other waies, he will easily perceive, who adheres to things *apparent, and is able to understand what suits with them*.

Thunder-claps may be made thus, *Either by the rolling of a wind within the cavities of the clowds, as in ordinary vessells, when something is rolled in them*.

Or making a crack, by the very difflation and ebullition, as it were, of the fire, within the same clowds.

Or by the breaking and tearing of the same clowds, as when a swollen bladder cracks, paper is torn, or a shrowd rent.

Or by the same clowds, rubbing and driving against one another, having acquired an icy kind of concretion, [454] *and this by reason of the winds driving them*;

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as tall woods crackle at the blowing of the East-Wind, waves unbroken murmur, garments hung up, and papers carried away and beaten, as it were, by the winds, make a clattering noise.

Or by extinction of the fire of thunder, breaking out of one cloud, and lighting upon another which is waterish, whereupon it hisses like red hot iron, taken out of the fire, and cast into the water.

Or by the burning of some dry clowd, which crackles like a branch in the fire.

In a word, that this also may be explained severall waies, the things which appear evince and teach us, that we think not, with ignorant and superstitious persons, that the noise of thunder denotes the appearance of some god, since other bodies, being struck against one another, make·a sound also, as Mill-stones in grinding, or the hands clapped together.

Lest any wonder how how it comes to passe, that lightning is seen before the thunder is heard, this may happen, *either for that in some certain disposition of the clowds, as soon as the wind lights upon them*, there leaps forth such a configuration of little bodies, as causeth lightning; and thereupon the wind, by rolling up and down, maketh this sound.

Or for that they being both generated together, the lightning is brought to us with a quicker nimbleness; the thunder commeth later, as happeneth in some things which are seen at distance, and make a sound by blowes; for it is manifest, that the stroak is seen before the found is heard.

Chap 13 – Of Rain and Dew

WE must now speak of watery concretions, whereof some continue fluid, others acquire some solidity by the impression of cold; those which continue fluid are Rain and Dew, whereof one is made, the heaven being clowdy; the other, when it is clear.

455 Rain may be made of the clowds, either when being thinner then ordinary, the wind driving them, or they pressing upon one another, are squeezed together, and knit into drops; or when being thicker then ordinary, they are rarifi'd and changed by heat or by the wind; or, like wax, melt so, that they fall down in drops.

That there are seeds of water contained in the clowds, is so well known, that we need not speak of it. They ascend together with the clowds, they encrease together with them, and are dispersed thorough them, as blood through the parts of our body. Neither doth there ascend moisture into the clowds from all rivers onely, but the clowds also which hang over the sea receive moisture, like a fleece of wool.

456 Wherefore rain may flow from the clowds, either when the force of the wind thrusteth the clowds up together, and great store of showers. being raised above them, presseth and thrusts them; or when the clowds by the power of the winds are rarifi'd, and suffer their moisture to flow abroad; or by the heat of the Sun are so dissolved, that they fall down in drops, and, as I said, like melting wax.

It may happen, that rains sometimes last a long while, because it then happeneth, that many seeds of waters, rising up to severall clowds, and dispersed every way, may supply the rain. Sometimes also the earth recking, exhales back again all the moisture which she receiveth.

Dew is made, either by the meeting together of the little bodies in the air, which are of such a nature, as to be fit to generate this kind of moisture; or by the bringing forth of little bodies, which chiefly generate dew above, when they so meet together as to make that moisture, and flow down into the places beneath. Many things of this kind are done amongst us, especially in stoves.

Chap 14 – Of Hail, Snow, and Frost

OF watery Concretions, which by impression of cold are congealed into some solidity, there are two which are made when the heaven is clowdy, Hail and Snow; one, when it is clear, Frost.

Hail is generated, either when the congelation is stronger, by reason of the setling of a cold wind which is on every side, and presseth the drippings or drops of the clowds, which otherwise would go away into rain, or when the congealed bulk cleaveth asunder in many places, and by a moderate liquefaction, watery·drops insinuating into the chincks by compression of the parts, and breaking the whole frame into pieces, they cause that the parts exist compacted severally by themselves, and make a heap of fragments, which are thereupon dispersed.

That these fragments be in a manner round, nothing hindreth, either, for that the outmost corners are cut off on every side, by reason of their long falling; or, for that in their very forming, something either watery or windy, surrounds all the parts evenly, as we said, so that their surface is round, and not un-even.

Snow happeneth to be made either by thin water poured out of the Clouds, so as that it froaths, (some Clouds fit for the purpose pressing, and the winds blowing them abroad) and is afterwards congealed in the very Motion, by reason, of some more vehement cold in the lower places of the Clouds.

Or by some smooth congealing, caused in the Clouds; unto which, whilst the little watery bodies, compressed by, and neighbouring to, one another, arrive, there is caused an aggeneration of such loosnesse, as the flocks of snow have, whereas, the same driving one another harder, cause hail, which two things chiefly are made in the aire.

It may also be, that a kind of ejaculation of the snow, which falleth down in heaps, maybe made, the Clouds which were first congealed, breaking it asunder.

Lastly, frost is made of the same little bodies as dew, when, as the little drops of dew made either way, are by the cold temperament of the Aire congealed, and in congealing, receive a light compactednesse.

Chap 15 – Of the Rain-bow, and Halos

WE must not here passe by two remarkable things, which appear in the Clouds or above; The Rain-bow, an Arch of various colours, ever against the Sun; and Halos, which sometimes like a white crown compasseth the Moon.

The Rain-bow is made either, for that the moist aire shineth by the opposite splendor of the Sun, or for that it is the particular nature of light, and of the aire, to present such kind of colours either all of them, or one onely, from which (shining forward) the neighbouring parts of the aire are so coloured; in like manner, as we observe to be done, when the parts of any thing which is enlightned, make the parts of other things next to it shine also.

As to the roundnesse of its figure; this is caused by reason, that it is onely,

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convey'd to the beholders eye, from a distance every way equall; or, for that the atoms, which are carried out of the aire into the Cloud, are so compelled, that every concretion made of them, is formed into this roundnesse.

A Halos is made about the Moon, either by the carrying up of a somewhat grosse or lightly-cloudy aire towards the Moon, whilst in the mean time, some effluxions derived from her, do as it were fift it, (for they do not absolutely disperse it)in such manner, that they are formed into a circle about her in this cloudy figure.

Or by the aire, compelled about the Moon, after such a manner, as to make this round and grosser figure about her; which some conceive to happen according to some of her parts, or by some effluxion driving together from without, or, by insinuation of heat from beneath, fit to effect this.

16 – Of Avernall Places

IT rests, that we speake some things of Avernall places, so termed, for that they are pernicious to birds; for when birds attempt to flye over them, they instantly fall down and dye: As also concerning the causes of Pestilence, as far as they depend on the aire.

I must here only repeat, that the earth containeth all kinds of little bodies so diversly figured that some are suitable to the natures of Animals, others hurtfull; and by reason that the contextures of Animals are so unlike to one another, some of these are convenient and wholsome to some Animals, which to others are inconvenient and pernicious. And why not? when the contexture and temper of the same person being changed by a Feaver, the same wine, which before did him much good, is now as deadly to him as to be stabb'd to the heart.

It is manifest that many things unpleasant, troublesome, and pernicious ordinarily come into the taste, the smell, the touch, and all the senses, not to mention some trees which either cause a heavinesse to those who sleep in their shade, or by an ill sent kill them; nor strong wine, or the fume of coals and the like: How many places are there, which exhale strong and hurtfull scents of brimstone and sulphur? They who dig in Mines, who look so wan, and dye so soon, how many noisome vapours do they find to breathe out of the inmost parts of the earth?

Thus there are some places out of which these vapours breathe, which being carried up into the aire, diffused round over it, in some manner poyson it, and infest it with a deadly quality; so as that, when birds come to passe over it, *Veluti si Mulier mensium tempore Castoreum olfaciat*, they become stupefy'd, and immediately

fall down dead.

It may also be, that the aire which lies between the birds and the earth, being cleft asunder by the force of a vapour breaking forth, and the place becoming almost vacuous; the birds may not have a support, upon which to reft their spreading wings, and continue their flight, so that they sink and fall, over-burthen'd by the weight of their own body. Thus much for Avernall places.

Chap 17 – Of Pestilence

THough Pestilence, or a mortall affection of the aire may come from above, like a Cloud or dew, yet it is most commonly caused, when

the earth is putrify'd by unseasonable rains and heats, and such a vapour ariseth out of it, as infects the aire, and killeth far and neer, not only men but other living Creatures.

That the aire easily entertains the affection (or quality) of the vapour breathed immediately out of the earth into it, is manifest, from the diseases that are particular to Countries, as here with us, the gowt is frequent; among the Achaeans, sorenesse of eyes; among the AEgyptians, the Leprosie; As also for that, Travellers find it by experience, acknowledging that the aire in severall places is very different.

That this affection is sometimes propagated by the aire, the nature of the Pestilence declareth, as that especially, which, in the memory of our Ancestors beginning in AEthiopia, ran on into Lybia and AEgypt, and almost over all the dominions of the King of Persia, so as it came into our Citty and Country also, and quite laid it waste.

This propagation it made, when the poisonous vapour intermingling its little bodies with the aire, doth so disorder, and pervert the scituation of the little bodies thereof, that whatsoever of them are like its owne, is formeth into the same contexture: as when fire insinuating with its little bodies into wood, so altereth its composition, that it strikes forth all the fiery little bodies that are in it; and, out of it, maketh a new fire like to it selfe. Moreover, as fire running along in its swift motion, is able to spread it selfe thorough a whole Wood; so this Pestilent affection, by reason of the little bodies, of which it consists, creepeth forward by Degrees, and changeth the aire a great way, untill it be repress'd by an affection quite different, in like manner, as when a Cloud or mist creeps thorough the aire, and by little and little, changeth, and disturbeth it all along as it goeth.

Not to mention, that when men by breathing, draw the aire into, their bodies, they suck in at the same time, the little bodies of this affection; wherewith, those which are like them in the body are transposed, and perverted in the fame manner, as we said of the aire; and by contagious afflation, they are transmitted on to others, which cause the same perversion, whereby the disease spreads every where.

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Thus much concerning not Meteorology onely, but all Physiology: of which the few things that we have said are such, as that by contemplating them, we may throughly understand the things that are done, whereby the things that are of affinity with them, may be comprehended; and the causes of particular effects in Nature, known. For they, who pursue not these with all possible diligence, are far from understanding them, as they ought, and from obtaining the end, for which those are to be understood?

And never must we cast out of Mind the Criteries, (nor the evidence that belongs to every one of them) because, if we forsake not these, we shall with right reason find out from whence perturbation ariseth, and what it is that causeth fear, and shall quit our selves from it, understanding the cause of superiour things, and of all others which ordinarily happen, and strike great fear into others.

But, presupposing the Criteries, it avails most to apply ourselves to speculation of the principles, of which all things consist, and of the infinity of Nature, and other things coherent with these, and with constant remembrance to preserve the chiefest and most generall Maxims concerning them. For by this means, we shall be farthest off from Fables, and obtain that undisturbed state of mind, which is the true and onely mark,

at which, in all this discourse, we have aimed.

2.4. The Third Part of Philosophy – Ethick or Morals

It resteth that we speak of *Ethick*, or the Philosophy of *Manners*; neither is it without cause that we said at first, that this is to be esteemeth the principall part of Philosophy, because that which is, of Nature would be useless, unless it conferred to the end of life with an Ethicall consideration. Even Prudence it selfe, which belongs to this part, therefore excells naturall Philosophy, because it rules it, and useth it as a means to moral Philosophy.

In saying this part concerns the *end of life*, I show why it is commonly called the Philosophy *concerning Life and Manners*, or concerning the Institutions of the actions of life (for Manners are no other than the customary actions of humane life); likewise concerning the *End*, that is, the extream or greatest good which we pursue, and concerning things eligible and avoidable, inasmuch as it prescribeth the election of such things as conduce to that end, and the avoidance of such as divert from it.

For the *end* of life by the tacit consent of all men, is *Felicity*; and since almost all miss of that end, must it not happen either for that they propose not to themselves that felicity which they ought, or that they use not the right means to attain it?

When we behold so many, who, abounding in all things necessary to the use of life (swimming in wealth, adorn'd with titles, flourishing in a hopefull issue; in fine, possessed of all things commonly esteemed desirable) are not withstanding anxious and querulous, full of cares and solicitudes, distracted with terrours, in a word, leading a miserable life; thence we may inferre that they know not wherein true felicity consists, and by what means it may be attained; their hearts resembling a vessell, which either being leaky and full of holes, can never be filled; or being tainted with ill liquor, corrupts and spoyles whatsoever it receives.

It is therefore worth our paines, by the benefit of this Philosophy (which treats of the End and of Felicity) to cleanse and mend our heart, that it may be satisfi'd with a little, [457] and be pleased in the enjoying of any thing, *we must Philosophize nor for show but seriously; for it is requisite not that we seem sound, but that we be sound*: [458] We must philosophize forthwith, and not deferre it to the morrow; for even to day it concerns us to live happily, and *it is a mischief of folly that it always begins to live*, or defers to begin, but in the mean time liveth never.

A strange thing it is! [459] *We have been borne once, we cannot be borne twice, and age must have an end; Yet Thou O Man, though the morrow be not in thy power, in confidence of living tomorrow, put'st thy self off to the future, and loosest the present: So mens lives waste with delay, and hence it is that some of us dye in the midst of business*; Every man leaves the World as if he had but newly entred it; and therefore old men are upbraided with infancy, because, as if employed in a business that concerns them not, they do not take notice that they live, and so their whole life passeth away with the benefit of life.

Let us therefore endeavour so to live that we may not repent of the time past; and so enjoy the present, as if the morrow nothing concerned us. He most sweetly attains the morrow who least needs or desires the morrow; and that hour overtakes a man most welcome, whereof he had framed to himself the least hope. And since *it is troublesome always to begin life*, [460] let life be alwayes to us as it were perfect and absolute, and as if there wanted nothing to its measure. *The life of a fool is unpleasant, it is timorous, it is wholly carried on in the future;* [461] let us endeavor that ours be pleasant, secure, not only present, but even now settled in safety.

Doubtlesse, the way to fly folly is to ascend that watch-tower (as it were) of wise men, from whence we may behold the rest wandering, and, in life, vainely seeking life. If you think it is pleasant from Land to behold Mariners striving with storms, or, without endangering your self, see Armies joyning battell; certainly, nothing can be more delightfull than from the calm throne of Wisdome to view the tumults and contentions of fools. Not that it is pleasant that others be afflicted; but it pleaseth, that we are not involved in the same evills.

But that we may in some measure, to our ability, help those who desire to attain this height of wisdom, we will collect our meditations upon these things, treating first of *Felicity*, which is man's greatest good, and then of those things which conduce to the making and preserving of it, which are nothing else but the *Virtues* themselves.

2.4.1. Chap 1 – Of Felicity, Or the End of Good as Farre As Man Is Capable of It

OF Felicity we must first take notice, it is termed the End, that is, the last, the extream and greatest of Goods; because since those things are called Goods which allure the appetite to pursue them, and of these Goods some are desired for themselves, some for other things, Felicity is such a Good as all goods ought to be referred unto, it selfe to none.

And though *Felicity*, or *Beatitude*, and *happy life* be the same thing, yet that doth not hinder us, but that we sometimes mention the end of happy life, which we do according to the vulgar phrase taking the end of happy life, and happy life, for the same thing; but not implying any farther end, to which happy life may be thought to be referred.

This premised, we must first distinguish felicity into two kinds; one supream, incapable of intension and remission; the other subalternate in which there may be addition and detraction of pleasure.

The first, is conceived to be a state, than which none can be imagined, better, sweeter, more desirable, in which there is no ill to be feared, no good wanting: there is nothing that would and may not be done; and which is so sure that it can at no time be lost.

By the other, we understand a state, in which it is as well as may be, or in which there are very many necessary goods, very few ills, and in which it is permitted to lead a life so sweetly, so quietly, and constantly, as the Company, Course of life, Constitution of Body, Age, and other circumstances will allow.

Nor without reason is it I make this distinction and definition. For, though it seem manifest, that the first kind is proper only to God; yet there are, who, having a high opinion of themselves, and of their own wisdom, dare promise and arrogate it to themselves, and therefore affirm, that they are equall to God; and modest amongst them are they who repute themselves inferiour to none but *Jupiter*.

But these truly seem forgetfull of their own mortality and weaknesse, when as all, who are conscious thereof, cannot but acknowledge, that men are capable onely of the latter, and that wisdom doth much, if all men being in some manner miserable, it place thee in a state, wherein thou shalt be the least miserable of all men. Or, if among the severall degrees of miseries, to which thou art obnoxious by birth, it place thee in that wherein thou shalt be least miserable. For that is to be happy, to be free from those ills, wherewith thou mightest be afflicted; and in the mean time to enjoy such goods, than which, greater cannot be had in the condition wherein thou art.

This indeed is the reason, why I conceive a wise man, though deprived of sight and hearing, may neverthelesse partake of happy life, because he will yet persevere in as many goods as he can, and be free from those ills, if not of body, at least of mind, which otherwise might have afflicted him.

I further declare, that a wise man, though he should be cruelly tormented, will yet be happy, by felicity, not divine but human; which in a wise man is alwaies as great, as can be for the condition of the time.

For in torments he feels the pain indeed, sometimes groans and cries out; but because there is a necessity of suffering them, he not exasperates or makes them greater, by impatience or dispair, but rather, with as great constancy of mind as is possible, mitigates and renders them somewhat more easie. Herein certainly he is more happy than if he sunck under them, like those, who being under the same torments, bear them not with equall courage and constancy, nor have the like assistance from wisdom (which confers at least innocence of life, and security of confidence) to lighten them.

Therefore neither is there any reason to cavill, that the Bull of *Phalaris*, and a bed of Rofes, are all one to us; and the wise man, burning in that Bull, must cry out, *How pleasant is this! how unconcern'd am I! how little care I!* Since there are somethings, which a wise man had rather should happen to him, as rest of body free from all disturbance, and leisure of mind, rejoycing in contemplation of its own good. There are other things, which, though he would not have them, yet, when they do come, he bears them constantly, even commends and approves them, inasmuch as they give him occasion to please himself in his own constancy, and to say, I burn, but yield not. Why may it not be wished, not indeed to be burnt, but to be vanquished?

This I say, in regard a wise man is obnoxious, both to the pains of sicknesse, and the tortures of Tyrants, although he neither invites those, nor provokes these, so far as decently he may. Besides, the times are not such alwaies to all men, as that they may by indolence live happy.

2.4.2. Chap 2 – That Pleasure, Without Which there is no notion of Felicity, Is in Its Own Nature Good

SEeing that to live without pain is sweet or pleasant, and to enjoy good things, and be recreated by them; it followes, that Felicity cannot consist without both, or at least one of these; (by pleasure, suavity, jucundity, and the like terms, I understand the same thing): yet some there are, who, with great flourishes, have so discoursed against pleasure it self, as if it were something ill in its own nature, and consequently not appertaining to Wisdom and Felicity.

Therefore before we enquire, whether felicity really consists in pleasure, we must show, that Pleasure is in its own nature good, as its contrary, Pain, is in its own nature ill.

Certainly, since that is good which delighteth, pleaseth, is amiable, and allures the appetite; that, consequently, ill which harmeth, is unpleasant, and therefore excites hate and aversion; There is nothing pleaseth more then pleasure, delighteth more, is lov'd more, is desired more; as on the contrary, nothing incommodes more than pain, displeaseth, is abhorred, and shunned. So as Pleasure seems not onely to be a good, but the very essence of good, it being that by which any thing is good or desirable: Pain not onely an ill, but the very essence of ill, as being that by which any thing is ill or hatefull.

For though we sometimes shun pleasure, yet it is not the pleasure it self which we shun, but some pain annexed accidentally to it; as, if at any time we pursue pain, it is not the pain it self that we pursue, but some pleasure accidentally joyned to it.

For, (to expresse this more plainly) no man sleights, hates, or shuns pleasure, as pleasure; but because great pains overtake those, who know not how to follow pleasure with reason. Nor is there any who loves, pursues, would incur pain, simply as pain; but because sometimes it so happens, as that with labour and pain he must pursue some great pleasure.

For to instance in the least things; Who amongst us undertakes any laborious exercise of body, unlesse that some commodity arise by it? Who can justly blame him, who defires to be in that pleasure which hath no trouble? Or him, who shuns that pain which procures no pleasure? But we accuse and esteem those worthy of contempt, who, blinded and corrupted with the blandishments of present pleasures, foresee not the troubles that must ensue. Alike faulty are they, who desert their duties out of softnesse of mind, that is, the avoidance of labour and pains.

Of these things, the distinction is easie and ready. For at a free time, when our election is at liberty, and nothing hinders, but that we may do what pleaseth us most, all pleasure is to be embraced, all pain to be expelled. But at sometimes it often falleth out, that pleasures are to be rejected, and troubles not to be declined.

Thus, although we esteem all pleasures a good, and all pain an ill; yet we affirm not, that we ought at all times to pursue that, or to avoid this; but that we ought to have regard, as to their quantity, so also to their quality; since it is better for us to undergo some pains, that we may thereby enjoy the more abundant pleasures; and it is expedient to abstain from some pleasures, lest they prove the occasion of our incurring more grievous pains.

Hereupon this was, as it were, the fountain, from which, in treating of Criteries, we deduced severall Canons concerning Affection or Passion, esteeming pleasure or pain the Criterie of Election and Avoidance. And not without reason, forasmuch as we ought to judge of all these things, by the commensuration and choice of things profiting or hurting, since we sometimes use a good as an ill; and, on the contrary, sometimes an ill as a good.

Hence therefore, to presse this further, I say, that no pleasure is ill in it self, but some things there are which procure some pleasures, but withall, bring pains far greater than the pleasures themselves. Whereupon I

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add, that if every pleasure might, be so reduced within it self, as that it neither should comprise within it, nor leave behind it any pain, every pleasure, by this reduction, would be no lesse perfect and absolute, than the principall works of Nature, and consequently there would be no difference amongst pleasures, but all would be expectible alike.

Moreover, if those very things which afford pleasure to luxurious persons, could free them from the fear of Meteors, and death, and pain, and could instruct them what are the bounds of defires; I could not find any fault, forasmuch as they would be every way repleat with pleasures, and have nothing grievous or painfull, that is, ill.

2.4.3. Chap 3 – That Felicity Consists Generally in Pleasure

NOw to come to what was proposed, Felicity seems plainly to consist in Pleasure. This is first to be proved in generall, then we must show in what pleasure particularly it consists.

In generall, Pleasure seems to be, as the beginning, so the end also of happy life, since we find it to be the first good, and convenient to our, and to all animal nature; and is that from which we begin all election and avoidance, and in which at last we terminate them, using this affection as a rule to judge every good.

That Pleasure is the first and connaturall good, or (as they tearm it) the first thing suitable and convenient to Nature, appeareth; for that [462] *every animal, as soon as born, desireth pleasure, and rejoyceth in it, as the chief good; shunneth pain as its greatest ill, and, to its utmost ability, repells it*. We see that [463] even Hercules himselfe, tormented by a poisonous shirt, could not with-hold from tears;

Crying and howling whilst the Locrian stones,

And high Eubaean hills retort his grones.

[464] *Thus doth every undepraved Animal, its own nature judging incorruptly and entirely*.

[465] *There needs not therefore any reasoning to prove, that pleasure is to be desired, pain to be shunned; for this is manifest to our sense, as that fire is hot, snow white, honey sweet. We need no arguments to prove this; it is enough that we give notice of it. For since that if we take away from man all his senses, there is nothing remaining, it is necessary, that what is couvenient or contrary to nature, be judged by nature her self, and that pleasure be experible in it self, and pain in it self to be avoided: For what perceives, or what judgeth, either to pursue or avoid any thing, except pleasure and pain?*

That pleasure, as being the first thing convenient to nature, is also the last of expetibles, or the end of good things, may be understood even from this, Because it is pleasure onely, for whose sake we so desire the reft, that it self is not desired for the sake of any other, but onely for it self; for we may desire other things to delight or please ourselves, but no man ever demanded a reason, why we would be delighted and pleased. Certainly no more, than for what cause we desire to be happy; since pleasure and felicity ought to be reputed, not onely in the same degree, but to be the very same thing, and, consequently, the end, or ultimate, and greatest good, on which the rest depend, but it self depends on none.

This is further proved, for that Felicity is, as we hinted formerly, no otherwise, than because it is that state, in which we may live more sweetly and most pleasantly, that is, with the greatest pleasure that may be. For, take from life this sweetnesse, jucundity, pleasure; and Where, I pray, will be your notion of felicity, not of that felicity onely which I tearmed divine, but even of the other, esteemed human? Which is no otherwise capable to receive degrees of more and lesse, or intension and remission, than because addition or detraction of pleasure may befall it.

To understand this better, by comparing pleasure with pain, [466] *let us suppose a man, enjoying many great incessant pleasures, both in mind and body, no pain hindring them, nor likely to disturb them; What state, can we say, is more excellent, or more desirable than this? For in him who is thus affected, there must necessarily be a constancy of mind, fearing neither death nor pain, because death is void of sense; pain, if long, useth to be leight; if great, short, so as the shortnesse makes amends for its greatnesse, the leightnesse for its length. When he arrives at such a condition, as he trembles not with horrour of the Deity, nor suffereth the present pleasures to passe away, whilst his mind is busied with the remembrance of past, or expectation of future good things, but is daily joyed with the reflecting upon them; What can be added to better the condition of this person?*

Suppose, on the other side, a man afflicted with as great pains of body, and griefs of mind, as mans nature is capable of, no hope that they shall ever be eased, no pleasure past, present, or expected; what can be said or imagined more miserable than he?

If therefore a life full of pains be of all things most to be avoided, doubtlesse the greatest ill is to live in pain; whence it followeth, that the greatest good is to live in pleasure. Neither indeed hath our mind any thing else, wherein, as its center, it may rest; all sicknesses and troubles are reduced to pain, nor is there any thing else which can remove nature out of her place, or dissolve her.

2.4.4. Chap 4 - That the Pleasure, Wherein Consists Felicity, Is Indolence of Body, and Tranquility of Mind

THere being (as before is intimated) two kinds of pleasures; one in station or rest, which is a placability, calmnesse, and vacuity, or immunity from trouble and grief; the other in motion, which consists in a sweet movement, as in gladnesse, mirth, and whatsoever moveth the sense delightfully, with a kind of sweetnesse and titillation, as to eat and drink out of hunger and thirst: It may be demanded, Whether in both, or in either, and in which consists Felicity?

We say, that pleasure, wherein felicity consists, is of the first kind, the stable, or that which is in station; and so can be no other than indolence of body, and tranquillity of mind.

When therefore we say in generall tearms, Pleasure is the end of happy life, we are far from meaning the pleasures of luxurious persons, or of others, as considered in the motion or act of fruition, by which the sense is pleasantly and sweetly affected; as some, either through ignorance, dissent, or ill will, interpret. We mean no more but this, (to repeat it once more) Not pained in body, nor troubled in mind.

For it is not perpetuall feasting, and drinking; not the conversation of beautifull women; not rarities of fish, nor any other dainties of a profuse table, that make a happy life; but reason, with sobriety, and a serene mind, searching the causes, why this object is to be preferr'd, that to be rejected; and expelling opinions, which occasion much trouble to the mind.

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The better to understand why this pleasure only is the End, we may observe, that Nature tends to no other pleasure primarily, as to her end, but to the stable; which followeth upon removall of pain and trouble. The moveable she not proposes as the end, but provides only as a means conducing to the stable, to sweeten (as it were) that operation of hers which is requisite to the extirpation of pain and trouble. For example, Hunger and Thirst being things troublesome and incommodious to an Animal, the primary end of Nature is to constitute the animal in such a state as that it may be free from that trouble and inconvenience; and because

this cannot be done but by eating and drinking, she therefore seasons with a sweet relish the action of eating and drinking, that the animall may apply himself more readily thereto.

Most men, indeed, live preposterously; transported inconsiderately and intemperately, they propose for their end the pleasure which consists in motion; but wisdome summon'd to our relief reduceth all pleasures into decent order, and teacheth that pleasure is to be proposed as the end; but that which is the end according to Nature, is no other than that which we have spoken of. For while Nature is our guide, whatsoever we do tends to this; that we neither be pained in body nor troubled in mind: And assoon as we have attained this, all disturbances of the mind are quieted, and there is nothing beyond it that we can aim at to compleat the good both of our Soul and Body. For we then want pleasure when its absence excites pain in us: but as long as we are not pained, we want not pleasure.

Hence comes it that amotion of paine, or the state which followes upon that one-word is the furthest bound or height of pleasures; for, where ever pleasure is, as long as it is there, there is nothing painfull or grievous, or both together. Hence also it comes that the highest pleasure terminated in privation of pain may be varied and distinguished, but not increased and amplified: for Nature, untill she hath quite taken away the pain, increaseth the pleasure; but when the pain is quite removed, she permits not the pleasure to increase in greatnesse, but onely admits some varietyes which are not necessary, as not conducing to our not being pained.

Moreover, hence it appears, that they insult without cause, who accuse us that we mean not by want of pain some middle thing betwixt pain and pleasure, but so confound it with the other part (in the division) as to make it not onely a pleasure, but the very highest of pleasures. For, because when we are delivered out of Pain, we rejoyce at that very freedome and exemption from all trouble, but every thing whereat we rejoyce is pleasure, as every thing whereat we are offended, pain; the privation of all pain is rightly named pleasure. For, when hunger and thirst are expelled by eating and drinking the very detraction of the trouble brings pleasure; so in every thing else, the removall of pain causeth sucession of pleasure.

Hence also may be shown the difference when they objectt, that there is no reason why this middle state should rather be esteemed a pleasure than a pain. For discontent ensues not immediately upon detraction of pleasure, unlesse some pain chance to succeed in the room of the pleasure: but on the contrary, we rejoyce at the losse of pain, though none of those pleasures which move the sense succeed. By this we may understand, how great a pleasure it is, not to be pained; which if any doubt, let him aske those who are oppressed with sharp sicknesses.

Some laugh hereat; They object, that this pleasure is like the condition of one that sleeps, and accuse us of sloath, never considering that this constitution of ours is not a meer stupidity, but rather a stace wherein all actions of life are performed pleasantly and sweetly. For, as we would not have the life of a wise man to be like a torrent or rapid stream, so we would not it should be like a standing dead-pool: but rather like a river gliding on silently and quietly. We therefore hold his pleasure is not unactive, but that which reason makes firm to him.

But to omit these, and return to our subject, there are two good things of which our chiefest Felicity consists; That the mind be free from trouble, the body from pain; and so as that these goods be so full, and all trouble taken away, that they admit not increase. For how can that increase, which is full? If the body be free from all pain, what can be added to this indolence? If the mind from perturbation, what can be added to this tranquillity? As the serenity of Heaven being refin'd to the sincerest splendor, admits no greater splendor; so the state of a man who takes care of his body and foul, and connects his good out of both, is perfect, and he hath attained the end of his desires, if his body be neither subject to pain, nor his mind to disturbance. If any externall blandishments happen, they increase not the chief good, but, as I may say, season and sweeten it; for that absolute good of humane nature is contained in the peace of the soul and the body.

2.4.5. Chap 5 – Of the Means To Procure this Felicity; and of Virtues the Chiefe

Now seeing this peace of body and mind, tranquillity in one, indolency in the other, is the compleat felicity of man; nothing more concerns us, than to consider what things will procure and preserve it; for when we have it, we want nothing; while wee want it, all we do is to obtain it; and yet (as we said) for the most part we fail of ir.

First, therefore, we must consider of Felicity no otherwise then as of Health; it being manifest, that the state in which the mind is free from, perturbation, the body from pain, is no other then the perfect health of the whole man. Whence it comes that as in the body, so in the mind also, those things which produce and conserve health are the fame with those which either prevent diseases, or cure and expell them.

Now seeing that to provide against the diseases of the body belongs to the art of Medicine, as well for the prevention as cure of them, we shall not need to say much hereupon, but onely give two cautions which may be sufficient.

One, that for the driving away all diseases, or at least making them leighter and easier to be cured, we use Temperance and a sober continent life.

The other, that when there is a necessity of our suffering them, we betake our selves to fortitude and undergo them with a constant mind, not exasperating them by impatience, but comforting our selves with considering that, if great, they must be short; if long, leight.

Against the diseases of the Mind, Philosophy provides, when we justly esteem it the medicine of the mind: but it is not with equall facility, consulted, nor applyed, by those who are sick in mind. For we judge of the diseases of the body by the mind; but the diseases of the mind, we

neither feel in the body, not know or judge as we ought by the mind, because that whereby we should judge is distempered. Whence we may understand, that the diseases of the mind are more pernicious then those of yhe body; as amongst those of the body, the worst and most dangerous are such as make the patient insensible of them; as the Apoplexy, or a violent feaver.

Moreover, that the diseases of the mind are worse than those of the body, is evident from the same reason which demonstrates that the pleasures of the mind are better than those of the body; *viz*., because in the body we feel nothing but what is present, but in the mind we are sensible also of the past and future. For, as the anxiety of the mind, which ariseth from pain of the body, may be highly aggravated, if we conceit (for instance) that some eternall and infinite Evill is ready to fall on us; so (to transferre the instance) pleasure is the greater, if we fear no such thing; it being manifest, that the greatest pleasure or trouble of the mind doth more conduce to a miserable or happy life, then either of the other two, though they should be equally lasting in the body.

Now forasmuch as there are two principall diseases of the mind, *Desire*, and *Fear* with their severall off-springs, and accompany'd with discontent and trouble, in the same manner as pain is joyned to the diseases of the body; it is therefore the office of Philosophy to apply such remedyes as may prevent them from invading the mind, or, if they have invaded it, expell them. Such chiefly, are the vain desires of wealth, of honours, fear of the gods, of death, and the like, which having but once taken possession of the mind they leave no part thereof found.

The remedyes which Philosophy applyeth, are the *Virtues*, which, being deriv'd from reason, or the more generall prudence, easily drive away and expell the affections. I say, from Reason, or the more generall prudence; because, as there is a more particular prudence, serving for the direction of all the particular actions of our life; so is there a more generall prudence, which is no other than reason it self, or the dictate of reason, and is by most esteemed the same with wisdome; whereas, virtue is only a perfect disposition of the mind, which reason or prudence doth create and oppose to the diseases of the Mind, the *vices*.

2.4.6. Chap 6 – Of Right-Reason and Free-Will, From Which The Vertues Have All Their Praise

BEing therefore to proceed in our discourse to Vertue and its severall kinds, we must premise something concerning Reason it self, and likewise concerning the Free-will which is in it; for thence is derived all the praise belonging to Vertue; as also its opposite, the reproach due to Vice.

Forasmuch as Reason generally is nothing but the faculty of ratiocinating or judging and inferring one thing from another, we here take it particularly for that which judgeth, inferreth, and ratiocinates in things of action, subject to election or avoidance.

But whereas, judgement or reasoning may be either right or wrong, that reason, whose judgement is false, is not properly reason, and therefore we terme it *opinion*; yet in respect it is the common phrase, you may call it also reason if you please, meaning *wrong reason*; as right reason may be tearmed *Opinion*, meaning *sound Opinion*.

Right reason ariseth either from ingenuity, or experience, and sedulous observation. Being grounded upon firm and correct principles, but ratiocination becomes solid; and justly do we appeal to the judgment of him, who is expert and knowing in things. But of this already in the Canonick part, concerning the Criteries, which need not repetition.

When I say, things subject to election and avoidance; I take for granted, that there is in us a free or arbitrary power of reason, that is, a faculty elective and prosecutive of that which reason hath judged good, and of avoiding and shunning what it hath judgeth ill.

That it really is in us, is proved even by experience, and by common sense, which manifests, that nothing is worthy of praise or dispraise, but what is done freely, voluntarily, deliberately, and by election; and therefore must depend on something within us, which is beyond companion, and in respect whereunto, all rewards and punishment are rightly ordained by the Laws: than which, nothing were more unjust, if the actions of men were to be imputed to that rigid Necessity, which some assert, derived from Fate, as the sole commandresse of all things, declaring, that whatsoever comes to passe, floweth from an eternall truth, and continuation of causes.

467 *Truly it is much better to be addicted to the fabulous (that is, the common) opinion of the gods, than to be slaves to the belief of Fate, according as some Naturalists hold it, emposing it upon our necks as an everlasting Lord or Tyrant, whom we are to stand in awe of, night and day. For, the other opinion hath some comfort in it, that the gods will be moved with our prayers; but this, imports an inexorable necessity*.

True indeed it is, that, in things void of reason, some effects are necessary, (yet not so necessary, but that they might have been prevented, as we declared in the Canonick; and where we treated of causes) but, in Man, endew'd with reason, and as far as he makes use of that reason, there can be no Necessity. Hence it was, we endeavoured to assert the declination of motions in atoms, that we might from thence deduce, how Fortune might sometimes intervene, and put in for a share amongst human affaires, yet, that which is in us, our Will, not be destroy'd.

It behooves us to employ all our wit and endeavours to maintain our owne free-will against that sempiternall motion, and not to suffer wickednesse to escape unculpable.

But what I say of fortune, implies not that we ascribe any divinity to it, not onely as the vulgar, but even as those Philosophers, who esteeming her an unstable Cause; though they conceive not, that she bestowes on men, any thing of good or ill that may conduce to happy life, yet think that she gives occasions of very considerable goods and ills. We imply not this I say, but onely mean, that, as many things are effected by necessity and counsell, so also by Fortune; and therefore, it is the duty of a wise man to arme himselfe against Fortune.

Now seeing, what ever good or ill there is in human actions, depends onely upon this, that a man doth it knowingly, and willingly, or freely; therefore the mind muft be accustomed to know truely, that is, to use right reason; and to will truely, that is, to bend the free will to that which is truly good, from that which is truly ill. Forasmuch, as this accustoming begets that disposition in the mind, which we described to be vertue; as the

accustoming of it to the contrary, begets that disposition which we may justly define Vice.

Not to mention, that what produceth pleasure, sincere without any pain, trouble, or repentance, attending or ensuing thereupon, is truly good; that which produceth pain, sincere without any pleasure, or joy succeeding upon it, is truly ill; I only give this hint of both to distinguish each of them from what is only apparent and dissembled: such as that good which begets present pleasure and afterwards introduceth pain, and trouble; and that ill which procures pain or trouble, but afterwards pleasure and cheerfullnesse.

2.4.7. Chap 7 – Of the Vertues In General

FOrasmuch as all *Vertue*, is either Prudence or the dictate of *right reason*, as we accustom our selves to it, or is directed by, and dependent on Prudence, and the dictate of right reason; it is manifest, that to this latter kind belongs, as well, that whereby a man is affected toward himselfe, as that, whereby he is affected towards another: for by Prudence, a man is made capable to govern not onely himselfe, but others.

The Virtue which relates to others, is generally called *Justice*; that which concerns our selfe, is ordinarily distinguished into *Temperance*, and *Fortitude*. But we use to comprise both under the terme *Honesty*, as when we say, to act virtuously is no other, then to act Prudently, Honestly, Justly; they who live soberly and continently, are said to live Honestly or Decently; they who do valiantly, are thought to behave themselves honestly or decently.

Hereupon, we (as others) distinguish Virtue into four kinds, *Prudence, Temperance, Fortitude*, and *Justice*; but so, as that we oppose not *Prudence* to any affection so much as to *Incogitance, Ignorance, Folly*, (except by accident, in as much as perturbation blinds reason and cauaeth a man to act imprudently); nor *Justice*, to any affection so much as to *Malice*, whereby a man is prone to deceits (unlesse by accident in as much as anger, hatred, coveteousnesse, or some other passion may cause a man to do unjustly); *temperance* we oppose to *desire; fortitude*, to *feare*.

Hence is manifest, when I formerly said, A sober or well-orderd reason procures a pleasant or happy life; we are to understand that it procures it by means of the Vertues which it ingenerates and preserves. And whereas I added that it searched out the causes why things are to be embraced or avoided, and chaseth away opinions with occasion great trouble in the mind, we are to understand that it is all one with generall prudence, the principle of all things expetible and avoidable, and consequently the greatest because the vertues which arise from it appease perturbations, teaching that we cannot live pleasantly, unlesse prudently, honestly, and justly; not prudently, honestly, and justly, unlesse pleasantly.

By this you find, why I conceive, that the Vertues are con-naturall to a happy life, and that it is impossible to seperate happy life from them. All other things, as being frail and mortall, are transitory, seperable from true and constant pleasure; onely Vertue, as being a perpetuall and immortall good, is inseperable from it.

By this also you may understand, that all the vertues are connected within one another, and that by one; because to the principal, Prudence, all the rest are conjoyned, as the members to the head, or as rivers to the spring from which they flow; the other, because as well prudence, as all the rest cohere with happy life, there cannot be a happy life where the vertues are not; neither can the vertues be there, where the life is not happy.

Notwithstanding, that the Vertues are all connected within one another, yet are they not therefore all equall, as some conceive, who bold that all vices and faults are also equall. For a man may be more inclin'd to Justice, then to Temperance; and temperance may be more perfect in one, then in another. As for indance, (without envy be it spoken) my selfe, by length of time have made so great a progresse in sobriety, as lesse then an *obolus* serves me for a meal; *Metrodorus*, who hath not yet made so great a progresse, a whole *obolus*. And it is evident, that, of men, one is wiser then another; and of them, who do rightly according to vertue, equall rewards are not allotted to all, as neither equall punishments to all offenders. Even sense and manners confuse them, who make all equall, and hold that they offend alike, he who beats his servant wrongfully, and he who his parent; seeing, some there are who make no difference betwixt eating a bean, and the head of our father.

Others condemne, and exclaim on us, for affirming, that the vertues are of such a nature as that they conduce to pleasure or felicity, as if we meant, that pleasure which is obscene and infamous; but let them raile as they please. For as they make vertue the chief good, so do we: if the discourse be of the means conducing to happy life, neither is there any of so great power as vertue, therefore not more excellent, (not wealth, not honour, not friends, not children, &c.) But if the discourse be of living happily or felicity, why should not this be a good, superiour to vertue, to the attainment whereof, vertue it selfe is but subservient?

They exlaime again, that we enervate Vertue, in not allowing her so much power, as to render a wise man free from all passion or affection, but to permit him to be moved therewith, as (for instance) to grieve, weep, and sigh at the death of friends: but as we set a high value upon vertue, as being able to deliver us from vain terrours and superfluous desires, the chief heads of all grievous perturbations; so likewise not a little esteem it, for that it reduceth the reft of the affections to such a mediocrity, in which there remains some sense as it were of humanity.

Certainly, that totall exemption from grief, which these men boast of, proceeds from some greater ill, cruelty, and immoderate ambition of vain glory, and a kind of madnesse. So that it seems much better, to feel some passion, to be affected with some grief, to shed some tears, such as proceed from persons, touched with Love and tendernesse, then to be wise as these would have us, and grin like brute beasts.

2.4.8. Chap 8 – Of Prudence in General

WE must now say something of every virtue in particular, beginning with Prudence, whose office being to govern the life, and so to provide for every occurrent in life, as to direct it to happinesse; it seems alone to comprize the offices of all vertues.

That the propriety of Prudence, is to dispose all accidents and actions of life to felicity, or pleasure, is most manifest. As we value Medicine, not for the science it selfe, but for health; and the art of steering, not for its ingenuity, but use in navigation; so Prudence, the art of living, would never be desired, if it were nothing efficacious in life; but being so, it is desired, as the art, by which pleasure is sought and obtained.

For Prudence,·?r (if you like the word better) Wisdome, alone it is, which not onely provides, that nothing happen which may afflict the body; but likewise above all, expells sadness from the mind, nor permitting us to be daunted with fear; Under which governesse we may live in tranquillity, extinguishing the ardor of all desires. For desires are insatiable, they

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subvert not onely single persons, but families, many times a whole Common-wealth. From desires arise hatreds, dissentions, discords, seditions, warres; neither do these onely revell abroad, or with blind fury assault others onely, but likewise, shut up in the breast, they disagree and quarrell with one another, which must necessarily make life exceeding bitter. Only the prudent and wise person, cutting off all vanity and error, content with the limits of nature, can live without discontent, and without fear.

Now seeing life is disturbed by errour and ignorance, and that it is prudence alone, which rescues us from the violence of Lusts and fears, teacheth us temperately to sustain the injuries of Fortune, and showeth us all the wayes that lead to quiet and tranquillity, Why should we stick to affirm, that Prudence is expetible in order to pleasure, and imprudence to be shunned, for trouble’s fake?

That we say, A prudent Person temperately sustains the injuries of fortune, the reason is, that he fore-sees them, if not in particular, at least in the generall; Neither, if any thing happen contrary to his expectation or designes, is he troubled, for that he knoweth it, not to be within the reach of human industry, sagacity, or power, either to fore-see, or to prevent, that nothing adverse or troublesome happen. He judgeth it better to be, with Well-ordered reason, (as far as human frailty will admit) unfortunate, then with inconsideration fortunate; and thinks nothing more handsome, than, if fortune bring about a thing fairly and prosperously, that it was not undertaken without judgment and deliberation.

But indeed, a wise man orders so himself, that cutting off vain desires, he contracts himselfe within necessaries, which are so few and small, as hardly any fortune can snatch them from him. Thus, since none, or very little fortune can intervene to a wise man, he may say to her, I have seized on thee, (Fortune) and intercepted thee, so as thou canst not come at me.

Concerning the cutting off all desires, we shall speak hereafter. Now forasmuch as prudence may be considered, either as it governs our selves, or a house, or a family, or a City, or a Common-wealth, and so is distinguished into Private, Domestick, Civill; let us say something upon each.

2.4.9. Chap 9 – Private Prudence

PRivate Prudence consisteth almost wholly in this, that a man understand his own Genius, and undertake nothing whereto his nature is averse, that he deliberately pre-examine the state in which he is to spend his whole life, and to which he must so accommodate all the actions of life, as that, as much as possible, he may live in indolence and tranquillity.

For he ought to have the end or scope of life fixt, and constantly set before his eyes, and, consult with right reason, according to all evidence, whereby we use to weigh whatsoever we think or determine. For unlesse this be done, all will be full of indiscreet temerity and confusion, and our designs and enterprises will be overtaken by too late repentance.

Besides, if upon every emergent occasion, you refer not each of your actions both to this kind of scope, and to that end of nature which you proposed to your self in designing it, but turn aside to pursue or flye some other thing, the actions of your life will not correspond to your own words. For example, you extoll tranquillity in words, but in actions discover your self busie and obnoxious to trouble.

He understands the bounds prescribed by Nature, to those who enter the course of life, who discern, how easily procurable that is which is necessary to life, or what is sufficient to remove any thing that afflicts the body with indigence. Thereby he knowes so well to order the whole series of life, as never to need such things or businesse as are contentious, and consequently full of hazard and danger.

Hence it is, that a wise man is not much afraid of poverty, it happening seldom, that any man wants the things necessary to life. Yet if those should chance to be wanting, and he not have mony to procure them, he will not betake himself to beg, as the *Cynicks*; but rather apply himself to instruct some persons in learning: thus taking an employment not misbecomming wisdom, and at the same time supplying himself with necessaries from those, who have full estates.

Whilst we are obliged to this or the like employment, [468] *if necessaries fail us, and our businesse be, to entertain daily occurrences with a setled courage, we must have recourse to wisdom or Philosophy for relief. To an ill counsellor we resigne the ordering of the things that concern us, if, what is necessary to nature, we measure and provide without Philosophy*.

It therefore imports a Philosopher to bestow time in looking after these things, untill by diligent care he hath furnished him self with them. But as long as he hath so much of these, as that he can spend of them, yet retain perfect confidence, he is not to apply himself to acquisition of wealth and provisions.

Thus is Philosophy to be our guide in these things, by which we shall soon perceive, what a vertue, and how great a good it is, to require onely what is simple, light, and very small; because what is most sweet and free from trouble in all a man's life, depends upon our being contented with the least. But, by those impediments which a sollicitous acquisition of things drawes upon us, being quickly discover'd, either by the pains and toil of the body, or by the difficulty of their procurement, or by their drawing the mind away from the most advantageous speculations, (which we ought evermore highly to esteem) or by someother cause; we shall clearly find, that it is altogether fruitlesse, and not of countervalue with the troubles which follow it.

I advised, that every man should examine his own genius, and advise with himself, that he may apply himself to that which is proper for him; because otherwise, nothing can be more miserable, and more at a distance

with tranquillity, than to be engaged in a course of life, for which nature hath rendred thee unfit.

For neither is an active life to be undertaken by an unactive person, nor an unactive life by an active person. To one, rest is quiet, and action labour; to the other, rest is labour, and action quiet. A timorous and soft person must avoid the military life; a bold and impatient, the easie; for one cannot brook war, nor the other peace. The same it is in all the rest. So that nothing can be more safe, then to undertake that course onely which thou canst run through, without any reluctance or repugnance of nature.

I shall onely add this, That every man, as far as lies in his power, to the end the state of life which he chooseth may be the more secure and quiet, ought to choose it mean, neither very eminent, nor very abject. For it behoves him to live in a civil society, neither as a Lion, nor as a Gnat, lest, resembling the one, he be cast out; the other, caught in a snare.

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2.4.10. Chap 10 – Domestick Prudence

DOmestick Prudence being either conjugall and paternall, or dominative and possessory; we shall in the first, onely consider that which ariseth from what hath been said, concerning the Institution of life.

If you find that you cannot, without much trouble, live single; that you can patiently bear with a crosse-wise, and disobedient-children; that you will not so much as vex, to behold your children crying before you; that you shall not be perplexed and distracted with various sollicitudes, how to provide all things requisite to a married life, how to prevent all inconveniences, and the like: in this case, to marry a wife, and to beget children, for whom you may provide with a conjugall and fatherly prudence, is lawfull. But unlesse you know your self to be such, you see, by Marriage and Issue, how much you will hinder the happinesse of your life, True tranquillity.

Presume you may, of having a loving wife, dutifull children, cares neither great nor many; but you can onely presume it, there is not any god will warrant the successe of your presumption. Since therefore the case is hazardous, it is no wisdom voluntarily to undergo the venture, and throw your self into a condition; out of which, should you afterwards repent, you can never retire.

I say, voluntarily; for some circumstance of life may exact, that, though unwilling, you marry and beget children; as if your condition he such, as that it requires you to serve your Country herein. For whereas some pretend propagation of the species, to which we are in a manner oblig'd, certainly there is no danger, that there should be wanting such as will marry and procreate; so that some few wise men, maybe allowed to abstain from this employment.

But if some case, or certain counsell, or necessity, enforce you to marry, you must so dispose your wife, as that she may be loving to you, and and a partner in your cares. You must take such care for your children, as is partly prescribed by Nature, which instigates us to love them as soon as born, (common also to sheep, woolvs, and other living creatures); partly by prudence, which adviseth so to bring them up, as they may be obedient to the Lawes of their Country, and desirous themselves may become wise.

Neither is this care to be taken for our own children onely, but likewise for the children of our friends, especially if they are our Pupills; there being nothing more beseeming friendship, than to be Guardian in the room of a parent to those, whom our deceased friend entirely loved, and hath left Orphans needing protection.

For the other kind, as having slaves and Servants under us, (a possession, though necessary, yet for the most part not very pleasant) a wise man must take order, they grow not insolent and froward, that he may behave himself mildly (as far as is fitting) towards them, and chastise the disobedient, remembring they are men; with a kind of unwillingnesse; being ever ready to forgive, especially if they are diligent, nor of an ill disposition. And not onely this, but if he find any enclined to learning, (such as we had, particularly *Mus*) let him delight to further them, call them Friends, and study Philosophy with them.

As to his Estate, he must take care of it, and provide for the future, but so, as without covetousnesse, and the desire of growing rich, of which hereafter. A wise man must not neglect his estate, because it is his livelihood; lest, if that be consumed, and he want the necessaries of life, his study of Philosophy be hindred, whilst he either gains by labour what might with little or no pains have been preserved; or begs, and by importunity extorts from another, what every one with little endeavour might provide for himself; or, growing old, fall sick, and die in want, which not a little hinders the tranquillity of the mind.

Besides the things necessary to the uses of life, there may be others, which, according to the condition of the person, place, time, must be esteemed necessary, and therefore not to be neglected. But our chiefest care must be for things requisite, to the prevention of naturall indigence, without which, nature her self would suffer; such is the provision of corn. Those who store their houses with corn, are to be commended above those, who adorn them with rich furniture. I rejoyce exceedingly, that lately in a strict Siege, when many perished in our City by famine, we were able to sustain so many good friends with food (no delicacies, but a provident quantity of Beans) which we distributed daily to every one by tale.

2.4.11. Chap 11 – Civill Prudence

LAstly, as to Civill prudence, we must likewise repeat what we insinuated concerning the choice of a course of life.

They who are naturally ambitious, desirous of honour, active withall, and fit to manage publick affairs; as also they, whom the quality of their birth, or fortune, and opportunity invite, by an easie accession to publick government; those men may decline quiet, and comply with their own nature, by addicting themselves to publick government, and an active life. For their disposition is such, that a quiet life gives them trouble and molestation, whilst they obtain not what they desire.

But they who either are naturally enclined to quiet, or have suppress'd ambition and vanity by the power of reason; or, having made triall hereof, have escaped, as out of a storm, or tooke warning by many eminent precedents; these will justly conceive, that quiet is much the best for them, and that it is not convenient to exchange it for an active life, unlesse by chance some accident intervene in the Common-wealth, requiring their industry. Whence we conclude, that a wise man must not involve himself in publick affairs, unlesse upon some intervening necessity.

What else? since he in pursuing quiet, may far more easily and safely attain to that end, which the ambitious aim at by dangers and labours.

For to speak of their scope, there never wanted some, who, to procure security of men, (according to the condition of soveraignty and rule, by which they commonly think it gained) have affected to excell in honour, and to become illustrious, thinking by this means to attain a secure and quiet estate. But if their life be secure and quiet, they have acquired the chief good of nature; if not secure and quiet, (as indeed it can hardly be) then have they lost it, because they fought that which is convenient to nature in Dominion.

But the wise man's scope being the same, security and tranquillity of life, by how much nearer a way doth he arrive at that end, when flying the troubles of civill life, he directly and immediately settles himself in a most profound quiet, as in a still calm haven? Happy indeed, who knowes The chief good and a blessed life, consists not in Soveraignty or power, not

in numerous wealth or plenty, but in indolence, composure of affections, and such a disposition of mind, as, circumscribing all things by the boundaries of nature, makes him, in being content with little, obtain that which they, who rule over many, and possesse great treasures, despair ever to arrive at.

Truely, if it be fit to speak of my self, I esteem it a great happinesse that I was never engaged in the factions of our City, and never studied to flatter and please the people. To what end should I? when as, what I know, the people approve not; what the people approve, I know not. That Metrodorus and I lived private, How far was it from doing us harm, when among the large goods enjoyed in narrow gardens, and in obscure Melite, Greece was so farre from knowing us, that she had scarce ever heard of us?

I said, unless something intervene as to the Common-wealth: because, if the Common-wealth should summon and really need our assistance, we should be inhumane, where we might benefit many, not to do it: injurious also to our selves; for unless the common-wealth be safe, we cannot be what we most defire, quiet.

A wise man therefore doth not like some, who, professing wisdome; have, through excessive pride, so great an opinion of their own judgement in civill government that they think they could equalize Lycurgus and Solon.

But if he be desired to make lawes, and to prescribe a form of Government, and the offices of Magistrates, he will not refuse it; knowing that they who first made laws and ordinances and constituted Government and Magistracy in citties, setled life in a secure and quiet condition: for if that be taken away, we shall live like beasts, and every man devour the next he meets with.

And if he be called to the supream power to govern the Common-wealth according to the lawes and form of Government already established, he shall not refuse; knowing that though the thing it selfe is for the most part full of hazard, yet a wise man may have such regard to all things, and such a provident care of all, as that little of fortune, as I said before, shall intervene to him; but the greatest things, and such as are of most concernment be managed by his advice and conduct. He will first take care that the weaker sort of men, discharging their duty towards the more powerfull, be neither oppressed by them nor permitted to want those necessaries of life wherewith the others abound; it being the end of every society and common-wealth, that by mutuall assistance the lives of all be safe, and as happy as is possible.

Lastly, if he be summoned by his Prince, and some occasion require that he serve him either with his advice or help, neither shall he refuse this, knowing that as it is, not only more honourable, but more pleasant to give then to receive a benefit, it is: as the most honourable, so the most pleasant thing to oblige a Prince who confers so many obligations on others. Hitherto of Prudence.

2.4.12. Chap 12 – Of Temperance in Generall

NExt follows Temperance, the first part, as we said, of honesty, and which seems to contain the greatest share of what is honest and decent. For it being the office of Temperance to suppress the mind when it desires, as of Fortitude to exalt it when it fears; it is esteemed less undecent to be dejected by pusillanimity, than exhalted by desire; and therfore to resist desire, is more decent than to oppose fear.

Concerning Temperance, we must first observe, that it is desired not for its own sake, but for that it procureth pleasure, that is, brings peace to the minds of men, pleasing and soothing them with a kind of concord. For, it being employed in moderating desires, and consequently in advising that in things to be pursued or avoided we follow reason, it is not enough that we judge what is to be done or not to be done, but we must fix upon that which is judged.

But most men, not able to hold and keep to what they have resolved on, being vanquish’d and debilitated by the appearance of a present pleasure, resign themselves to the fetters of Lust, not foreseeing what will follow; and hereupon for a small unnecessary pleasure, which might otherwise have been procured, or wholly wanted without incurring pain, they fall into great sicknesses, Iosses, and infamy, and many times into the penalties of Law.

But they who so enjoy pleasures as that no pain shall ensue, and who preserve their judgment constant, nor are overcome by pleasure, to the doing of what they know ought not to be done; these men obtaine the greatest pleasure, by pretermitting pleasure: they also many times suffer some pain to prevent falling into greater.

Hence is it understood, that Temperance is to be desired, not for that it avoids some pleasures, but because he who refrains from them declines troubles; which being avoided, he obtains greater pleasures. Which it so doth, as that the action becomes honest and decent, and we may cleerly understand, that the same men may be Lovers both of pleasure and of decency, and that such as esteem and practise all vertues perform for the most part those actions and attain those ends, as that by them it is manifest, how odious to all men cruelty is,

and how amiable, goodnesse and clemency; and that those very things which ill men most desire and aim at, happen also to the good.

Now forasmuch as of the desires about which Temperance is employ'd, some are naturall, others vain; and of the naturall, some necessary, others not necessary (to omit, that, of the necessary, some pertain simply to life, as that of meat and drink, and the pleasure which consists in motion; others to felicity it selfe, (as that of indolence and tranquillity or stable pleasure): it is manifest, that not without good cause we in our Phisiology distinguished desires into three kinds, some both naturall and necessary; others naturall but not necessary; others neither naturall nor necessary, but vaine, or arising from vain opinion.

And for as much as we said, that those are naturall and necessary, which, unlesse they be satisfied, cause dammage and pain in the body; it is evident, that those which infer no dammage nor pain, though not satisfi'd yet are accompanied with earnest and vehement instigations, are such not by necessity, but vain opinions, and though they have some beginning from nature, yet their diffusion and excesse they have not from nature, but from the vanity of opinions; which render men worse than beasts, that are not obnoxious to such diffusion or excesse. Likewise, that such desires are not only not necessary, but not naturall, maybe proved, for that they have a diffluent excessive apparition, very hardly or never to be fatisfi'd; and are, for the most part, justly esteemed causes of harme.

But to discourse of some chief kinds of Temperance, according to some chief kinds of desires, we may make choyce of Sobriety opposed to Gluttony, or the excessive desire of meat and drink; Continence, to Lust, or the unbridled defire of coition; Mildness, to Anger or desire of Revenge; Modesty, to ambition or desire of honour; Moderation, to Avarice or desire of riches; and lastly, in respect of the affinity betwixt desire and hope, Mediocrity, which consists betwixt hope and desperation of the future.

2.4.13. Chap 13 – Of Sobriety Opposite to Gluttony

ITt can hardly be expressed how great a good Sobriety is, which reduceth us to a thin simple and spare dyet, teaching us how little that is which Nature requires, and clearly showing that the necessities she lies under may be abundantly satisfi'd with things leight, and easily provided, as barly-cakes, fruits, herbs, and water.

469 *For these things being every where to bee had, and having the simple nature of moist and dry, moist aliments sufficiently remove the trouble of the body arising from want of sustenance. Whatever is more then this amounts to Luxury, and concerns onely the satisfaction of a desire, which neither is necessary, nor occasion'd by any thing, the want whereof doth necessarily inferre any offence to nature; but partly for that the want of somewhat is born with impatience; purely, for that there is presumption of an absolute delight without mixture of any trouble; partly (to speake in short) for that there are vain and false opinions inherent in the mind, which serve neither for the supplying of any naturall defect, nor tend to the acquisition of anything by the want of which the frame of the body would be dissolved*.

Those very things which are ready at hand, abundantly suffice to supply all nature's wants; and they are such as partly for their simplicity, partly for their slightnesse are easily made ready. Hee, for example, who feeds on flesh, needs other things inanimate to eat with it; whereas he who is content with inanimate, needs but halfe so much as the other, and sustains himselfe with what is easily got, and cheaply dress'd.

There are four benefits arising from Sobriety; the first, that to accustome our selves to a simple diet 470 *brings and preserves health*: for it is sumptuous feasting and variety of meats which begets, exasperates, and continues crudities, head-aches, rheums, gouts, feavers, and other diseases, not plain and simple food, which nature makes both necessary and wholsome, and not onely to other animals but even to man himselfe, who yet depraves them by his exorbitancy, and corrupts them by such delicates, as which while he affect, he affects onely his own destruction.

Therefore if we are wise, 471 *let us beware of that meat which we much desire and long for, but assoon as we have had it, find it was pleasant to us only to our harm. Such are all costly and luscious meats*; whence the eating flesh is lesse to be approved, as being rather prejudiciall to health than wholsome, as may be argued because 472 *health is preserved by the same means whereby it is recovered; but it is manifest that it*

is recovered by a thin dyet and abstinence from flesh.

473 *Neither is it any wonder that the ordinary sort of men conceaves the eating of flesh to conduce much to health; for, they in like manner think, that the way to preserve health is to wallow in pleasures, even the venereall; whereof neverthelesse there is none benefits any man, and it is well if it hurt not*.

The second, is that 474 *it makes a man ready and quick in the offices necessary to life*. For if you look upon the functions of the mind, it preserves her serenity, acutenesse, vigour; if upon the functions of the body, it keeps

is sound, active, and hardy. But repletion, over-satiety, forfeiting and drunkennesse cloud the mind, make it blunt and languid; the body diseased, unactive, and burdensome. What, I pray, can you expect extraordinary from that man whose limbs are unweildy, his knees feeble, his tongue faltring, his head swimming, his eyes full of rheum, his mouth of the hick-up, brawling, and clamour; and all this, through excesse of Wine?

Certainly, a wise man who ought to content himself with a *hemina* of small Wine; or to esteem the next water he comes at to be the most pleasant of all drinks, will be far from spending the night in drunkennesse; and as far from stuffing himself with meats that are high, or burthening his stomack with such as are luscious and grosse, who ought to be concent with the most simple, even the very free gifts of Nature.

Indeed such simple and slender dyet will not make a man as strong as Milo, nor conduceth absolutely to an intense corroboration of the body; but neither doth a wise man need such intense strength, seeing his employment consists in contemplation, not in an active and petulant kind of life.

The third benefit is, that *if some times the Table happen to be more plentiously furnished, we shall come much better prepar'd to tast what it yeelds*. No but that homely fare affords as much delight as sumptuous feasts, when hunger, which, in want of food, troubleth us, is satisfied (for barley-cakes and water are highly pleasant, if taken onely when we hunger and thirst); but because they who are dayly accustomed to more costly viands are not so sensible of their sweetness by reason of their being almost continually cloyed with them; as a wise man is, who the better to relish them brings along with him a taste prepared by mean dyet: in like manner it comes to pass, that he, if at any time he chance t? be present at publick spectacles, is taken with them more sensibly than are others.

What I affirm concerning the coorsest meat and drink, that it affords no less pleasure than the greatest delicates, cannot be deny'd by any but by him who deceaveth himself with vain opinions; who observes not that they only enjoy magnificence with greatest pleasure, who least need it; who never hath tasted coorse bread and water pressed with hunger and thirst. For my own part, when I eat coorse bread and drink water, or sometimes augment my Commons with a little Cytheridian-cheese (when I have a mind to feast extraordinarily) I take great delight in it, and bid defiance to those pleasures which accompany the usuall magnificence of feasts; so that if I have but bread, or barley-cakes and water, I am furnish'd, to contend even with Jove himself in poynt of Felicity.

Shall I adde that *magnificence of feasts, and variety of dishes not onely not free the mind from perturbation, but not so much as augment the pleasure of the body, forasmuch as this also, when that trouble is removed, hath found its end? For example, the eating of flefh (which we lately instanc'd) neither takes away any thing particularly that is a trouble to nature, nor performs any thing which would occasion trouble, if not fulfilled. But it hath a forc'd delight, and perhaps mingled with that which is contrary to these, for it conduceth little to long life, and serveth only to variation of pleasures, like venereall pleasures, and the drinking of forreign wines, without which nature or life may well subsist: for those things without which it cannot subsist, are most compendious, and maybe obtained, easily without breach of Justice, Liberality and Tranquility*.

Neither is it any matter, whether the ordinary sort of men be of this beliefe or not; since petulancy and intemperance abound in such persons, so that we need

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not fear, but there will be those who will feed on flesh. For though all men had the best and right judgement of things, yet would there be no need of Fowling or Fowlers, or fishers, or Swine-herds; these Animals, living by themselves, free, and without a keeper, would in a short time be destroy'd by others preying upon them, and suppressing the vastnesse of their increase, as happens to infinite others which men eat not. But since there reigneth alwayes a multiplicious, or rather universall folly amongst men, there will never be wanting an innumerable company of gluttons to feed on these.

Lastly, the fourth benefit is, that [475] *it renders us fearlesse of fortune*. For they onely must stand in awe of Fortune, who, being accustom'd to live sumptuously, conceive their lives cannot be otherwise then most miserable, unlesse they are able to spend Pounds, and Talents every day. Whence it happens, that such men are for the most part subject to a troublesome life, and often commit rapines, murthers, and the like villainies. But he, who is concent with coorse food, as fruits and sallads, who is sacisfy'd with bread and water; who hath confin'd his desire within these, what can he fear from Fortune? For, who is there so poor as to want these? Who so distress'd, that he cannot easily meet with beans, pulse, hearbs, fruits? As for water, what need I mention it?

For my owne part, truly (that I may with modesty instance my selfe) I am content, and highly pleas'd with the plants and fruits of my owne little Gardens; and will, that this Inscription be set over the gate, *Stranger, here you may stay; here the supreme Good is Pleasure; the Master of this little house is hospitable, friendly, and will entertain you with polenta, and afford you water plentifully, and will aske you, How you like your entertainment? These little Gardens invite not hunger, but satisfie it; nor encrease thirst with drinks, but extinguish it with the naturall and pleasant remedy*.

In this pleasure, I have grown old, finding by account, that my diet amounts not fully to an *obolus* a day, and yet some dayes there are, in which I abate somewhat even of that, to make tryall, whether I want any thing of full and perfect pleasure, or how much, and whether it be worth great labour.

2.4.14. Chap 14 – Of Continence, Opposite to Lust

Moreover, continence or abstinence from venereall pleasures is a great vertue; for the use of them, as I said formerly, doth never benefit, and it is well if it hurts not.

Certainly to abuse them intemperately, is to make a man destitute of vigour, anxious with cares, painfull with diseases, and of short continuance. Wherefore a wise man must stand upon his guard, and not suffer himselfe to be caught with love, far from conceiving love, to be something sent from the Gods above, and therefore to be cherished.

And that a man may be left subject thereto, and want the chief excitements to venereall delights, nothing more avails then spare diet, of which we lately treated: for excesse in eating, causeth abundance of that humour which is the food and fuell of love's fire. The next antidotes are, an honest employment, (especially the study of Wisdom) and Meditation upon the inconveniences, to which they, who suffer themselves to be transported with Love, are liable.

The generall inconveniences, which attend love of women and boyes, are, consumption of strength, decay of industry, ruine of estate, mortgages and forfeitures, losse of reputation. And while the feet wear Sicyonian buskins, the fingers emeralds, the body other ornaments; the mind in the mean time, conscious to it selfe, is full of remorse, for that she lives idly, and suffers good years to be lost; and the like, which it were easie to instance.

But as to particulars, What ill doth it not draw upon a man to desire the company of a woman prohibited to him by the Lawes? Doubtlesse, a wise man will be very far from thinking of such a thing; it being enough to deterre him from it, to reflect upon the vast sollicitude, which is necessary to precaution, of those many and great dangers which intervene; it happening, for the most part, that they who attempt such things are wounded, murthered, imprison'd, banish'd, or suffer some great punishments. Whence it comes, that (as we said before) for a pleasure which is but short, little, and not-necessary, and which might either have been obtained otherwise, or quite let alone, men expose themselves to great pain, and sad repentance.

Besides, to be incontinent, to resigne up our selves to this one kind of pleasure, were to defraud ourselves in the mean time of other pleasures, many and great; which he enjoyes, who lives continently according to the Lawes. He so applies himself to wisdom as that he neither blunts his mind nor excruciates it with cares, nor disturbs it with other affections; and for his body, he neither enervates it, nor vexeth it with diseases, nor torments it with pains. And thus he attains the chief good, which (as I faid) is not gotten by keeping company with boyes or women, not having a table plentiously furnished with choice of fish or fowl.

Yet there is no reason anyone, from this commendation of generall abstinence from venerall delights, should infer, that therefore a man ought to abstain even from lawfull marriage. What our judgment is of that particular, we have formerly declared. I shall onely adde, that whereas I said, Love is not sent from the gods, it gives us to understand, that if a man hath no children by his wife, he must not attribute it to the anger of Cupid or Venus, or hope to become a Father, by Vowes, Prayers, and Sacrifices, rather then by naturall remedies.

I shall adde, that a Wiseman ought not to live after the manner of the Cynicks, or to behave himselfe with such immodesty as they shew in publick. For whilst they plead they follow Nature, and reprehend and deride us, for esteeming it obscene and dishonest to call things which are not dishonest by their names, but things which are indeed dishonest we call by their proper names; as to rob, to cozen, to commit adultery, are dishonest indeed, but not obscene in name; whereas to performe the act of generation, is honest in deed, but obscene in name, and alledge divers others arguments against modesty: they seem not sufficiently to consider, that they live in a civill society, not in the fields, like wild beasts, and therefore ought not to follow Nature exactly.

For, from the time that we enroll'd our names in a society, Nature commands, that we observe the Lawes and Customs of that Society: to the end, that, participating of the common goods, we draw no evill upon our selves; such as is, (besides all other punishments) the very infamy or ignominy, which attends Impudence, or the want of such modesty, as is prescribed by the Customs and manners of the society wherein we live, and from which, in the voice, the countenance, and behaviour, that modest respect, which is deservedly commended by all, is denominated.

Lastly I adde, that it not a little conduceth as to modesty in particular, so to all kinds of continency, to abstain from Musick and Poerty, for that their pleasing songs and airs are no other then incentives to lust.

Hence is our Maxime, that a wise man onely can treat of Musick and

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Poety aright, and according to vertue. For others, easily taken with the allurements of both, indulge to both; onely the wise man duely fore-seeing the harm that would ensue, casts them away; declaring that Musick, is, amongst other things, an allurement to drink, an exhauster of Money, a friend to idlenesse, conducing nothing to good, honest, and generous works; that Poetry hath alwaies made men prone to all sorts of vices, especially to lust, even by the examples of the gods themselves, whom it introduceth, inflamed with anger, and raging with lust, and represents not onely their Wars, conflicts, wounds, hatreds, discords, dissentions, births, deaths, but also their complaints, lamentations, imprisonments, coition with mortalls, and mortall children of immortall Parents, and the like; which certainly sober men would abhorre.

2.4.15. Chap 15 – Of Meeknesse, Opposite to Anger

Moreover Lenity or Meekneffe, whereunto are reduced Clemency and Piety, is so excellent an antidote against anger, or desire of revenge, that it is esteemed a most eminent vertue; in as much as anger, especially if excessive, causeth madnesse for the time. For by anger, the mind is heated and darkned, the eyes sparkling with fire, the breast ready to burst with rage, the teeth gnashing, the voice choaked, the hairs standing on end, the face glowing, and distorted with menacing looks, horrid, and ugly to behold, so that the mind seems to have lost the command of her selfe, and to have forgotten all decency. But, lenity cures the mind, or rather preserves it sound, so, that it is neither moved in it selfe, nor is there any eruption of passion into the body, that may cause the least undecency.

Now anger being commonly kindled, and set on fire by opinion of some injury receiv'd; but men are injur'd through hatred, envy, or contempt; how can a wife man so bear an injury, as to behave himselfe with Lenity and sweetnesse towards those who did it? By submitting himselfe to the government of right reafon; whereby, (as I formerly said) he must fortifie himselfe against fortune. For, he accounts an injury among things of chance, and discreetly considers, it is not in his power to make other men just, and free from passion; and therefore, is as little moved at injuries done to him by men, as at the incommodities, or losses which happen by accidents of fortune, of by any other cause above, beyond his owne power.

He is not, for example, troubled at the great heats or colds of the seasons of the year, because it is the nature of the seasons in their vicissitudes which he cannot alter! In like manner, neither is he troubled at the injuries, which dishonest and malicious men do to him, because in doing so they act according to their owne natures, and to make them do otherwise, and to change their natures, is not in his power. Besides, he conceives it not agreeable to Reason, and Wisdom, to adde ill to ill, (to adde, unto the harm which happens to him from without, perturbation within by opinion) or, because another man would afflict his mind with vexation he should be so foolish as to admit that vexation, and further the ill designes of his enemy upon him.

Yet is it fit, that a wise man take such care of his reputation, as not to become contemptible, since there are some pleasures that arise from a good Name, some troubles from an ill, and the contempt that followes it; but he must take care of his reputation, not so much by revenging injuries,

or being offended at those that do them, as by living well, and innocently, giving no man a just cause of contumely or malediction. To do thus, is in our power; not, to hinder another from exercising his owne malice.

Whence, if one that bears you ill-will, and is your profess'd enemy, shall demand any thing of you, you must not deny him, provided what he demand be lawfull, and you are nothing the lesse secure from him; he differs not from a dog, and therefore must be appeased with a morsell. Neverthelesse, nothing is better or safer, than to confront his malice with innocence of life, and the security of your own Conscience, and withall, to show that you are above injury.

Especially, seeing it may so happen, that a wise man (as I said before) may be arraign'd, and suffer not onely injury, but calumny, accusation, condemnation: Even then he considers, that to live well and virtuously, is in his power, but, not to fall into the hands of envious unjust persons; not to be unjustly accused by them; not to be sentenced by unrighteous Judges, is not in his power. He therefore is not angry, either with the accusers, witnesses, or judges but confiding in a good conscience, loseth nothing of his lenity and tranquillity, and esteeming himselfe to be above this chance, he looks upon it undaunted, and behaves himself in his tryall boldly, and with courage.

Let not any object, that, what I here advise concerning lenity, is repugnant, to what I formerly said of the chastising of servants; for I limited castigation, onely to the refractory and perverse. It is manifest, that punishment ought to be inflicted on offenders, as well in a private family, as in a Common-wealth; and that, as a Prince or Magistrate punisheth the offences of his subjects, without anger; so the Father of a family may, without anger, punish the faults of his servants.

Moreover, a wise man must not onely bear injuries, not onely pardon them mildly, but even kindly, encourage, and congratulate him, who betakes himselfe to a better course. For since the beginning of reformation is to know our fault; therefore must this gratulation, and encouragement be given to the penitent offender, that, as he is affected with horrour at this knowledge of his crime, so the excellence, and beauty of that which he ought to have done, and thence forward must do, may be fully represented to him, and the love of it increase daily in him.

2.4.16. Chap 16 – Of Modesty, Opposite to Ambition

AS concerning *Modesty*, there needs little more to be said, then what we formerly declared, when we show'd it was not the part of a wise man to affect high Offices, or Honours in a Common-wealth, but rather so to contain himselfe, as to live in some private corner: wherefore, here I shall once more give the same counsell, which I give to all my fiends. Live close, or private, (provided no necessities of the Common-wealth, require

otherwise) for even experience teacheth, that he hath lived well, who hath well concealed himselfe.

It is but too frequently seen, that they who clime up to the top of Honour, are cast down by envy, as with a Thunder-bolt, and then too late acknowledge, that it is much better, quietly to obey, then by laborious climing up the narrow path of ambition, to aime at command and soveraignty, and to arrive there, where nothing can be expected, but a great and dangerous praecipitation. Befides: Are not they, whom the common people

gaze upon with admiration, glittering with titles and honours, the most unhappy of all men, for that their breasts are gnawn with weighty and troublesome cares? You must not imagine that such persons live quiet and secure in mind; for it is impossible but that they who are feared by many, should themselves fear many.

And though you see them send out great Navies, command Legions, compassed with Guards, yet you must not think they live all quiet, or indeed do at all partake of any true pleasure, for all these things are ridiculous pageantry and dreams: fears and cares are not afraid of the noise of Armes, nor stand in awe of the brightness of gold, or splendor of purple, but boldly intrude amongst Princes & Potentates, and, like the Vulture, which the Poets talk of, gnaw and prey on their hearts.

Neither must you think that the body is any thing the better for this, since you see that Feavers go away nothing the soorer, if you lye in a bed of Tyrian purple, in a Chamber funished with rich Tapistry, than under a plain homely coverlet; and that we take no harme by the want of purple robes, embroidered with Gold and Pearle, as long as we have a coorse plain Garment sufficient to keep away the cold. And what, if, being cheerfull and contented with raggs and a bed of straw, you should instruct men how vain those are who with astonish'd and turbulent minds gape and thirst after the trifles of magnificence, not understanding how few and small those things are which make a happy life? Beleeve me, that which you shall say will appear far more magnificent and high, being delivered from a mattress covered with coorse cloath; for it is not onely spoken but practised.

Though your house shine not with silver and gold, resound not with musick, hath not any golden images of boyes holding tapers to light you at your nightly Revells and Banquets; truly, it is not a whit lesse plesant to repose your selfe on the soft grass by a purling stream, underneath a spreading tree, and especially in the spring, at what time the fields are besprinkled with flowers, the birds entertain you with their musick, the West wind fans you, and Nature her self smiles on you.

Why therefore should any man, that may live thus in his own fields and garden, pursue honour; and not rather modestly restrain his desires within this compass? For to aim at glory by ostentation of Vertue, Science, eloquence, nobility, wealth, attendants, attire, beauty, meen, and the like, is a ridiculous vanity: in all these, Modesty requires no more than that we transgress not decency through rusticity, stupidity, or negligence. It is (as I said) equally base and abject, to grow insolent, upon possession of these, as to be cast down at their loss.

Hereupon a wise man, if he happen to have the images or starues of his Ancestors or other persons, will be far from taking pride in them, or showing them as badges of honour; yet on the other side, he will not neglect them, but place and keep them carefully in his gallery.

In like manner, neither will he be sollicitous about his own funerall, or give order that it be performed magnificently. He will only consider what may be beneficiall and pleasant to his successours, knowing that as for himself or his dead body, it is all one what becomes of it. For to propagate vanity even beyond death is madness, and such also is the fancy of those who would not that their dead bodyes should be devoured by wild beasts. For, if that be an ill, must it not be very bad to have them burnt, embalmed, and immersed in honey, to grow cold and still under a Marble-stone, to be pressed and consumed with earth?

2.4.17. Chap 17 – Of Moderation, Opposite to Avarice

THe next is moderation, or that disposition of mind by which a man is contented with little, and than which he cannot have a greater good. To be content with little is the greatest wealth in the world, forasmuch as a mean estate proportion'd to the law of nature is great riches. To have wherewithall to prevent hunger, thirst, and

cold, is a felicity equall to that of the Divinity; and who possesses so much, and desires no more, however the World may esteeme him poore, is the richest man.

How sweet a thing is this poverty, cheerfull and contented with what is enough, that is, with those riches of nature which suffice to preserve from hunger, thirst, and cold? Truly, seeing the riches of nature are finite and easie to be had, but those that are coveted out of vain opinions, are without measure and infinite, we ought to be thankfull to kind Nature, for making those things necessary, that are easie to be had, and those that are hard to be got, unnecessary.

And since it behoves a wise man to hope he shall never, as long as he lives, want necessaries, doth not the easie acquisition of these cheap and common things abundantly cherish that hope? Whereas, on the contrary, things of magnificence affords him not the like hope. And this is the reason why ordinary men, though they have great possessions, yet as if they feared those might faile them, labour still to heap up more, never thinking their store compleat.

This may teach us to content our selves with the most simple things, and such as are easily gotten, remembring that not all the wealth in the World put together is able in the least measure to allay the perturbation of the mind, whereas things that are mean, ordinary, and easie to be had, remove that indigence which is incommodious to the body, and besides are such that the thought of parting with them is nothing grievous to him who reflects upon death.

Miserable indeed are the minds of men and their hearts blind, in as much as they will not see that Nature dictates nothing more to them than this, that they supply the wants of the body, and withall enjoy a well pleased mind, without fear or trouble; not that they should employ their whole life in scraping together that which is necessary to life, and that with such greedinesse as if they were to out-live death, never thinking how deadly a cup, from our very birth, we are design'd to pledge.

What though those things which are purely necessary, and in respect whereunto no man is poore, yield not the delights which vulgar minds dote on? Nature wants them not, and yet she ceaseth not to afford reall and sincere pleasures, in the fruition of those mean and simple things, as we already have declared. Whence a wise man is so indifferently affected towards those things, for whose sake money is coveted (to supply the dayly expences of love, and ambition) as that being at a great distance from them all, he hath no reason either to desire or care for mony.

Whereas I said, that the riches which are covered through opinions, have not any measure or bound, the reason is, that though Nature is satisfied with little, yet vaine opinion, ushering-in desire, alwayes thinks of something which we have not, and, as if it were really needfull, directs the desire to that thing. Whence it happens, that he who is not satisfied with a little, can never have enough; but the more wealth he hath, the more he conceives himself to be in want.

Wherefore seeing there can never be want of a little, a wise man, possessing that little, ought to esteem it great riches, because therein is no want; whereas other riches, how great soever in esteem, are indeed small, because they want multiplication to infinity. Whence it follows, that he who thinks not what he possesseth is sufficient and plenteous, though he were master of the whole world, would yet be miserable. For misery is the companion of want, and the same vain opinion which first perswaded him, that his own estate was not sufficient, will continue to perswade him, that one world is not sufficient, but that he wants more and more to infinity.

Would you then make a man rich? Know, that it must be done, not by adding to his riches, but by detracting from his desires. For when having cut off all vain and superfluous desires, he shall compose himself to the rules of nature, and covet no more then she requires, then shall he find himself to be rich indeed, because he shall then find that he wants nothing. Whence this also should be inculcated to him, If you live according to Nature, you shall never be poor; but if according to Opinion, never rich. Nature desires little, Opinion infinite.

Certainly this disposition or faculty of the mind, whereby a man moderating himself, cuts off from his defires whatsoever is not necessary to nature, and contents himself with such things as are most simple and easie to

be got; this disposition, I say, begets that security which is found in a quiet retirement, and avoidance of the multitude; moreover, by it, even he who lives with much company wants no more, than he who lives alone.

Hence also it proceeds, that whosoever endeavours to beget a confidence and security to himself out of externall things, the best way that may be, seeks after things possible to be got, as being not unsuitable to him; but the impossible he esteems unsuitable. Besides, even of the possible, there are many which he attains not; and all those which it is not necessary for him to attain, he renounceth.

Now for want of this renouncing or detraction, how great misery is it for a man, to be continually pouring into a bored vessell, never able to fill his mind? For not to mention, that many who have heaped up wealth, have therein found onely a change, not an end, of their misery; either because they run themselves into new cares, to which they were not subject before, or because they made way for snares, in which they were entangled and taken. Not to mention this, I say, the greatest misery is, that the more thou feedest, the more thou art tormented with hunger.

2.4.18. Chap 18 – Of Mediocrity, Betwixt Hope and Despair of the Future

LAstly, seeing that all desire whatsoever is carried to that which is not possessed, but proposed as possible to be attained, and accompany'd with some hope of obtaining it; which hope, cherishing the desire, is accompanyed with a certain pleasure; as its contrary, Despair, fomenting a fear, that what is desired cannot be obtained, is not without trouble. Something therefore must be added concerning Mediocrity, which is of great use, as well in the generall, concerning things hoped or despaired, as in the particular, concerning the duration, or rather perpetuity of life, whereof, as there is a desire kindled in the breasts of men, the despair of it torments them.

476 *In the first place therefore we must look upon this as a generall rule; In contingent things, that which is to come is neither absolutely ours, nor absolutely not ours; so that we are neither to hope for it, as if it must certainly come to pass*, because it may be diverted by some accident intervening; *nor to dispair of it, as if it must certainly not come to pass*, because it may fall out, that no accident may intervene to divert it. Thus, not being destitute of all hope, we shall not be without some pleasure; nor being quite frustrated of our hope, we shall not receive any trouble.

This difference there is betwixt a wise man and a fool; the wise man expects future things, but depends not on them, and in the mean time enjoyes the present, (by considering how great and pleasant they are) and remembers the past with delight. But the life of a fool (as I said before) is unpleasant and timorous; for that it is wholly carried on to the future.

How many may we see, who neither remember the past good, nor enjoy the present? they are wholly taken up with expectation of future things, and those being uncertain, they are perpetually afflicted with anguish and fear, and are exceedingly grieved when they too late perceive, that they have in vain·addicted themselves to the getting of riches, or honours, or power, or glory; for they fail of obtaining those pleasures, with the hopes whereof being enflamed, they had undergone many and great labours. Not to say any thing of those others, who being abject and narrow-hearted, despair of all things, and are for the most part malevolent, envious, morose, shunners of the light, evill speakers, monstrous.

I say, a wise man remembers the past goods with delight and gratitude; but indeed it cannot sufficiently be lamented, that we are too ungratefull towards the past, in not calling to mind, nor accounting amongst pleasures all the good things we have received; forasmuch as no pleasure is more certain, than that which cannot now be taken from us. The present goods are not yet consummate and wholly solid, some chance or other may intervene and cut them off in half; the future are dependent and uncertain; what is already past is onely safe, and out of all danger to be lost.

Among the past goods I reckon, not onely such as we have enjoyed, but even the avoidance of the ills that might have befaln us; as also our deliverance out of such ills as did fall on us, and might have lasted longer; likewise the remembrance and delight, that we sustained them constantly and bravely.

As to the desire of prolonging life to a vast extent, I already hinted, that a wise man must cut off that desire, because there would immediately upon it follow desperation, which is never without trouble and anguish. Hither it conduceth to consider, that no greater pleasure can be received from an age of infinite duration, than may be received from this which we know to be finite, provided a man measure the bounds of it by right reason.

For seeing that to measure the bounds of nature by right reason, is nothing else but to consider, (as I said before) that the supream pleasure is no other, then an exemption from pain and trouble, it is manifest, that it can neither be made greater by length, nor lesser, or more remisse, by shortnesse of time.

And though the hopes of a more prolonged pleasure, or of a longer age, seems to render the present pleasure more intense; yet it is onely so with those, who measure the bound of pleasure, not by right reason, but by vain desire; and who look upon themselves so, as if, when they die and cease to be, they should yet be troubled at the privation of pleasure, as if they had been alive. Whence it happens, that, as I hinted formerly, To understand fully, that death nothing concerns us, much conduceth to our enjoyment of this mortall life, not by adding any thing of uncertain

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time, but by casting away the desire of immortality.

Wherefore seeing that since Nature hath prescribed bounds to corporeall pleasure, and the desire of eternall duration takes them away, it is necessary, that the mind or reason interpose, that, by discoursing upon those bounds, and extirpating the desire of sempiternity, it may make life every way perfect, so that we being content therewith, shall not want a longer duration.

Moreover, neither shall we be deprived of pleasure, even then when death shall summon us, forasmuch as we have attained the perfect and delightfull end of the best life, departing like guests full and well satisfied with life, and having duly discharged that office, to acquit our selves of which we received life.

2.4.19. Chap 19 – Of Fortitude In Generall

WE come next to *Fortitude*, which I affirmed to be the other part of *Honesty*, because it withstands fear, and all things that use to cause fear; whereby, they who behave themselves not timorous and cowardly, but valiantly and stoutly, are said to behave themselves honestly and beseemingly. This may be manifested many wayes, especially from War, wherein, they who behave themselves with courage and honesty, get honour above the rest. Whence Honest is almost the very same with that, which in the common esteem is Honourable.

That this vertue conduceth also to pleasure, may be inferred from hence, for that neither the undergoing of Labours, nor the suffering of Pains, are things in themselves allective, nor patience, nor assiduity, nor watchings, nor industry, though so highly commended, nor Fortitude it selfe; but we pursue these, to the end we may live without care and fear, and so (as much as possible) free both the body and mind from molestation.

For as by the fear of death, (for example) all the quiet of life is disturbed; and as to sink under pains, and to bear them with a dejected and weak mind, is a great misery, and by such lownesse of spirit, many have quite undone their Parents, Friends, Country, and even themselves: so on the other side, a strong and gallant mind is free from all care and anguish, for it contemns death, because they who suffer it, are in the same case, as before they were born; and is so fortify'd against all pains, as to remember, That the greatest are determined by death, the least have many intervalls of ease, the middle sort we our selves can master; if they are tolerable, we can endure them, we can contentedly quit this life, when it no longer pleaseth us, as if we went off from a stage.

Hence is it manifest, that timidity and cowardlinesse are not dispraised, nor fortitude and patience praised, for their owne sakes; but, those are rejected, for that they cause pain; and these desired, for that they produce

pleasure.

Whereas I said, that Fortitude withstands fear, and all things that use to cause fear, it tends to let us understand, that they are the very same ills, which torment when they are present, and are feared, when expected as future; and therefore, we must learn not to fear those ills, which we either fancy to our selves, or any wayes apprehend as future, but to bear those which are present with constancy and patience.

Of the Ills, which we fancy to our selves, but are not really future, the chiefest are those, which we fear either from the Gods, as if they were ill themselves, or could be the Authors of any ill to us; or from death, as if that brought along with it, or after it, some sempiternall ill. Of the Ills which we fear, for that they may happen, and yet in the mean time are so present, that they afflict and trouble us, are, those which either cause pain in the body, or discontent in the mind.

Those which cause pain are, sicknesses, stripes, fire, sword, and the like: those which cause discontent, are such as are termed externall ills; and of these some are publick, as Tyranny, war, destruction of our Country, pestilence, famine, &c. Others private, of which sort are servitude, banishment, imprisonment, infamy, losse of friends, and the like.

The difference betwixt all these things on one part; and pain, and discontent on the other; is this, that pain and discontent are absolute ills in themselves, the others are not so, but onely in as much as they relate to pain and discontent, as causes; for if they did not cause pain and discontent, there were no reason why we should shun them.

We shall say something, in order, upon these: but first take notice, that fortitude is not to be looked upon, as if ingenerate in us by nature, but acquired by reason. Fortitude is different from audacity, ferocity, inconsiderate temerity, for those are found even in brute Animals also, but this is proper to man, and to such men onely as act advisedly and prudently; and therefore it is to be measured, not by the strength, and violent carriage of the body, but by the firmnesse of the mind, constantly adhearing to an honest intention or purpose.

2.4.20. Chap 20 – Of Fortitude, As To Fear Of the Gods

WE must first treat of a twofold fear, far transcending the rest: For if any thing ever produced the ultimate good, and chief pleasure, proper to the mind; it was the expunction of those opinions, (and all allied to them) which have impress'd the greatest fear upon the mind. Such is the condition of miserable Mortalls, that they are not led by sound opinions, but by some affection void of reason; so that not discerning what is ill indeed, by reason they suffer an equall, and no lesse intense perturbation, then as if these things, for which they are troubled, were indeed such.

That, which in the first place, useth to possesse men with greatest fear, and consequently, cause in them the greatest perturbation, is this, that, conceiving there are certain blessed and immortall Natures, they do yet think them to have wills, passions, and operations, plainly repugnant to those attributes, (of beatitude and immortality) as perpetuall sollicitude, businesse, anger, favour; whereby it comes to passe, that ill men receive great harms by way of punishment, the good protection and benefits, from these Natures, that is, from the Gods. Thus men being nursed up in their owne, that is, in human affections, fancy and admit Gods like to themselves; and whatsoever suits not with their owne dispositions, that they conceive incompetent to them.

Hereupon, it cannot be express'd, how great unhappinesse mankind hath drawn upon it self, by attributing such things to the Gods, especially anger, and severicy; by reason whereof, Mens minds being dejected, every one trembles with fear, when the Heaven Thunders, or the Earth quakes, or the Sea is Tempestuous, or any other thing happens, whereby he is perswaded, that the gods intend to punish him, miserable man:

But it is not so with those, who, instructed by reason, have learnt, that

the gods live in perpetuall security and tranquillity, and that their natures is too far remov'd from us, and our affairs, for them to be either pleased, or displeased with us. Truly if they were, and did hear the prayers of men, how soon would all men be destroy'd, who continually imprecate mischief on one another?

Therefore, when you conceive God to be an immorrall and blessed Animal, (as the common notion concerning God suggests) take heed of attributing any thing to him, which is either incompetent with immortality, or repugnant to beatitude; but let all your conceptions be such, as may consist with immortality and beatitude.

Gods indeed there are, for the knowledge of them is evident, as we formerly proved; but such as men commonly conceive them, they are not. For first, they describe them by some adjuncts or properties, as when they say, they are immortall and blessed, and then overthrow what they averted, by applying other attributes to them, repugnant to the former, as when they say, that they have businesse, or create businesse for others; that they are affevted with anger or favour, which, as I hinted formerly, imply imbecillity, fear, and want of externall assistance.

Neither need you fear, that this will make you esteemed impious; for he is impious indeed, not, who denies the vulgar Gods of the multitude, but he who ascribes to the Gods the opinions of the multitude. For those things which are commonly delivered concerning the Gods, are not genuine praenotions, but false opinions.

By the same reason likewise, he is not pious, who out of fear to the gods addresseth himselfe to every stone, to every altar, besprinkles every Temple with the blood of Victims: but he, who, contemplating all things with a serene and quiet soul, conceiveth aright of the Gods, and worshipping them in his mind, not induced thereto by hope or reward, but for their excellent Majesty and supreme nature, observes all kind of veneration towards them, and useth expressions suggesting such thoughts, is out of them arise no opinions repugnant to veneration, and consequently, suffereth not that which others suffer, in whose minds, this contrariety causeth an extraordinary perturbation.

2.4.21. Chap 21 – Of Fortitude, As to Fear of Death

THat which next striketh greatest terrour into the minds of men is Death, for that they expect, and fear, I know not what everlasting ill, as Fables tell them, (and which is strange; in the very privation of sense which then happens, as if they should still have being) not knowing that all stories concerning the infernall places, (which we spoke of formerly) are meer fictions of Poets; or if they contain any thing of truth, it is made good in this life, by vain fears, superfluous cares, insatiable desires, and other violent passions, which torture unhappy men in such manner, that their life is worse then hellish.

That you may exempt your selfe, therefore, from these terrours, accustome [477] *your selfe to this thought, That death nothing concerns us*; and to this argument, That *all good or ill that happens to us is with sense; but death is a privation of sense*, for death is a dissolution, and what is dissolved, remains without sense. So that death seems easie to be contemn'd, because it is an ineffectuall Agent, and in vaine threatens paine, when the patient is not.

[478] *Indeed the ordinary sort of men abhor death, because they look upon it sometime times at the greatest of pains, sometimes because they apprehend it as the cessation of all things that we enjoy in life; but without cause is it, that not to live, or not to be, is fear'd; for when it comes to that, we shall not have any faculty left whereby to know, that, not to live, is ill*.

Hence we may conclude, that they are very foolish who abhorre, amongst other things, to think, that after death their bodyes should be torne by wild beasts, burnt by fire, devoured by worms; for, they doe not consider, that then they shall not be, and so not feel nor complain, that they are torn, burnt, devoured, turned into corruption. As also, those who are troubled to think that they shall no longer enjoy the conversation of their Wives, Children, Friends; no longer do them good offices nor assist them; for, these consider not that then they shall have no desire of such things.

479 *Death therefore, which it esteemed the most horrid of all ills, doth (at I said) nothing concern us, because, while we are, Death is not; and when Death is, we are not: so that it concerns neither the living nor the dead; the living it toucheth not, the dead are not*.

Now the assured knowledge that death nothing concerns us makes us enjoy this mortall life, not adding uncertain time to it, but casting away the desire of immortality. For, in life, there can be nothing of ill to him, who perfectly understands, that there can be nothing of ill in the privation of life. Whence, as we make choice not of the most meat, but of the best, so should we covet, not the longest, but most pleasant life.

Neither can he be acquitted of folly, who sayes he fears death, for that, when it comes, it brings not any trouble, but because it afflicts the mind with griefe before it comes: for, that which brings no trouble with it, when it comes, ought not to make us sad with expectation. Certainly, if there be any thing of inconvenience or fear in this businesse, it is the fault of him that is dying, not of Death: nor, is there any trouble in death, those then there is after it, and it is no lesse folly to fear death, than to fear old age, since as old age follows youth, so death follows old age.

Moreover, we are to hope at least, that either we shall feel no pain at the point of death; or if any, so short, as the very consideration of that may comfort us; for no great pain lasts long; and every man ought to beleeve, that, though the dissolution of his Soul and body be accompanied with some torment, yet that being past he shall feel no more pain.

480 *He also who advised young men to live well, and old to dye well, was very ridiculous, for those are not to be parted; the meditation of living well and of dying well is one and the same*, seeing that a young man may dye suddenly, and an old man hath something more of life behind: besides, the last act is a part, even the crown of life.

Both young and old ought to consider, that though men may provide for their security in other things; yet as to death it self, all men live as it were in a City without walls or bulwarks.

Besides, a young man may dye happy, if he consider that he should find nothing more in a longer life, than what he hath already seen and experienc'd; and an old man may live unhappy, if, like a vessell full of holes, he suffer the goods of life only to run thorough him, and so is never full of them, nor, as a sober guest of Nature, after a plentiful feast of life, is willing to go away, and take his repose.

Think not any old man happy for dying old, but for dying full and well satisfi'd with goods.

481 *Lastly far more foolish and ridiculous is he, who saith, It is good either not to be born at all; or as soon as born to passe the gates of death. For, if he speak this in earnest, why does he not presently rid himself of life, it being very easie for him so to do, if he hath well deliberated upon it? If in jest, he is perfectly mad, because, these are things that admit not of jeasting. Again, in life there is something amiable in it self*; and therefore they are no lesse to be reproved who desire death, than they who are afraid of it. What can be so ridiculous as to desire death, having made your own life unquiet by fear of death? Or, out of a wearinesse of life, to runne to death, when your own imprudent and constant course of life is the cause of that wearinesse.

You must rather take care to make life not tedious to you, that you be not willing to part with it, unlesse either nature, or some intolerable chance summon you to surrender it. And in that respect we ought seriously to consider, whether it be more commodious, that death come to us, or that we go to death. For though it be an evill indeed to live in necessity, yet is there no necessity we should live in necessity; since Nature though she hath given us but one way into life, yet hath furnish'd us with many to get out of it.

But though it may sometimes so fall out, that it behoves us to hasten and flye to death, before some greater power intercept and rob us of the liberty to quit life; yet ought we not to attempt any thing, but when it may be attempted conveniently and opportunely, and when that long waited for time comes, then to leap out of life resolutely. For neither is it fit for him, who thinks of flight, to sleep; nor ought we to despair of a happy exit even out of the greatest difficulties, if we neither hasten it before the time; nor, when the time is come, delay it.

2.4.22. Chap 22 – Of Fortitude Against Corporeall Pain

COrporeall pain is that which alone would deserve the name of ill, even of the greatest ill, did we not of our selves adde to it the pain of the mind, which is worse than that of the body, For discontent of mind taken at the losse of riches, honours, children, and the like, many times becomes more intolerable than the greatest corporeall pains; but this is by reason of our own opinion, which if it were right and sound, we should not be moved by any such losse, in regard that all such things are without or beyond us, and touch us not indeed, but onely by mediation of that opinion which we frame to our selves. And thereupon we may inferre, that there is no reall ill, but the pain of the body, and that the mind ought not to complain of any thing, which is not joyned to some pain of the body, either present or to come.

He therefore who is wise will be very cautious that he draw not any corporeall pain upon himself, or do any thing upon which corporeall pain may ensu ; unlesse it be done either for avoidance of some greater pain or acquisition of some greater pleasure, as we formerly declared. Hence we may well wonder at those Philosophers, who accounting health, which is the state of indolence, a very great good, as to all other respects, do yet, as to this, hold it to be a thing indifferent; as if it were not a triviall playing with words, or rather a high folly, to affirm, that to be in pain, and to be free from pain, is all one thing.

But if any necessity either of the naturall constitution, whereby the body is obnoxious to diseases, or of any externall violence done to him, which, as humane affairs stand, cannot sometimes be avoided (for that a wise and innocent person may sometimes be arraigned, condemned, beaten and tortur'd, is manifest) if either of these shall bring pain upon him, then is it his part to endure that pain, with a constant and valiant mind, and patiently to expect, either the solution or relaxation of it.

Certainly, pain never continues long in the body, but that which is great, or highly intense soon ceaseth, for eitber it is determined of it selfe, and succeeded, if not by absolute indolence, yet by very great mitigation, or is taken away by death, in which there is no pain. And as for that pain which is lasting, it is not onely gentle, but hath many lucid intervalls; so that it will not be many dayes, nay not hours, ere the body hath not onely ease, but pleasure.

And may we not observe, that long or Chronicall diseases have more hours of ease, and quiet intervalls, then of pain and trouble? For, (not to mention that the thirst which they raise, increaseth the pleasure of drinking) they allow as time for repast, strength to talk, some recreation and sports, and for the most part have many long intermissions, in which we may apply our selves to studies and businesse. Whence it is evident, that as great pain usually is short, so long pain is leight; thus the shortnesse makes amends for the greatnesse, the remissenesse, for it’s length.

Let us therefore often reflect, that pain either is not intolerable, or not perpetuall; for if it be long, it is leight; if great, short. Provided, that you remember the bounds, prescribed to the things themselves by nature, and adde nothing through your owne opinion, whereby you may think, and make it greater then it is; and oppressing your selfe with complaints, and impatient exasperations, help onely to render it more insupportable: whereas, on the other side, nothing doth asswage pain more then constancy, and inurance to suffering. Whence it comes, that a wise man, accustom’d to pain, can many times rejoyce and smile, even in the height of his sicknesse.

Thus much we can testifie of our friend Metrodorus, who hath at all times behaved himselfe undauntedly, as well against death, as pain. For concerning my selfe, I need not say anything, who frequently suffer such pain in the bladder and bowells, as none can be greater: and yet full amends for all these, is made by the alacrity of mind which redounds to us, from the remembrance of our dissertations and inventions, and by our constant patience; whereby we forbear not to esteem those very dayes, in which we are tormented with those diseases and pains, happy.

And this indeed is the reason, why we formerly said, that a wise man, though in torments, may yet be happy; because he both softens, by his patience, the necessity which he cannot break; and, as much as possible, with-drawes his mind from his suffering body, conversing no otherwise with it, then as with a weak and

querulous part. He bethinks himselfe, what he hath at any time done honestly and generously; and fixing his memory upon those things, which he hath most admired, and have most delighted him, cheers himself with the past goods, for which he is far from shewing himselfe, as fools usually do, unthankfull.

He also considers, that he can do nothing, more worthy that vertue and wisdome which he professeth, than not to yield the victory to pain, though the most hard to be sustained of all things, to bear up couragiously, to repulse by patience so dangerous an enemy; and at length to make so perfect a conquest, as that the very remembrance of it will be most delightfull, and especially, through absolute indolency, which will be so much the more pleasing, as a quiet Haven is most welcome after a Tempest.

Now if a wise man, is not without his alleviations and comforts in the greatest pain, what shall we say of him in remisse and gentle pains, or at the Iosse of some limb or sense? Truly, it was not without reason, that I said formerly, A wise man, though depriv'd of the best of senses, Sight, would yet be happy: for if the night doth not diminish the happinesse of life, why should blindnesse, that so neerly resembles night? However he may want some pleasures that depend upon the light, yet are there severall others left Him, and what is much above all the rest, he may delight his mind with many things, and many wayes without Seeing.

For since to a wise man, to live is to think, certainly his thoughts are not oblig'd to his eyes in the businesse of searching into truth. And that man, to whose doctrine I gave up my name, could live long and happy, without being able to distinguish colours: but without the knowledge of things, he could not have lived happy. Moreover, he was of opinion, that the perspicacity of the mind was very much dim'd by the sight of the eyes; and while others, could scarcely be said to see things that were before them, he travelled abroad into all infinity, not stopping at any bounds.

2.4.23. Chap 23 – Of Fortitude, Against Discontent of Mind

I Said, that Discontent of mind is commonly taken at such things, as are conceived to be externall ills, and the contraries to those goods, which we most love and desire. For men call some things adverse, others prosperous: and we may generally observe, thas the mind, which is elevated, and insolent with prosperity, and cast down with adversity, is abject and base. Hence is it, that all we should here say, concerning the ills which cause discontent, and against which we have need of fortitude, may be sufficiently inferred from what we formerly said, touching those goods which are the generall objects of our desires or inclinations, and in respect whereof we have need of Temperance.

Let it suffice in generall, to repeat what we formerly said, that discontent of mind is not grounded upon Nature, but meerly upon opinion of ill. Wherefore, who conceives himselfe to lye under some ill, whether onely fore-seen and expected, or already come upon him, must of necessity be discontented. For how comes it, that a Father whose son is kill'd, and he knowes it not, is not a whit lesse cheerfull or merry, than if he were alive? Or that he, who hath lost much of his good fame abroad, or all his goods, and cattell by robbery at home, is not at all sensible of either losse till he hear of it? Is it not opinion onely which discontents him? For, if Nature did it, at the same minute wherein the Son was slain, the father's mind would be struck with a sense of his death; the like would be perceived in the Iosse of honours or goods.

Therefore, to raise discontent in the mind, it is necessary that opinion, not nature, intervene. And that you may doubt the lesse of this, observe, that a man who thinks a supposititious child his owne, and his owne supposititious; if news be brought him of the death of his owne son, he will not be moved, but if of his supposititious, he will be exceedingly afflicted; and this comes not from nature, but Opinion.

But that those things which afflict us, are not indeed ills to us, appears even from this, that they are without or beyond us, and cannot reach us of themselves, but onely by our owne opinion are made ills to us. And hence it was that I said, it is reason, which makes life happy or pleasant, by expelling opinions, for which the mind is possess'd with trouble. For it is discontent alone which disturbs the mind, and its quiet and content.

But how can reason expell these opinions? By, teaching a wise man to arm his mind against fortune. For the externall things which we think Goods, and the Iosse of which causeth discontent in our minds, are tearmed the goods of fortune, because indeed they are not ours, but come and go as Fortune pleaseth.

For this reason, a wise man esteems them no more belonging to him, nor to others; nor possesseth them so, as not to be ready to part with them. He hath cast off that opinion which tells us, Such goods are our own, and can never be lost; and hath put on the right opinion, which assures him they are uncertain and transitory, as indeed they are. And hereupon he considers with himself before-hand, what he shall do if he chance to lose them; he considers, I say, before-hand, that when it happens, he may not be afflicted with vain grief, but take it quietly that fortune re-demands, what she give not, but onely lent.

Certainly to those who think, that to be deprived of these goods is an ill, the most unhappy thing of all, is, that premeditation encreaseth the ills, which it might have much diminished, if not wholly prevented; and thus becomes onely a foolish consideration of ill to come, and which perhaps will never come. Every ill is of it self troublesome enough when it comes; and if it chance never to come, we draw a voluntary misery upon our selves to no purpose, and by that means shall never be free from trouble, either by receiving or apprehending some ill; for he who alwaies thinks, that some ill or adversity will befall him, to him that very thought is a continuall ill.

Now if it shal happen also to a wise man, that, by being long accustomed to the possession, and use of the goods of fortune, he hath not quite blotted that opinion out of his mind, and so some little of Fortune intervene, and give him a blow, by reason whereof, he falls into some discontent, and perhaps grieves: In this case, the asswagement of his discontent consist in two things, formerly prescribed as remedies against corporeall pain; *viz*. Diversion of his thoughts from his losse, or the cause of it; and an application of them to those things, which he knowes to be gratefull and pleasant to his mind.

For the mind of a wise man is conformed to reason, and followes the conduct thereof; but reason forbids to look on those things, which create and nourish discontent; and thus he abstracts the mind from bitter thoughts, to convert it to think upon goods, either future or past, especially those which he knowes please him most.

Those sad and importune thoughts indeed are very apt to return, but he must insist upon that diversion and application of the mind whereby it is brought by little and little to wear out, and deface its sorrow. Neither doth time diminish discontent any other way, than by exhibiting various occasions of divertisement, which, by degrees, take the mind off, and make her forget, as it were, the things that caused her discontent.

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2.4.24. Chap 24 – Of Justice In Generall

IT rests we speak of Justice, which, as I said before, wholly relates to others, and therefore belongs to a man, as living in a civill society. And certainly it is a common tye, without which, no society can subsist, it being a vertue which gives to every one that which is his, and takes care that none receive injury.

And to begin with that with which I used to begin, in treating of the other vertues, truely not unlike are the things that may be said of this. For, as I showed, that Prudence, Temperance, Fortitude, are inseparably joyned to pleasure, the same may be said of Justice, which not onely never hurts anyone, but, on the contrary, alwaies preserves and nourisheth something, that calms and quiets the mind; and this as well by its own power and nature, as by a hope, that none shall ever want any of those things, which pure undepraved Nature desires.

Now forasmuch as temerity, lust, and cowardice, alwaies excruciate the mind, alwaies perplex and trouble it; it is impossible, that a mind in which Injustice dwells, should, for that very reason, because injustice dwells in it, be otherwise than unquiet: because though such a mind should attempt any unjust action with the greatest secrecy imaginable, yet can it not perswade it self, but that it will at last come to light. And though some men may think their consciences sufficiently barricado’d and fortifi’d by their wealth, yet they dread the divine powers, and imagine, that those very sollicitudes and troubles, which torture their souls day and night, are sent by the immortall gods for their punishment.

But, how can we expect, that unjust actions should diminish the troubles of life, so much as remorse of conscience, penalties of the Law, and the being hated by our country-men encrease them? And yet, in some men, there is not any bound or moderation of wealth, of honour, of power, of lust, of gluttony, and other defires, which nothing that is unjustly gotten diminisheth, but rather encreaseth and enflameth, so that they are fitter for restraint than instruction.

All sound and judicious persons therefore, are, by right reason, induced to justice, equity, honesty; but neither can unjust actions benefit a child or impotent person, for such can neither easily effect what they endeavour, nor obtain their ends when they have effected it. Besides riches are more suitable to fortune, or a noble genius, which they who enjoy, procure to themselves a generall respect and good-will, and (what most conduceth to quiet living) an endearment from others, especially there being no cause of offending.

For the desires which proceed from Nature are easily satisfi'd, without injuring any man; those which come from vain opinions are not to be followed, for they aim at nothing which is desirable; and there is more detriment in the injury it self, than advantage or benefit in the things that are gained by the injury.

Neverthelesse, no man can say rightly, that Justice is a vertue, expetible onely for it selfe, but because it brings great pleasure along with it. For to be belov'd, and to be dear to others, is pleasant, because it renders life more safe, and pleasure more full. We therefore conceive, that Injustice ought to be avoided, not onely for the inconveniences which

happen to the unjust; but much more, for that as long as it is in the mind, it never suffers it to take breach, never to be at reft.

These considerations might perhaps be sufficient, yet I shall add something, partly concerning *Right* or *Just*, from which *Justice* is denominated, that we may come the better to understand what is its originall, among whom it is practised, what are its benefits; and partly concerning some other vertues nearly allied to Justice, as, *Beneficence, Gratitude, Piety, Observance*, and *Friendship*.

2.4.25. Chap 25 – Of Jus (Right) or Just, Whence Justice Is Denominated

First therefore, forasmuch as *Justice* is so named, for that it preserves the *Jus* or Right, due to one another, or performs that which is *just*; it is worth our knowing, what that is which ought to be esteemed *Right* or *Just*.

Now in regard Justice was instituted in order to the common good, necessary it is, that Right or Just, to which Justice hath respect, should be such a goood, as is common to all and every member of the Society. And because every one, by the direction of nature, desires what is good for himself; it is also necessary, that what is right or just be conformable to nature; and therefore tearmed naturall.

It is not without cause that I hint this; for sometimes it happens, that in a Society, something is prescribed as Right and Just, which is not good for the Society, and so being not naturall, or contrary to nature, it cannot, but by abuse, and onely in name, be reputed Right or Just, since that which hath the true reason of naturall right or just, is such, as that it is not onely prescribed as profitable and good, but is really such.

Wherefore to speak properly, naturall right or just is no other, than a symbol of utility, or such an utility agreed upon by concurrence of votes, as may keep men from hurting, or being hurt by one another, so that they may live securely; A good which every man is taught by nature to desire.

I here take Profitable and Good for the same thing; and I conceive, that, to a thing's being just or rightly kept, two things are requisite; One, That it be profitable, or respect the common utility, that is, security: The other, That it be prescribed by the common consent of the Society; For nothing is compleatly just, but what the Society, by common consent or agreement, hath decreed to be observed.

Hence it is, that the name of Right or Just is usually given to both these, since not onely what is profitable is said to be just, but also the very common covenant or prescription of the Society, which is tearmed Law, as being that which prescribes to every one what is profitable or just.

Some there are who conceive all things that are just, to be just of their own proper and unalterable nature, and that Lawes do not make them to be just, but onely declare and prescribe, according to the nature which those things have. But it is not so, but rather after the same manner as is observed in other things, which are profitable, as in those which concern health, and many others of the like nature, which are beneficiall to some men, hurtfull to others; by which means they often fail of their mark, as well in common as in private.

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And seeing that every thing is apprehended every where, alwayes, and by all men, to be really such as it is in its own nature, because its nature is unalterable, whether are those things, which these men call just, just in all places and alwayes, and amongst all men? Ought they not to have observed, that many of those things that are constituted by Laws, and consequently accounted lawfull and just, are not constituted and received amongst all nations alike, but are neglected by many as things indifferent, rejected by others as hurtfull, and condemned as unjust? And are these not some who account things not generally profitable, to be neverthelesse such; and accordingly embrace those things which are not generally approv'd, if they find them advantageous in respect of their own Society, and seem but to promise some generall benefit?

In fine, that is universally just, or hath the nature of just, which is profitable or conformable to the prenotion of right or just even now described: for particularly, according as utility is various among severall nations, so also is right or juft, various; insomuch as what is esteemed just in one, is unjust in another. Whence, if it be demanded, whether just or right be the same among all men, I answer, that, as to the generall, it is the same, for it is something that is profitable in mutuall society: but the differences of severall Countryes, and various causes amongst them being considered in particular, it comes to passe that it is not the same amongst all.

And (to deduce some few particulars hence) whatsoever is by experience found profitable to a mutuall Society, or the common participation of such things as are esteemed just, than thing hath the nature of just or right, if it be such as its utility extends unto all. But if any man shall establish such a thing for just, and yet it shall happen not to be profitable to mutuall Society, it hath not the true nature of just or right.

Again, though sometimes the utility of that which was esteemed just may faile, neverthelesse, if there be sometimes some utility in it, so that it corresponds to the prenotion of just or right, it is truly just for that time: they certainely will esteeme it so who confound not themselves with vaine loquacity, but looke more generally into humane affaires.

Lastly, where no new circumstance of things intervening those very things, which were esteemed just in the actions of men, are found not to correspond with the notion of just, they are not just at all: but where, upon innovation or change of affairs, those things which were formerly decreed to be just, cease to be profitable, they were just, as long as they continued profitable to mutuall Society, but as soon as ever they ceased to be profitable they ceased to be just.

2.4.26. Chap 26 – Of The Originall of Right And Just

But that we may go higher and deduce the thing from its originall, it appears that Right and Just are as ancient, and Justice hath been kept amongst men as long, as they have had societies amongst themselves.

For, in the beginning, Men wandring up and down like wild beads and suffering many inconveniences, as well from beasts as from the injuries of weather, a certain naturall agreement amongst them (by reason of their likenesse in form and soul or manners) perswaded them to joyn together in severall companies, and to make some provision against those inconveniences, by building hutts or cottages, and furnishing themselves with other shelters, as well against wild beasts as the weather. But in regard every one was desirous to be in a better condition than another, hereupon there arose frequent contestations about food, women, and other conveniences, which they took away from one another; untill at length they perceived, that they could not live secure and commodiously, unlesse they made a covenant not to injure one another, and that in case any one did harme and injure another, the rest should punish him.

This was the first band of Society; which, supposing that every one might have something proper to himself, or which he might call his own, as being his, either by first possession, or by gift, or by purchase, or by acquisition through his own industry, or otherwise; decreed, that it should remain in the possession and disposall of that person. Now this band or covenant was no other than a common law, which all were equally bound to observe, and which did confirme to every one a certain right or faculty of using whatsoever was his own. Whereupon that very law also came to be (as I formerly intimated) the common right as it were of the Society.

I need not mention how the whole Society transferr'd their power of restraining or punishing, upon some few wise and good persons, or else on one, who was reputed the wisest and best amongst them. I shall only observe, that in the Society those were accounted just or favourers of justice, who being content with their own rights invaded not those of other men, but did injury to none; those unjust, or doers of injustice, who being not content with their own rights, did assault the rights of other men; and, harming them by rapine, personall violence, or some other way, became injurious to them.

Thus men lived a while peaceably and happily, especially being under one or more Kings or Princes, the wisest and best, who being wholly intent upon the conservation and utility of the publick, made, and with consent of the people, established divers Lawes, to prevent dissentions from rising, or, if any did arise, to compose them. But, such is the corruption of mens manners, in processe of time the government fell into the hands of Princes or Kings that were not good; and those being either deposed or slain it reverted to the people, whereupon tumults were raised by the factions of such as aspired to the supream power, untill at length, the people languishing under emnities and dissentions, and weary of living by force and hostility, became willing to submit again to the government of Magistrates or Princes. But because the wills of Princes

had formerly pass'd for absolute lawes, they made a covenant with their governours, about those Laws, according to which they desired to be governed; and thus brought themselves again under Laws, that is, under strict Rights.

But not to descend to later times, but to touch only upon that chief head, which concerns the preservation of life, for whose security (as being the most precious of all things) care was taken from the beginning, that it might be established by common covenants or Laws; [482] *It appears that those most wise and good founders of Laws, having regard to the society of life, and to those things, which men usually do each to other, declared it a wicked act to kill a man, and decreed that the Murtherer should be punish'd with more than common ignominy*, and losse of life. And to this they seem to have been induced, partly by considering the conciliation of men among themselves (of which I treated even now) in respect whereof men ought not to be as forward to destroy an animall of their own kind, as one of different kind, which it is lawfull to kill; partly, and indeed chiefly, by considering, that *men ought to abborre, what is no way advantageous to life, but tends only to evill*.

Indeed from the beginning, to those who had regard to the utility of that constitution, there needed nor any other cause to make them contain themselves from doing any such act: but they who could not sufficiently comprehend of what great concernment it was, abstained from murthering one another, only out of a fear of those great punishments; both which we may observe to have happened even in our own dayes. They who consider the great advantages of such a constitution are sufficiently disposed for a constant observance thereof; but they who are not capable of understanding it conform themselves to it out of fear of the punishments threatned by the laws, and ordained by the most prudent, against such as had no regard to this utility, the greater part of the multitude admitting them as legall.

For none, of the lawes written or not written that have been derived to us, and shall be transmitted to our posterity, did at first subsist by any force or violence, but (as I said) meerly by the consent of those who used it. For it was prudence, not strength of body or imperious sway, wherein they who setled these laws upon the people, transcended the vulgar; and this, by inducing some men to consider, what would be profitable (especially when they did not before so well understand it as they ought) and by terrifying others with the greatnesse of the punishments. Nor could they indeed make us of any other remedy for cure of the peoples ignorance of this utility, than fear of the punishment prescribed by the Law. For even now also, it is fear alone

that keeps the ordinary sort of men within the bounds of their duty, and hinders them from committing any thing against either the publick or private good.

Now if all men could alike understand, and bear in mind what is truly profitable, they should need no laws at all, but would of their own accord beware of doing such things as the laws forbid, and do what they enjoyn; since onely to know what is profitable and what hurtfull, is more than sufficient, ty induce them to avoid this, and pursue that. But as for those, who discern not what is beneficiall, what hurtfull, doubtlesse the commination of punishment against such is highly necessary; insomuch, as the fear of the punishment impendent causeth them to suppress and bridle those heats of their passions, which instigate them to unjust actions, and in a manner compel them, though against their wills, to do what is right.

Hereupon was it, the Law-makers ordained, that even involuntary killing of a man, should not be free from all mulct and punishment. Not that they might not, to such as were apt to commit wilfull murder, give any occasion of pretext or excuse, to imitate that on set purpose, which the others did unwittingly; but lest they might seem not to have used sufficient caution, and diligence as to this particular, whereupon many things would fall out, which indeed were not involuntary. Nor could this course but prove beneficiall for the same causes, for which men were expressly prohibited to kill each other. So that considering, that, of these actions, of this kind, that are done involuntarily, same happen from a cause, that could not be fore-seen, nor prevented by human nature, others meerly through our negligence, and heedlenenesse of the imminent danger; therefore to prevent negligence, which might tend to the destruction of others, they provided, that even the involuntary action should not passe altogther unchastised, but took away the frequentcy of this sin, by the fear of Law.

Moreover I conceive, that even those slaughters of men which were permitted by the Law, were made liable, to those accustomed expiations, by publick Lustrations, (and that by order of the same persons, who first ordained them) for no other cause but this, that they had a mind to deterre men from involuntary slaughter, which was too, too frequent.

For the vulgar sort of men, stood in need of something, to restrain them from doing any thing rashly, which might not conduce to the publick. utility; which these first Law-makers understanding, not onely decreed severe punishments, but withall stroak another fear into their minds, the reason of which was not so manifest as the other, declaring that such as had killed a man, by what means or accident soever, should be impure untill they had used lustrations.

Thus the brutish part of the soul, in which the affections and passions reside, being instructed and reform'd, came at length to that gentlenesse which now flourisheth amongst us, by applying the arts of taming and civilizing our savage affections, which were invented, and practised at first, by those who ruled the multitude; of which, this is one chief act among the rest, that men should not destroy one another, without any distinction.

2.4.27. Chap 27 – Between Whom, Right And Justice Is To Be Exercised

NOw since, it may be demanded, Betwixt what Persons, as well Right, and the violation of it, which is Injury, as Justice, and what is opposite to it, Injustice properly consist? We shall therefore explicate this, by comparing men with other living Creatures.

As therefore, there is no reason of Right or injury, or just and unjust betwixt Animals, that could not make a common agreement, not to hurt, nor be hurt by mutuall invasion: so neither, is there between those nations which either would not, or could not, enter into a mutuall engagement, not to hurt, nor be hurt by one another.

For just, or right, the conservation whereof is Justice, hath no being at all, but in mutuall Society, whence Justice is the good of a Society, insomuch as by it, every one of the associated Persons live securely; free from that anxiety, which is caused by the continuall fear of harm. Whence it followes, that whatever Animals, or what Men soever, either cannot, or will not make an association, nor enter into covenant among themselves, must want this good, not being reciprocally oblig'd by any bond of right or Justice, whereby they might live securely: and so to them, there can remain no other reason of security, then onely this, to do harm

to others, that they be not harmed themselves.

As therefore, when one of those brute Animals, amongst which there hath past no such agreement or pact, doth hurt another, though it may be said that one hurts the other, yet it cannot be said that one doth an injury to the other, because one was not bound by any right, compact, or Law, not to hurt the other: In like manner,·if on man of that nation, among whom there is no covenant, or association hurts another, it may be said that he hurts him, but not that he wrongs or doth him an injury; because he was not obliged by any compact or Law, not to hurt him.

I speak of brute Animals, not as if there were any even of those who live in heards or flocks, that are capable of entring into covenants, not to harm or be hurt by each other, and so might be conceived to be just, if they do not hurt each other, and unjust if they do; but onely to the end, that from thence it may be the better understood, that even among men, justice in it selfe is nothing, for that it is found onely in mutuall Societies, according to the amplitude of every Country, in which the inhabitants may conveniently enter into agreements, and covenants of not doing, or receiving any hurt; since otherwise, and in a man singly considered, there is no justice at all; and what is Justice in one Society of men, many times is, in respect of contrary covenants, injustice in another.

But can there be justice betwixt Men and other Animals? Certainly not. For if men could make a covenant with brute Animals, as they can with other men, that they should not kill, nor be killed by them, without any distinction; then indeed, might the reason of just or right be founded betwixt them and us, since the end of that covenant would be the security of both parties: but because it is impossible, that Animals void of reason should be obliged by one Law with us, it must also be impossible, for us to obtain more assurance of security from animals, than even from inanimate things. So that, there is no other way for us to secure our selves from brute beasts, but onely to execute that power of destroying them,·which Nature hath given us.

Perhaps you will, by the way, demand, why we kill even such Animals, as can give us no occasion of fear?·This we may do either through intemperance, and a certain naturall savagenesse or cruelty, as we exercise cruelty even upon men, who live out of our society, and cannot give us any fear. But it is one thing, to break the rules of Temperance, or any of its kinds, as Sobriety, Lenity, or Mansuetude, or (if you please) meer humanity or goodnesse of nature; another, to violate justice, which presupposeth Lawes and Covenants established by mutuall consent.

483 *Nor can it be alledg'd, that we have a power granted us by Law, to destroy any such Animals, as are not offensive or destructive to mankind. I confesse, there is not any kind of living Creatures, among all those we are allowed to destroy, which being permitted to increase to vast multitudes, would not prove pernicious to mankind, but being preserved in such number as ordinarily they are,·are not some wayes usefull to life*.

For sheep, kine, and all such like, as long as they are preserv'd to a moderate number, afford us many necessaries for life: but if they were suffered to multiply in a far greater manner; certainly, they could not but prove very·hurtfull to us, as well in regard to their strength, as for that they would devour the fruits of the earth, that should serve for our subsistence. And for this very cause is it, that we are not prohibited to destroy such Animals, yet preserve so many of them as may be usefull to us, and easily ruled by us.

For of Lyons, Wolves, and all such as are called wild beasts, (whether little or great) we cannot take a certain number, which being preserved, may afford us any relief necessary to life, as we may of kine, horses,and the rest, that are called tame Creatures. Whence it comes to passe, that we endeavour wholly to exterminate these, and of these cut off onely so many as are over and above a competent stock.

Hereupon (to touch briefly on this also) we may conceive that even among those nations who make their choice of certain sorts of Animalls for food, *the matter was determined and prescribed by certain Laws, grounded upon reasons correspondent to those we have now given. And as for those Animals that were not to be eaten, there was respect had to their utility and inutility*, and for some reason peculiar to each Country; to the constitutions whereof there is no necessity for us to adhere, who live not in those places.

Hence we come to understand, that, from the very beginning, a difference was put betwixt the killing of Men, and the killing of all other Animals; [484] *For as to other Animals it is manifest, that those primitive wise persons, who prescribed what we should do, and what not, did not forbid to kill any of them, because the profit that ariseth from them is perfected by the contrary action, that is, by killing them. For it could not be, that men, living promiscuously amongst beasts, could preserve themselves in safety otherwise, than by expelling or destroying them*.

But as concerning Mankind, [485] *Some, who at that time were more gratious than the rest, (these perhaps were they, that perswaded men first to enter into the covenant we spoke of) remembered; that, in those places where men lived promiscuously, they had sometimes abstained from slaughter, out of a respect to that utility which conduced to their safety; as also represented to others in their meetings what had happened, that refraining from slaughter of an Animal of the same kind, they might defend the society of life, which it generally the cause of every man's particular safety. And it was profitable at first to quit the society of either other Animals, or men meeting together, at least not to hurt any, to avoid the incencing of, not onely other Animals of severall kinds, but also men; who are all of the same, and apt enough of themselves to do harm. Whence, upon this account, men refrained laying hands upon an animal of their own species, that offer'd it self to the communication of things necessary, and contributed some benefit to society*.

But in processe of time, there being a great encrease on both sides, and animals of different species being forc'd away, men began to make use of their reason, (whereas before that time they had trusted altogether to memory) and to enter into consultation what was to be done in order to their safety, when they should come together, and conjoyn their habitations. For they endeavour'd strongly to refrain those, who rashly and imprudently would murther one another, and thereby made the mutuall assistance, that men were able to afford each other, daily the weaker; and this chiefly, because those great inconveniences, which had frequently fallen out in former times upon the like cases, were utterly forgotten. Now whilst they endeavoured to bring this to passe, they at length introduced the Laws and Constitutions, which continue in all Cities and Nations even to this day, the common people of their own accord consenting to them, as I said; being sensible how much greater utility would from thence accrue to them, living in mutuall society. In like manner, it conduceth also to security, both to destroy without any pitty what is pernicious, and to preserve what ever is usefull to exterminate it.

Thus it is probable, that upon these considerations, the slaughter of all other animals came to be permitted, and that of men prohibited. But I insist too long hereupon.

Mmmmm

2.4.28. Chap 28 – With What Right Justice Is To Be Exercised

Justice being established by a mutuall agreement, it remains, that every man, whether a native or alien, ought, from the time he hath given up his name to a Society, to account himself a member of that Society, upon this condition, either expresly or tacitly, that he hurt none of bis fellow-members, nor be hurt by any other. Wherefore he must either stand to the Covenant, or depart out of the Society; for he is not to be suffer'd to live in the Society upon any other terms. Whence it follows, since by nature, no man is willing to receive harm from another, that he do not that to another, which he would not should be done to himself.

Hereupon it may be imagined, that the Laws in all Societies, were made in favour of the wise, not to prevent wise men from doing unjustly, but that others should not injure them: For as for them, they are so well disposed, as that if there were no Laws, yet would they not do harm to any. They have prescribed bounds to their desires, and accommodate them to nature, which requires nothing that must be obtained by waies of injustice; nor indeed is there any of nature's pleasures, which induceth a man to do injury to another, but some exorbitant desire arising from vain opinion.

For nature having (for example) provided herbs, corn, fruits, for food, competent and usefull, and water for drink, things easie to be had; it cannot be the pleasure of satisfying hunger and thirst, that should cause a man to rob his neighbour, or commit any of those injuries which they usually do: but the vain desire of living

at a higher race, more splendidly and wantonly, that so he may acquire wealth enough to discharge the expences of his luxury. The same may be said also of those, who not content with plain apparell, a plain house, a plain match, and the like, through ambition, pride, lust, and other passions, desire more than nature needs.

Moreover, seeing that a wise man, as I hinted formerly, doth all things for his own sake, nothing certainly can more conduce to his advantage, than to observe justice exactly. For in giving to every one his due, and harming no man he to his utmost, preserves and keeps safe that Society, which, unlesse it be safe, he cannot be safe himself; nor doth he provoke any man to revenge an injury suffered at his hands, or fear any mulct or punishment to be inflicted upon him by publick decree. Thus being conscious to himself of no ill done, he remains free from all perturbation, which is the greatest benefit and fruit of justice; and while he reaps that, what can be more to his own advantage?

Neither ought you to think, that he, who, though secretly and without the knowledge of any man, violates right, or the Covenants ratifi'd by generall consent to prevent the committing and suffering of wrong, can live in the same security and indisturbance as the just man doth, because (as I said) he cannot assure himself, that his injustice shall never be brought to light: for crimes, though they may be secret, can never be secure; nor doth it avail an offendor to be concealed from others, while he can never be concealed from himselfe.

Truely, though his offence were never so well concealed for a time, yet is it very uncertain, whether it will continue so concealed till his death. For first, there is a jealousie and suspition that followes upon ill actions; and again, there have been many who have decided themselves, some in dreams, others in raving fits, others in drink, others through incogitancy. So that a wicked man, though he may for a time lye hid both from gods and men, (as they say;) yet he hath reason to mistrust, that it will not be concealed for ever.

Hence is it, that notwithstanding injustice is not an ill in it self, because what is reputed unjust in one place, may be just in another; yet it is an ill in respect of that fear, which, stinging the confidence, creates in it a continuall suspition, that at some time or other, his unjust deeds will come to the ears of the avengers of injustice, and so he be called to a severe account for them. Thus there is nothing that more conduceth, as to security, so likewise to a quiet and pleasant life, than to live innocently, and upon no occasion to violate the common covenants of peace.

Wherefore since this just and unjust are in this opposition, that the just, of all men, are the most free from perturbations; What can be more profitable to those than justice? what more hurtfull to these than injustice? For how can any anguish of mind, sollicitudes, daily and nightly fears, be profitable to any man?

Justice therefore being so great a good, and injustice so great an ill, let us embrace one, and abhor the other. And if at any time our mind seem to stagger, and we are in suspence what to do, let us fix on some grave good man, and suppose him to be alwaies present with us, that we may live and do all things, as if he looked upon us.

By this means, we shall not onely avoid the doing of any thing openly against justice, but also of offending in secret against the rules of honesty. This good man will be to us in stead of a Guardion or Tutor, whom, because we reverence, we fear to offend. Following this counsell therefore, thus argue; If he were present, I would not do it; Why do I do it in his absence? He would find fault with it, because it is ill; Why do not I shun ill, of my self? Thus, do all things, as if some such person looked on; for if you in this manner reverence another, you will soon come to be reverenced your self.

2.4.29. Chap 29 – Of Beneficence, Gratitude, Piety, Observance

We come next to the Vertues which we said were allied to Justice, for that they have regard to other persons, and though they are not (as Justice is) prescribed by Laws and Covenants, yet they import, out of decency, a certain obligation like that of Justice.

The first is *Beneficence*, or the doing good to others, whereunto those are obliged, who are able to assist or relieve others, either with their hand or purse. If they deny the assistance of their hands, they are censured

as barbarous, cruell, inhuman; if that of their purse, they are thought the same, as also, sordid, tenacious, covetous, and the like. But if they assist others, they are accounted courteous, civill, kind, as also liberall, munificent, magnificent, &c. So that they are obliged for their own sakes to do good to others, so far as may be without prodigality.

For those who practise this vertue procure to themselves good will, and (what most of all conduces to quiet living) and dearnesse or tender estimation from others: they who use it not, ill will, and (what most occasions troublesome life) contempt and hatred. Take heed therefore you omit not to be beneficent, at least in small matters, that so you lose not the advantage of being accounted ready to gratifie others, even in great.

Not without reason did I say formerly, It is not only more honourable, but also more delightful, to give, than to receive a benefit; because the giver thereby makes himself superior to the receiver, and reaps more over the interest of Thanks; and there is no any thing that joyes a man more than thanks. A beneficent person is like a fountain, which if you should suppose it to have a reasonable soul, what joy it would not have at the sight of so many corn-fields, and pastures, which flourish and smile as it were with plenty and verdure, and all by the diffusion of its streams upon them?

The second is *gratitude*, to which every man that receives a benefit, is reciprocally obliged, unlesse he would incurre the greatest hatred and ignominy. For ingratitude is worthily hatefull to all men; because seeing nothing is more suitable to nature than to propense to receive a good, it is highly contrary to nature not to be readily gratefull toward the author of that good.

Now since, no man is more gratefully affected towards his benefactors than the wise man, we may justly affirm, that only the wise man knows how to fulfill the duty of gratitude, because he alone is ready upon all occasions to express his thankfulness to his friends, both present and absent, even to those that are dead.

Others pay thanks only to present friends, when present, and this perhaps for their own farther ends, to encourage them to some new favour; but how few are there, who gratefully commemorate their absent benefactors? Who requite the good they did them upon their Children or other relations? How few who honour their memory after death; who rejoyce not rather, as if their obligations were cancelled? Who love those that were dear to them, respect them, and as far as in them lyes, do good to them?

The third is *Piety*, the most sacred species of gratitude. It looks upon our parents in the first place, to whom every man is more obliged than to all the World besides; for to others he may ow other things; but to his parents he owes himself. Therefore if ingratitude to others be hatefull, that which is shewn to parents must certainly be the most horrid and detestable.

We say, in the first place, because piety in the second place extends to kindred, and chiefly to our Brothers and Sisters, to whom we are obliged by the interest of our parents; in such manner as that we cannot shew ourselves disrespectful and unkind to them, but we must be at the same time highly ungratefull to our parents, and all our progenitors, who in the circle of their love and experience comprehended all that were, and should afterwards be derived from them.

Nor is this piety distinct from that dearnesse we are to bear toward our native Country, which comprehends our Parents and all our kindred, and receives us at our birth, brings us up and protects us. And as by the interest of our parents we are obliged to our kindred, so by the interest of our Country we are obliged to respect all our Country-men; but more especially the Magistrates and Princes who defend the Country itself, and the laws of it, and give us this benefit in particular, that under their protection we may live securely and peaceably.

The fourth is *observance,* or that reverence which we ow to all persons of eminence of any kind. This is accompany'd partly with gratitude and piety (for we cannot any way better express the gratefulnesse of our minds than by giving due reverence and worship to our Benefactors, Parents, Governours, Princes, and all men of dignity and power) and partly with honour and respect, as it is the best testimony we can give of our internall sentiments of their deservings, who excell in Age, Wisdom, Learning, and Vertue, the most honourable of all things.

To this observance belongs that which men call *Religion* and *Sanctity* toward the Gods, whom we are bound to reverence and honor no otherwise than our parents, not through any hope of reward, but (as I said before) for their transcendent majesty and the supremacy of their nature. Because, whatever is excellent deserves a just veneration, and no excellency is greater than that of the divine Nature, for it is immortall and most blessed.

Thus understanding that the Gods neither create troubles to themselves nor give to others, we piously and holily reverence their most excellent nature.

2.4.30. Chap 30 – Of Friendship

The last is Friendship, to which all are mutually obliged, who love and are reciprocally belov'd. And well may it be the close and crown of this discourse; for amongst all the means procured by wisdome to make life happy, there is not any thing more full and pleasant than Friendship; and the same reason that confirms the mind not to fear any lasting or eternal ill doth also assure that, in life, there is no Sanctuary so safe, no protection so secure as that of friendship, which together with that security, conferreth also very great pleasures.

For as hatreds, envies, despites are enemies to pleasure; so are friendships, not onely most faithfull conservers, but effectuall causes of pleasures, as well to our friends as to ourselves; by which, men not only enjoy present things more fully, but are cheer'd with hopes of those to come. And a solitary life destitute of friends being full of fears, and subject to treacheries, reason it selfe adviseth us to procure friendships, by which the mind is confirmed and possessed with hopes of enjoying future pleasures.

Now through friendship is contracted in respect of use and utility in like manner as we sow the earth in hope of a crop thereafter, and the first meetings and conversations of friendship are made in respect of the utility and pleasures which are hoped from thence; Yet when this custom hath gone on to intimacy, then love so flourisheth, that though there were not any benefit of friendship, yet friends would be loved for their own sakes. If we love places, temples, cities, academies, plains, horses, dogges, sports, out of an habituall custome of exercising or hunting, how much easier and more justly may we do this in conversation with men?

But in the choice of our friends we must be exceeding cautious and prudent; for it concerns us to be more circumspect with whom we eat than what we eat. And though to eat alone without a friend, be to lead the life of a Lyon or Wolfe, yet we must be carefull to choose such a friend whose conversation may be the best sauce to our meat. We must seek one to whom nothing is more in esteem than candor, simplicity, and sincerety; one that is not morose, querulous, and murmuring at all things, but who by his complacency, alacrity, and pleasantnesse may render our life sweet to us.

Friendship, I grant, consists in, and is kept alive by, the mutuall participation of pleasures or goods which we may enjoy whilst we live; yet is it not necessary that the goods of friends should be put into one common stock, as he conceived who said: *Amongst Friends all things are common*. This implies a diffidence (that all their wills may not continue constant) and they who are diffident are not friends; such only are friends who can with full confidence and freedome take and use so much of their friends goods or estate as they need, although kept in severall not in one joynt-stock, no otherwise than as if it were their own, esteeming them to be no lesse their own, than if they had them in their own possession and keeping.

This sounds strange in the ears of the vulgar: but what are they to us? There is no faith or constancy in their kindnesse and friendship, they being incapable of these things and of the least part of commendable Wisdome.

Moreover, he that is one of the vulgar understands not what is profitable in private or publick, nor can distinguish betwixt good manners and bad.

I speak therefore of the wise onely; amongst whom there is a kind of league, and covenant not to love their friends less than themselves, which we know may be done and see if often come to pass; whence it is manifest, that there can be nothing more conducing to pleasant living than such a conjunction.

Whence also we understand, that the placing of the chief good in pleasure is so far from being obstructive hereto, that without it there can be no institution of friendship.

For it being impossible for us to conserve the sweetnesse and security of our lives firme and lasting without friendship, and to preserve friendship, unlesse we love our friends as much as our selves, this therefore and pleasure are the inseparable adjuncts of friendship; for, we rejoyce in our friends joy as much as if it were our own, and are concern'd equally with his grief.

A wise man therefore will be alike towards his friend as toward himself; what labour and pains he undergoes for his own pleasure, the same will he undergo for the pleasure of his friend. And as he would rejoyce to think that he hath one that will sit by him, if he should be sick, and relieve him if he were cast into prison, or fallen into want; so will he rejoyce at at having one whom, if he should fall sick, he may sit, and whom if imprisoned or fallen into want, relieve. And not only this, but his love will be so great as to undergo the greatest torments, even death itself, for his friend's sake.

We have known it certainly happens (and that within the memory of our parents) that many, who had the happinesse of procuring to themselves full confidence and security in the society of men living in the same opinion and the same affections with them, have in the assurance of this comfortable league lived most sweetly together and been conjoyned with so absolute a neerness, as that one could, without the least reluctancy, wish so to suffer for the other condemned to dye.

This is all I had to say concerning ETHICK, which in the beginning I asserted to be the chiefest part of Philosophy. You whoever you are that aspire to true wisdome, practice and meditate upon these rules, considering them as the grounds of honest, well, and happy living.

Meditate I say upon them day and night, as well when you are alone, as when in the company of some faithfull companion who is like your selfe, and to whom you may say, We are indeed alone, but by this means we have the greater opportunity of making inquisition into truth without prejudice. I speak not to many, but to you; and you speak not to many, but to me, and that's enough, since to each other is a theater large enough.

Do you not now grant that no man can be compared to him whose mind is rightly informed concerning the Gods, and is fearlesse of death, and who hath so reasoned concerning the end of nature, and the ultimate good, as to understand, that it may be compleated and attain'd with the greatest facility imaginable, and that whatever ill he must endure, either is short, if vehement, if long, gentle; and telleth himself that there is no such thing as an inevitable necessity of fates concerning him, but that he hath and absolute freedom of will, and that nothing at all or very little of fortune can at any time intervene to crosse him; and the rest which we have laid down.

Certainly when you shall come to be such a man as this, you will never be troubled waking nor sleeping (for even in sleep you will be just as you are when awake by reason of the well-composedness of your mind) but shall live like some Deity among men.[486] For that man who spends his life in the enjoyment of immortall goods is far different from a mortall creature.

Hitherto *Gassendus*.

2.4.31. Chap 31 – Wherein Epicurus, Asserting Pleasure To Be The Ultimate Good, Differs From The Cyrenaicks

Though Epicurus agrees with the *Cyrenaicks* in asserting Pleasure to be the ultimate good, yet [487] *concerning this Pleasure, they disagree. The Cyrenaicks admit not pleasure to consist in rest, but in motion onely*. Epicurus *allowed both, as well that of the Soul as of the body, as he asserts in his book* Of Election and Avoidance, *and in his Treatise of the* End, *and in his first book of* Lives, *and in his Epistle* To the Philosophers at Mitylene. *Likewise* Diogenes *in the eleventh book of his Select Rules, and* Democritus *in his* Timocrates, *say thus; Whereas pleasure is twofold, one consisting in motion, the other in rest &c. And* Epicurus *in his Treatise of* Elections *expresly thus; Of pleasures, indolence and imperturbation consist in rest; joy and delight in motion.*

Moreover, he differs from the Cyrenaicks, for that they conceive the pains of the body to be worse than those of the mind; whence it comes to pass, that, upon Malefactors, corporall punishment is inflicted as being the most grievous. But Epicurus *held that the pains of the mind are the greatest, for that no ill can afflict the body long than whilst it is present; but besides the present, the past and the future also torment the mind, and by the same reason, the pleasures of the Soul are the greatest. Thus much of the* Epicurean, *the last of the* Italick *Sects*.

FINIS

[1] lib. 10

[2] lib. 1. *de themat.*

[3] de nat. deor. lib 1.

[4] lib. 13.

[5] loc cit.

[6] in voce Epicurus

[7] lib. 6.

[8] in Lemide.

[9] in Thesee.

[10] de urb.

[11] loc. cit.

[12] Silv. lib 1 & 2

[13] lib. 15. cp. 16

[14] var. hist, 4.

[15] lib. 10.

[16] in Solone.

[17] loc. cit.

[18] in Anthol. lib. 3.

[19] lib. 14.

[20] de nat.deor. lib. 1.

[21] in voc. Epicur.

[22] loc. cit.

[23] adv. Colot. lib. 2

[24] de amor. Frat.

[25] adv. Col. 2.

[26] ibid.

[27] ibid.

[28] loc. cit.

[29] lib. 10.

[30] lib. 35. cap. 2.

[31] de die nat.

[32] lib. 10.

[33] lib. 5.

[34] in Chron.

[35] loc. cit.

[36] in voc. Epis.

[37] de vi. Cler.

[38] This anonymous Writer is no other than Scaliger, whose mistakes, for the most part, Meurfius hath unhappily followed, and taken pains to confute the rest, conceiving him some ancient Author.

[39] lib 10.

[40] lib. 14.

[41] loc. cit.

[42] adv. Col. iib.2

[43] in Epic.

[44] Epist. 18

[45] lib. 10

[46] in Epic.

[47] de nat. deor. 1.

[48] Stroim. lib. 1.

[49] adv. nath. 1.

[50] loc. cit.

[51] de nat. deor.

[52] adv. Col. 1.a.

[53] Ecl. Phyf.

[54] cap: 1.

55 locis citatis.

56 apud Laert. lib. 10.

57 loc. cit.

58 lib. 9.

59 in Epic.

60 lib. 10.

61 ibid.

62 ibid

63 adv. Phys. lib. 2.

64 loc. cit.

65 ibid.

66 ibid.

67 ibid.

68 lib. 1.

69 adv. Col: 1.

70 loc. cit.

71 lib. 19, cap. 4.

72 in Attic.

73 in Imag.

74 ad Attic: ep: 2.14.

75 Sat. 14.

76 in lexic.

77 in lexic.

78 lib. 10.

79 in demetr.

80 loc. cit.

81 de occ. viv

82 de fin. lib?

83 loc. cit. cap 8.

84 lib. 1. cap. 8.

85 lib. 10

86 de amor. fra.

87 adv. Col. 2

88 as Genebr. lib: 2. Chronol.

89 in Epic.

90 lib: de co.

91 Erasm: Chil: 2. Centur: 10.

92 in Neocl.

93 Epist. 6.

94 de din: lib. 2.

95 lib. 13.

96 loc. cit.

97 lib. 10.

98 in Not: ad Laert.

99 lib. 2.

100 lib. 3. cap 21.

101 adv. Col.

102 Strom. 2.

103 Acad. 2?

104 lib. 10.

105 adv. Col 1. x.

106 lib. 6.

107 in Somn. Scip. lib. 1.

108 Epist. 21.

109 lib. 1. cap. 12

110 Saturn. I. II.

111 lib. 13.

112 de Nat. deor.

113 Strom. lib. 4.

114 lib. 8. and 10.

115 lib. 1.

116 lib. 19.

117 lib. 10.

118 ibid.

119 ibid.

120 adv. Celf. lib. 7.

121 Comment in 1. lib. Hipp. de nat. hum.

122 lib. 2. cap. 1.

123 adv. Col lib. 1.

124 de din. lib. 2.

125 de nat. deor. 2.

126 adv. Phys. lib. 2.

127 in Pseudom.

128 lib. 4. Acad.

129 adv. Col. 2.

130 de nat. deor. 1.

131 de occ. viv.

132 adv. Col. 2.

133 lib. 3 & 9.

134 in Lycurgo.

135 Symp. quaest. 1. 1.

136 deipn. 5.

137 adv. Col. 1. Symp. quaest. 3. 3.

138 apud Laert.

139 adv. Col. 3.

140 adv. Math.

141 adv. Gram.

142 adv. Col. 1.

143 lib. 5.

144 adv. Col.

145 lib. 10.

146 adv. Col. 2.

147 lib. 14.

148 in Pub.

149 lib. 2.

150 in Phaen. Arat.

151 adv. Col. 1.

152 lib. 7.

153 lib. 10.

154 adv. Math. 1.

155 in Protag. lib. 9.

156 deipn. 8.

157 de Praepar. lib. 15.

158 deipn. 13.

159 Epist. 13.

160 Cent. 16. Paraem. 95.

161 lib. 10.

162 de fin. 2.

163 de Iaps. in salut.

164 lib. 3.

165 ibid.

166 Tusc. 3.

167 de devin. 2.

168 de nat. deor. 1.

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172 Laert. lib. 10

173 in Lex.

174 loc. cit.

175 de fin. lib. 2.

176 loc. cit.

177 lib. 10.

178 Strom. lib. 2.

179 de fato

180 lib. 7. cap. 48.

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182 de die nat.

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194 Rivier

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197 Alex. XXX ab. Alex. 2. 19.

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203 in Epic.

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206 praep. lib. 14.

207 lib. 3. cap. 17.

208 Acad. 4.

209 Orat. 4.

210 Epist. 35.

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219 ibid.

220 Epist. 5. 11.

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222 Sext. Emp. adv. Math. 1.

223 Laert.

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225 Cic. in Bruto

226 Macro. b in Sumn. lib. 1. cap. 2.

227 viz. Plato in Rep. Sib. 10

228 Tacit.

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242 Laert. Cic. Acad. 4.

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244 from Laertius and Plutarch adv. Col.

245 Laert.

246 Sext. Emp.

247 Laert.

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257 Lucret.

258 Lucret. loc. cit.

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260 Laert.

261 Sext. Emp.

262 out of Sext. Emp.

263 Sext. ibid.

264 out of Laert.

265 Laert.

266 SIDENOTE WITHOUT CONTENT

267 Laert.

268 Sext. Emp.

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270 Sext. Emp.

271 Lucret. lib. 4.

272 out of Laertius.

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274 Laert.

275 Laert.

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281 Lucret. Lib. 1.

282 Lucret. loc. cit.

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318 Laert.

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363 Sext. Emp.

364 Laert.

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403 Laert.

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406 Lucret. 4.896.

407 Lucret. 5.102.

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423 Laert.

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433 Laert.

434 Laert.

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436 Laert.

437 Laert.

438 Lucret. 5.

439 Laert.

440 Laert.

441 Laert.

442 Laert.

443 Laert.

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447 Senec. nat. quaest. 55.

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456 Lucret.

457 Stob. [Joannes Stobaeus]

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467 Laert.

468 Porph. de non efu carn.

469 Porph. de non efu carn.

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473 Porph.

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482 Porph. de non efu carnium.

483 Porphyr.

484 Porph.

485 Porphyr.

486 Laert.

487 Laert.