Natures secrets. Or, the admirable and wonderfull history of the generation of meteors ... / By the industry and observations of Thomas Willsford.

Contributors

Willsford, Thomas

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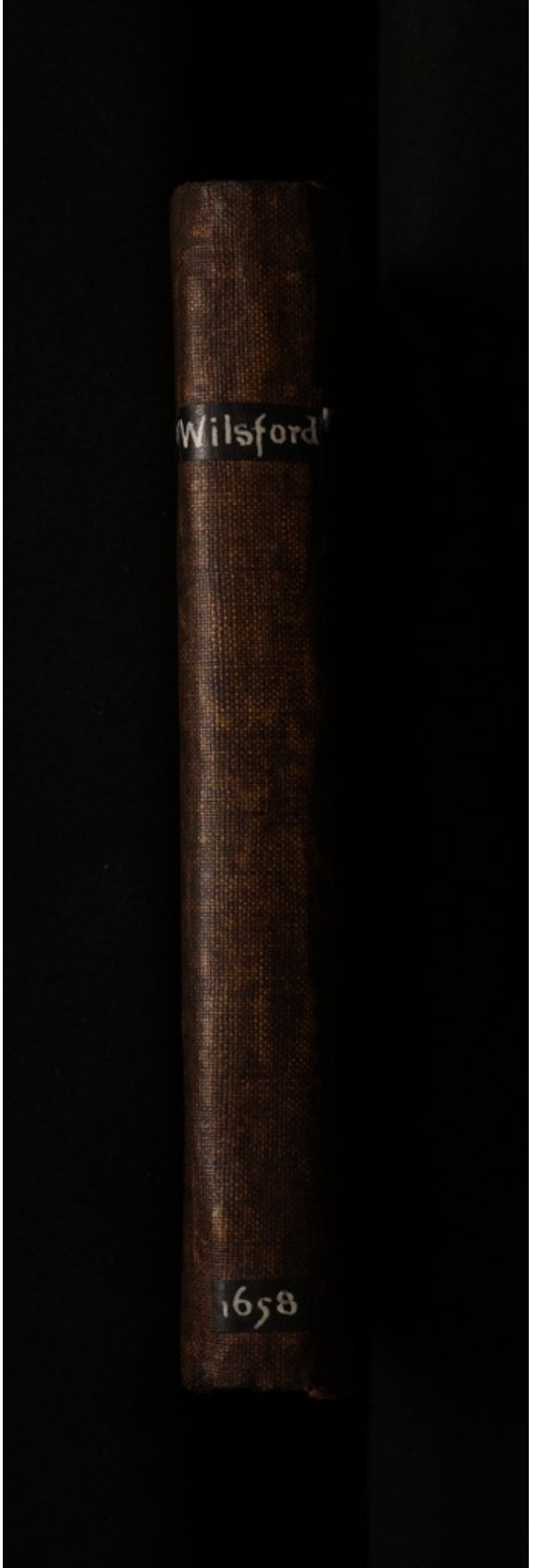
Wilsford'
1658

92 **Willsford** (Thos.) THE SCALES OF COMMERCE AND TRADE, Ballancing betwixt the Buyer and Seller, Artificer and Manufacturer, Debitor and Creditor, the most General Questions, Artificial Rules, and Usefull Conclusions incident to Traffique, including Architectonice, or the Art of Building Discovered, *portrait by Vaughan (mended)*, post 8vo, *old calf*, RARE, *Lond.*, 1660 10s 6d

Vera effigies THOMÆ WILLSFORD: Ætatis suæ 46.

Omnia videntur formata ratione Numerorum: Boetius.

Mans shadow oft does first appeare,
And so does his Effigies heere:
Looke in his Bookes, and there you'l finde,
Him in the Mirrour of his Minde.

M: Boteler.

Re: Vaughan sculp:

NATURES SECRETS.

OR,

The Admirable and wonderfull HISTORY

Of the generation of Meteors.

Particularly describing,

The temperatures and qualities of the *Four Elements*, the Heights, Magnitudes, and Influences of the *fixt* and *wandring Stars*: the efficient and finall causes of *Comets*, *Earthquakes*, *Deluges*, *Epidemicall Diseases*, and *Prodigies of precedent times*; Registred by the Students of Nature.

Their Conjecturall presages of the Weather, from the Planets mutuall Aspects, and Sublunary bodies: with the proportions and observations on the *Weather-glass*, with Philosophicall paraphrases rendred explicitely, usefull at Sea and Land.

By the industry and observations of

THOMAS WILLSFORD, *Gent.*

Venite & videte opera Domini, quæ posuit prodigia super terram, Psal. 45. v. 8.

LONDON, Printed for *Nath. Brook* at the Angel in *Cornhill*. 1658.

A DEDICATION TO

The Right Honourable, the Lady Stafford, *Sister to the Lord* Henry Stafford *deceas'd, Lineally descended from the eminent and ancient Earles thereof, and sole Heir surviving the most illustrious Dukes of* Buckingham.

Madam,

THe splendor of your renowned *Family*, and the influence of *Celestiall Graces* illuminating the moral vertues you inherit, attracts me and my *Meteors*, as the *Sun* does Exhalations and Atomes; although many have been observ'd more illustrious to vulgar eyes, and more

ſtupendious to common capacities gaz'd upon by the gaping Multitude with terror and admiration; yet ſome of them now totally eclipſt, others prov'd but *Ignes fatui*, the greateſt and higheſt like enflamed *Comets*, elevated on the wings of *Ambition*, conſume themſelves with their own glory, diſcover'd by their *Horoſcopes* through the Perſpectives of *Reaſon*; Demonſtrated by the *Parallaxes* of their Spheres, and by *Experience* found that the moſt exalted are but Falling *Stars*, whoſe coruſcations ſhew their groſs extractions, ſomething ſublim'd from the *fæces* of the Earth; whereas I look upon your *Honour* like a benevolent *Planet* Culminant, which may be eclipſt for ſome time, and alſo ſet, yet will riſe again, recover its former luſtre, and diſſipate thoſe Meteors

teors that mask the face of little Stars : and thus (*Serene Lady*) a ſmile from you (by vertue of your Rays) will calme the moſt rigid brow, clear the frowns and cloudy aſpects of malignant readers, convert the aſperſions of palli'd *Envy* into Pearls, and ſcatter the miſty Exhalations riſen from ſplenitick bodies, to obtenebrate the weaker inſpection of others : but if it be judg'd preſumption to require ſo honourable a Protection in defence of ſo mean a Peece, vouchſafe me leave to proſtrate this at your *Honours* Feet, whereby your ſhadow may prove as propitious, and tutelary, as the *Laurel* whoſe ſhade is held a *Sanctuary* againſt ſtorms of Thunder and Lightning.

I have compendiouſly render'd here (moſt auſpicious *Lady*) the prognoſtication of *Meteors*, with

ſundry obſervations plaine and conſpicuous as in a Mirrour, in favour of your Sexe, to whom (I hope) 'twill be acceptable, reflecting on the providence of *Nature*, and in imitation of her dictates, providing beſt for thoſe who are in moſt danger to be damnified by the aſſaults and ſuddain incurſions of angry ſtorms; and this her motherly affection not only viſible in Senſitive Creatures, but in all Vegetables, vailing their bonnets to ſalute the *Sun*, while their bloſſoms receive his vivificating beams; and if too hot for their natures, their leaves fan the Air, or their Husks make *Umbrelloes* againſt the inflammations of his Rays, and at other times contract them like traverſe curtains, whereby to ſhelter their infant Buds and tender Blooms from being ſtorm'd, or injur'd by

the

the exceſſe or fury of the weather: but the nobler *Creatures* endow'd with the uſe of *Reaſon* (as your *Honour* with an ample portion fortifi'd with knowledge) thoſe are refer'd to ſearch, and argue the cauſe, or by precurſing ſigns deriv'd from the effects, preſage the events, as the collections of Expe-rience. Upon theſe animadverſi-ons in order to *Natures* Inſtincts, I compos'd this treatiſe, your tender and beautiful *Sexe* tranſcending her pleaſant and odoriferous Flowers; and ſince the better ſort are often now expos'd to rude and boyſterous ſtorms, by the abortive production of a more bluſtering uncivil Age, the precepts of Gratitude obliged me to dedicate theſe Obſervations to your *Honour* (as the Nobleſt in my eye) that the World may witneſſe my

ſincere

ſincere and grateful intentions for ſheltring me; In teſtimony whereof it is ſign'd by

Your affectionate kinſman

and moſt devoted ſervant,

Thomas Willsford.

A GENERAL PREFACE TO The Ingenious and Judicious ſpeculators of Nature, illuſtrating here the Antiquity of this Meteorological ſubject, in prognoſticating their effects.

Benevolent Reader,

I *ſhall preſent you here with a ſmall compendium of a mighty ſubject, offer'd up to the glory of* God, *and intended for your benefit, in the deſcription of the* Heavens, *the* Heights, Magnitudes, Periods *and* Aſpects *of the fixt and wandring* Stars; *the natural qualities and greatneſs of the four* Elements; *the generation of* Meteors, *and* Prognoſtications *of the Weathers variable tranſmutations; with the alterations of* Senſitive *and* Vegetable Creatures, *in their diſpoſitions and inclinations; a ſubject, into which the Wiſe and* Learned *(of precedent Ages) have made ſerious and diligent inquiſitions, omitting Catalogues of* Philoſophers *from* Ariſtotle

ſtotle *and his Diſciples (on the ſpeculative part) continued by ſucceſſion to theſe times; and for the practical obſervations of many I will record a few.*

Thales (*one of the* Athenian *Wiſe-men*) *a grand contemplator of* Nature, *and ſo judicious a proficient in this* Art, *that he ſaid, he could berich when he would, by prognoſticating Weathers temper in ſucceeding years, from thence preſaging plenty, or ſcarcity of Fruits; after him, divers made obſervations of the* Stars *aſpects, and thoſe grave* Experience *ratified as in relation to particular Countries or regions; after a long tract of time, this knowledge was made more univerſal by being contracted into general Rules, and thoſe again much illuſtrated by the induſtry of* Ptolomæus *the* Alexandrian, *whoſe fame ſurvives his Funeral: Since his time very many have writ of this Subject, in a continual ſucceſſion, unto this preſent Age, yet never render'd till now in our vulgar tongue.*

And that I may pleaſe all Sexes *and Ages, the Ignorant and Learned, diverſity of predictions are here inſerted, from the* Heavens *to the* Elements, *from the loſty* Pine *to the humble* Shrub, *and little* Vegetables, *from* Birds *and* Beaſts *and* Fiſhes *in the deep, down to the* Minerals *in the* Earths *pregnant*

womb,

womb, besides ocular Demonstrations to preserve you from the injury or assaults of the Weather: Yet some (perhaps) will bluster, and make a noyse (like Thunder without Lightning) because dedicated to a Woman; *should I name her* Vertues *they would be calm'd, or charm'd by their own* Reasons *to silence, but 'twill displease her* Modesty; *so I will only intimate, her* Favours *reflecting upon my mind (as the* Sun *upon a Cloud which he rais'd) represented this Impression, having imprinted in my memory her* Nobleness *indelible, not convenient to be publish'd at this present time.*

As for the subject of this Treatise, it appertains to the Astronomer *in part, 'tis true; yet who understands the Characters and Aspects of the* Signs *and* Planets *by this, will know them in any* Ephemeris, *or Annual* Kalender, *whereby you may judge of the future Weather: For our present purpose Mr.* William Lillies *is the best extant; As for apparitions in the* Airy Regions, *you have here the Observations upon them; and for the nature of* Vegetables *they are more essentially observ'd, and better known in general, then the influence of the* Stars, *or the nature of* Meteors *are discovered to learned* Men, *especially all tender and redolent*

Flowers,

Flowers, *that embroyder the Earth, or perfume the Air; whose natural instincts, each* Florist *observes as Kalenders of the Weathers mutability: besides these, here's* Birds *and* Beasts, *that are domestick Creatures, or familiarly seen; which if they satisfie not the beholders, I have presented them with a* Glasse, *not to see their features in, but to view the state of the* Air, *whether Dropsical or Feaverish, Hot or Cold, and by a member sequestred from the* Element, *confin'd within a transparent Glasse, where behold its contraction or rarefaction! and from thence you may visibly presage the approaching weather; the fourth and last Part is historical; so there is something in every ones Sphere, or Element.*

The Tables of the Stars *natural qualities in their tempers seem oppugnant to themselves; as* ♄ *cold and dry, with* ♃ *hot and moist, likewise in* pag. 82, line 28, *and* 29; *and such like seeming contradictions in general, but not in particular respects: these are the observations of others, faithfully recollected and transfer'd to your judgements as Moderators, whereby I will not deceive you, if you be deceiv'd. The* Cosmical *rising and setting of some* Stars *are mention'd here, when as to many Places, and whole Countries, those* Asterismes *can neither rise nor set: In all such*

cases

cases 'tis to be understood (if visible) when neer the Horizon *of that place, or direct North, the* Sun *ascending or descending that Hemisphere at the same time. As for terms, Latine words and quotations not explain'd, they are known unto the* Lady, *for whom this is chiefly intended; and if they do eclipse or offuscate the subject (as in relation to others) the next Impression shall delucide them: And as for those who only know how to find fault, I can with more facility remit, then such as they can censure; So all such malignant spirits I leave to themselves, and reconvert my discourse from them, to the Ingenious (as the* Heliotrope *from its shade to court the* Sun) *and if they are satisfied, I am pleas'd by subscribing*

Your friend and coadjutor,

THOMAS WILLSFORD.

To his honoured Uncle Mr. *Thomas Willsford* upon his Book of Meteors.

HEav'n is by earth epitomiz'd!
The greater world, by th'lesse Comprisd!
The sacred Harmony o'th'spheres
Made audible to mortal ears!
Nature's Anatomy displayd!
The universal frame survayd!
The Elements complexions shown!
And every Star's Dominion!
The Weathers watr' in glasses cast,
Speaks how her fits, may change, or last!
Whence bearded Comets have their births!
And strong Convulsions shake the Earth!
Whence all portentous symptomes rise!
Bad Omens, and sad prodigies!
These are thy tracks! pervious to none,
But to thy better thoughts alone!
Whose mystique Causes do'st explore;
Seeing implum'd effects in store!
Who Can'st the Cabala of Fate,
And energy of Planets state!
While stupid we on Terrene Regions move:
But Looking up see Stars and Thee above!

Edward Boteler.

AN INTRODUCTION TO THE WORLDS EPITOMY, AND THE *Generation of Meteors.*

ACcording to my Talent received from the sole *Creator* of the *Universe*, whose *Fiat* alone made this great and stupendious *Machine* of the *World*, for whose excellency *Man* cannot find an attribute, but *Supereminent* in all beginnings, *Eternal*, *Immense*, *Omnipotent*, *&c.* which we cannot comprehend: Who in the beginning created *Heaven* and *Earth*, *Gen.* 1. *cap.* 1. And by his omnipotent *Word* alone, made on the first *Day Light*, which *He* divided from darkness; whose *Divine* assistance I now implore, to illuminate my understanding, and to dissipate the clouds of Error involving humane Learning, deviated in diversity of Tracts, in which obtenebrated ways, we grope for what we seek in the bewildred cogitations of others,

whereof ſome do think they ſee ſo well as *Argus*, when they are as blind as Moles; *Phantaſmes* undermining their wilful benighted *judgements*.

Others there be whoſe ſordid minds are buried deep in *Earth*, or ſo propenſe on vanities, that they reflect not upon *Natures* dayly works, much leſſe on the *Sacred Deity*, from whence ſhe was ordained herſelf; ſhould but any ſtupid man (that hath a glimmering light in the uſe of *Reaſon*) behold the *Heavens*, he muſt needs read there an immenſe *Creator*, if his Reaſon enters into judgement for to examine the cauſe, or contemplate on the effects, obſerve the illuminated *Orbs*, how by an orderly courſe and ſucceſſion they riſe and ſet; diſtinguiſhing *Days* from *Nights*, and *Seaſons* of the Year; contracting their Lights, or diſtributing their Rays impartially to the *Peſant* as the *Prince*; they cannot but confeſſe the Providence, Goodneſſe and Bounty of an Infinite and univerſal *Opificer*: Which moved *Ovid*, though a Heathen, wavering like a weather-cock, turn'd with Air of poetical fictions, yet from them converts himſelf to point at the original Author, *Metam. lib.* 1. deſcribing of the *Chaos*.

——————*Quia corpore in uno*
Frigida pugnabant calidis, humentia ſiccis,
Mollia cum duris, ſine pondere habentia pondus;
Hanc Deus & melior litem Natura diremit.

And a little after,
Ille Opifex rerum mundi melioris origo.

Declining here the *Poets* and *Philoſophers* authority

rity let any rational man but contemplate of the leaſt *vegetable* or ſenſitive *creature*, a time there was it had no being, it increaſes to maturity and perfection, at a period declines again, returning unto *Earth*, from whence extracted, according to the courſe and conception of *Nature*; which evidently demonſtrates that She and the World had an original, as by their Fruits and off-ſpring, (the ſubjects of mortality) and conſequently muſt have an end: *Eccleſ. cap.* 3. conſider then the omnipotency of an *Eternal Creator*, by whoſe ſacred *Word* alone 'twas made, by whoſe *Providence* it continues, and by whoſe *Power* it ſhall periſh, all things declaring the *Almighty Deity*, and ſo apparently, that there are not any but muſt ſee it, except wilfully blinded in their underſtandings; and thus writeth the *Apoſtle* of the Gentiles, S. *Paul*, inſpired by the *holy Ghoſt*, *ad Roma. cap.* I. *ver.* 20. *Inviſibilia enim Dei, à creatione Mundi, per ea quæ facta ſunt intellecta conſpiciuntur; ſempiterna quoque ejus virtus & Divinitas, ita ut ſint inexcuſabiles.*

Now to return from whence I came, and look back to the *Creation*; on the ſecond *Day*, *God* made the *Firmament* as the bounds unto this great work; for the *Empyreal-Heaven* or his bleſſed *Seat*, is an *Orb* unlimited, whoſe Centre is everywhere, and the Circumference nowhere; and ſince that *Geneſis* doth mention the *Heavens* as the nobler part of this admired Architecture, I deſire here to begin, where I hope for to conclude, having finiſhed my Pilgrimage through this tranſitory Deſart; and in what I ſhall err, may it be aſcrib'd to my weakneſſe and not my will; and that we may always remember our imbecillities, and reflect

on the Glory and Majesty of the sole eternal God, Behold the Regal *Psalmist* 75. *ver.* 1. *Confitebimur tibi Deus, confitebimur: & invocabimus nomen tuum, narrabimus Mirabilia tua.*

The subject of my intended discourse is *Meteors*, originally deriv'd from the Creation of the 4 *Elements*, their conceptions extracted from thence by *Nature*, with a continual succession from Corruptions to Generations, and from hence *Reason* assisted with *Experience*, discusses their Qualities, and from their material cause prognosticates their effects; the *Stars* are generally conceiv'd the efficient cause in elevating and digesting the matter which *Nature* imploys to what 'tis aptest for: thus the wandring *Planets* and fixed *Constellations*, over-looks their transmutations, and by their mutual aspects do generate the *Meteors* from whence *Man* does prognosticate the Weather, either at the present, or by calculation of their places, for any time in future; yet the nature of these *Stars* being known but by the effects, depending much upon Experience, on Demonstration little; this presciential knowledge is often subjected unto errors, besides the course is more uncertain, by reason so few do concur, and not an Age free from extravagant opinions of *Philosophers* and *Astronomers*, started up in oppositon to what hath been maintain'd and generally receiv'd before: the World's inviron'd in obscurity for the pride of *Knowledge*, which transgression made humane *Sciences* conjectural under the tuition of *Experience*; yet since we are allowed to argue and dispute upon it, conclusions may be deduced and made apt for humane use, and *Nature* beheld through the *Meteoroscopes* of

of *Reason*, although with mists before our eyes (the *Scouts* to our *understandings*) yet some are sharper-sighted than others, and many think they discover more than they doe, and multitudes magnifie and multiply things greater then they are, or more than is true; so I will record here a few, supposed both Wise and Learned men and so proceed.

Empedocles the *Philosopher* of *Sicilia*, a man famous for wit, and endow'd with a profound talent of humane learning, imploying all the faculties of his mind to discover the secrets of *Nature*, and the substance of the Celestial orbes (in which the *Elements* are involv'd) he maintain'd to consist of *Water*; of this opinion he had many disciples, which flourished until buried with the Author's, and in this later Age his *paradoxes* are reviv'd again, unto which *Galilæus* doth much incline: others conceive them to be form'd out of a refined *Element* of *Air*, and the *Stars* of *Fire*: many urges that the arched vaults of Heaven are compos'd out of *Natures Quintessence*, as it were a sublim'd substance refin'd from the 4 *Elements*, yet differing essentially in their Qualities, as by being neither Hot nor Cold, Drie nor Moist, Ponderous nor Light; to be brief, a body which they fancie, but understand it not: *Aristotle* conceiveth the *Stars* to be a thicker part of their *Spheres* in which they are infixt, not differing in matter nor *Species* any more, than knots in a piece of timber, and these condensed *Orbes* apt to receive light, being void of lustre in themselves (like the common people of the *Skies*) but as they are illuminated by the influence of the *Sun*, nor have they heat but by

reflection, nor colour, but by participation of divers *phænomenons*, or appearances of ſundrie colours; but all this cannot be admitted, ſince ſage *Experience* (in peculiar motions) by demonſtration overthrows their Arguments, and *Reaſon* denies their concluſions.

In the *Firmament* are plac'd all the fixed *Stars*, accounted in number but 1143, and of theſe there are 14 rarely viſible, beſides multitudes (without peradventure) that never were or ſhall be ſeen to Mortals, ſince by *Perſpectives* ſome have been diſcovered in this later age to attend particular *Planets*, never obſerv'd before, and by ſeveral mediums undoubtedly have influences on ſublunary bodies; yet by what means 'tis in diſpute: but leaſt my cogitations ſhould wander with thoſe *Stars*, it ſhall aſcend to the fixed, diſtinguiſhed by their Magnitudes, whoſe differences are 6. as by theſe *paradigmas* following.

1 The number of *Stars* of the firſt Magnitude are accounted 15. *viz.* as the *Scorpions* and *Lions* heart, &c.

2 Thoſe of the ſecond Magnitude are reckoned 45. *viz.* the north Horne of *Taurus* and the Foot of *Gemini*, &c.

3 Of the third Magnitude, there are numbred 208 *Stars*, as the Breaſt and Knees of *Caſſiopeia*.

4 The fourth Magnitude doth liſt 474. as the Northern and Southern *Aſſe*, &c.

5 The fifth Magnitude or difference, doth number 217, as the leaſt in the *Pleiades* and the *Ram*.

6 Of the ſixth and laſt Magnitude, 49 *Stars*, as thoſe in the mouth and on the back of *Capricornus*, &c.

There

There are accounted besides all these 14 little cloudy, or obscured *Stars* that seldome do appear, *viz. Præsepe* in the breast of *Cancer*, the sum of these is 1022. to which if you add 121 *Stars* of several magnitudes discovered by the *Portugalls*, in their voyages to the *East-Indies*, the totall will be 1143 in several *Constellations*, according to *Astronomers* observations; but I believe not true, since the Sacred *Records* puts to man this quæry, Who can number the *Stars*? but these are more than we know, or shall use in our observations here, although there were none created unnecessary, nor can there be less without an error.

The fixed *Stars* are so called for never changing their positions or latitudes, and their longitudes not one minuit in a year, as all the *Planets* daily doe: to distinguish the fixed, and avoid confusion, they are contracted into several *Constellations* or *Asterismes*, the easier to be remembred, the sooner to be found, and the better for observation: these Celestial Configurations are now numbred 58. representing the formes and names of Men, Beasts, Birds, Fishes, &c. deriving their Pedegrees from *Astronomers* Poetical fictions, or their natural effects; as when the *Sun* enters the *Sign* of *Aquarius*, these northern Countries do expect much rain or snow: *Canis major* or *Sirius* at his *Heliacal* occultation or setting inflames the *Air*, and makes Dogs apt to run mad, as *Pliny* testifies, *lib.* 1. *cap.* 40. the *Egyptians* call'd their river *Nilus Siris*, from the Dog-*star*, observing their inundations to happen constantly every year, when this *Star* ascended their *Horizon* with the *Sun*, and those floods over-running their valleys, untill his *Heliacal*

rising

rising or apparition, summon'd those extravagant, but fertile waves to retreat into their confined channels.

Hypotheses of Astronomers, concerning the heights and magnitudes of the fixed Stars and also the Planets in their mean motions, with the distance of the four Elements from the Earth's centre.

THe *Firmament* or 8. *Sphere* (in which the fixed *Stars* are placed) is affirm'd by *Astronomers* to be in distance from the Worlds *centre*, the *Earths* diameter 9327 times; from the Terrestial Globes superficies 18653 semi-diameters; the distance from us in miles 65285500; the least *Star* in this Sphere is conceived greater than the Globe compos'd of *Earth* and *Water*, and that all the *Stars* of the first magnitude are 100. times as great in relation to their Cubes.

Under the starry Firmament there are imagined 7. peculiar Spheres involv'd within one another, on these the ancient *Astronomers* did fancy little circles (called *Epicycles*) whose centres were in the superficies of those Orbs, in whose circumferences they plac'd the centre of each *Planet* according to its proper Sphere, thereby to solve the irregular motion of each wandring *Star*, in their various courses, and excentrick motions; that point which is most remote from the centre of the *Earth* is called *Apogæon*, the lowest *Perigæon*, the difference between them is termed the mean motion, the *Planet* being then on the superficies of his own *Sphere*.

Saturn

Saturn the higheſt of all the *Planets*, in his mean motion is in diſtance from the ſuperficies of the *Earth* 10358 $\frac{1}{10}$ Semidiameters in proportion to it as 31 to 11. being greater than the Terreſtrial Globe 22 $\frac{3}{10}$ according to cubical numeration, and is in diſtance above us in our Hemiſphere 36153318 Miles; this later age (by *Teleſcopes*) hath diſcovered 2 *Stars* that attend him, interpoſing themſelves ſometimes betwixt him and us.

Jupiter in his mean motion is in diſtance from the *Earth* 3917 $\frac{4}{10}$ ſemi-diametrs, and is in proportion to it as 12 to 5. and greater than the Terreſtrial Globe, according to the Cubes made of their diameters 13 $\frac{8}{10}$ and in diſtance from us 13711090; he hath 4 *Stars* diſcovered, that make a progreſs with him through the 12 *Signes*, but keep no equal diſtance, and do often interpoſe themſelves and us.

Mars in his mean motion, is above the Earth 1713 $\frac{2}{10}$ ſemi-diameters, and is in diſtance from the ſuperficies of the terreſtrial Globe 5996200 Miles, and according to *Tycho Brahe*, the Cube made of his Diameter, is leſs then that of the Earth 13 times and a little more.

Sol in his *Apogæon* is from the ſuperficies of the Earth 1169 ſemi-diameters, in his *Perigæon* 1089, and conſequently in his mean motion 1129, and according to his Cube 139 times greater then the cube made of the terreſtrial Globes diameter, and is in diſtance from the Earths ſuperficies 3951500 Miles.

Venus is in proportion unto the terreſtrial Globe, as 6 to 11. and ſhe is leſſer then the globe of Earth 6 $\frac{1}{10}$ times, and in her mean motion is

in

in distance from thence, so much as the *Sun* is or very neer.

Mercury is held less then the terrestrial *Globe* 19 times very neer, and in his mean motion, hath the same distance allowed him almost as the *Sun* hath in his mean motion.

Luna in her mean motion, is in distance from the Earth's superficies $58\frac{9}{10}$ semi-diameters, in Miles 206050, and the cube made of the terrestrial *Globes* diameter, will contain that made of the *Moon*'s $42\frac{8}{10}$ the proportion being as 2 is unto 7 and so much greater is the *Globe* of Earth then that of the *Moon*.

Under the *Moon*'s Sphere is the Element of *Fire* conceived for to be in thickness 154050 Miles, whose concave or neereſt distance from the superficies of the Earth and Water is conjectured 52000 Miles, and from the center 55500 Miles.

The upper *Region* of the *Air* (being next unto the Element of *Fire*) is suppos'd to contain in thickness 51994 Miles, and the concave of it in distance from the superficies of the Earth 6 Miles, the Middle *Region* 4 Miles, and the lowest two Miles, which is the distance from the Earth to the highest watery clouds, and this is the *Region* of *Air* in which we mortals draw our vital breath in.

The two lowest *Elements* do make one *Globe* consisting of *Earth* and *Water*, whose Diameter is 7000 Miles, and the whole circumference 22000 Miles, and according to this proportion $61\frac{1}{9}$ miles upon this *Globe* will answer unto one degree in the Heavens; but expect no exactness in the dimensions.

Here I could have shown you a great assembly of

of various opinions, but not assisted with any convincing Reasons, or grounded upon undeniable demonstrations; as in the magnitudes and distances of the Stars, most supposing them for to be in a further distance from the Earth, and of greater magnitudes, in which proportions I have followed *Tycho Brahe*, but not altogether in their heights. Some deny these several Spheres, and the motions called *Accessus*, and *Recessus*; others will have them moved by Angelical powers; and this opinion is assisted by the great Doctor and light of the Catholike *Church* St. *Augustine*, *lib.* 83. *p.* 74. saying, *Every visible thing in this World, is under the charge of an Angelical power*; And so writeth St. *Jerome cap.* 28. *On Ezech.* That there is an *Element* of *Fire* some reject, others do affirm it; but deny that either the *Fire* or the *Air* have any motion with the Heavens from East to West. *Aristotle* affirms the *Air* to be naturally of a hot quality, the *Stoiks* and *Cardanus* do think it cold; *Turnebius* neither, but apt for either heat or cold: The common received opinion is, that the upper *Region* of the *Air* is naturally hot and dry; the second cold and moist; the lowest *Region* temperate, according unto the place and Season of the year; but generally the whole Element of *Air* is thought to be hot and moist.

Now as for the two lower *Elements*, *Earth* and *Water*, as united together they do make one *Globe*, and this assertion generally ratified, and unanimously consented unto, by the ablest men in all Ages; yet something in approbation of this shall be said hereafter: But as for the greatness of this *Globe* it is doubted of by many, although not with such

such dissonant, and diversity of opinions, as for the magnitude and height of the Spheres, and the other two Elements: for some do seem to prove by Eclypses of the *Sun*, and *Moon*, and voyages at *Sea*, what part or how many leagues or miles upon this *Globe* will answer unto one degree of the Heavens; the common opinion is 20 leagues or 60 miles, and by this account the terrestrial *Globe* is in compass 21600 miles. *Ptolemæus* accounts 500 Stadiums for 1 degree, that is 22500 miles, if the *Stadium* in *Egypt* did not exceed that in *Italy*; others will have it 66 miles allowed for one degree, and in compass then 23760 miles: but I have in this allowed for the whole circumference of the Earth 22900 miles: Thus numerous are the opinions of learned *Philosophers*, *Geometritians*, *Astronomers*, *Geographers*, *Cosmographers* and *Navigators*, and their ways so ambiguous, seldome agreeing in any thing, often crossing one another; that if there be a truth in them, it is hard for to discover which it is, and being found difficult to follow,; but whether this admired and stupendious machine of the *World*, be greater or lesser 'tis not for me to argue, And thus I will conclude, *Psal.* 135. *ver.* 6. *Omnia quæcunque voluit Dominus fecit in Cœlo & in Terra, in mari, & in omnibus abyssis.*

The 7 Planets, or wandring Stars, with their Characters, colour, motion, period and courses.

First under the Firmament or Starry Heaven, is plac'd the planet *Saturn* ♄ who is the highest of them; his colour is pale, his course is finished through the 12 Signes, in 29 years, 5 moneths, 2 weeks, 1 day and 8 hours.

The next Orbe to this is *Jupiter* ♃ a fair and bright planet he passeth through the 12 Signs of the Zodiack in a 11 years, 11 moneths, 5 days and 17 hours, or very neer.

Mars ♂ appeareth in his proper Sphere, of a red or fiery colour, marching through the 12 Signs in 1 year 11 moneths, 1 week, 6 days and 22 hours or thereabouts.

The *Sun* ☉ is next being placed in the middle of the planets, the better to distribute his light unto the rest, they being illuminated by him, their bright and glorious Prince, and is called *Sol quasi solus:* for this Planet is as Monarch of the Skies, all the Stars receiving their lustre from Him: his progress through the Zodiack is finished in a year, consisting of 365 days, 5 hours, 49 minuits, and 16 seconds almost; for the odd hours and minuits, is allowed a day every fourth year.

Venus ♀ is a very bright and clear shining Planet, she finisheth her course in a year: sometimes

times rising before the ☉ she is called the morning Star, and at other times will follow the ☉, and then is called the evening Stars she seldome goeth 45 degrees from the ☉ and can never exceed two whole Signs or 60 degrees.

Mercury ☿ posting to and fro in the sixth Sphere; but cannot exceed 30 degrees, or one whole Sign in distance at any time from the ☉ and so is seldome visible, being obscured by the *Sun* beams, and when seen, he is not bright, and finisheth his course in something lesse then the space of a year.

The *Moon* ☽ is the lowest of all the Planets, and consequently swiftest in her motion; She passeth through the 12 Signs of the Zodiack in 27 days, 7 hours, 43 minuits, and 5 seconds, but from one new Moon unto another it is 29 days and odd hours, by reason of the ☉ proper motion from the West Eastward, in those 27 days.

The mutual Aspects, or positions of the 7 Planets.

THe *Planets* are called wandring Stars, both for their various courses, and not keeping any certain distance one from another, each of them moving in a proper & peculiar Sphere; the *Sun* only keeping under the Ecliptick line; but all the other 6 (according to their motions) changing continually their latitudes; being sometimes Southward of the Ecliptick as was said before, which mutability of their courses, you may plainly behold by the Moon, who passes by all other Planets in less then 30 days; and so do all the other 5 Planets

(accor-

(according to their proper motions) mutually aſpect one another, and are conceived by Aſtronomers to have the more force (in their influences upon all ſublunary things) according to their poſitions; and the powerful effect of their natures, are ſuppoſed to be hindred or further'd by the interpoſition of another, which in things of this nature ought to be judiciouſly and circumſpectly conſidered, weighing with reaſon the poſition of the Planets, their natures, the Seaſons of the year, with the temperature of the Signs they are in, and the intervening Aſpects of the other *Stars*; of which Aſpects there be many obſerved by Aſtronomers; but thoſe which may concern this Treatiſe are theſe following.

Conjunction of any two Planets, is when they have one Longitude, both of them being under one Sign and degree of the Zodiack.

Sextile aſpect, is when any two Planets are in diſtance one from another (in reſpect of their Longitudes) $\frac{1}{6}$ part of the 12 Signs, that is two whole Signs or 60 degrees.

Quartile aſpect, is when the difference of two Planets Longitudes ſhall be $\frac{1}{4}$ part of the Zodiack; that is 3 Signes, being a quadrant or 90 degrees.

Trine, is the aſpect of any two Planets, that differ in Longitude one from another $\frac{1}{3}$ part of the Zodiack, that is 4 whole Signs or 120 degrees.

Oppoſition, is the aſpect of two Planets directly oppoſite, differing in Longitude 6 of the 12 Signs that is 180 degrees, and for brevity are charactered thus, according to their Aſpects.

A Table of the 7 Planets aſpects.

The Characters			*Degrees of the Zodiack.*	
	☌	Coniunction		00
	✶	Sextile		60
	□	Quartile		90
	△	Trine		120
	☍	Oppoſition		180

The natures and qualities of the four Elements.

AN *Element*, is a beginning; out of which all bodies are compos'd, mixed with ſome part, of all the four which are theſe, *viz.* (1) *Fire* (2) *Air* (3) *Water* and (4) *Earth*; theſe four do fill up the whole Orbe, from the center of the Heavens to the *Moons* Sphere, whereby a *vacuum* or an emptineſs is avoided, which *Nature* doth abhor, and ſo hath curiouſly made them, as to be the bounds of the connex ſuperficies of one another, and conſequently to the concaves of their Spheres, and are deſcribed in order thus.

Fire.

Under the *Moon's* Sphere is plac'd the Element of *Fire*, void of all weight and moſt remote from the center of gravity, this Element is of nature extremely hot and dry.

Air.

Air.

Next unto the *Fire* is placed the Element of *Air*: which is alſo light, and is by nature hot and moiſt.

Earth and *Water.*

The other two (that is the *Water* and the *Earth*) as joyned and commixt together do make one *Globe*; for the *Water* is heavy, and by nature cold and moiſt; the *Earth* extremely cold and dry, but heavier then the *Water*; yet both theſe Elements preſſing to the center of the Spheres.

To prove the Earth's roundneſſe.

Nature, in all her admirable works, does aim at that which is moſt convenient, and attains unto the greateſt perfection, which is a ſpherical figure, being moſt capacious, and uniform of all others, one part counterpoſing the other: thus *Nature* hath made the center of the Heavens, the ſeat of *Gravity*, to which all heavy things muſt naturally tend unto; and ſo conſequently if it were of any form but round, the fluxible waters would be divorced from the Earth, diſſerting it, to run unto the center. But ſome will object, that it is not round, by reaſon of ſome high exalted hills, ſpacious plains, and deep depreſſed vallies, and do conceive theſe a ſufficient demonſtration; but this Argument will be of no force, if you conſider the greatneſs of the terreſtrial *Globe*; For

Mount *Pelion*, was obſerved by *Dicæarchus*, whoſe perpendicular height was found to be but 12 Stadiums, that is, but an Italian mile and a half, and this the higheſt hill that was then known; and ſo writeth *Pliny*, *lib.* 1. *cap.*65. but in the ſame Chapter he falls into a great abſurdity, conceiving the Alpes to be 50 miles high: *Eratoſthenes* (a famous Geometrician) found the perpendicular of mount *Atlas* not to exceed 10 Stadiums, a ſmall proportion, in reſpect of the Globes rotundity.

And that the ſuperficies of the Water is alſo round it doth evidently appear by every little bubble, or drop of water falling from any place, or lying upon ſome duſt, it will immediately contract into a ſpherical or round form whereby to preſerve it ſelf from drought; this naturally and voluntarily doing ſo, argues the roundneſs and form of the whole Element, whoſe parts they are; the ☽ eclipſt demonſtrates the *Earth's* rotundity; and let this ſuffice, as not requiſite in this Treatiſe, conducing to our purpoſe.

The concord and diſagreement of the four Elements.

THis *Globe* compoſed of *Earth* and *Water*, is ſuſpended in the center of the Heavens equidiſtant on every ſide, counterpoiſed with its own weight, circumvolved with the Element of *Air*, and that within the *Fire*; theſe 4 Elements have naturally a peculiar quality in themſelves; participating with ſome, and contrary to others, as the *Fire* is hot, the *Air* moiſt, the *Water* cold, and the *Earth* dry: in this, the *Fire* and *Water* be naturally

rally oppoſite, as heat and cold; the *Air* and *Earth* be in oppoſition, as wet and drought; theſe 4 Elements do alſo participate of one anothers qualities; as thus, the *Fire* is of nature hot and dry: the *Air* hot and moiſt: the *Water* cold and moiſt: the *Earth* cold and dry: So the *Air* agrees with the *Fire* in reſpect of heat, and with the *Water* in reſpect of moiſture. The other *medium* is, the Water in combination with the Air in moiſture, and in coldneſs with the Earth: the two extreams, as Earth with Water in reſpect of coldneſs, and agreeing with the *Fire* in dryneſs.

By the commixtion of theſe 4 Elements, all bodies are ingendred, and by their mutual affinities do ſubſiſt: and if any one predominates, or be defective, it turns the other 3 into diſcord; and if not in time united, it ſubverts the frame, and deſtroys for want of concord, what it ſhould preſerve in peace; for if the *Fire* prevails, it burns and turns to Feavers; and if defective, the heat of the *Air* being equally oppoſed with the cold of the *Water*, moiſture in them both predominates, equalled with the drought of the *Earth*; So that the cold then onely rules with which nothing can live.

The nature and temperature of the 4 Seaſons.

THe 4 *Seaſons* of the year are compared to the four Ages in every Man; and his complexion or conſtitution unto the four Elements: and firſt the *Spring* is compared to *Infancy*, being Airy, hot and moiſt. 2. *Summer* to youth; as being Fiery,

hot and dry, grown to full perfection of ſtrength and vigour of body, every part and member ripe. 3. *Autumne* is likened to elder *Age*, the body and ſtrength in Man declining, being Watery, cold and moiſt, his beauty withering. 4. *Winter*, reſembling old and decrepit *Age*, being cold and dry.

But ſome do ſuppoſe the 4 *Seaſons* of the year to be in oppoſition one unto another; for what one *Seaſon* does produce, the contrary will deſtroy. And ſo they conceive, as the *Spring* is hot and moiſt, that *Autumne* is cold and dry: and as the *Summer* is naturally hot and dry; ſo *Winter* is oppoſite unto it, being cold and moiſt; But theſe *Seaſons* vary as the Climates doe.

The Complexions in Man are theſe.

1 *Choler*: like *Fire*, hot and dry.
2 *Sanguine*: *Air*, hot and moiſt.
3 *Phlegme*: *Water*, cold and moiſt.
4 *Melancholy*: *Earth*, cold and dry.

THus one does qualifie and allay the violence of the other; but yet you muſt conceive they are not equally commixt in every Man, Beaſt, or vegetable Creature, but all differing, and every member or part participating much more of one then of another, as the vital Spirit of *Fire*, the Fleſh of the *Air*, the Humidity of the *Water*, and the Bones in more affinity with the *Earth*: yet theſe compoſitions not alike infuſed, as you may ſee in the diverſity of Spirits and conditions of Men: by the agility of ſome Beaſts, and the ſlow-

neſſe

neſſe of ſome others; the mildneſſe of one creature, and the fury of another; as the ſervile Aſſe, dull and ſlow, Horſes valiant and nimble, Lions indomitable, always raging as with a perpetual feaver, inflamed with choler; And ſo it is in all other Creatures, differing in their temperatures, both in their ſeveral kinds and ſpecies; and the like we ſee in Vegetables and Minerals in their compoſitions, yet participating in all four of the Elements, but in ſome of them more then in others.

As in Plants, the roots are moſt Earthly, their leaves in affinity with the Water, their Bloſſoms do participate of the Air, and their ſeeds of the Fire; for without heat, nothing can be produc'd; all Stones do generally partake moſt of the Earth: yet there be exceptions, as Flint-ſtones and Thunderbolts, are of a fiery quality: Cryſtal and Pearls of a Watry: and in others the Air and Water moſt predominates, as the Pumice-ſtone, made of the froth of the *Sea*, and flotes upon it, being exceedingly light; which argues it participates but little of Earth, and leſſe of Fire: from whence the old Adagie is derived, *To ſtrike fire out of a Pumice-ſtone*, is to expect an impoſſibility in *Nature*. But this diſcourſe here is not in ſeaſon, and ſo let us return.

The 4 Seaſons.

EVery one of the four *Seaſons* is conceived to be qualified with the Signs as they are commixt with their ſeveral temperatures, called the triplicity, three Signs being in every Seaſon, as we have

ſaid already; but for your more eaſe, I will place it here again, but not intending to induce or perſwade any for to believe that, which I do not confidently credit my ſelf, as that their natural temperatures are known: yet I doubt not, but that the Stars, by their aſpects and influences, are cauſes of diſtemperatures, and alter the Air and all ſublunary bodies; Yet by what means, it is not certainly demonſtrated unto Reaſon, being but extracted from bare effects where doubtful Experience is only Miſtris. For if it were a truth, that the nature and temperature of them were diſcovered to man, we could not egregiouſly err ſo often as we doe; beſides the aſpects being general, the effects would be ſo too, the Climate conſidered; but this is quite otherwiſe, when the weather will alter in a little ſpace, or few miles, and there may be at one time (in four neer adjacent places) Rain, Snow, Hail, and fair weather: yet to ſatisfie ſome (Experience having thus delivered it) I will neither approve, nor quite reject it, but leave it indifferent to every ones judgement, as they pleaſe to peruſe, or omit it; And here I will ſubject to your view, the Signs, Temperatures, Complexions, and Natures of the four *Seaſons* obſerved by many,

The ſympathy of the twelve Signs with the four Elements.

♈	Fiery	Hot and dry	Cholerick
♉	Earthly	Cold and dry	Melancholy
♊	Aerial	Hot and moiſt	Sanguine.
♋	Watery	Cold and moiſt	Phlegmatick
♌	Fiery	Hot and dry	Cholerick
♍	Earthly	Cold and dry	Melancholy
♎	Aeriall	Hot and moiſt	Sanguine
♏	Watry	Cold and moiſt	Phlegmatick
♐	Fiery	Hot and dry	Cholerick
♑	Earthly	Cold and dry	Melancholy
♒	Aeriall	Hot and moiſt	Sanguine
♓	Watry	Cold and moiſt	Phlegmatick.

The nature and qualities of the ſeven Planets in union with the four Elements.

♄	Earthly	Cold and dry	Melancholy
♃	Airy	Hot and moiſt	Sanguine
♂ & ☉	Fiery	Hot and dry	Cholerick
♀ & ☽	Watry	Cold and moiſt	Phlegmatick

As for the temperature of the Planet ☿ he is of himſelf inclinable to the condition of the Sign he is

is in, or the nature of any other Planet that is in ☌, ✶, □, △, or ☍ with him; yet in conjunction he is generally observed (as ♂ is) to cause tempests and a turbulent air; but more or less according to the disposition of the others, and the Signs he moveth under, suitable to their temperatures, and not moderating the evil aspects of the bad, as men do in this World, according to the old saying or Adagie;

Who lives with good, are good we see;
And with the bad, perverted be.

Definitions of some few terms that are used by Astronomers.

A *Parallel Sphere* is also called vertical, having the World's Poles in the Zenith and Nadir, the *Æquator* in the Horizon; the Meridians and Azimoths are all one; and likewise the Parallel circles and Almicanters; in a verticle Sphere there is half a year day, and half a year night; one half of the Heavens never riseth, and so consequently the other half must never set.

A right Sphere hath the World's Poles in the Horizon, the *Æquinoctial* circle passeth by the Zenith and Nadir, and by that means it divides the Horizon at right angles; in this Sphere every degree and part of the *Æquator*, that ascendeth or descendeth the Horizon with the *Sun*, or any fixed *Star*, will come to the Meridian with the ☉ or the same ✶; for these causes it is called a right Sphere; and here the days will be always equal

to

to the nights, either of them being 12. hours in any time of the year; and all the Stars likewise will be 12. hours above the Horizon, and as long depressed in every natural day.

An Oblique Sphere hath one Pole elevated above the Horizon, and the other as much depressed; in any oblique Sphere, the *Æquator* will pass by the Horizon obliquely, making an acute, and consequently an obtuse angle with it; and that degree or part of the *Æquator*, which shall ascend the Horizon with the *Sun* or any Star, will not come unto the Meridian of the place with the ☉ or the same ✳; for these reasons this Sphere is thus nominated. In all oblique Spheres some part of the Heavens will never rise, some will never set; and some Stars will both rise and set, as by the Sphere is evident in any latitude.

The Altitude, or Poles elevation, is an arch of the Meridian circle, intercepted between the Horizon, and the end of the World's Axis; and the complements are the degrees and parts that it wants of 90, that is, an arch of the Meridian contained between the Pole elevated, and the places Zenith, which in all oblique Spheres is ever equal to an arch of the Meridian, intercepted betwixt the Horizon and the *Æquator*.

The *Declination* of the *Sun*, or any Star, or part of the Heavens, is an arch of the Meridian, passing through the centre of the ☉ or ✳, and intercepted between the *Æquator* and the centre of the ☉, ✳ or point of the Heavens, given either North or South.

The *Oblique Ascension* is the degree or part of the *Æquator* that ascendeth the Horizon with the

Sun

Sun or any Star in an oblique Sphere, and those degrees reckoned from ♈ and continued to the end of ♓, that is to 360. degrees.

The *right Ascension* of the *Sun* or any Star, or part of the Ecliptick, are the degrees of the *Æquinoctial* circle, that ascends the Horizon with them, in a right Sphere, or the degrees of the *Æquator*, that do come unto the Meridian of any place with the ☉, ✳, or any other part of the Heavens, and those reckoned from *Aries* to 360. degrees, in the *Æquinoctial* circle, as were the former oblique Ascensions; and this is general in all oblique Spheres whatsoever, and the true degree in the *Æquator*, that ascended the Horizon, the ☉, or ✳ in a right Sphere.

The *Magnitude* of a Star is to be understood only of the fixed, which for distinction, and the readier finding them in the Sphere, they are divided into six sorts, the first being the greatest, and so in order; but as for those of the sixt Magnitude, or cloudy ones, they are but little observed in the predictions of the weather; yet are here inserted with a Table of the *Sun*'s right Ascension in hours and minutes; for every 15. degrees of the *Æquator*, is equal to an hour, and so each degree is equall to four minutes in time, as was said before.

I have here inscribed a Table for the *Sun*'s right Ascension every fift day of the year, and two other of the Stars which are observed in prognostication of the weather, with the right Ascensions, Declinations, and Magnitudes of them, whereby they may be readily found on the *Globe*, or without it; when they will be visible, and when obscured with

with the *Sun*, and what time of day or night they will come upon the Meridian; from whence the hour of the night, and many other useful propositions; and necessary conclusions will be deduced, by well observing these in prognostication of the weather.

A Table of the Suns right Ascention in hours and minutes, for every fifth day in any moneth in the yeer.

Daies.	*Janu.* ho.mi.	*Febru.* ho.mi.	*March* ho.mi.	*April* ho.m.	*May* ho.m.	*June* ho.m.
5	19 50	21 57	23 42	1 34	3 28	5 34
10	20 11	22 16	00 00	1 53	3 48	5 55
15	20 32	22 35	00 18	2 11	4 8	6 16
20	20 53	22 54	00 36	2 30	4 28	6 37
25	21 13	23 12	00 54	2 49	4 49	6 57
30	21 33		1 12	3 9	5 10	7 18

Daies.	*July* ho.m.	*August* ho.mi.	*Septem* ho.mi.	*October* ho.mi.	*Nove.* ho.mi.	*Decem.* ho.mi.
5	7 38	9 39	11 32	13 21	15 23	17 32
10	7 58	9 58	11 50	13 40	15 43	17 54
15	8 18	10 16	12 8	13 59	16 5	18 16
20	8 38	10 34	12 26	14 18	16 26	18 39
25	8 57	10 53	12 44	14 38	16 48	19 00
30	9 16	11 11	13 3	14 58	17 10	19 23

The right Ascentions, Declinations, Natures, and Magnitudes of some one noted Starre in each Constellation of the Firmament from the North Pole to the Ecliptick.

The first Table of ✳ in North latitude. *The Starres names.*	*Right ascentions* ho. mi.	*The Declinations* de. mi.	*The Stars mixt natures.*	Magnitude
The Polar Star	00 30	87 N 19	♄ & ♀	3
Andromedas girdle	00 49	33 N 42	♀	2
The Northern Fish	01 00	17 N 21	☽	5
Cassiopeias knees	01 12	58 N 17	♄ & ♀	3
Delta the north Triangle	01 32	27 N 51	☿	4
The Ramms head	01 46	21 N 42	♄ & ♂	3
Algol, Medusas head	02 44	39 N 29	♄ ♀ ♃	3
Perseus right side	02 58	48 N 28	♂	2
Pleiades or 7 Stars	03 24	22 N 57	♂ & ☽	3
The Goat and Kids	04 50	45 N 33	♂ & ☿	1
Erichthonius his heel	05 00	30 N 00	♂ & ☿	2
Castor, or the head of ♊	07 11	32 N 38	♂	2
The head of Pollux	07 23	28 N 52	♂	2
The Manger in ♋ breast	08 15	20 N 56	♂ & ☽	don
The northern Asse	08 22	22 N 44	♂ & ☉	4
The Lions head	09 11	24 N 38	♄ & ♂	3
Regulus the ♌ heart	09 49	13 N 45	♃ & ♂	1
Calisto the great Bear	10 40	63 N 43	♂ ♄ ☿	2
Berenices hair	12 00	31 N 31	♀ & ☽	3
Vindemiatrix in ♍	12 44	13 N 9	♄ & ☿	3
Arcturus in Bootes	13 58	20 N 30	♄ & ♂	1
The bright ✳ in ♎	14 57	7 S 57	♃ & ☿	2
The northern Crown	15 18	28 N 7	♄ ♀ ☿	2
The Snakes neck	15 26	7 N 45	♄ & ♂	2
Hercules, his forehead	16 58	14 N 56	♂ & ☿	3
Serpentarius, his head	17 18	12 N 56	♃ & ♀	3
The Dragons head	17 49	52 N 00	♄ & ♂	3
The Vulture and Harp	18 25	38 N 29	♀ & ☿	1

Anti

Antinious his right knee	19	17	7	S	44	♃ & ♂	3
The Eagles heart	19	33	7	N	58	♃ & ♂	2
Capricornus, his head	19	58	14	S	34	♂ & ♀	3
The Swans breaſt	20	19	39	N	9	♀ & ☿	3
The Dolphins head	20	22	13	N	15	♄ & ♂	3
The Waterman, ≈	21	12	7	S	4	♄ & ☿	3
Cepheus left knee	22	55	75	N	0	♄	3
Pegaſus right wing	23	50	11	N	10	♂ & ☿	2

The right Aſcentions, Declinations, Natures and Magnitudes of ſome noted Starres in every Conſtellation of the Firmament from the Ecliptick to the South pole.

The ſecond Table, of ✳ in South latitude.	*Right aſcentions*	*The Declinations*	*The Stars mixt natures*	Magnitudes
The Stars names.	ho. mi.	de. mi.		
The Phœnix neck	00 10	45 S 50	♃ & ♀	3
The Whales belly	01 30	12 S 7	♂ & ☽	3
Alcarnar in Eridanus	1 35	40 S 43	♃ & ☽	1
The water Snake	2 00	64 S 30	♀	3
The Hyades or 5 ✳	3 50	14 N 30	♀ & ☽	3
Aldebaran the ♉ eye	4 15	15 N 42	♂	1
The Hares belly	5 13	21 S 30	♄	3
Orions girdle	5 18	1 S 28	♄ ♂ ☿	2
The Dove	5 40	37 S 00	♃	2
Argonavis	6 10	52 S 30	♄ & ☿	1
Dorado	6 15	66 S 10	☽	4
Syrius the great Dog	6 29	16 S 12	♃ & ♂	1
Procyon the little Dog	7 20	6 N 9	♂ & ☿	2
The Southern Aſſe	8 24	19 N 26	♂ & ☉	4
The flying Fiſh	8 30	68 S 30	☿ & ☽	5
TheHydras heart	9 9	7 S 4	♄ & ♀	1
TheChamelion	10 30	77 S 10		5
The Goblet	10 40	16 S 9		4
The Centaures flank	11 50	49 S 30		2

The

The Christians Armes	12 00	61 S 10		3
The Crows wing	12 15	13 S 23		3
The Indian fly	12 20	67 S 30		5
Arista. ♍ ear of corn	13 6	9 S 10	♂ & ♀	1
The Indian Bee	14 10	82 S 15		5
The Wolfes flank	14 30	46 S 30		3
Antares, the ♏ heart	16 7	25 S 30	♄ & ♂	1
The South Triangle	16 15	69 S 15		2
The Altar	16 30	56 S 30		3
The Southern Crown	18 30	43 S 20		3
The foot of Sagittarius	18 40	49 S 30		2
The Peacocks eye	19 50	60 S 00		1
The Indian with darts	20 30	59 S 00		5
The Cranes wing	21 45	50 S 50		2
Fomahand in Pisces	22 36	34 S 10	♀ & ☿	1
Toucan an Indian bird	23 50	68 S 30		

The use of these Tables.

THe first of these, contains the *Sun's* right Ascension, in hours and minutes the fifth day in every moneth, excepting *February*, which is defective, having but 28 days, unless it be *Bissextile* or leap year; and some moneths have 31 days, which excess or defect is not to be regarded, nor such exactnesse required, as to a minute, and yet you may allow, in proportion some minutes, for any day between these, if so it be desired; the head of this table contains the 12 Solar moneths of the year, each in a peculiar column: the first hath the days for the fifth day in every moneth, against which in each column, stands the hours and minutes for the *Sun's* right Ascension those days.

The next Table hath 5 columns; the first contains the names of those *Stars* which are used in progno-

prognosticating the weather; the second column shews the right Ascension of those fixed *Stars*, that is, the hours and minutes, or degrees of the *Equinoctial* circle (reckoned from ♈) that comes unto the Meridian with those *Stars*: the third column doth contain the declinations of those *Stars*, in degrees and minutes, and those distinguished with an *S*, or an *N*, to signifie whether their Declinations be Northward or Southward from the *Equinoctial* circle; the fourth, their natures, according to the Planets; the fifth and last column sheweth the bigness,or magnitudes of those *Stars*: as whether they be of 1,2,3,4, 5, or 6. magnitude; as their titles in the head of the Table do appear, the use of them is as followeth.

To find the Sun's right Ascension.

ADmit it were required to know the *Sun's* right Ascension on the 5. day of *March*; against 5 in the Title of days, and in the column under *March*, I do find 23 hours, 42 minutes for the day required, that is, 42 minutes after 11 at Noon, was ♈ the 6 day upon the Meridian; for from that time 355 degrees, 30 minutes of the *Equator* had past the Meridian, and Astronomers do account from one mid-day unto another; and if the ☉ right Ascension were required upon the 5 day of *July*, it will be found in the Table 7 hours and 38 minutes, and in the same manner may the others be known.

To

To find the right Aſcenſions, Declinations and Magnitudes of theſe Stars.

LOok for the Star deſired in the firſt *Column* of either Table; on the head of the Table you will find whether the Star ſought for, hath North or South Latitude: in the ſecond column ſtands the right aſcenſion, in hours and minutes: the third will ſhow the Declination in degrees and minutes; and whether it be Northward or Southward from the *Equator*; the fourth the temperature according to the Planets: and the laſt will ſhew the magnitude of that Star.

Example, the *Ram's head* is deſired, having north Latitude, whoſe right Aſcenſion is 1 hour, 46 minutes; the Declination 21 degrees, 42 minutes Northward from the *Equinoctial*; The nature participates of both theſe Planets, ♄ & ♂, and is a Star of the third magnitude, and ſo of the reſt; thus are the fixed Conſtellations of a mixt and doubtful nature, according to *Duret*, whom I follow much in this.

To know at any time of the year, in what hour either of day or night, any of theſe Stars will be South.

Subſtract the Sun's right Aſcenſion, from the *Stars* right aſcenſion, the remainder will ſhew the hour and minute of the Stars comming to the Meridian, and whether it be day or night, by being reckoned from noon. But if it be required

to,

to know when a Star will be South, whose right ascension is less then that of the *Sun's*, in all such cases, add 24 *h.* unto the Stars right ascension, and from that sum, substract the ⊙ right ascension, and then the remainder will be the hour and minute, that day from 12 at noon, that the Star will come unto the Meridian; this done, for to know whether it will happen in the day time, or visible at night, or whether it will be neer about the time of *Sun* rising or setting, or how long before or after, I will now show, and explain it (God willing) with two Examples following.

Upon the 10. *day of June*, it is required at what hour the Star called the little *Dog* will be upon the Meridian: the *Sun's* right ascension for that day, I do find to be 5 H. 55 minutes; and the little Dog (a Star of the 2 magnitude) to have for his right ascension 7 *h.* 20. m. from whence substract the ⊙ right Ascension (for the day given) and the remainder will be 1 H. 25. so the little Dog will be upon the Miridian the 10 day of *June*, 35 minutes before 2 in the afternoon.

The 25 day of *December* celebrated for the *Nativity of our Blessed Saviour*, it is required to know when the middle Star in *Orions* girdle will come unto the Meridian, this is a Star of South Latitude, and of the second magnitude, whose Declination, you may see is 1 g. 28. min. and the right ascension of this * is 5 H. 18 minu. and the ⊙ right ascension the 25 day of *December*, is 19 hours, 0 minutes, which being greater then the given Star; adde 24 hours to it, the sum will be 29 H. 18 minu. from whence substract the Suns right ascension 19 H. 0 minutes,

and the remainder will be 10 H. 18 minu. at night.

By *Trigonometry* you may find the true time of ⊙ rising or setting in any Latitude, and for any day in the year; which hour known, and substracted from the hour of the Stars being *South*, giveth the time after Sun setting; as in the Latitude of 52. *g.* 0.m. where the Artick pole is elevated above the Horizon; the ⊙ upon the 25. day of *December* will descend the Horizon, at 3.*h.* 50 m. which substracted from 10.*h.* 18. m. the remainder will be 6.*h.* 28. the true time after Sun setting, before *Orions* Girdle comes unto the Meridian.

Bootes (who is also called *Arcturus*) will be full *South* on the same day, at 18.*h.* 58.m. from whence substract 12. hours, (for you must reckon from noon-day) and there will remain 6.*h.* 58.m. in the morning, and before ⊙ rising 1.*h.* 12.m. if it were required when these or any other fixed Star will be upon the Axis of the *Æquator*, substract 6.*h.* from their right ascentions, and the remainder is the thing required; as *Orions* Girdle was upon the Worlds Axis, at 4.*h.* 18.m. after mid-day, and *Arcturus* 58. minutes after midnight, by the right ascentions of the Stars and the ⊙, you may find their apparitions, and occultations to any time of the year, with the hour of the night, &c. The *Pleiades*, and these two last constellations are mentioned in the sacred Scriptures: As *Job* 38. 31, & 32. & *cap.* 9. 9.

The

The severall Ascentions and Descentions of the fixed Stars and Planets.

THis is to be understood in respect of the hemisphere, and the Horizon of your place, and that in several senses too; as a Star is said (sometimes) to be ascending, not being come unto the Meridian of any place required; and when any Star is upon the Meridian, it is said to be culminant; and here you are to note, that the influence of any Star is then of most force to that place; and observe also in the aspects of any Planet in ✶ □ or △; whether both these Planets thus aspected are visible in that hemisphere at the same time? or which of them? and in what sign? and whether ascending towards the Meridian? or having past it, descending towards the Western Horizon? but the ascention and descention of the Stars, is usually understood for the rising and setting of any Star, according to the violent motion of the *Primum Mobile*; and in respect of the Horizontal circle, to that hemisphere which they must passe, both ascending and descending.

But know, that in all oblique Spheres (where either pole is elevated above the Horizon) that those Stars can never set to that hemisphere, whose declinations towards the pole elevated are greater then the complement of the poles elevation; and those Stars whose declinations are as many degrees towards the pole depressed, can never rise: But if the declinations of any Star (towards either pole) be lesse then the *Æquators* height above that Horizon, then all those Stars (in every natural day)

will both rise and set; of which ascentions and descentions of the Stars, there are three several kinds observed, both by the *Poets* and *Prognosticators* of the weather, in the alteration of the Air: And are these,

1. *Cosmicall.* 2. *Acronycall.* And 3. *Heliacall.*

Those Stars are properly said to rise Cosmical, which do ascend the Horizon with the ☉; as the Dog-star doth in Summer, from whence they are called the Dog-dayes, beginning about the 20. day of *July*, and ending in the latter end of *August*: But in the largest sense any Star is said to rise Cosmical, that ascends the Horizon in the day time. The Cosmical setting of any Star, is when they do descend the Horizon at the same time when the ☉ rises, or at any time of day, but not taken in the strictest sense.

The *Acronycal* ascention is the rising of any Star when the ☉ sets; as when the ☉ doth enter into the sign ♒, and descending the Horison, the sign ♌ will rise at the same time, which is properly called *Acronycal*, although it be often taken for a Star that ascends the Horizon at any time of night; the *Acronycal* descension is said of any Star that sets with the ☉, as the little Dog-star the 5. day of *June*; but this is also said of any Star that sets in the night time.

The *Heliacal* rising of any Star, is to be understood of those that have been obscured with the Sun-beams; and the Sun moving according to the succession of the signs, the Star begins again to appear at his rising, a little before the Sun, as you may see in the Latitude of 52. g 0. And on the seventh of *August*, the Lions heart quite obscured,

and

and a few days after will be seen to rise before the Sun; and the *Heliacal* setting, is any Star that is seen presently after the Sun setting, and a few days after will be quite obscured with the glory of his beams; as the 28. of *August*, you may behold *Spica Virginis* in the *West*, and in a few days after offuscated with the resplendent radius of the Sun, his proper motion being East-ward. This I do desire may satisfie (most courteous Reader) as an abstract of the world; and if further satisfaction be desired, vouchsafe to look over my books of Astronomy; and for the better recording (in your memory) the apparition and occultation of the Stars, accept of these verses, though from a rude *Minerva*.

Ascention Cosmicall (as Poets say)
Are Stars that rise with Sol, or in the day.
Those asterismes Acronycall they call,
That in the night do either rise or fall.
And those Heliacall (Astræa says)
Whom Phœbus does offuscate with his rays.

AN INTRODUCTION TO THE *Second Part of Meteors.*

AS for the word *Meteors*, it signifies an apparition in the *Air* (as taken in the common or usual sense) or high and lifted up: but in general there are two sorts, one risen from *Vapours* and *Exhalations*, termed by the *Philosophers* imperfect mixt bodies, by reason they are easily reduced into their first nature, or proper *Element*, as *Hail* or *Snow*, quickly resolving into *Water*, and all those which are accounted perfectly mixt, are *thunder bolts*, &c. and the reason they do give, is because that such as these will not so soon be converted into their first *Elements*, from whence they were extracted or derived, the material cause of all, are hot and moist vapours, or hot and dry exhalations, from Water and Earth, the efficient cause (under *God*) is from the fixed and wandering *Stars*, by vertue of whose beams a light rarifi'd substance is extracted from gross and heavy bodies, as vapours from water, and exhalations from Earth: their qualities, are heat and moisture, which causeth diversity of effects, especially in those lesse perfectly mixt, which are the subjects now intended.

Vapours

Vapours do consist of the four Elements, but the substance water, as the steam of a boyling Pot, which hangs like a dew upon the lid, or cover over it : And *Exhalations* are commonly like smoak, of nature hot and dry, as you may behold in a Summers day to offuscate the *Air*, or make it seem dusky with the ascending of thin fumes, and after this comes usually thunder, which shews from whence these exhalations were extracted; for out of *Fire* and *Air* only no *Meteor* can consist, as wanting matter, the *Fire* of it self (as being an Element) is so subtile, that it cannot be purified; whereas all exhalations and vapours, must be refined, and consequently extracted from some grosser body; for the *Air* (if much rarified) would turn to *Fire*; as you may see in violent and circular motions, of wheels or such like things, that are set on fire by rarification of the *Air*, where the matter is dry and combustible: and when the *Air* becomes grosse it turns to Water, as you may see by your breath, in the winter time, or the *Air* inclosed in vaults, or other hollow places, will quickly be condensed, by opposition of the outward *Air*, or coldnesse of the place, especially against rainy weather; but let us now ascend to unmask some other doubtful quæries.

The places where *Meteors* are generated, is generally held for to be in all, or any Region of the *Air*, which are three, *viz.* the upper from the Element of *Fire* to the clouds, the middle Region containing the clouds, the lowest from the clouds unto the Earth; but *Tycho Brahe*, with some others, do conceive the Element of *Air*, for to be delated up into the *Firmament* or fixed *Stars*; but that

above the Element of *Fire*, to be of a Celeſtial nature, differing from the inferiour *Air*; and their reaſons are derived from the height of *Comets*, obſerved not only above the Element of *Fire*, but with the *Planets* and ſome higher then the Sphere of *Saturn*, even with the fixed Stars, as the new Star in *Caſſiopæia* which was ſeen, and the height taken by *Tycho* himſelf (in the year of the World's *Redeemer*, 1572) without *parallax*.

The proof of the altitude of *Comets*, is deduced from their *Parallaxes*, that is the difference between the true and apparant height of any blazing *Star* (being obſerved from the ſuperficies of the terreſtrial *Globe*) and not from the center of the Heavens; and this difference is diſcovered ſeveral ways. Firſt, as by obſerving ſome noted and fixed *Stars*, aſcending the Horizon with it, or preſently before or after; and if they do keep the ſame diſtance, or neer unto it, that *Comet* muſt needs be very high; or by ſeveral obſervations made in other Countries; for if neer the Firmament, thoſe fixed *Stars* will appear with it in all Hemiſpheres alike: But if the diſtance between them varies, and in a ſmall diſtance of place or time, it argues thoſe blazing *Stars* are very low. And thus the *Parallaxis* of any thing viſible under the Firmament, will be found greater or leſſer, according to the height of it; As the *Star* in *Caſſiopæia* appearing in the year of *Grace*, 1972. differing but little or nothing in the Parallax, or the obſervations made by divers Aſtronomers in ſeveral Countries, in the year of the *Virgin's* being a 1585, there was a *Comet* appeared in the Sphere betwixt *Saturn* and *Jupiter*, and an other in the

year

year of the *Incarnation* of the *Son* of *God*, 1618. between *Jupiter* and *Mars*.

Aristotle, with *Regiomontanus*, and many others of his followers, do affirm all *Comets* to be sublunary: and this their Schollars do alledge, that if the Astronomical hypotheses be true, the *Star* in *Cassiopeia*, was greater then the fixed *Stars* of the first magnitude, and consequently (by their own demonstrations) bigger then the whole *Globe* of *Earth* and *Water* above 100. times; and a greater body cannot be extracted from a lesse; from whence then (say they) could the matter be drawn or exhaled to feed so great a light for the space of a year and four months? but to this *Galilæus* answers, that the highest Sky under the Firmament hath matter in it for the generation of these blazing *Stars*. *Licetus* to defend the height of *Comets*, doth argue that the Sky hath hard condensed knots in it, made and enlightned by the rays both of the fixed and wandring *Stars*. *Gemma Phrysius* did diligently observe in 3. or 4. *Comets*, that their tails did stream or extend out directly contrary to the *Sun*, as if it were by him inlightned. But others do rather conceive from hence, that these are *Meteors*, whose matter is drawn together, and set on fire by some *Star* or *Planet* which it follows, and turns unto it by some attractive power, and their bodies not round, but dilated according to the matter.

Some do think that these Stars were not new, but from the creation, although unvisible to the world before; as that observed by *Hipparchus*, or that in the brest of the Swan, in the year 1600. or that which appeared in the year 1604. in *Sagittarius*;

gittarius; and these observed without parallaxes, in the year of *Christianity*, 1625. towards the latter end of *August*, a bright Star did appear at noon-day, to the admiration of the people in the City of *Antwerpe*; which Star many Astronomers did behold, and affirmed that it was the Planet *Venus*. From the *Nativity* of our *Lord* and *Saviour*, *Anno* 1630. *May* the 29. being the birth-day of Prince *Charls*, there was a bright Star appeared at mid-day; the decrees of just *Heaven*, I dare not presume for to enter into. So here I will end this discourse of blazing *Stars*, the cause and their effects not being certainly known unto mortal man: And thus writes St. *Damascene*, *lib. 2. cap. 7. Fidei Ortho. Cometæ Dei imperio certis temporibus conflantur, rursusque dilabuntur.*

The middle Region of Air contains watry *Meteors*, as *Hail*, *Snow*, and *Rain*; but some conceives that those clouds which causeth rain, to be the bounds unto the middle and lowest Region of the *Air*; the midlemost is thought not to exceed four miles in depth; and that the lowest is but so high as the Sun can reflect from the superficies of the terrestrial Globe; so one of these regions must decrease by the increasing of the other; and yet the lowest region when highest, not to exceed two miles; and when least, or the lowest clouds, not above an *Italian* mile; for there be hills whose heads are perpetually covered with Snow, and yet their perpendiculars are found by the observations of able *Geometricians*, not to exceed a mile and a half, that is, 12. *Stadiums*, or 1500. Geometrical Pases, as was said before.

But some do urge that *Tenariffe* is higher then

Pliny

Pliny fains the *Aspes* to be; others do affirm that 'tis visible at Sea 4. degrees, or 240. miles; from whence *Snellius* would seem to demonstrate the perpendicular height for to be miles 9 $\frac{1}{20}$, and others 4. miles. There is a mountain in *Peru* called *Periacaca* by the *Indians*, which hill *Josephus Acosta* (in his History of the *Indies*) doth advance so high in the description of it, as he makes the *Aspes* in *Italy* for to seem but like mole-hills unto it; and that the *Air* was so subtile on the tops of them, that it was unapt to breath in, and that he had almost vomited up his life. And some erroneously do conceive the heads or tops of these mountains for to be exalted above the middle region of *Air*.

Cradanus in his 17. Book, *De Subtilitatibus*, affirmeth the highest clouds not to exceed two miles, and the lowest not above half a mile from the superficies of the terrestrial Globe, being by common experience found to be under the tops of ordinary mountains: Some would seem to prove it by thunder and lightning in this manner; observe when a cloud breaks over your head, the space of time between the flash of lightning, and the clap of thunder, for to be equal unto the firing of a *Cannon*, and the report it gives at a miles distance; neither is it heard much further then great Ordnances are, as it hath been often observed in great tempests both of thunder and lightning, that in 30. or 40. miles distance, nothing hath been heard or seen, but a fair day, and tranquil Sky.

Some men do think the matter which causes this thunder and lightning to have an affinity with Gun-powder, one being compounded by

Nature

Nature, and the other imitated by *Art*, which opinions are various both in Philosophers and Chymists; for *Paracelsus* and most of his disciples do affirm, that it is caused by *Sulphur* and *Salt-peter*, commixed with a great contrariety of *Mercury* unto either, and these three they alledge to be the chief causes of *Meteors*. Others do say that they are sulphurious exhalations confused in the clouds, and by opposition of the vapours and coldnesse of the place, it gets into a body, where taking fire by antiparistasis, it violently forces a passage through the condensed clouds, with a roaring noise, to the astonishment of mortalls: Others do think that tempests are caused by the wicked condemned spirits, and for this cause bells are hallowed and rung; probable it is that it may be often times so permitted by the *Creator*; as *Psal.77. ver.* 49. and in the 7. of the *Revelation*; yet all is in the power of God, as *Jer.*10.13. & *Psal.*134.7. *Qui producit ventos de thesauris suis.*

Nothing in this world is certain or permanent; opinions of men have their births,periods,courses, and revolutions, as you may read in all ages, where the opinions of Philosophers have been buried, and again revived from their funerals, armed with new demonstrations, and fortified with arguments, yet besieged and overthrown at last by the offspring of others; which shews these are but disputations, nothing being certain but the greatnesse of the *Creator:* yet useful conclusions are derived from hence, and necessary observations may be selected from humane conceptions, although the essential part cannot be comprehended by us: And here I will end this *Introduction.*

Ecclesiastes

Eccleſiaſtes *cap.* 3. *ver.* 11. *Cuncta fecit bona in tempore ſuo, & mundum tradidit diſputationi eorum, ut non inveniat homo opus, quod operatus eſt Deus, ab initio uſq; ad finem.*

The ſecond Part.

A brief diſcourſe of Meteors: imperfect mixt bodies, and their cauſes.

FIrſt you ought to obſerve, that the *Fire*, *Air*, *Water*, and *Earth* (which here we have for our uſe) cannot be called pure Elements, but rather Elementarie bodies; for *Fire* and *Water*, *Air* and *Earth*, are oppugnant and irreconcileable one to another, as they are contrary in their own natures, and can neither generate, nor corrupt ſimply of themſelves, but as mixt they doe; for if theſe were pure Elements which here we have, the *Fire* would be immoderate for our uſe; the *Air* to ſubtile, and not fit for living *Creatures* to breath in; the *Water* would be without taſte and not good to drink; the *Earth* would be ſterile, and could neither bring forth, nor cheriſh; and we being all mixt bodies (compounded of the four Elements) could not be nouriſhed or ſuſtained with Simples.

Of

Of the severall divisions and dispositions of the Air.

THe *Element* of *Air*, is divided into three several regions; or distinguished in three several parts variously qualified, in which are generated many imperfect and mixt bodies, and these divisions are thus nominated, the *Upper*, *Middle* and *Lower Region* of the *Air*; the first and uppermost, is close adjoyning to the *Element* of *Fire*, and hath a circular motion with it, from *East* to *West*, carried about by the *Primum Mobile*, ; this *Region* of *Air*, is perpetually hot and dry, by the reason of its violent motion, and proximity to the *Fire*. In this Region there are no clouds, because of the heat, and remoteness of the *Earth*, from whence they are extracted, their matters being grosse and moist; but to this place are lifted up, exhalations, being by nature hot and dry, which do easily ascend to that heighth, by reason of their heat and levity: these imperfect bodies, by the heat of the *Sun* and influence of the *Stars*, are conceived to be exhaled from the *Earth*, or out of lakes, rivers, seas, and other watery places; and this *Meteor* as it does ascend, it leaves the grosser part, in the lowest and the middle region; and as it rarifies, it elevates it self, unto the upper region, like a subtile and thin fume.

These exhalations having penetrated the middle region, and attained unto the height of the Elements, and circumvolved with a slimy matter, oylie, and apt to be inflamed; thus having assumed a body, is violently carried about with the *Air*, until with the motion and vicinity of the *Fire* it is inflamed,

inflamed, and then nouriſhed with more exhalations (continually drawn unto it) that it burns and converts it ſelf into divers forms, according to the diſpoſition of the matter, as reſembling *Dragons*, *Lances*, *Torches*, *Comets* or *Blazing Stars*, *&c.*

And ſome again that ſeems to fall and ſlide through the *Air*, the lighteſt part being conſumed, extracted, or drawn away by ſome other means, or the levity of it, unable to ſupport the groſſer part, lets it deſcend, which gliding through the *Air*, and enlightned, appears like a falling *Star*: ſome conceives, that theſe aſcend not ſo high, being of a groſſe body (yet hot) and ſtriving to aſcend is repulſed by the coldneſſe of the middle Region, or the moiſtneſſe of the clouds, and ſo by the reaſon of its own weight, and oppoſition of the Element, it is thrown down again; the ſubſtance of them is like a gelly, tranſparent, and apt to be illuminated.

Comets, and all fiery *Meteors* are uſually moved with the Region they are in, and from *Eaſt* to *Weſt*, according to the raptile motion of the Spheres: but *Seneca* affirms, that he did ſee one which moved parallel to the Horizon, from the North, by the Weſt into the South, and ſo by the Eaſt into the North again; and the contrary likewiſe may be ſo, the exhalations moving as the *Air* and according to the matter which does nouriſh it, as you may ſee fire in a ſtubble: and others have been ſeen to remove ſuddenly from one place to another, caſting forth ſparkles like fire; theſe by ſome are called *Goats*: and ſome have ſeemed as fixt, both in reſpect of their Latitudes and Longitudes.

They

They may be also generated in any part of the Heavens, and at all times of the year: but in cold Countries, rarely but in Autumn; for then the heat is sufficient to raise up the matter, and the temperature of the *Air*, is apt to suffer the exhalation to draw to it a slimy substance: which cannot be in the Spring time, the heat being not sufficient to elevate them, and in the Sommer season the exhalations are not so grosse, by reason of the *Sun's* heat, dissipating those vapours, and rarifying the *Air*, and if it could be got together, the middle Region is so cold that it cannot ascend to the upper; and the Winter quarter is cold and moist, oppugnant to all such exhalations; and so consequently quite unapt for those generations, or any other of that kind as *Philosophers* affirm, though experience proves the contrary many times.

The middle Region of Air and what is there generated.

THis Region, or middle part of the *Air* is generally conceived to be vehemently cold and moist by *Antiperistasis*, and the effects do also prove the same: and this we see in all things that are oppugnant, inclosed and comprehended by their contraries, being of greater force, doth cause the contrary inclosed (not being able to break forth) and withall repulsed by its opposite, to contract and fortifie it self: as by experience you may see in all living and sensitive Creatures, that their inward parts are much hotter in Winter

Winter then in Sommer, and their ſtomachs apter and abler to digeſt; and the cauſe is, for that the heat is then repulſive to the inward parts, by the oppoſition and coldneſſe of the outward air; and beſides, you may ſee that the fire and all combuſtible things will burn more violently in Winter then in Sommer; and the colder the weather is, the more it ſcorches; the reaſon is the ſame in theſe; for the fire grows more violent, by how much the more it is oppoſed with the contrary quality of the ſubdued cold.

The caſe is the ſame in the middle Region of the *Air*; for the upper part is made hot by the violent motion of it, and the neerneſſe unto the Element of fire; and the lower Region is made hot by reflection of the Sun-beams; and ſo the cold included between them is the more violent, by how much the lower Region is inflamed with the *Suns* reflection, and ſo by that means is colder in the heat of *Sommer* then in *Winter:* But theſe diviſions or portions of the *Air*, have no determined bounds, nor hath the Water in reſpect of quantity; for by the motion of the celeſtial bodies, cold and moiſture getting together, the Element of *Water* will increaſe, and the *Air* of neceſſity muſt then diminiſh; and with the coniunction of heat and moiſture, the Sphere of the *Water* will be diminiſhed, and the *Air* as much increaſed; ſo by this means the *Air* does more abound in *Sommer* then in *Winter*, and the *Water* more in *Winter* then in *Sommer*; and thus the middle Region is greater at one time then at another.

By the heat of the *Sun*-beams, and influence of the *Starrs*, *Meteors* are elevated to the middle

Region of the *Air*; those which by nature are temperately hot and moist, are extracted from wet and wateriſh places; yet have ſo much heat as is ſufficient to elevate them unto the height of the middle Region, where by reaſon of the coldneſſe of that place, they are condenſed, and do generate there ſeveral kinds of mixt imperfect bodies; the clouds thus incorporated, are with the cold turned into Snow, congealed many times before it does ingender Water: And to prove this aſſertion, you may obſreve that Snow (if compacted or beaten together) is not ſo ſoon diſſolved into water, as Ice will be by the *Sun* or any other means; which argues, had it been water firſt, it would have been the ſooner reduced: Theſe vapours or thick exhalations, drawn up into the middle Region, are often digeſted and turned into water, from thence diſtilling down like miſts, or in very ſmall drops; for the greateſt rain is thought not to fall far through the *Air*, and out of the inferior part of the lower Region.

For it is generally conceived, the rain that falls from the middle Region, deſcends in little orbs, whereby to preſerve it ſelf, and reſiſt the violence of the *Air* through which it paſſeth, and becomes ſmall by reaſon of the diſtance and time in falling; for the Hail does demonſtrate both the bigneſſe and rotundity of the drops, which from humide exhalations drawn up unto the middle Region, and there converted into water, and immediately as the drops do diſtill down, they are contracted into Ice by the Airs coldneſſe in that part, which is called Hail; derived from the high *Dutch Hagell*, or paradventure from the *Hebrew Egell*, which ſignifies congealed drops. In

In the *Winter* ſeaſon it is ſeldome obſerved to Hail, by reaſon the cold in the middle Region is more remiſſe then in warm weather; and in *Sommer*-time it is alſo rare, upon any very hot day, becauſe the heat of the lower Region will not permit it for to paſs without diſſolving of it before it comes unto the *Earth*; but frequently in the *Spring* and *Autumn*, the heat being then ſufficient to elevate the matter. and yet not ſo violent as to diſſolve it in the fall; yet ſometimes it happens that great Hail-ſtones are precipitated at Mid-Sommer, or in very hot ſeaſons, and are then the greater, (if the matter be ſufficient) by how much the more it is oppoſed by the lower Region made hot by reflection of the *Sun*; for in all times of the year you may find (if obſerved) more and greater ſtorms of Hail to fall in the day time then in the night.

And ſome do conceive that there is a fiery nature included in them, beſides the heat of that ſubtile vapour which made it to aſcend that middle Region, for by contraries, it is undoubtedly congealed; as you may ſee in Salt (which is hot and dry) to be made of water, whoſe natural temperature is directly oppoſite, being cold and moiſt in open weather, or by the fire-ſide, or in Sommer-time; take a little Salt, and mix ſome Snow with it, ſtir them together till they do incorporate, and they will contract themſelves into Ice, which is done by *Antiperiſtaſis*, or repulſion on every part; as the middle Region of the *Air* is cold, and theſe frigide *Meteors* are ingenerated there. Many other things might be here inſerted, which for brevity ſake are omitted.

The lower Region of the Air, and the effects it produceth.

THis Region of *Air* receives all the former qualities by courſe, according to the ſeaſons of the year; and by the former means (out of wateriſh places) there are exhaled from the *Earth*, moiſt and crude vapours, the groſſer part of them being earthly, and containing but little heat, they are unable to aſcend unto the middle Region; yet with the help of that heat included in thoſe vapours, and the attractive vertue of the celeſtial Orbs, they are raiſed above the *Earth*, and there often times congealed before they can be diſſolved into water; and theſe are called Froſts; whereof there be many kinds, according to the matter exhaled, and the temperature of the ſeaſon, as ſome times of the year the ground (in the mornings) will be hoary, like the head of *Time*, and the graſſe criſped with the Froſt; at other times rine-froſts, or congealed miſts, hanging like pendants on the trees; there be alſo black or wind-froſts, which are not ſo wholſome, for they are groſſe and earthly vapours exhaled out of more undigeſted humors, and not ſo eaſily diſcovered by the ſight as by the ſenſe of feeling.

There be ſome vapours exhaled which are called miſts, the name derived as from the mixture of *Air* and *Water*; of theſe there be ſeveral ſorts, as ſome vapours thin and ſterile, and have not moiſture ſufficient to beget water, nor the heat in them is not prevalent to elevate the groſſe humor, and cauſe them to aſcend, but they hang upon the

the earth, untill the *Sun* riſes, which if he chaſes away, and diſſipates by the vertue of his beams, it argues a fair day. There be beſides all theſe groſs miſts or fogs, which are more earthly then the former, compoſed of crude and undigeſted vapors, drawn from corrupted places, as out of fennes and mariſh grounds; theſe are very unwholſome, and very unpleaſant to the ſenſe of ſmelling; but are uſually the worſe according to the places from whence they were extracted, or after much calm and moiſt weather.

The nature of Dews in general are theſe.

Dews are defined for to be liquid vapours, extracted from the water, or earth; theſe have an affinity unto froſt, as Rain unto Snow, and are alike in the material cauſe; the efficient cauſe is attributed unto the Stars, and the coldneſſe of the *Air*: Theſe Dews are conceived to be very earthly and ponderous, for they do not aſcend high, but are converted into a watry ſubſtance, ſo ſoon almoſt as extracted, being obſerved much more upon low and wet grounds, then upon high and dry hills; and thicker upon the humble ſhrub, then upon trees, or any exalted plant, as the lofty *Cedar*.

The uſual time of theſe Dews is in the evening, the heat of the *Sun* declining, being unable to ſupport the *Meteors* which he raiſed, and he deſerting the Hemiſphere, thoſe that were more elevated muſt likewiſe fall; and the hotter the day was, the greater are the exhalations, and the nights are uſually then cooler to convert them into water.

All *Dews* are commonly observed the greater, the *Moon* increasing, or at the full most of all; the season of the year is to be considered, and the weather, for the hotter the day is, the cooler will be the night, by reason of the shadow which the terrestrial Globe then makes: As for an instance, you may see by the shade of trees, or any other interposed body, which are cooler in *Sommer*-time then in *Winter*, as in respect of the Air in general; for in shadowed places, in the heat of *Sommer*, the *Air*, as in opposition to the Heat, doth contract it self into a grosser body; from whence some conjecture (as by the parts) that the whole Element of *Air* is by nature cold.

The Virgins thread.

There is a Dew that flies in the *Air* like small untwisted Silk or Yarn, and falling upon the ground or plants, it does convert it self into a form like Spiders Webs; the matter they consist of, is held for to be an earthly and slimy matter, or exhalation something dry; these are observed for to be both in the *Spring*, *Sommer*, and *Autumn*; but in these Northern Countrys they are most frequent, the *Sun* neer *Libra*, the days being temperately warm, the earth not exceeding dry, nor yet over-charged with moisture.

Mell-dews.

Honey-dews some conjecture for to be earthly exhalations, mixed with wateriſh vapours, and many suppose them for to be exhalations from plants,

plants, and all ſorts of flowers and vegetables; and this does evidently appear in *Sugar*-canes, and divers kinds of *Indian* Reeds, that have in the morning a Dew hanging upon them, in taſte reſembling honey; which argues by their ſweetneſſe that they are extracted from thence.

Theſe Honey-Dews do afford plenty unto the ware-houſes of the induſtrious Bees with quick returns: their purveyers are going for to ſeek provant, nor their labourers much trouble to get their loading.

Theſe Honey-Dews, as they are good for Bees, ſo they are as deſtructive to divers kind of beaſts, as Sheep, Goats, &c. and in general to all fruits and blooming flowers, eſpecially to Hops and Grapes; they are alſo obnoxious to Corn, and often blaſts it in the blooming: For diverting theſe ſad effects, *Numa*, one of the Roman Kings ſuperſtitiouſly inſtituted a Feaſt called *Rubigalia* and *Floralia*, in the year from the building of *Rome*, 516. *Pliny*, *lib.* 18. *cap.*29. which Feaſt was obſerved upon the 28. day of *April*, 3. *Kalend. May*; He was adviſed ſo to do by the *Oracles* of *Sybilla*. This Heatheniſh Feaſt the Catholique Church did alter into *Aſcention Week*, calling it *Rogation* from asking a bleſſing upon the fruits of the *Earth*.

The nature of Rain water:

Rain Water is much more inſipide at one time then at another, and hath very often a brackiſh and unpleaſant taſte, yet comfortable to vigetables, and by reaſon of the warmth, it doth nouriſh

nouriſh them much better, and more natural for them then ſpring-water, or out of wells, being cold and too earthly; whereas the other participates of the *Air*, which is hot and moiſt; but by reaſon of this commixture of the Elements, it is apt to form divers bodies, eſpecially in calm times; the *Air* wanting motion may corrupt, and ſo conſequently generates many things, according to the undigeſted matter exhaled from the earth, as Frogs, falling upon the tops of houſes and Churches, immediately after a ſtorm, and there they will periſh in a ſhort time, for want of ſuſtenance; which argues they were not there produced. Corn I have ſeen, that was after a ſhowre found upon the leads of Churches, and on the ground in divers places; it had the form of Wheat, but ſmall and without taſte, the colour of it pure white, both within and without.

The loweſt *Meteor* in the *Air*, is the burning candle, or as ſome call it, *Ignis Fatuus:* This is a hot and moiſt vapour, which ſtriving to aſcend, is repulſed by the cold, and fiered by *Antiperiſtaſis*, moves cloſe by the earth, caried along with the vapours that feed it, keeping in low or moiſt places; the light is of an exceeding pale colour, very unwholſome to meet withal, by reaſon of the evil vapours it attracts unto it, which nouriſhes the pallide flame, and will often aſcend (as thoſe exhalations do) and as ſuddainly fall again, from whence the name is derived.

Thunder

Thunder and Lightning, and the causes from whence they proceed.

THese are conceived to be vapours hot and moist, commixed with exhalations that be hot and dry; involved thus within one another, they do ascend (by vertue of their heat) unto the middle region of the *Air*, where the exhalation by *Antiperistasis* grows inflam'd, and strives to get forth of the cloud in which is involved, and the upper part of the cloud (where the heat would passe) by opposition grows the strongest, and the exhalation grown over-hot by being constrained, with violence breaks forth of the weakest place, against the weather that is in the lowest part; and by reason of the cold above it, the heat and subtilenesse of the exhalation, with its own violence in breaking forth, it glances down upon the earth without doing any harm, if unresisted; as consuming a Sword without hurting the Scabbard; and many other things of this kind, unnecessary, and too long for to relate.

The clap of Thunder is first, but the Lightning soonest appears, by reason our sense of seeing is much quicker then our hearing: As you may perceive at a distance a Man driving a Stake, or felling of Timber, you may behold him ready to strike again, before you hear the former blow; and in shooting, or discharging of a Gun, you may see the fire before the report. With the conjunction of these compound vapours and exhalations, stones are generated in the *Air*, as other Minerals are in the Earth, but more fiery by nature, and these are called

called thunder-bolts, in their formes perfect cones, like the flame of fire which did generate them out of the terrene exhalation; it ſtrikes not above five feet into the earth, as ſome do affirm.

The remedies againſt Thunder and Lightning; all hard things will preſerve whas is ſoft and liquid; as Iron laid upon Veſſels, will keep the Liquor from ſowring, by the former alledged reaſons; beſides this, it is naturally reſiſted by a cover made of Seals skins, and preſerving that on which 'tis placed upon any creature; and the like does the *Laurell* tree, whirh cauſed many of the *Roman Emperors* in time of Thunder and Lightning, to wear a garment made of *Laurel* boughs: The pale lightning is moſt unwholſome, but the red apteſt to burn; the beſt and moſt aſſured remedy againſt theſe tempeſts, is the protection of *Heaven: A fulgure & tempeſtate, libera nos Domine.*

But note, there may be Thunder without Lightning, and Lightning without Thunder; for when theſe hot and dry exhalations are inflam'd, and the cloud weak (in which they are involv'd) the incenſed exhalation breaks forth without violence, in not being reſtrained; but the coldneſſe of the middle Region ſtrikes the flaſhes downwards upon us, but not always upon the earth; but glittering and reflecting on the watry clouds, makes it ſeem cloſe by; as you may ſee by the *Sun* beams, or any other ſuddain light falling upon the water, will reverberate the luſtre, and dazle your eyes, eſpecially if the water be moved with any wind; theſe coruſcations are uſual in hot Countries, or in the heat of *Sommer.*

Thunder

Thunder without Lightning does happen when these hot and dry exhalations break violently through the clouds (in which they are circumvolved) but not inflamed, yet making a roaring noise in the burst of the cloud which restrained it; as you may see, little bladders filled with wind, will give a crack or report at the suddain and violent breaking of them; sometimes Thunder will happen (and yet no Lightning appear) by reciprocal winds, the clouds violently breaking themselves in meeting with one another; and this may often happen with insurrections of several mutinous exhalations, disturbing the *Air* with several commotions; these usually proceed after much calm weather, but are very wholsome to purge the *Air*, left with too much quietnesse it should corrupt.

Apparitions in the Air made by reflections of the Sun, Moon, fixed Stars, or Planets, upon condensed Clouds.

Of Circles about the Sun, Moon, or Stars.

SUndry apparitions in the *Air* are made by the *Stars* reflecting upon wateriſh exhalations; for when they happen uniform in all the parts equally rarified and ſuppoſited under the *Sun*, *Moon*, or *Stars*, that their beams cannot penetrate the cloud in any part, by which means the rayes are refracted, and the cloud being uniform and round, the extreams or outward part is inlightned in manner of

of a misty circle, which equally will appear about the *Sun*, *Moon*, or *Stars*; but these are rarely under any of the fixed *Stars*, but common under any of the *Planets*; yet not so usual under the *Sun*; for by reason of his fervour and heat, the exhalation cannot so easily get directly under it; and being got together, it cannot long subsist, but the matter will be dispersst by vigour of his beams; which the *Moon* cannot effect for want of heat, and so the oftner she hath those circles about her, they continue longer; the same reason it is with the other *Stars*; yet the circles made about them, are conceived to be weak and sterile exhalations, neither so apt to beget wind or rain as the former are; for in thick and wateriſh exhalations, the rays of the *Stars* are unable to illuminate them, but will be observed by those and such like spissous, and dark clouds.

Impressions in the Clouds representing the Sun or Moon.

THe cause of these apparitions doth proceed from thick clouds, regular and uniform, as were the former, from whence are caused circles about the *Sun* or *Moon*; yet these exhalations are more condensed then be the others, and not situated under the *Sun* or *Moon*, as be the last; but placed obliquely on either side, which clouds are apt to be converted into rain, and by refraction of the *Sun* beams it does expresse the form or image of it; as you may see in a mirrour of glasse or polished steel; these clouds must be condensed, for the beams of the *Sun* to reflection, and not under the *Sun*, for then his

his refracted rays will not be visible unto us; and if it be not regular and uniform in all the parts, the cloud cannot portrait and expresse the whole and perfect image of it; and in this manner there may be represented in clouds the figure of the *Moon*; but those are much more rare to be seen, because her rays are weaker; and there may be many *Suns* or *Moons* appear at once, upon these former alledged reasons.

Of the Rain-Bow, and the causes thereof.

Rain-Bows are generated in wateriſh clouds, ready to be diſſolved into rain; theſe are obſerved to be always directly oppoſite to the *Sun* or *Moon*; as if the ☉ be in the *South*, the Rain-bow will be in the *North*; and when the ☉ is in the *Eaſt*, the Rain-bow will appear in the *Weſt*: and the contrary ſo in any part of the Hemiſphere; and the lower or neerer the Horizon that the *Sun* is, the Rain-bow will appear the greater, but never can exceed a ſemicircle, but leſſe, according to the height of the *Sun* above in any Sphere, which is the reaſon at noon day we rarely ſee any, eſpecially the ☉ being in the *Sommer Solſtice*, or nigh the *Tropick* of ♋, excepting all places far Northward, or toward the pole *Antartick*, where for ſome weeks there is continual day; but the ☉ in *Winter*, neer ♑ may cauſe a Rain-bow at noon day in theſe our climates; for they are formed by the light rays of the *Sun* falling upon vapours and wateriſh exhalations oppoſite unto him, and but little elevated above the earth; and by reaſon of the great diſtance or remoteneſſe of the *Sun*, the illuminated

illuminated beams describe his form, after an obscure and imperfect manner, portraiting only an arch of a circle adorned usually with three colours, *viz.* Red, Green, and Purple, or inclining unto a Blewish colour; the distinction of these proceeds from the Radius of the *Sun* reflecting upon these vapours; for those colours are lightest in it which are neerest to the *Sun*; and those which are remotest, do tend more to obscurity.

As for a demonstration, you may behold in the commixture of such like colours, and the form of the Rain-bow you may experimentally try, by casting water in a circular manner against the *Sun* when he shines: But some doe think the red colour to be only made by his rays, the second by reflection, and the third by the second, all contained within some condensed hollow cloud, commixed with Aiery and wateriſh exhalations; for if more Rain-bows do appear then one at any time, it is conceived that they are made by reflection of one another; but the colours in the second will be weaker then those in the first; and the third Rain-bow more pallid then the second. If there happens to be three, which is very seldome seen, then the colours in the first will be counterchanged in the second, and the third again like the first: These arches in the clouds or Rain-bows, do continue longer then do the circles about the *Sun*, because the distance in these is so great, that his beams cannot so soon dissipate the exhalation which caused them. Rain-bows in the night time are exceeding rare, because they are made by the *Moon*, whose beams are usually too weak to cause such a reflection upon any cloud, at so great a distance;

and

and are so rarely seen, that I will cease to describe them any further.

The causes and diversities of Winds.

Winds by the vertue of the *Sun*, are generated of hot and dry exhalations, evaporated from the *Earth*, and striving to ascend, are repulsed by the obvious coldnesse of the *Air*; and forced collaterally about, and upon the superficies of this terrestrial Globe, moving as they are compelled by the cold, and do receive names, as from whence they blow, and are divided into 32. distinct winds, according to the divisions or points of the *Mariners* Compass. The four chief are these, *East* and *West* opposite, and so the *North* and *South* point, which four do divide the Horizon into four equal parts; and are compared by some to the nature and temperature of the four seasons.

But as for these exhalations, they are naturally dry, resolved into *Air* by vertue of the *Sun*, as the moist vapours are into rain; sometimes these exhalations are mixed with moist vapours, which the *Sun* convers at one time both into rain and wind; the more these windy exhalations are restrained, by so much they will rage; and the more violent they are, by how much they are repulsed, and stricken down with the coldnesse of the *Air*, which makes them often times rebound upon the Earth, which commonly are called whirl-winds, from revolving and throwing up all light things that are in the way where they move; these are also caused by the meeting of two contraries. Winds are the greatest in open weather; in Frosts exhalations

are

are incloſed within the pores of the *Earth*, and ſo likewiſe by exceſſive heat.

The generation of Waters.

THere is undoubtedly a continual flux and reflux of waters, both upon the ſuperficies of the *Earth*, and in the channels within it, as you may ſee by the veins in the bodies of men (a *Microcoſmus* in it ſelf) for the *Earth* being by nature extream dry, without water would be ſterile, and quite unapt to produce any vegetables, or Minerals within her now pregnant womb; and ſo the waters to ſupply this defect, do continually move, as from their Springs, to little Brooks, and thoſe united making Rivers, running along in fruitful Valleys, cooling the ſuperficies of the *Earth*, and ſupplying what the fervour of the *Sun* exhales; this office being performed, and living creatures in it nouriſhed by the ſtreams, the reſt falls into the *Ocean*, and from thence returns into the veins of the *Earth* again; one water ſtill following of another; and this is confirmed by the undeniable authority of the ſacred Scriptures, *Eccleſ. cap.* 1.

Yet many exhalations and vapours are by the *Sun* extracted from the waters, and thoſe converted (by the vertue of his rays) into ſeveral *Meteors*, as moiſt and windy exhalations, which the *Air* gratefully does repay again unto the waters, as in a continual courſe of amity, and inſeparable league between them; the *Air* which is included within the pores of the *Earth*, is by nature ſubtile, and gets into all the corners and hollow places, whereby to avoid a *vacuum*, which *Nature* does

does abhor; the *Air* here with cold, (that in the *Earth* does abound) is easily condensed, and turned into drops of water, which falls from their heads into little channels, and so discends into the valleys; for these sometimes are observed at the bottoms or sides of hills to bubble forth; and the bigger mountains do afford the greater Springs, and the more plenty of water, especially such as are pregnant with Minerals.

The higher and greater that the mountains be, the vaster are their caverns and hollow places in them to receive the *Air*; and as it turns into water, it is supplied with more: And besides, hills being more exposed to the *Sun* beams, must of necessity be fuller of pores then the lower grounds, and plain places; and yet it does not follow that all high places must have Springs, because the soyl may differ, and the Earth not pory, there will want receptacles for the *Air*, whereby the water should be generated. For a demonstration of this, you may see in the Winter time, or against wet weather, the stones do become moist, with a Dew hanging upon them, and in close and cold rooms drops of water will hang upon the walls; observe then but the alterations and fluxibility of the *Air*, the condensed coldness of the *Earth*, and this will easily be credited, which makes Springs generally lowest in Autumn, as from hence, and being exhausted with the Sommers heat.

The wonderful vertues and effects of Waters.

FOuntains there be which naturally have marvelous qualities, of which I will briefly relate some of their ſtrange operations; As a Fountain in *Bœotia*, which being drunk of does ſtupifie the ſenſes, and cauſeth forgetfulneſſe. And one in *Cilicia* which quickens the wits, as *M. Varro* writes. *Ovid. Metam. lib.* 15. writeth the River *Lynceſtus* will inebriate; and the water of the *Stygian Lake* in *Arcadia*, will eat through any mettal, and is held deadly poyſon: In *Dodone* the Fountain of *Jupiter* will extinguiſh a torch that is lighted, and being immediately put in again, it will illuminate it: So writes S. *Auguſtine* of a Well in *Ægypt*; in ſome waters nothing will eaſily ſinck, as *Mare mortuum* in *Judæa*.

Here be waters in *England* that will turn wood into ſtone; but one of the moſt remarkable ſtories is recorded by *Albertus Magnus*, neer *Lubeck* in *Saxony*, where birds in a neſt being touched with a ſtick taken out of the *Sea*, metamorphoſed the young ones into ſtone. There is a River in *Hungary*, that will give Iron a tincture of Copper. *Theophraſtus* writeth of waters that will change the colour of birds or beaſts, if they do drink of it, as from black to white. The waters of *Pentaſium* (as *Solinus* writes) is good and wholeſome for men to drink of, but deadly poyſon to venomous ſerpents. In *Libia* there is a Spring, that at the *Sun* riſing and ſetting is temperately warm, at noon-day exceeding cold, and at midnight exceſſive hot, Some Springs do riſe and fall every

ſix

six hours, as the Seas do ebbe and flow: As for the taste, colour, and temperature of waters, they are according to the veins and minerals through which they pass; whereof some are hot and drying; as the Bathes, having a taste of Brimstone, coming through some sulphurious minerals, famous they are for curing of aches in the bones, and all cold diseases: Those that turn wood into stone, or other materials into mettal, do participate much of their natures, and the mines from whence they run; some being hot, others cold; some salt, others fresh; some wholesome to drink, others hurtful and unpleasant, with divers other strange operations, retaining more or lesse of the nature and qualities from whence they are derived.

Yet, as we said before, all waters are not conceived for to run through the hollow veins of the *Earth*, but some are generated there, in the caverns of hills, and all hollow subterranian places, by the condensed *Air*; and this is not oppugnant to the sacred Scriptures *Eccle. cap.* 1. *ver.* 7. for that is the general course of all rivers, and the other but particular, which is demonstrable in man, the little world; for by learned *Physitians* it is observed, that such bodies as are inclined to a Dropsie, or any phlegmatick disease, their Urine will be more in quantity and weight then all that they do eat and drink; and this observed not only for a few days, but many months together; and the reason which they give, is, that not only their meat and drink converts to water, by reason of the coldnesse of those phlegmatick stomachs, but the very Air in those bodies does turn to water, and those parts supplied with more Air, as it

converts to the other element; and such cold causes and wateriſh effects may be in the *Earth*: and likewiſe in diſcolouring of water, as by making it black, pale, green, high-coloured, or the like; but howſoever theſe are but peculiar, and from accidental cauſes; for the general courſe of waters is from the Springs unto the Sea, and ſo to thoſe heads again. Thus wonderful are the works of the *Omnipotent God*, every thing magnifying *His* Greatneſſe, *Daniel* 3. *Benedicite fontes Domino.*

Conjectures of the Seas ſaltneſſe, with the Ebbs and Flouds.

THe *Seas* are conceived to be made ſalt and brackiſh by the fervour of the *Sun*'s rays, with the permixion of burnt exhalations, and chafed with the violent and perpetual motion of the flux and reflux of the waters; for by experience we find that liquid things, if hot and burnt, their taſte will be bitter, and with commotion will prove brackiſh; but it is very likely that the Seas were brackiſh from the creation, and by this means contiaued ſo; but ſome does object that if the rain-water were exhaled from the Seas, and that the Springs did flow from thence, the waters would retain a ſaltneſſe in their taſte; but as for that it appears evidently that the Rain is refined by vertue of the *Sun*, and the Spring-waters by their *Meanders*, in paſſing through the *Earth*; and this you may try by diſtilling of Salt-water, or putting it into Earth, ſo as it may drain forth, and in time it will loſe its ſaltneſſe, being but accidental. As

As for the ebbing and flowing of the *Seas*, the cauſe is aſſigned unto the *Moon*, her influence having power over all wateriſh bodies; and beſides, the Tides are obſerved to alter as ſhe does in her courſe (if not hindered or furthered by accidental cauſes, as winds, land flouds, or the like;) She coming later every day unto the *Meridian*, by 48. minutes or very neer; and thoſe *Seas* which flows when ſhe is above the Horizon of that place, will cauſe greater Tides then when ſhe is depreſſed in the oppoſite Hemiſphere; and when ſhe hath latitude and declination towards the pole elevated, the force of her influence is the greater, and the waters will flow the higher, and rage the more violently in all indraughts, eſpecially at the new *Moon* or ful, which are uſually called Spring-Tides; but the full *Moon*, and three Tides after are much the greater, her power then predominating moſt over all wateriſh and phlegmatick bodies, and requires time to bring in greater ſupplies of water into the Land.

Of Earth-quakes, and their cauſes from whence they do proceed.

THe cauſes of theſe are exhalations hot and dry, generated by the vertue of the *Sun* and *Stars*, incloſed within the concaves and hollow places of the *Earth*; yet they cannot break forth by reaſon of the vapours, groſneſſe, and the cloſe compactedneſſe of the Earth which involves them, and there increaſing till it cannot be contained, and not finding a paſſage out, it ſtrives to force one

and so violently shakes the *Earth*, that it causes a trembling, which often hath swell'd up mountains, and overturned others, and ruinated many Cities, making mens houses their sepulchres, and whole Towns involved in a grave, overwhelmed with their ruines; the continuance of *Earth-quakes* is uncertain, from a minute to a day, and a longer time, according to the greatnesse of the vapour inclosed, and the firmnesse and solidity of the *Earth* which contained it. Here I have shewed you the weak and supposed reasons of men, in the wonderful and stupendious frame of *Heaven* and *Earth*; all which are subjected, and do obey the commands of the *Immense Creator*, *Eternal God*, and Author of *Nature*, to whom be all *Honour*, *Praise* and *Glory*, world without end. *Amen*.

AN

AN INTRODUCTION TO *The Third Part.*

Predictions of the Weather.

TO *Prognosticate*, or foretel the alteration of the Weather, there hath been (in all Ages) diligent observers of *Nature*, who have prescribed rules and prenotations of the *Airs* mutability, grounded on judicial signs, collected from the *Stars* and the four *Elements*, the principles of all sublunary bodies: Of these Predictions there be several kinds, both general and particular, established by humane reason; some derived meerly from old experience, yet many of them true; divers observations are ascribed to some particular Place, Country, Province, or lesse proportion of this our habitable world, being oftentimes confined within the precincts of a parish, as by fogs or mists ascending from some meer or morish grounds; or descending from the tops of hills, high exalted places, and low depressed dales; some men do observe domestick and particular beasts, as the story of the Herdsman, &c.

But as for all such presages (as are not general,

or warranted by ſome ſeeming reaſon) I will quite reject, and leave them at home for to obſerve the ſmoak of their own chimneys; for it is my real intention (at leaſt my deſire) to direct my ſerene inſtructions to the benefit of the tender, vigilant, or diſtreſſed travellers, whereby they may avoid the danger or inconvenience of foul and tempeſtious weather, by preſaging the *Airs* alteration, and the inundation of the lower Regions, menacing the Earth with their over-charged exhalations and vapours, in tumults ready to deſcend; to avoid theſe enſuing ſtorms is the ſcope of my intentions in this Treatiſe, and the better to enable you to do it, I have proſtrated to your view *The Worlds Epitomy*, and the ſeveral riſings, ſettings, apparitions, and occultations of the *Stars*, with the natures of thoſe celeſtrial *Orbs*, the four *Elements*, and all *Meteors* in general the ſecondary cauſes (under God) of heat cold, wet and dry weather; from whoſe exceſſe proceeds want, diſeaſe, all corporal diſtempers, and from their concord plenty, crowned (by the bleſſing of *Heaven*) with health and happineſſe.

That the *Stars* have their influences upon ſublunary bodies, it is not denied by any learned men, and affirmed undoubtably by many of the moſt famous Philoſophers, Aſtronomers, and Divines, as witneſſe *Ariſtotle*, *Ptolomæus*, and St. *Auguſtine*, *lib.* 13. *cap* 4. *de Trin.* and multitudes more which I have omitted, fearing to incumber this volume with teſtimonies and approbations of that which ſeems demonſtrated unto reaſon, and confirmed by experience; and according to *Hippocrates* (with the conſent of many others) Thunder,

Lightning

Lightning, Hail, Snow, Rain, Storms, and all alterations of the weather may be predicted by the rising and setting of the fixed Stars, with the aspects of Planets, their natures and qualities considered with the climate, region, and season of the year.

The Stars being supposed of several natures, and each constellation mixt, their influencies may cause diversity of effects, as heat, cold, moisture, or drought, which are the four qualities of the Element; and as for the Planets, they do alter according to their aspects, which many learned Phisitians do diligently observe in administring Physick, and in the time of their Patients falling sick, calling the 7. day critical, the 14. &c. Their reasons are, the *Moon* having dominion over all humors and wateriſh bodies, and in her motion swift, doth passe in 7. days, and a little more, from one sign into another of a contrary nature and quality, as from ♎ hot and moist, into ♑ cold and dry, and the like of others; from whence the Doctors do judge of the malignity of the disease, with the hopes of life, or danger of death; and of this you may read in *Galen* (*lib.3. de diebus Criticis*) rather then in me.

And in prognostication of the Weather, these judicial days would be observed in the beginning of drought, Rain, Snow, Frost or the like, and there would be considered the latitude and aspects of the Planets, the nature of the signs they are in, passing under the fixed Stars, especially where they are mixt with the nature of those Planets: Consider the season of the year, as Hale, or Rain in the Spring, or Autumn, Thunder and Lightning

Lightning in Sommer, Froſt and Snow in Winter: Ponder alſo the riſing and ſetting of the fixed *Stars*, with the Planets, the Eclipſes, Comets and all fiery Meteors, and ſuch as theſe accompanied by nature, are juſtifiable; for God hath given man knowledge and underſtanding in the courſe of natural things and ſigns in the Heavens, whereby to avoid inconveniencies, not with a certain, but a conjectural ſcience, by the Aſteriſms or celeſtial configurations and the four Elements, from whence may be preſaged diſtempers of the *Air*, cauſing contagious diſeaſes, ſterility and the like; as *Ariſtotle* writeth of *Thaletes*, who foretold the ſcarcity of Oyl that would be in the enſuing year; and ſo writes *Pliny*, *lib.*18. *cap.*35. of *Democritus*.

But whether the *Stars* are of theſe mixt natures, or their temperatures be known, it remains as yet in diſpute, and not for me to argue, but only follow the tracts of other men, and their obſervations of the weather, derived from experience, but not preſume to ſearch into the decrees of Heaven, or predict the actions of men, with the event of future things, which many pretend to do; for although that God hath made ſigns in the Heavens, and hath enabled us to know the times and ſeaſons of the year, with all things neceſſary for us to underſtand, yet not to be inquiſitive in thoſe ſacred Ordinances, which the omnipotent *Creator* hath decreed and concealed from us, as unneceſſary to be known; and prohibited by the commands of the Doctors and Councels of the holy *Catholike* and *Apoſtolike Church*, to which ſacred Authority I do humbly ſubmit my ſelf.

This Author was a Papist—

And

And here I will conclude this Introduction, remembring the saying of our blessed *Saviour* unto His Apostles, *Acts cap. 1. ver. 7. Non est vestrum nosse tempora vel momenta, quæ Pater posuit in suæ potestate.*

The Third Part.

Of the Weathers Prediction.

The affinity of the 12. Zodiacall Signs, with the 7. Planets in their naturall qualities, with their operations on sublunary bodies, according to the collections, and observations of the Wise and Learned.

THe signs of the *Zodiack* in the eighth Sphere are removed almost 28 degrees from their places, according to the motion of the *primum Mobile*; so that the first *Star* in the horn of *Aries*, is in the 28. degree of ♈, and is continued to the 18 degree of *Taurus*, the first mover, and in like manner are the rest of the 12. signs.

♈ The first parts of *Aries* beginning on the 28. of

28. of ♈, and ending in the 4. degree of ♉, do cause winds and rain; those *Stars* being of the nature of ♄ and ♂, commixed and assisted with ☿, the middle part of *Aries*, from the 4. degree unto the 10. of ♉ temperate, inclining to heat and drought, by reason of the *Stars* in his hinder foot, in his loins and ham, being of the nature with ♂; from the 10. degree of *Aries* to his hinder parts (being in the 17. degree of ♉ almost) is very hot; his horns and his neck of the nature of ♂ and ☿, but cool by the southern *Stars* in the *Whale* being very cold of the nature of ♄.

♉ The former parts of *Taurus*, from the 17. degree, to the 27. of ♉, the *Stars* are something windy, turbulent, and cloudy, by reason of the *Pleiades* contained within those degrees, and are of the nature of ♂ and ☽, the middle parts of ♉ from the 27. degree to the first of ♊ are temperately hot, and something moist, by reason of some *Stars* in *Perseus*, of the nature of ♄ and ♃, from the beginning of ♊ to the *Hyades* and the horns of *Taurus*, of the nature of ♂, and by the approach of *Orion*, causeth Thunder and Lightning, the North part made temperate by *Perseus*, the South variable and uncertain, by reason of some *Stars* participating of ♂, commixed with others of the nature of ♄, ☿, and ☽.

♊ The former part of *Gemini* from the 26. of ♊ unto the 6. degree of ♋ are something moist and hurtful; the middle parts, from the 6. degree of ♋ unto the 14. the *Stars* do incline to the nature of ♄, as in the arms and knees of ♊, yet temperate, and observed drier then formerly they have been; the hinder parts of ♊, from the 14. degree

unto

unto the 24. of ♋, are of a mixt and uncertain nature inclining to drought, by reason of some *Stars* of the nature of ♂ and ☿, the heads of ♊, of ♂, the North part moveth winds, the South part causeth heat and drought.

♋ The former parts of *Cancer*, from the 24. of ♋ to the first degree of ♌, are *Stars* of mixt and doubtful natures, of ♂, ☿, and ☽, as those nigh the feet of ♋, *Præsepe*, &c. causing earth-quakes, or tempests; the middle parts of ♋, from the 1. degree of ♌ unto the 7, in which are the little *Asses* of nature ♂, and ☉ more hot and dry then formerly, from the 7. degree of ♌ to the 13. the *Stars* in ♋ are of nature ♄ & ♂, very dry, but not so windy a formerly; both the Northern and Southern *Stars* of ♋ are generally hot & suffocating.

♌ The former parts of *Leo*, from the 13. degree to the 24. of ♌ where *Regulus* is, the *Stars* are of various natures, part of them commixed with ♄ and ♂, others with ♄ and ♀, and part repleniſhed with ♃ and ♂, pestilent and stifling; the middle parts of ♌, from the 24 degree to the 4. of ♍, temperate, and inclining to moisture but a little; the *Stars* of the nature of ♄ and ♀, and others with ♀ and ☿, the hinder parts of ♌ to the 17. degree of ♍, temperately hot and moist; the *Star* in the ♌ tail, of the nature of ♄ and ♀, the North part of this asterism is fiery and unstable, by reason of *Ursa major*, the South part moist because of the *Hydra*, whose nature is ♄ and ♀.

♍ The first part of *Virgo*, from the 17. degree unto the end, the *Stars* being of the nature of ♂ and ☿, are something hot and offensive, but lesse then formerly; from the beginning of ♎ to the 18. degree

18. degree is temperate, containing in her left wing and thigh, *Stars* of the nature of ♀ and ☿, the end of this constellation is from the 18. degree of ♒, unto the 8. degree of ♓, in which is contained *Spica*, ♍, of the nature of ♂ and ♀, and some other *Stars* in the train of her gown, of the nature of ♂ and ☿, yet something wateriſh, and more then formerly participating of the ☽; the Northern *Stars* are windy, inclining to ♂ and ☿, the Southern *Stars* to ♄ and ♃.

♎ The former parts of *Libra*, from the 8. of ♍ unto the 15. degree, containeth *Stars* of the nature of ♄ participating with the Southern *Ballance*, and the *Serpent* of *Æſculapius*, which *Stars* are temperately cold, and drier then formerly; the middle of ♎, from the 15. to the 19. degree of ♍ is alſo temperate; the extreams of ♎, from the 19. to the 26. degree of ♍ wateriſh; the Northern part of ♎ windy, of the nature of ♄ and ☿; the Southern part dry and feavouriſh.

♏ The former parts of *Scorpio* from the 26. degree to the 6. of ♐, do participate of *Stars* commixed with the nature of ♄ and ♂; and in the 4. degree, as the *Star Antares*, producing Snow, and more then formerly the middle of ♏, from the 6 degree of ♐ to the 16. degree, the *Stars* are temperate, by the vicinity of *Serpentarius*, of the nature of ♃ and ♀, but moiſter then they have been in former ages: the tail or extreams of ♏, from the 16. of ♐ to the 26 degree are turbulent, their natures being of ♂ and ☿; the Northern parts are hot, the Southern moiſt.

♐ The former parts of *Sagittarius*, from the 26. unto the 6. degree of ♑ the *Stars* are moiſt,

and

and colder then in former ages; the middle part of ♐, from the 6. degree of ♍ unto the 16, the *Stars* are of the nature of ♃ and ♂, yet temperate, inclining to cold; the hinder part of ♐, from the 16. of ♍ to the 28. fiery; the Northern part of this constellation is windy, the South part moist and inconstant.

♑ The first part of *Capricornus*, from the 28. degree to the 7. of ♒, the *Stars* do participate of ♂ and ♀ which are hot and hurtful; the middle of ♑, from the 7. degree of ♒ unto the 15, more temperate; lastly, from the 15. degree to the 21. of ♒ is observed rainy weather, for the Northern and Southern part of this asterism is generally held moist, and also hurtful.

♒ The beginning of *Aquarius*, is from the 21. degree unto the end of the same very moist; the middle of it, unto the 8. degree of ♓ temperate, of the nature of ♄ and ♃; the end of this sign in the 15. degree of ♓ windy; the Northern part of this constellation is hot, the Southern part snow or cold weather.

♓ The former parts of *Pisces*, from the 15. degree unto the 30. more cold then in former ages; the middle parts from the beginning of ♈, unto the 15. degree, moister then formerly; and lastly, from the 15. degree of ♈ unto the 28. causing a thick and dark air, the Northern part windy, and the Southern is held wateriſh, which concludes the 12. *Signs* and the properties of them in particular.

Aphorismes,

Aphorismes, or selected places out of Cardanus.

CArdan. 7: *Aph.* 73. does propound these ♓ and ♈ do cause winds, and the half of ♉, the other part of ♉ being more aireal, participating of ♊ doth produce suddain and fruitful showres; ♊ Author of winds, ♋ and ♌ produceth great heat and storms of Hail, ♍ remisse heat and giveth showres, ♎ and ♏, inequality of Air, ♐ Snow and Rain, ♑ cold weather does produce, and ♒ waters, especially in the beginning.

Stadius, and the later observers collects these properties of the 12. *Signs, of the first mover and* 8. *Sphere, conformable to this Age.*

♈ OF the *Primum mobile* lesse subject to Thunder, but apter to hail then in the times of *Ptolomy.*

♉ Hot, and moderately moist.

♊ Temperate, inclining to heat, and also to drought.

♋ Cloudy, and not the parent of fair weather, in times past.

♌ Hot, with a scorching drought and suffocating.

♍ Thunder, with moisture, but more temperate then in former ages.

♎ Various and mutable, inclining something unto drought.

♏ Fiery

♏ Fiery, but more remisse then in the time of *Ptolomy.*

♐ Windy, but moister then formerly.

♑ Temperately cold, and a little moist.

♒ Cold and watery.

♓ More cold then in former ages.

The natures, properties, and operations of the 7. Planets upon sublunary bodies, in causing Meteors.

♄ *Saturn* by nature is more cold then dry, especially being East-ward of the ☉, and in earthly signs, producing then both clouds and coldnesse of the Air; in time of heat it lessens it; and in frosty weather it much increases the cold; when he passes from one sign into another, for many days together he causeth red clouds, and fiery apparitions in the Air, inundations, earth-quakes, snow, frosts, and much cold, according to the season of the year, and situation of the Country. *Card.*

♃ *Jupiter* is of nature hot and moist, and is accounted the parent of fair weather, being temperate both in heat and moisture, mittigating the cold of Winter, and the heat of Sommer, causing gentle winds, and a temperate Air, with much serenity; being East-ward of the ☉ he increaseth heat, and West-ward moisture. *Card.*

♂ *Mars* is hot and dry in excesse, and in fiery Signs in Sommer he causeth much heat, and in Winter-time remisse, mittigating the coldnesse of the weather; he is accounted as Lord paramount of tempests, violent and suddain storms of Rain,

Hail, Thunder, Lightning, exceſſive heat in fiery Signs, and much Rain in paſſing by the *Pleiades*, as is obſerved by *Stadius*.

☉ *Sol* is by nature hot and dry, but more or leſſe, according to the Sign he is in, or aſpected with the other ſix Planets; or aſſiſted by the fixed *Stars*; in his annual revolution, his greateſt force is in making Hail, moderate in Rain, little Froſts and Snow; the general motive of vapours and exhalations, the deſtributer of light unto the reſt of the *Stars*, Monarch of the skies inabling them with his rays, and the earth with fruitfulneſſe.

♀ *Venus* is temperately cold and moiſt, yet *Argol* ſays moderately warm, predominating over humors, ſhe warmeth little, and moiſtneth much, eſpecially when ſhe is the morning *Star*; in Winter ſhe maketh the Air temperate, but moiſt; and in Sommer ſhe leſſens the drought, and cauſes great Dews and gentle ſhowres, but chiefly when ſhe is in the beginning of ♋. *Card.*

☿ *Mercury* is by nature mutable and doubtful, according to the Sign or nature of the *Star* he is withal, or the Aſpect of any other Planet participating of their natures, with whom he is aſſociated; he is held the father of winds, in earthly and watery Signs; and cauſeth Thunder and Lightning often in fiery or airy Signs.

☽ *Luna*, the loweſt Planet, is of nature cold and moiſt, and but little warm; ſhe naturally moveth the waters, having much force over all phlegmatick bodies and cold humors, and increaſeth them, according to her place in the *Zodiack*, the Aſpect with the ☉, and the other Planets, her aſſociation with the fixed *Stars*, and her latitude from the

Ecliptick.

Ecliptick. Astrologers do allow the *Moon* these temperatures, from the ☌ to the first of □, cold and moist; from the first □ unto ☍ moist, and something warm; from ☍ to the last □ dry, and a little warm; from the last □ to the ☌ cold and something dry; but in general she is held to increase the humors in all bodies, from the new unto the full; and decreasing, for to dry them up or lessen them, yet more or lesse according to her place and season of the year: and the full ☽ is conceived cold in Sommer, and temperate in the Winter season; the new ☽ warm in Sommer, and produceth the coldest nights in Winter; and in general the conjunctions of the *Luminaries* bringeth the fairest weather, and their oppositions the greatest store of Rain. *Card.* And thus far for the particular observations of the *Planets* properties and natures.

Proper and peculiar observations of the weather, in every one of the four Seasons, or Quarters of the Year.

Spring:

IN the conjunction or opposition of the *Luminaries* immediately, or the last before the Vernal Equinox, if ♂ were in ☌ with either the ☉ or ☽, expect much Thunder and Lightning for to follow; if ☿ in *March* or *April* be retrograde, expect much wet weather to follow.

Sommer.

If the 5. *Planets* be direct, this season will be beautiful and pleasant; but if these 5. be retrograde, then will the Sommer be vehemently hot; for the *Planets* do heat the Air, when retrograde in their courses, and when direct they cool; and this is general, except when ♃ is in ☌ to the *Sun*. *Planets* in their swift motion, do increase the heat; but when Stationary, if they be hot, they do inflame the Air; if cold, they cool it; if moist, they do beget Rain; and those by nature dry, do cause at that time much drought; and *Planets* combust in this Sommer quarter, do cause much Thunder and Lightning, *Leupold. Tract.6.cap.2.*

Autumn.

Fiery Planets in this season, and in our Northern Countries, do cause both cold and moisture; if in this quarter the 5. *Planets* be retrograde, there will be much drought in every Country and climate, and when the ☉ enters into the 18. degree of ♏, if ♀ be in a watery Sign, expect excessive rains, with inundations, *Leupold.* 3.

Winter.

Fiery Planets in the beginning of this quarter do produce clouds and Southern winds; if that ♀ in this season be direct, and the morning *Star*; in the beginning of Winter she will produce some rain, and in the latter end much wet, unless it be

be hindred by some other *Planet* of neer affinity to the *Sun*; and the contrary when ♀ is retrograde, and *Lucifer*, expect then very much rain in the beginning of this quarter, and in the end of Winter but little or none at all.

This general conclusion *Haly* doth propound thus, *Cap.* 4 *part.* 1. If ♀ be retrograde in this quarter, it doth presage a moist and rainy Winter: one *Planet* retrograde when in ♂ with ☉ argues drought, especially at the end of this season, going out of ♒ into ♓; if there be two *Planets* retrograde, it prognosticates temperate but moist weather: but if three, an abundant deal of wet; and if four *Planets* be in their motions retrograde, it will presage a deluge. And here ends the observations upon the four Seasons or quarters of the year; the *Sun* entering any of the four Cardinal points, as ♈, ♋, ♎, and ♑. *Leupold.*

The names of the most tempestuous and remarkable Asterismes and Stars observed in former Ages, as at this present.

THe most tempestuous *Constellations* are these; *Orion. Arcturus*, and the Northern *Crown*; the most windy are the *Goat*, and *Kids*, in *Erichtonius*; the most watery are the *Hyades*, and the 7. *Stars* called the *Pleiades*; the causers of violent heat, are *Regulus*, or the *Lions* heart, and both the *Dog-stars*, as *Sirius* and *Procyon*: These are the chief and principal Asterismes observed in presaging the *Airs* mutability; yet there be many more Constellations of note in this kind, although not so

general in their effects, being of much more doubtfull and promiſcuous qualities; but being part of the Aſtrologers Calender, they ſhall be inſerted, and according to their Coſmical aſcentions for this latitude of 52. degrees, beginning at the feaſt of *Chriſt-maſs*, and ſo in order with the *Suns* revolution in his proper courſe through the 12. Signs, as in this manner following.

The head of *Capricornus*, *Andromeda*, *Canda*, ♒, *Piſces*, ♓, the *Rams* head, the *Bulls* eye, the heads of *Gemini*; *Aſelli*, the Aſſes; *Præſepe*, or the *Cribbe* both in ♋ the *Lions* head; the *Hydras* heart, *Vindemiator*, and *Spica Virginis*, or the ear of Corn, both in ♍, the *Vulture* with the *Harp*; the *Serpent* with *Æſchylapius*. *Lucida Lancis*, or the bright *Star* in ♎ the *Eagle*; the *Scorpion* heart, or *Antares*, the *Dolphin*, *&c.* There are many other Stars obſerved (but not ſo remarkable) which you ſhall ſee in the following Predictions of the Weather. There are divers other Conſtellations towards the antartick pole, not viſible in our Hemiſphere, as the Stern of *Argonavis*, with multitudes more, whoſe natures and effects are not known, and howſoever not for our obſervations, in prognoſticating the weather, and ſo they are purpoſely omitted.

The

The Cosmical and Acronycal rising and setting of the Stars, observed in presaging the Airs Vicissitude, as in former Ages by Pliny, and at this present time.

First, you are to note that the nature of the fixed *Stars*, and their influences are increased or diminished by the association of the *Planets* or wandring *Stars*, either by oppugnant or united qualities; as ♀ approaching any *Stars* of her own nature, causeth cloudy and fickle weather, rain or much moisture; ☿ uniting his rays with *Stars* of his unconstant and subtile nature, causeth winds, and a great mutability of the weather; ♂ joyned or commixing his rays with *Stars* of his fiery nature, increaseth them much more, and inflames the *Air*, being prone unto all combustions, as ♂ with *Sirius*, and the rage of the *Dog-star* is mittigated by the approach of ♃ and ♀; the *Planet* ♄ also lesseneth the heat, and causeth dark weather, and cold showres when his rayes are united with fixed *Stars* of his own cold and melancholy disposition, and thus judge of the rest: The influences of the fixed *Stars* to be more or lesse effectual, according to the *Planets* united with them, or ascending the *Horizon* of any place together; the time of year and sign considered, and the nature of *Meteors* pondered in your judgement, with what hath been already specified, and so to proceed.

1. The *Star Arcturus*, when he sets *Acronycally*, denotes cold winds, and with the rays of ♂ tempests, and conjoyned with ♄, hail, snow, winds or cold rain, according to the season.

2. *Aselli* and *Præsepe*, if conjoyned with the rays of ☿ or ☽, it presages rain or moist and misty weather.

3 The *Cosmical* rising, and *Acronycal* setting of the *Hyades* d notes rain, and if nstigated by the approach of ♂, expect winds both by Land and Sea.

4. *Virgiliæ*, or the *Pleiades* setting *Cosmically*, produceth rain and storms, if joyned with ♂, and the Sky at the same time be cl udy, it argues a wet Winter, especially if ☿ be with it; and if the Heavens be clear, it foreshews a sharp and cold Winter.

5. *Sirius* with his *Cosmycall* rising maketh the Seas rough, and stupifie the *Fishes*; in this I have partly followed *Pliny*.

Observations of the weather, by Ptolomy, collected from the ascentions of the fixed Stars with the Sun.

6 *Orions* Girdle setting *Cosmically*, causeth a turbulent *Air*, and if Southerly winds, then rain will imm diately follow after.

7. The *Dolphine* setting *Acronycally*, causeth both Winds and Snow.

8. The *Rams* head rising *Cosmically* presageth hail or cold rain.

9 The *Hyades* rising *Cosmically* prenoteth wet and show r weather; and setting *Cosmically*, frost, snow or cold rain.

10 The *Eagle* setting *Cosmically*, produceth violent hot weather.

11. *Arcturus*

11. *Arcturus* rising *Cosmically* doth predict some showres to follow quickly after, within a few days; from hence the Swallows take their leaves, and repairs to their Winter-quarters.

The observations of Maginus, selected from the Ascentions of the Sun and fixed Stars.

12 THe *Asses* and *Præsepe* rising *Cosmically* often presageth a suddain alteration of the *Air*, with thunder, lightning and rain.

13. The *Eagle*, the tail of ♍, or the head of *Medusa* rising *Cosmically* produceth Snow.

14. *Libra* rising *Cosmically*, causeth rain, with some wind.

15. The *Eye* of ♉ or *Orion* rising *Cosmically* doth cause rain, disturbeth the *Air*, and sometimes produceth thunder and lightning; the *Acronical* setting of these *Stars* causeth the same effects, with suddain showres.

16. *Andromeda*, the *Whale*, the head and tail of ♈, the belly of ♓, and *Fomahand* in ♒, rising *Cosmically*, do all presage moist weather, and a turbulent Air.

17. The *Sun* entering the cloudy *Stars* of ♌, *Orion*, or ♐, causeth lowring weather; and likewise the *Hydras* heart, and head of ♏.

18. The *Cosmical* ascention of the shoulder of *Pegasus*; and the tail of ♍ produceth snow, cold, or cloudy weather.

19. The *Acronical* setting of the *Vulture* with the *Harp*, predict a moist, cold, and cloudy time.

20. *Virgiliæ*,

20. *Virgilæ*, or the *Pleiades* rising *Cosmically* foresheweth wet and cloudy weather, and suddain storms to ensue.

21. The *Star Regulus* rising *Cosmically* is a sign of showres, with thunder and lightning.

22. *Sirius* rising *Cosmically* prenoteth hot weather, with thunder and lightning; the *Cosmical* setting foresheweth warm weather, but inclining to wet.

23. The *Sun* rising with any *Star* of *Jupiters* nature, and not commixed with ♄ or ♂, argues warm, clear and temperate weather; with those of ♄ nature, cold and cloudy weather, and sometimes snow; with those of ♀ moist, and inclining to rainy weather; ascending the *Horizon* with those of ♂, it argues tempests, with thunder and lightning; with *Stars* of his own nature, or of ☿ winds; with those of the ☽ great flouds and tumultuous billows at *Sea*; and if the *Sun* doth rise with fixed *Stars* of mixed natures, as ♄ and ♂, it argues in Sommer time a hot and suffocating day; these last signs are general, according to *Maginus*.

Observations of the weather by the influence of the fixed and wandring Stars, united and collected by Na. Durret.

24 *Saturn* rising with the head of *Medusa*, prognosticateth for some days cold and moist weather, according to the season or time of year.

25. ♄, with the *Stars* of the *Whale*, the tail of ♈, the horn of ♉, and the belly of ♓, causeth a cold, cloudy and troubled Air, sometimes with rain or snow.

26. ♄

26. ♄, with the *Pleiades*, a dark and troubled Air, inclining to rain or ſnow.

27. ♄, with the *Stars* of *Orion* produceth ſhowres, and ſometimes cold ſtorms.

28. ♄, with the *Virgins* ear of *Corn*, cauſeth ſuddain alterations of the Air, with often ſhowres.

29. ♄, with *Arcturus* produceth winds and cold ſhowres.

30. ♄, with the *Dolphin*, the *Crown* or the tail of ♍, produceth moiſt and cloudy weather, and often ſnow and cold ſhowres.

31. ♄, with the *Hyades*, the *Aſſes*, and the *Manger*, cauſeth clouds and rain, with thunder and lightning ſometimes.

32. ♄, with *Regulus* cauſeth cloudy and unconſtant weather, in Sommer-time thunder, in Winter temperate.

33. ♄, with the great *Dog* cauſeth rainy and windy weather, with tempeſts of thunder and lightning.

34. ♃ aſcending the *Horizon* with *Regulus* in Winter, cauſeth fair weather, and leſſens the cold; but in Sommer it produceth heat, and prone to thunder.

35. ♂ riſing with the tail of ♍ makes the Air in hot weather temperate, in winter ſnow, and ſo with the heart of ♏ cauſing the ſame effects.

36. ♂ with *Arcturus* aſcending, doth produce thunder, lightning, rain, and furious tempeſts.

37. ♂ riſing with the *Eagle* cauſeth ſnow in Winter, and cold weather; and in Sommer rain.

38. What hath been ſaid of the ☉ theſe *Planets* will effect; but ♃ with much more mildneſſe, and ♂ with more violence and fury; and thus

♀ with

♀ with the *Pleiades* cauſeth rain; and with the *Eagle* in Winter, ſnow, or cold rain; and ſo likewiſe ☿ aſcending the *Horizon* with theſe fixed *Stars*, cauſeth very great alteration of the Air; as riſing with *Orion*, the *Hyades*; *Regulus*; the great and little *Dog*; the *Harp Spica*, ♍, &c. All theſe in their aſcentions with ☿ do produce hail, ſnow, rain, and cauſeth the *Air* to be troubled, and maketh many alterations, and often times produceth thunder and lightning, and violent tempeſts; the ☽ with the fixed *Stars* doth often cauſe mutations of the Air; but thoſe are ſoon over, her motion being ſo very ſwift: And here note that in all ſigns of ſtormy weather, the predictions given are moſt prevalent, and do laſt the longer if they happen at the time of any Eclipſe, or the ☌ of the two luminaries.

Prognoſtications of the winds, collected from the obſervations of Pliny and Maginus.

THe word *Wind* is derived from the inſtability of it, and ſignifies to turn; as for their natures and temperatures in general, they are hot and dry exhalations got together in multitudes, yet do retain part of the qualities from whence they are extracted, as from earth cold and dry, from water cold and moiſt vapours; ſome of theſe are called *Anniverſary* winds, as blowing at ſome certain time or ſeaſon of the year; others are called *Provincial* winds; ſo termed as from particular Provincies, no wind being general in all places, by *Sea* and *Land*; and ſome cauſed by great

great and high mountains in those Countrys; others derived from Lakes, Rivers, Seas, &c. and denominated often from thence; as the *Levant*, or *Subsolanus*, called also the East-wind; how they have been anciently devided and nominated, See *Pliny*, *lib.*2. *cap.* 47. of his natural History.

There may be as many winds as there be supposed divisions in the *Horizon*, which the *Sea-men* (to avoid confusion) do divide into 32. points, represented by the Compass, distinguishing those points and parts of the Horizontal circle, by several and peculiar names; and so also the winds answering to those points, whereof in this I will use but eight, being sufficient for prognostication, and the chiefest that are observed: And first, the four principal or cardinal points are these, *North*, *South*, *East*, *West*, dividing the Horizon into four quadrants or 90. degrees asunder; and those equally divided by four points more; all the eight being 45. degrees from one another, and are these *North-east*, and *North-west*, *South-east*, and *South-west*: As for the temperatures of these particular winds, they are so uncertain in every Country, that I will write nothing of them more, but refer you to the second part of this Book; for in these Countrys the North-wind is cold and dry; the South-winds warm and moist, making our bodies generally dull, and causeth moist weather, and pains in the head; whereas in the Southern parts of *America*, and the *East-Indies*, the effects of these winds are quite contrary, participating of that nature from whence those exhalations were extracted: But the signs presaged by the *Stars*, and derived from the observations of learned men, are these following.

1. *Orions*

1. *Orions* girdle rising *Acronycally* presageth South-west winds, and ofttimes great tempests both by Sea and Land.

2. *Aselli* and *Præsepe*, as *Pliny* sayes, *lib.* 18. *cap.* 35. that if in a fair and clear night the *Manger* be not visible, expect some storms or winterly weather.

3. If the Northern *Ass* be observed with any mist, the Southern winds will rage; and if the Southern *Ass* be hidden from your sight, then look for storms and tempests from the North or East.

4. The *Dolphin* setting *Acronycally*, produceth cold winds.

5. *Vindemiatrix* rising *Acronically* causeth cold Northerly winds.

6. The *Cosmical* rising of the *Pleiades* is a sign of Westerly winds; the *Acronycal* setting bringeth Southerly winds.

7. *Sirius* setting *Acronycally*, causeth South-west winds, and sometimes tempests.

8. The *Caniculare* days bring the Easterly winds; and the *Cosmical* setting Southerly, weather and tempests; the *Heliacal* rising or apparition of *Sirius* did begin the *Grecian* year.

9. The *Cosmical* setting of the *Eagle* produceth Eastern winds.

10. *Regulus* setting *Acronycally* doth cause Westerly winds, lasting ostentimes for 9. days, but seldome very violent.

11. *Vindemiatrix* rising *Cosmically*, produceth North-west winds, and white frosts; if the first day of *September* be fair, it betokens a dry *Autumn*.

12. The *Cosmical* rising of the Northern *Crown* produceth cold winds.

13. *Virgiliæ* setting *Cosmically*, bringeth Northern-

thern-winds; if at this time the Sky be dark or cloudy, it foreſhews a wet Winter; and very cold if dry and clear.

14. *Arcturus* ſetting *Acronycally* produceth Southerly winds; and much rain to follow, if it rains at his *Heliacal* ſetting or occultation.

Saturn, ♄, ♂, ☉, & ♀, or any one of theſe riſing or ſetting with the *Triangle*, with ♒, with the belly of the Southern *Fiſh*, with the right ſhoulder of *Auriga*, with the foremoſt head of ♊, with *Præſepe* and the two *Aſſes*, with *Orions* Girdle or ♍; the *Crown Arcturus*, with *Hercules*, or with the *Ballance*, all theſe produceth winds, and many times violent tempeſts, eſpecially the aforeſaid *Planets* being ſtationary or retrograde.

16. *Mercurius* doth produce winds, if he riſeth or ſetteth with the thigh of *Pegaſus*, with *Auriga*, with the *Triangle*; with the *Rams* head ſharp and cold winds; with the *Pleiades* wind and rain; with ♊, with *Orion* tempeſts, and often thunder and lightning; and ſo likewiſe with *Præſepe*, either *Dog* or *Regulus*; the *Hydras* heart, *Arcturus* and *Spica*, ♍, winds and cloudy weather; and likewiſe riſing or ſetting with the *Vulture*, the *Ballance*, the *Eagle*, or the *Dolphin*, aſcending or deſcending the Horizon with ☿ cauſeth often winds and cloudy weather, with the cloudy *Stars* of ♐ lowring weather; but with *Acarner* clear days, and warm winds; and uſually ſo with moſt *Stars* of the nature of ♄; and ſo much for this.

Generall

Generall Aphorisms in Prognosticating storms and tempests, selected out of Cardanus, Maginus and Durret.

THe twelve Signes of the Zodiack doe contain the nature of the four Elements; and these twelve Signes (by transmutation of their places) are divided into four Trigones, each of them containing the temperature and qualities of one Element, as was declared already in the Worlds Epitomy: and being they are conceived to have their severall effects in producing of particular winds, I will once again insert them, *viz.* ♈ ♌ & ♐ produceth Northwest winds, ♊ ♎ & ♒ produceth Northeast winds, ♋ ♏ & ♓ causeth Southwest winds, ♉ ♍ & ♑ raiseth Southeast winds: and thus are the twelve Signs appropriated to the four points of the horizon, equally between the four cardinall winds; yet you must consider the nature of the fixed and wandring Stars ascending with them, in every particular Horizon.

The presaging of the winds depends upon many causes, and are as various as they be inconstant; and besides all this, you must know the winds are appropriated unto each proper Planet, as the East to ♄, the North to ♃, the West to ♂, the South to ♀, the ☉ also to the East, and ☽ to the West: as for ☿, he is indifferent to the other six according to the conjunction of his rays with them. For if he applies himself to ♄, he produceth great winds, cloudy or rainy weather; if to ♃, warm gales with some

some rain; to ♂ or ☉ hot and corrupt winds; and with ☿ or ☽ moist winds. If ☿ changes his latitude, it argues winds; if stationary or retrograde, or going from one sign and entring the other, betokeneth great winds: ♄ also doth alter the weather for many days together, in his removing from any one sign into another, especially being retrograde, and having latitude towards the pole elevated, and the *Apogæon* or *Perigæon* of the Planets is to be considered.

There is never any great mutation of the *Air* without the ☌ or aspect either of ♄, ♃ or ♂, by reason their motions are so slow; great ☌ of *Planets* that are of contrary naures, do cause contrary winds, much rain, hail or snow, acccording to the season of the year; hail is multiplied by the ☌ of hot Planets in fiery *Signs*; the wandring *Stars* in their swift motions do beget drought, and likewise if they be direct and Oriental; but if slow, retrograde or occidental, they do produce rain, excepting ♂; and stationary they do generally cause winds; and ☿ instability of the *Air*, and likewise many ☌ or Aspects of the *Planets* concurring at one time, do pronounce great mutability of the weather, and do usually very much distemper the Element; in this *Cardanus* is oppugnant to *Leupold*.

Here we are arrived, having past many ambiguous Meanders, and obscure Laborinths of humane Hypothesis, concerning the nature and effects of the fixed and wandring *Stars*, through which I cannot guide you in a direct line with a thread, but am forced to follow the observations of others, and the rules by them prescribed, and delivered

to Astronomers by succession, from one ensuing Age unto another; yet with several opinions, according to the diversity of men, and the Countrys they lived in, as *Ægypt*, *Italy*, *Germany*, and the like: These several temperatures of *Climates*, have caused errors in our later observations whereas their rules were true perhaps in those Regions where they did inhabite. I have therefore delivered some things twice, to shew how several mens opinions do concur; others again I have given you almost oppugnant, yet may be in some things reconciled; which to do, I refer to your candid Judgement, to choose, correct, or reject, as you please.

I have shewn you rules and prognostications of the weather, both for days, years, and the several seasons thereof, as by the fixed *Stars* and *Planets*, with the effects of their influences commixt, (according to humane conjectures.) And now I will place before your eyes, predictions of the weather by mutual Aspects of the *Planets*, only with themselves; which way is generally held and approved for to be the best and most assured tract to follow, as in things that depends upon so many and uncertain causes; yet it is convenient to ponder in your judgement the former rules prescribed, and those well weighed and considered, I will leave it to your application, and so proceed to the observations of *Maginus*, with some diligent collections of my own annexed thereunto.

But first there ought to be considered whether either *Planet* were retrograde at the time of conjuction, or in any other Aspect; of which these are the chiefest, and held of greatest power in

altering

altering the *Airs* temperature, *viz.* ☌ hath the most force, and the effects of longest continuance; the next is ☍, and then the □; the △ and ✶, much weaker, and seldome observed in prognostication of the weather, except in ♄ and ♆, or when the others are stationary, or else ♀, ☿, ☽, any one of these parting ♆ to joyn with ♄ or ♂, with portends a turbulent air, and stormy weather neer at hand; also in ☍, or ill aspected, will effect the same or worse.

Prognostications of the weather by the mutual Conjunctions and Aspects of the Planets, according to Maginus, Argoll, &c.

Saturn conjoyned or aspected with Jupiter.

Saturn and ♆ in ☌, ✶, □, △, or ☍, are according to the nature of the *Signs*; as in fiery *Signs* they generally cause drought; in moist *Signs* rain, hail, with winds, and great mutations of the *Air*, both before and after, if other causes do not interpose.

Particularly causing in the Spring a troubled or moist *Air*; in Sommer, hail and thunder; in Autumn winds, or rain; in Winter frost, or snow; a turbulent *Air*, and durable storms.

Saturn conjoyned or aſpected with Mars.

Saturn and ♂, in ☌, □, or ☍, do produce theſe effects for ſome days, both before and after, eſpecially if ♂ be in his ſlow motion, and properly hail in his □, or ☍, rain, with lightning and tempeſts; in moiſt *Signs*, cloudy and dark weather corrupteth the *Air*, and is generally hurtful, but more or leſſe as aſpected with the fixed *Stars*.

Particularly in the Spring rain or thunder; in Sommer time hail or thunder; in Autumn wind or rain; and in Winter remiſſe cold, yet ſometimes ſnow.

Saturn conjoyned or aſpected with the Sun.

Saturn and ☉, in ☌, □, or ☍, do cauſe generally rain, hail, and cold weather, both before and after, eſpecially in watry *Signs*, or in ♓, and ♒, and is called *Apertio portarum*, or opening the Cataracts of *Heaven*.

Particularly their effects in the Spring are cold ſhowres; in Sommer producing much thunder and ſtorms of hail; in Autumn rain and cold; in Winter ſnow, or moiſt, dark, and cloudy weather, and oftentimes froſt.

Saturn

Saturn conjoyned or aſpected with Venus.

Saturn and ♀, in ☌, □, or ☍, begetteth cold ſhowres, eſpecially in watery *Signs*, with ſometimes hail, but not much, yet unconſtant weather generally.

Particularly producing in the Spring cold rains; in the Sommer ſeaſon ſuddain ſhowres; in Autumn cold ſtorms; and in Winter it portends ſnow, ſleet, or rain.

Saturn conjoyned or aſpected with Mercury.

Saturn and ☿, in ☌, □, or ☍, do generally produce cold winds; in moiſt *Signs* rainy and cloudy weather; in dry *Signs* drought; in aiery *Signs* great winds; in earthly *Signs* cold and drought, hurtful to all vegetables.

Particularly in the Spring ſeaſon theſe aſpects do cauſe winds, with ſome rain; in Sommer leſſe wet, but ſome wind; in Autumn it begetteth clouds; and in Winter ſnow, and often violent ſtorms.

Saturn conjoyned or aſpected with the Moon.

Saturn and ☽, in ☌, □, or ☍, in moiſt *Signs*, do cauſe cold and cloudy weather; in aiery *Signs*, and in ♐, or in ♒, it increaſes the cold, and often cauſeth hail, eſpecially at the full, and at the new *Moon* drought; in dry times ſhe cauſeth

frosts, or dark and obscure clouds; yet sometimes pleasant, quiet, and gentle showres, but with some cold; and withal she does much at these times increase the Tides.

Particularly in the Spring these conjunctions or aspects, do cause a troubled and moist *Air*; and likewise in the Sommer with remisse heat, and sometimes hail; in Autumn cloudy weather, with some frosts; in Winter cloudy, and vehemently cold weather, especially if either of them be aspected with ☿.

Jupiter in conjunction or aspected with Mars.

Jupiter and ♂, in ☌, □, or ☍, do properly foreshew thunder, lightning, flashes of fire, and rain; in moist *Signs*, thunder, corruscations, and rain; in fiery *Signs* scorching heat, and if rising with any of the tempestuous *Stars*, it may cause hail in Winter, and if otherwise, storms and snow.

Particularly in the Spring and Autumn whirlewinds; in Sommer thunder, tempests, and combust heat; in Winter remisse, cold, and a temperate *Air*.

Jupiter in conjunction or aspected with the Sun.

Jupiter and ☉, in ☌, □, or ☍, do generally produce wholesome winds or gales, fair, clear, warm and temperate weather, especially in aiery *Signs*; in watery or moist *Signs* it begetteth fertile showres;

showres; in fiery *Signs* it increaseth heat, and assures us constant fair weather, but in earthly *Signs* lesse.

Particularly in the Spring and in Autumn winds; in the Sommer season, thunder and lightning; and in Winter remisse cold, and a temperate *Air*.

Jupiter in conjunction, or aspected with Venus.

Jupiter and ♀, in ☌, □, or ☍, do beget a wonderful pleasing, tranquile, calm, and temperate *Air*, with grateful fair weather; in watery *Signs* gentle and wholesome showres; and in other *Signs* generally pleasing gales, and clear weather; much fertility, plenty of fruits; wholesome weather in any quarter of the year according to the season

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Jupiter in conjunction or aspected with Mercury.

Jupiter and ☿, in ☌, □, or ☍, do generally generate winds, and often great tempests without rain; in fiery *Signs*, drought and warm winds; in airy *Signs* fair weather, and pleasant gales; winds are usually his effects in every quarter or season of the year.

Jupiter

Jupiter in conjnnction or aſpected with the Moon.

Jupiter and ☽, in ☌, □, or ☍, doth generally produce ſerene weather, propitious and favourable winds; in ♄ and ♏, white clouds ſpreadeth over the Skyes, but in all quarters of the year it affordeth uſually fair and temperate weather, and very calm.

Mars in conjunction or aſpected with the Sun.

Mars and ☉, in ☌, □, or ☍, do uſually cauſe thunder, lightning, rain, hail, with vehemency and hurt, eſpecially in Sommer; in fiery *Signs*, it begetteth heat and drought; in airy *Signs* a dark Sky, and ſpiſſious clouds, and many diſeaſes it produces, eſpecially in the Spring.

Particularly in the Spring and Sommer they cauſe whirlewinds and drought, eſpecially if the *Signs* did participate of both their natures, the effects will be diſeaſes, and cauſe cloudy weather; in Sommer time vehement heat, with thunder, and lightning and in the winter it leſſens the cold.

Mars in conjunction or aſpected with Venus.

Mars and ♀, in ☌, □, or ☍, in watery *Signs* cauſeth much rain, opening the floud-gates of Heaven; in other *Signs* leſſe rain generally.

Particularly in the Spring and Autumn they generate rain; in Sommer often ſhowres; and makes the winter ſeaſon not very cold, but alters the preſent ſtate of the weather.

Mars

Mars in conjunction or aſpected with Mercury.

MArs and ☿, in ☌, □, or ☍, in fiery *Signs* do declare heat, and exceſſive drought; in watery *Signs* rain, and often ſhowres; in airy *Signs* warm winds, and thoſe uſually violent.

Particularly do generate hail and cloudy winds; in Autumn, in the Spring, and Winter, ſnow; in the Sommer tempeſts of thunder, lightning, and hail, and often violent ſtorms.

Mars in conjunction or aſpected with the Moon.

MArs and ☽, in ☌, □, or ☍, in watery *Signs* prognoſticates rain; in fiery *Signs* drought; and ſcatters over the heavens with red and yellowiſh clouds, cauſing often times rain; and as in *Signs* that are aireal, it makes the weather warm.

Particularly they cauſe in the Spring and Autumn ſhowres; in Sommer thunder, lightning, and hail; in Winter remiſſe heat, and oftentimes extendeth the celeſtial bow, a premonitor of following rain, but uſually not much.

The Sun and Venus in conjunction.

SOl and ♀, in ☌, do generally prognoſticate moiſt weather, eſpecially in watery *Signs*, and parti-

particularly in the Spring and Autumn rain; in Sommer thunder and ſhowres; and in the Winter quarter moiſt and foggy weather.

The Sun and Mercury in conjunction.

SOl and ☿, in ☌, do commonly beget winds in airy *Signs*; with moiſture, in watery *Signs* rain; in fiery *Signs* drought, warm winds, with corruption; theſe two *Planets* do always accompany the *Sun*, neither of them exceeding 60. degrees in their greateſt diſtances, and this not 30.

The Sun and Moon in conjunction or aſpected.

SOl and ☽, in ☌, □, or ☍, in moiſt *Signs* produce rain, reddiſh clouds, and great drops of water; and in fiery *Signs* fair weather, and altereth the *Air* according to the ſeaſon of the year, and the preſent temperature of the time; at the new and full ſhe cauſeth the greateſt flux of the Sea, and all wateriſh humors, and much the more if aſpected with the *Hyades* or *Pleiades* at the ſame time, with other circumſtances to be conſidered, as the other *Planets*, and what hath been ſaid before.

Venus and Mercury in conjunction.

VEnus and ☿, in ☌, do commonly beget in moiſt *Signs* ſhowres, and generally at all times of

of the year moist winds, and if this conjunction shall happen when the two luminaries are in ☌, □, or ☍, or within an hour it will cause an inundation, or very much rain, if not hindred with other intervening causes.

Venus in conjunction or aspected with the Moon.

Venus and ☽, in ☌, □, or ☍, presage generally mild and gentle showres, or moist weather, with some cold, according to the season; and much increases the flowing of the Seas, causing violent Tides, especially with *Hyades* or *Stars* of their own natures.

Particularly in the Spring moist and cloudy time; in Sommer remisse heat; in Autumn they produce dark clouds; and in the Winter season a cold and troubled *Air*, if not snow, sleet, or rain.

Mercury in conjunction or aspected with the Moon.

Mercury and ☽, in ☌, □, or ☍, do signifie winds, clouds, rain, with various and unconstant weather, and generally in all seasons of the year, if it happens in watery *Signs*, rain, or moist weather is presaged; in airy *Signs* wind; in fiery *Signs* drought; in earthly *Signs* cold; they cause also, many times, pale uncontinued clouds, resembling the colour of smoak; but the effects of these are not durarable, or

or of long continuance, without the assistance of the higher *Planets*.

The fixed and wandring *Stars* are observed diligently by some in administring Physick, Phlebotomy, &c. which I will omit in prescribing any Rules, (being out of my element) but leave it to the learned Practitioners. Others do vigilantly regard the *Planets* in Agriculture, and above all the *Moon*, predominating most over vegetables; but this is also out of my rode, excepting my Predictions of the Weather, and seasons of the year; as for other things Experience is the best instructor; yet those that will, may satisfie themselves with *Virgils Georgicks*, with *Pliny*, *Lib.* 17. & 18. and divers others of that kinde; but being this you have, and those not always at hand; peruse these few collections, if you please, they being held general.

Observations in Agriculture.

TO plant or sow, the *Moon* in these *Signs*, is held the best, *viz.* in ♈, ♉, ♊, ♍, ♎, ♑, & ♓, and if the ☽ be aspected with ♀ it is the better, as causing the more moisture.

Plant or graft trees the ☽ increasing in ♉, ♎ and ♒.

Sow all seeds after the new ☽; but round seeds neer the opposition ☽ is generally held the best, but all moist seeds in wet grounds the ☽ decreasing.

Gather fruits the ☽ decreasing before the last quarter.

The Eclipses of the two *Luminaries* are generally observed

observed prejudicial to this kind of husbandry, and the bloming of Corn.

Any *Planet* that is retrograde, and in ☌ with the ☽ is accounted hurtful to planting, graffing, or sowing.

The wind in the *North* or in the *East*, is held destructive or hurtful to planting, graffing, or felling of timber.

Cut hair, and shear sheep the ☽ increasing.

Presages of the weather by Experience, collected from the inflamation of Comets, fiery impressions, influences: and apparitions of the Stars reflecting on sublunary Meteors.

Hitherto I have discovered (according to my ability) the effects of the fixed and wandring Stars, selected from their aspects, by the registers of Experience, conceived by them the efficient cause (under God) of Wind, Rain, Hail, Snow, &c. But all men not being Astronomers, and my intentions generall, to whom I indeavour the dedication of my discourse; therefore I will demonstrate the weathers transactions, by signs derived more directly from the immediate dictates of *Nature*, beginning with *Comets*, being generally supposed to be sublunary, and so descend unto those more inferiour, according to my prescribed order. intending to treat of falling *Stars*, *Rainbows*, and all fiery apparitions in the *Air*, and then our terrestrial fires; for although they are compounded of the 4. *Elements*, yet I will rank them amongst these,

these, because the flames of all combustible matters, do naturally of their own accords ascend towards the *Element* of fire, the seat of lenity; whereas all heavy and ponderous things do tend downwards, pressing toward the seat of gravity and centre of the *Earth.*

The effects of Comets.

1. ALl fiery impressions and *Comets* do presage violent tempests of long continuance, and also they do denote much heat and inflamation of the *Air*, *Pliny*, *lib.* 2. *cap.* 25.

2. Frequent and many *Comets* do foreshew sterility of the *Earth*, famine, plague, burning feavers, and many other pestiferous diseases; by reason they do consume the humidity of vapours, and exhalations, and so from thence they ingender choler, inclining men prone to discentions and civil wars; it threatens Princes and great men with death, and all such as are of tender or fiery constitutions; to this consents *Cardanus*, *lib.* 1 *cap.* 1. but the effects of these are the more violent, and of longer continuance, by how much the greater and permanent they are; and the like judge of all unusual fiery Meteors.

3. The shooting or glancing of seeming *Stars* through the *Air* do presage rain, snow, or tempestious weather quickly after to ensue; and observe what point of the *Heavens* these *Meteors* point at, from that quarter will the wind proceed; if there be many of them falling often, and several ways, it is a sign the weather will be variable;

but

but if they be numerous, and all tending one way, then expect great winds, much snow or rain, and probably to continue long, for it argues the *Air* to be very moist and cold, oppugnant to the *Meteor*.

4. When you shall behold in the sable night, the Hemisphere to seem more gloriously adorned with glittering *Stars*, then usually it is in fair and serene weather; or those *Stars* to twinckle, like spangles upon a sable vestment, expect then suddainly to follow rain, snow, or misty weather; as you may judge according to the present temperature of the *Air*, and season of the year considered, the cause of either is thin and wateriſh vapours, transparent and interposed between the *Stars* and our sight; and these *Meteors* moving, or carried with the circular motion of the *Air*, upon which the *Stars* reflecting do cause the apparition of many, formed in the clouds by their rays, as by multiplying glasses may be demonstrated, or in shallow crystal streams of rivers, wherein you may behold the *Stars* (by reflection of the water) to twincle, and many *Moons* to appear at once.

5. Circles about the *Stars* (especially the *Planets*) that are pail and wateriſh do presage rain or snow; but if these circles be of a reddiſh colour, expect some winds.

6. If the *Stars* in the night do appear dim, like a sullied or unpoliſhed diamond, or greater then they use to be, or seem to hang as if they were ready for to fall, it argues that the lower Region of the *Air* is full of thick and wateriſh exhalations, which their rays cannot directly penetrate, but by

by reflection do appear thus unto us; yet these in Sommer time, or in hot Countrys, do often prove but mists, and those chased away by the *Suns* approaching the Hemisphere; but in Winter (especially) or in moist weather they do commouly turn to nine-frosts, snow, rain, or very foggy weather.

7. When the *Stars* do appear bright, and on a suddain the Hemisphere shall be vailed with spissious clouds, expect then some present change of weather, for it shews the Sky to be full of vapours, and those by the powerful influence and concurrence of the *Stars*, are drawn together and digested into snow or rain, so that the *Air* cannot support them, but they must suddainly fall.

8. If the *Stars* do seem very low, it argues that the lower Region of the *Air* is full of wateriſh *Meteors*, or transparent exhalations; for if the *Stars* do seem pail and bright, it denuntiates rain; and if red, windy weather.

9. Red streaks in the *Air*, and all fiery impressions like flames, do presage winds, and from that quarter whence they did arise; if they extend far, and move down wards, expect a tempest; for the colour shews the nature of the *Meteor* to be hot and dry, forceth to retreat by the frigide moistnesse of the *Air*.

By Thunder and Lightning.

10. IF there be more thunder then lightning, it argues a stresse of wind from that part it thundered, if not rain.

11. When

11. When it does lighten, and no clap of thunder follow, it is a sign in Sommer time of much heat, and sometimes rain.

12. When it lightens only from the North-west, look for rain the next day.

13. Lightning from the North presages winds, and often times great tempests.

14. If from the South or the West it lightens, expect both wind and rain from those parts.

15. Morning-thunder produceth winds, but midday or in the afternoon generally rain.

16. If the lightning appears very pale, it argues the *Air* to be full of watery *Meteors*; and if red or fiery, inclining to winds and tempests.

17. When the flashes of lightning do continue long before they vanish, the tempest is like to be great, and it argues the *Air* to be very moist.

18. Thunder and lightning in Winter, in hot Countryes is usual, and hath the same effects; but in these Northern Climates it is held ominous, portending factions, tumults, and bloody wars, and a thing seldome seen, according to the old Adigy, *Winters thunder, is the Sommers wonder.*

19. Generally if it thunders from several quarters of the *Heavens* at once, expect then moist violent storms immediately to follow.

The effects which these *Meteors* do produce, is evident; for these exhalations being fiered and opposed by the cold of the middle Region, do violently break forth of the clouds (in which they were involved) and dissipate them, causing tumultuous riots amongst the windy exhalations, opening a passage for the cataracts of water to issue down.

By the Sun.

THe two great *Luminaries* (in prognosticating the weather) *Virgil* and *Pliny* does prefer before those observations of the *Stars*, which are but apparitions in the clouds, and lower Region of the *Air*, as the others be; whose rays falling upon these elevated vapours and exhalations do declare by their colours what regiments they are of; from these apparitions of their colours, we do judge the nature of the *Meteor*, and from thence conclude the prognostication of the ensuing weather.

20. The *Sun* rising clear, and not fiery red, prenotes a fair day; but if pale and warm, it argues snow, hail or rain; if purple colour, wind and rain.

21. If the *Sun* at his rising appeareth hollow, it argues rain.

22. If before the *Sun* rising the clouds be red, intermingled with some that are black, expect both wind and rain.

23. If the rays of the *Sun* be red, both at his rising and setting, there will follow much rain or wind.

24. When the evening in the West appears red, and the morning following free from any clouds at his rising, it foreshews fair weather.

25. If the clouds at his rising do disperse themselves some Southward, and others Northward, expect that day both wind and rain.

26. At his rising or setting, if his beams be short, it is a sign of a shewre.

27. At

27. At his ſetting if it rains, or if his beams look dark or blew, or many clouds about him like bulwarks, heaped one upon another, great ſtorms and tempeſts will enſue the next day.

28. If his rays ſeem not bright and clear at his riſing, and clouds gather towards him like globes or wool-packs, it argues ſtormy and winterly weather; but if thoſe clouds do retreat towards the Weſt, it may prove a fair day.

29. Red clouds, or of purple colour, appearing in the North or in the Weſt, at the *Sun* riſing, denotes either wind or rain.

30 If the *Sun* riſeth pale or wateriſh, and quickly after proves obſcured with thick clouds, it will rain before his ſetting.

31. When you ſhall ſee at the *Sun* riſing a circle of clouds invironing him, it is a ſign of rain; if he be incloſed with a double circle, tempeſts; and the neerer theſe circles do circumvent him, the ſtorm will be the greater; and if theſe circles be red or mixt, expect then violent ſtorms both of wind and rain; if this circle breaks, obſerve from what part, for out of that quarter of the *Heavens*, which the fraction repreſents, the ſtorm will riſe.

32. The *Sun* riſing, if he appears ſpotted, or caſteth forth rays of ſeveral colours, or part of his body eclipſed with ſpiſſious clouds, it argues rain and tempeſtuous weather.

33. If the body of the *Sun* (at his ſetting) be mixed with sky-colour or purple, expect then immoderate tempeſts, and ſtorms of wind and rain.

34. If the *Sun* at his riſing ſeem to be as it were affronted with clouds, in tumults moving towards him, obſerve from what quarter of the *Heavens*

they come, from thence will the ſtorm ariſe; and if they come from the South, expect then both wind and rain, eſpecially if the clouds were fiery red or, mixt.

35. If the *Sun* doth caſt his beams a far of amongſt the clouds at his riſing, and ſome of them ſeem refracted, or the middle void, it preſages rain.

36. if he ſpread his beams before he riſes above the *Horizon*, expect both wind and water.

37. If at his ſetting there appear a white circle about him, there will be ſome troubleſome weather the enſuing night; but withal, if there be a thick miſt invirons him, the tempeſt may be outragious, both wind and rain.

38. If there be red clouds about the *Sun* at his riſing, which do become black or dark ſoon after he is up, it preſages rain.

39. If the *Sun* all day, or before his ſetting an hour or two, appeareth with a purple colour, and coming to the *Horizon*, deſcending ſeems greater then at other times, it foreſhews both wind and rain.

A Paraphraſe.

HEre with the ſetting *Sun* I will end his preſages, and now behold the *Luminary* of the night; for what hath been ſaid of his riſing, is or may be applied (for the moſt part) as rules in preſaging the weather, at the time of his deſcending the *Horizon* of any place; but not ſo certain and effectual as his firſt apparition in the morning, becauſe there be more groſſe and undigeſt d vapours

pours raiſed in the night, or fall for want of heat to concoct and diſpoſe of them according to their qualities; the reaſon of all theſe preſages is grounded upon the colour of the vapour or exhalation; on which the *Sun* reflecting doth cauſe theſe fiery and diverſity of apparitions, elevated above the ſuperficies of the *Earth*, but neer us, interpoſed between the *Sun* and our ſight, which by the vertue of his rayes he converts according to their qualities and quantities into ſeveral *Meteors*: for if they ſeem pale, they are watery; if red, windy; if black and mixt, both: if his rays ſeem refracted, broken or crooked, it is by reflection of one cloud upon another, which argues their number to be many; and if unpenetrable, it ſhews them to be great and groſſe: And ſo much for the *Sun*.

By the Moon.

40. THe *Ægyptians* (whom *Virgil* and *Pliny* follow) did obſerve the fourth day of the *Moon* (after the Conjunction) to be the ſureſt ſign; for if ſhe does appear after *Sun*-ſetting pure and bright, it argues fair weather; and if red, wind; if dim or cloudy, ſtorms and wet weather: alſo if the tips of her horns be blunt, it foreſhews foul weather; and if very ſharp pointed, it preſages winds, fair, or froſty weather.

41 If her Northern horn be only ſharp-pointed, it preſages wind from that coaſt; but if her lower or Southern horn be only ſo, the wind will be Southward: and if ſhe hath a red circle about her,

it is a sign of wind and rain. But *Varro*, who maketh these observations also of the weather, says, That if the *Moon* hath a circle or garland about her, and the same clear and bright, it promises fair weather until the Full.

42. If the *Moon* after the change appear not until her fourth day, and the wind blowing West, expect then cold and winter-like weather; the reason that the fourth day is observed in these, is this, her fourth time ascending the *Horizon*, reckoned from the New *Moon* inclusive, is but three days compleat, in which time she does recover light, and hath then entered another sign of a different nature from that at her change. But some would have these rules observed when her age is $\frac{1}{8}$ part of her whole course, that is, three days and sixteen hours very neer; but this cannot be strictly observed, the *Moon* not being then always visible above any one *Horizon*.

43. The *Moon* increasing, and rising with her upper or Northern horn blackish, presageth much rainy weather after the Full; but if the tip of her lowermost horn be so aspected, then it will rain before the Full; but if it appears blackish between her horns, that is, in the middle of her body, according to *Varro*, it will be wet weather about the time of her being Full.

44. When the *Moon* is at the Full, if her body seem very fair and bright, it is a sign of good weather; but if red, it argues wind; if inclining to black, rain; and if a mist about her, it is a sign of snow, rain or wind; and if two or more of these circles, it is the worse, and presages storms; and where the circle is brightest, or most transparent,

parent, from that part of the *Heavens* expect the winds.

45. Lastly, the eight points or angles which the *Moon* maketh with the *Sun* are observed by many, and are these days, *viz.* 3, 7, 11, 15, 19, 23, 27. and the day in which the two great *Luminaries* do happen in Conjunction.

46. Observe what weather it is when the *Moon* comes to be South any day, if the weather changes not then, it is like to continue that day, whether it be fair or foul. This would also be observed in the other *Planets*, at what time they do come unto the Meridian of any place, so well as their rising and setting.

But to find the ☽ coming to the Meridian, multiply her age by 4, and divide the product by 5, the quotient will be the time required.

Example, admit the *Moons* age were 5, which multiplied by 4, the product will be 20, and that divided by 5, the quotient will be 4, the hour of her being South that day; and so for any time.

By Rain-bows.

46. THere have been Rain-bows in the night-time seen, made by the *Moon*, and as for their effects (being seldome known) they shall be omitted only as signs conceived prodigious; but those of the *Sun* made by his rays are usual; and are these, a Rain-bow appearing presently after rain, is held a sign of fair weather, and that the storm is past; but if two or more be seen at once, it is a presage of future rain; for it argues the clouds

clouds to be very watery, when the reflection of the one can form the impression and figure of another in several clouds, as it were in mirrours; a Rain-bow broken presages tempests.

Of the Ignis fatuus.

48 These pallid fires appear but at some times of the year, and that in certain places; and in those parts where they are most usual, they are not commonly seen, but as fore-runners of sultry heat in Sommer, and wet in the Winter; they are usually observed to appear in open weather; yet I have seen one in a very cold season, both for frost and snow, moving but a little before me, and within a few days after the frost did break; they are *Meteors* seldome seen, little observed in prognostication of the weather, and so I shall lead you no further, until a better discovery of their natures be made, and their effects better known, which are generally held unwholesome; and so let them passe as *Ignes fatui.*

By terrestial fires.

49. When our common fires do burn with a pale flame, they presage foul weather.

50 If the fire do make a huzzing noise, it is a sign of tempests neer at hand.

51. If the flame of a candle, lamp, or any other fire does wave or wind it self, where there is no sensible or visible cause, expect some windy weather.

52. When

52. When candles or lamps will not ſo readily kindle as at other times, it is a ſign of wet weather neer at hand.

53. When the fire ſparkleth very much, it is a ſign of rain.

54. If the aſhes on the herth do clodder together of themſelves, it is a ſign of rain.

55. When candles or lamps do ſparkle and riſe up with little ſumes, or their wicks ſwell, with things on them like muſhrums, are all ſigns of enſuing wet weather.

56 When pots are newly taken off from the fire, if they ſparkle (the ſoot upon them being incenſed) it preſages rain.

57. When the fire ſcorcheth, and burneth more vehemently then it uſeth to do, it is a ſign of froſty weather; but if the living coals do ſhine brighter then commonly at other times, expect then rain.

58. If wood or any other fuel do crackle and break forth wind more then ordinary, it is an evident ſign of ſome tempeſtuous weather neer at hand; the much and ſuddain falling of ſoot preſages rain.

A Paraphraſe.

THe natural cauſe of theſe (as I ſuppoſe) is this, the *Air* in the lower Region (being apt for either heat or cold) does alter according to the inclination of the weather, whether it be diſpoſed to heat, cold, rain, or wind; the *Air* thus altering, when it becomes wateriſh, makes the flaming fire

appear

appear pale; candles nor lamps apt to light; their cotten-wicks to ſwell with tumors upon them like horſe-ſhooes, or muſhrums, the moiſt air being got into them, which by oppoſition makes the fire to ſparkle, or being cold, inclining to froſt, it cauſes it to ſcorch; the *Air* which does infuſe it ſelf into the pores of the fewel, being moiſt, and rarified by the fire, turns into wind, and ſo wanting room breaks a paſſage forth, which makes the wood to crackle, the flame to wave, and ſparkles to fly; and this in brief is the cauſe of them, ſo far as I conceive; our fewel being commixed of the four *Elements*, and ſo by oppoſition or participation theſe effects are cauſed; and this makes the ſoot in chimneys for to fall, being by nature dry, and looſned by the moiſtneſſe of the *Air*.

By Air, Winds, Clouds, and Miſts.

THe *Air* in which we breath being commixt and no pure Element, doth generate ſeveral *Meteors* (as was ſaid already in the ſecond part) and the preſages theſe; if the *Air* ſeem dusky, hotter then ordinary, and unapt to breath in, expect then thunder and lightning.

60. When the ringing of Bells, or other ſounds are heard more plain then at other times, and if by intervals it ſhews the *Air* to be dilated and diſturbed, which preſages either wind or rain, if not both.

61. A ſharp and cold wind after rain foreſheweth more to come, the exhalation or vapour not being ſpent in the former ſhowre.

62. Winds

62. Winds that do continue long in any one point, will cauſe the weather for to be generally the ſame, whether it be fair or foul; but if it ſhifts often in changing the place, it preſages rain quickly after to enſue; but in times of froſt it is a ſign that the weather will break.

63. Whirlwinds do predict approaching ſtorms uſually of rain or hail; theſe you may foreſee by raiſing the duſt, or any ſuch light materials; and and oftentimes theſe whirlwinds are forerunners of great tempeſts; for it is a windy exhalation driven obliquely upon the horizontal plain, and forced down by the coldneſſe or moiſture of the preſent *Air* in the lower Region; this repercurſion of the *Air* cauſeth chimneys to ſmoak more then uſually they do at other times, preſaging rain or great winds.

64. Sometimes theſe whirlwinds are cauſed by the meeting of one another, and ſo raiſing light things, as in contention, hurling them to and fro, at the pleaſure of the prevailing party; and ſuch as theſe do uſually preſage tempeſts; as you ſee when the clouds are moved ſeveral ways at once, and from the ſame cauſe above, as it is below.

65. It is probable that there is alſo many exhalations which do ſuddenly break out of the *Earth*, and do produce theſe whirlwinds, which are by nature held hot and dry; the cauſe how theſe do predict ſtorms and tempeſts, is conceived this; againſt rain, or any wet weather, the pores of the *Earth* does naturally open, and ſo gives a paſſage to them; they being hot and dry, do ſtrive for to aſcend, and ſo much the more then, the exhalation being oppoſed by the moiſtneſſe and the coldneſs

coldneſs of the *Air* infuſed into the *Earth*, which changes as the *Element* does.

66. Theſe whirlwinds are precurſors of tempeſts, when the *Air* incloſed in the *Earth*, is apt for to convert it ſelf into theſe windy exhalations, and there increaſing ſo as it cannot be contained, yet not ſo reſtrained as to cauſe an Earth-quake, but finds an eaſie paſſage through the pores of the *Earth*, whereby to evaporate and free it ſelf from reſtraint into the open Air.

67. Theſe exhalations when they happen for to be frozen in with extream cold weather in winter, and venting themſelves in wateriſh places, as in the bottome of great ponds, meers or rivers, where by Antiperiſtaſis, or oppoſition of the cold waters, it does congeal the bottome, when the outward air cannot freeze the top or ſuperficies of the water, by reaſon of the motion, but in the deeps, where it is ſtill and quiet; theſe are called anchor or ſubterranean froſts; they are not uſual, neither will they endure long; but when they do happen, it is moſt commonly extream cold weather, and little or no ſnow; theſe are generally held very hurtful unto plants; and deſtructive to the fiſhes; and by freezing up the channels, make the rivers overflow.

68. When the *Air* is dilated or rarified, it is a ſign of much heat, or againſt rain, which by your ſmelling you may know when ſhoars, naſty places, or things corrupted are more offenſive then at other times.

69. When the clouds be dark, deep, and very ſpiſſious, it is a ſign of rain, and ſometimes tempeſtuous weather.

70. Many

70. Many ſcattering clouds wandering in the *Air*, and moving ſwiftly, argues wind or rain, and from the North or South it is the worſe; but if the racke rides both wayes, it foreſhews a tempeſt.

71. If the racke in the forenoon rides in the *Air*, from the *Eaſt* weſtward, it argues rain at night; but if from the *Weſt*, it does foreſhew a cloudy morning, if not rain; and at any time of day, when the *Sun* beams and wind meet, it may cauſe the ſame effect by vertue of his rays.

72. When the clouds ſeem piled upon heaps like fleeces of wool, it preſages wet weather, and neer at hand.

73. If the clouds fly low in Sommer, it is a ſign of rain; and in Winter it prenotes cold weather to enſue quickly after.

74. When the clouds ſeem white and jagged (as if rent aſunder) gathering together in a body, their forces united, do foretel a ſtorm; the nature of the exhalation is apparently turbulent by the form and colour.

75. Hollow and murmuring winds do preſage ſtormy weather; for it ſhews the *Air* is moiſt and dilated, ſo cannot find an eaſie paſſage, but is oppoſed or hindred in the motion by hills, trees, and hollow places, which it gets into and makes a noiſe.

76. The *Air* being a ſubtile body, infuſes it ſelf into the pores of timber, boards, &c. and againſt rain being converted into water, or a moiſture, which makes boards to ſwell, and is the cauſe that Wainſcot, and Joyners work doth crack againſt wet weather; doors will not eaſily ſhut or open, &c.

77. Paper againſt wet weather will grow weak, damp, and ſwell, the reaſon is the ſame with the laſt; but in writing paper it will ſooner be perceived, and more certainly predict the weather; becauſe it is done over with a thin ſubſtance of a gummy nature, which with the wateriſhneſſe of the Air, diſſolves and grows moiſt, giving way for the Incke to ſoke into the paper, which the Gum in dry weather will not permit.

78. When the clouds ſeem overcharged, and white withal like towers, expect then hail or ſnow, according to the ſeaſon of the year.

79. After a ſtorm of hail, expect a froſt to follow the next day after.

80. When Spiders webs, poplare, and thiſtle-doune, and ſuch light things do fly in the *Air* up and down, as it were to make nature ſport, or a type of *Fortunes* favours; theſe are ſigns of the weathers changing, and ſpeedy mutability; for theſe things of lenity are eaſily moved by the firſt inſurrection of any exhalation, precurſor of the weathers change, and oftentimes wind.

81. Miſts deſcending from the tops of hills, and ſettling in the valleys, is a ſign of a fair day, eſpecially in Sommer time, and then an argument of heat; for they were exhalations raiſed by the ferver of the *Sun*, and by the *Air* in the evening, (which in hot weather is coldeſt) it is converted into miſts and dews, as a neceſſary proviſion of *Nature* to cool the *Earth*, and refreſh her fruits, whereby to enable them that they may endure the next days heat. White miſts are the ſame; but more wateriſh, and inclining to rain; and if they do aſcend, it preſages rain, and argues the middle

Region

Region of the *Air* not for to be very cold, the loweſt wateriſh, and the vapour warm.

82. If in calm and ſerene weather you do obſerve the rack to ride a pace, expect winds from that quarter; for it is evident that the exhalation above in the clouds converts into a wind or rain, and will deſcend; but if clouds do aſcend any day, it preſages the ſtorm is paſt.

But neither this, nor ſome of the other obſervations are conceived general; diverſity of climates producing ſeveral and various effects, and beſides, the ſeaſon of the year ought to be conſidered, the weather having peculiar properties in ſeveral Countries and places; as the nights in *Africa* are dewy in Winter; clouds in *Ægypt* ſo heavy, as if the *Air* were unable to ſupport them; and in ſuch tumults, as if they threatned the world with a deluge; yet march all away without any drop of rain. *Locri* and the lake *Velinus* in *Italy* have no day but there is a Rain-bow appears; in *Syracuſa* and *Rhodes*, no day in all the year ſo cloudy, but that the *Sun* is ſeen to thoſe places; moſt hot Countrys (neer the torrid *Zone*) have frequent flaſhes of lightning, and in their Winter often without rain, with many other obſervations purpoſely here omitted.

By Water and Earth.

83. THe water of the Fens, and ſtanding pools, growing warm without heat of the *Sun*, more then uſually, is a ſign of much rain; the *Element* of *water* being rarified, as appears by the parts.

84. The

84. The rain falling in ſmall drops, argues thoſe clouds were high from whence it fell, and a ſign of much wet.

85. If the rain be whitiſh, and falling into water riſeth up in bubbles, it ſhews the rain will continue, and that the water is then full of windy exhalations; and if the ſhowre does ceaſe, the wind will ſucceed it.

86. The rain falling upon the *Earth*, or floods, if ſoon drunk up, are ſigns of more.

87. Linnen or woollen cloth dipped in the water, and expoſed to the *Air*, if it ſoon freezes, it is a ſign of much or violent froſt.

88. Drops of water after rain falling from the eves of houſes, ſlowly one after another, is a ſign of froſt; for the *Air* works eaſily upon ſmall parcels, foreſhewing in thoſe parts an inclination of the greater.

89. If the *Sea* at low water within the harbour be calm, and yet makes a rumbling noiſe, it preſages wind; and if ſo by fits, expect both cold weather and rain.

90. If the *Sea* or Sea-bancks, in calm weather make much noiſe, or the billows ſeem to heave and riſe up, it preſages a tempeſt neer at hand.

91. If the *Seas* be very rough and boiſterous, the wind not great, the waves have been diſturbed either with a tempeſt paſt, or elſe at one approaching; and if the billows do make a noiſe as with a refracted *Air*, like the murmuring ſound of woods, the ſtorm is neer at hand.

92. When the tops of high hills are clear and free from clouds or miſts, it is a ſign of fair weather.

93. If a murmuring ſound be heard in valleys,

or from hollow caves within the *Earth*, or rivers make a rumbling noise more then usual, running with troubled streams, any of these do presage a storm.

Presages of Earth quakes.

94 THe extraordinary swelling and rising up of the *Seas*, when there is neither wind nor flood to cause it, foreshews an Earth quake, observed by *Posidonius*.

95. When the waters in wells, fountains, or deep pits, are much troubled, and have an evil savour, and a taste of sulphure, that were pleasant before, it does argue an Earth-quake.

96. A roaring noise under the earth, resembling thunder, is the forerunner of an Earth-quake.

97 When the *Air* for a long time wants motion, and is still, that birds can scarcely fly for want of wind, it foreshews an Earth-quake.

98. *Aristotle*, with some others, do say that a black and narrow streak or line, right under the *Sun*, stretched out to a great length, and remaining or continuing long, does presage an Earth-quake; but this doth rather signifie a great tranquillity of the *Air*, and so a second cause, but not the immediate.

A Paraphraſe.

THe reaſon of theſe and the former ſigns of tempeſts, by Water and Earth, are both one; for in long continued calms, the material cauſe of winds, is detain'd within the bowels of the Earth, and there being rarified, ſearches the veins, caverns, and hollow ſubterranean places to get a paſſage; but finding readily none, and not able to contain it ſelf, it forces a way, and according to its quantity diſturbs the Waters, and ſhakes the Land, or breaks forth into a tempeſt, with horrid noiſes, according to the reſiſtance made, or which is apteſt and moſt facile to be effected.

By ſenſitive Creatures; but firſt by Beaſts and Reptiles.

99. BEaſts eating greedily, and more then they uſe to do, prenotes foul weather; and all ſmall cattel, that ſeem to rejoyce with playing and ſporting themſelves, foreſhews rain.

100. *Oxen* and all kind of *Neat*, if you do at any time obſerve them to hold up their heads, and ſnuffle in the *Air*, or lick their hooves, or their bodies againſt the hair, expect then rainy weather.

101. *Aſſes* or *Mules* rubbing often their ears, or braying much more then uſually they are accuſtomed, preſages rain.

102. *Hogs* crying, and running unquietly up and down, with hay or litter in their mouths, foreſhews a ſtorm to be neer at hand.

103. *Dogs*

103. *Dogs* tumbling and wallowing themselves much and often upon the earth, if their guts rumble and stinke very much, are signs of rain or wind for certain.

104. *Cats* coveting the fire more then ordinary, or licking their feet, and trimming the hair of their heads, and mustachios, presages rainy weather.

105. *Moles* plying their works, in undermining the Earth, foreshews rain; but if they do forsake their trenches, and creep above ground, in Sommer time it is a sign of hot weather; but when on a suddain they doe forsake the valleys and low grounds, it foreshews a flood neer at hand; but their coming into meddows presages fair weather, and for certain no floods.

106. *Spiders* creep out of their holes and narrow receptacles against wind or rain; *Minerva* having made them sensible of an approaching storm.

107. The Common-wealth of *Emmets*, when busied with their egs, and in ordering their State affairs at home, it presages a storm at hand, or some foul weather; but when Nature seems to stupifie their little bodies, and disposes them to rest, causing them to withdraw into their caverns, least their industry should engage them by the inconveniency of the season, expect then some foul and winterly weather.

108. The little sable beast (called a *Flea*) if much thirsting after blood, it argues rain.

109. The lamentable croaking of *Frogs* more then ordinary, does denote rainy weather.

110. *Glow-worms*, *Snayles*, and all such creatures, do appear most against fair weather; but if *Worms*

comes out of the earth much in the day time, it is a presage of wet weather; but in the Sommer evenings it foreshews dewy nights, and hot days to follow; and here ends the prognostications of the weather by Beasts and reptiles.

By winged Creatures.

111. THe vigilant *Cock*, a bird of *Mars*, the good house-wives clock, and the *Switzers* alarum, if he crows in the day time very much, or at *Sun* setting, or when he is at roost at unusual hours, as at 9, or 10, expect some change of weather, and that suddainly, but from fair to foul, or the contrary; but when the *Hen* crows, good men expect a storm within doors and without; if the *Hens* or *Chickings*, in the morning come late from their roosts (as if they were constrained by hunger) it presages much rainy weather.

112. The offspring or aliance of the *Capitolian* guard, when they do make a gaggling in the *Air* more then usual, or seem to fight, being overgreedy at their meat, expect then cold and winterly weather.

113. *Birds* that do haunt the Fens, if they often wash themselves, it presages rain or wind, and so in most birds or fowls that do prune their feathers with an oyly substance, as a provision of *Nature*, in preparing themselves against a storm.

114. *Cormorants*, *Gulls*, *Ducks*, *Mallards*, and all water-

water-fowls, when they bathe themſelves much, prune their feathers, and flicker, or clap themſelves with their wings, it is a ſign of rain or wind.

115. *Cormorants* and *Gulls*, flying from the Sea and ſtanding lakes, preſages a ſtorm.

116. *Cranes* ſoaring aloft, and quietly in the *Air*, foreſhews fair weather; but if they do make much noiſe, as conſulting which way to go, it foreſhews a ſtorm that's neer at hand.

117. *Herons* in the evening flying up and down, as if doubtful where to reſt, preſages ſome evill approaching weather.

118. *Ravens* and *Crows*, when they do make a hoarſe, hollow and ſorrowful noiſe, as if they ſobbed, it preſages foul weather approaching.

119. *Crows* flocking together in great companies, or calling early in the morning with a full and clear voice, or at any time of the day gaping againſt the *Sun*, foreſhews hot and dry weather; but if at the brinck of ponds they do wet their heads, or ſtalk into the water, or cry much towards the evening, are ſigns of rain; the *Woodpeckers* cry denotes wet.

120. *Jack-daws*, if they come late home from forraging, preſages ſome cold or ill weather neer at hand, and likewiſe when they are ſeen much alone.

121. *Buzards* or *Kites*, when they do ſoar very high and much to leſſening themſelves, making many plains to and again, foreſhews hot weather, and that the lower Region of the *Air* is inflamed, which for coolneſſe makes them aſcend.

122. *Swallows* flying low, and touching the water often with their wings, presages rain.

123. *Owls* whooping after *Sun* set, and in the night, foreshews a fair day to ensue; but if she names her self in French (*Huette*) expect then fickle and unconstant weather, but most usually rain.

124. *Peacocks* crying loud and shrill for their lost *Jo*, does proclaim an approaching storm.

125. *Sparrows* in the morning early chirping, and making more noise then ordinary they use to do, foretels rain or wind: The *Titmouse*, cold, if crying Pincher.

126. *Doves* coming later home to their houses then they are accustomed to do, presages some evil weather neer approaching.

127. *Sea-mews*, early in the morning making a gaggling more then ordinary, foretokens stormy and blustering weather.

128. *Halcyon*, at the time of breeding, which is about 14. days before the Winter *Solstice*, foreshews a quiet and tranquil time, as it is observed about the coast of *Sicily*, from whence the Proverb is transported, the *Halcyon days*, *Pliny*.

129. *Bats*, or flying *Mice*, coming out of their holes quickly after *Sun* set, and sporting themselves in the open *Air*, premonstrates fair and calm weather.

130. *Birds* in general, that do frequent trees and bushes, if they do fly often out, and make quick returns, expect some bad weather to follow soon after.

131. *Bees* in fair weather, not wandring far from their hives, presages the approach of some stormy weather.

132. *Wasps*

132. *Waſps*, *Hornets*, and *Gnats*, biting more eagerly then they uſe to do, is a ſign of rainy weather.

133. *Flies* in the *Spring* or *Sommer* ſeaſon, if they grow buſier or blinder then at other times, or that they are obſerved to ſhroud themſelves in warm places, expect then quickly for to follow, either Hail, cold ſtorms of Rain, or very much wet weather; and if thoſe little creatures are noted early in *Autumn* to repair unto their Winter quarters, it preſages froſty mornings, cold ſtorms, with the approach of hoary *Winter*.

134. *Atomes*, or little *flies*, ſwarming together and ſporting themſelves in the *Sun* beams, is a good omen of fair weather: And ſo here I will end the predictions by ſenſitive creatures upon the Land, and turn to the Seas to behold the wonders of the deep.

By Fiſhes.

135. *Porpaiſes*, or *Sea-Hogs*, when obſerved to ſport, and chaſe one another about ſhips, expect then ſome ſtormy weather.

136. *Dolphines* in fair and calm weather perſuing one another, as one of their wateriſh paſtimes, foreſhews wind, and from that part whence they fetch their friſks; but if they play thus when the Seas are rough and troubled, it is a ſign of fair and calm weather to enſue.

137. *Cuttles* with their many legs ſwimming on the top of the water, and ſtriving to be above the waves, do preſage a ſtorm, offended with the

Meteor, and the disturbed waters in the deep.

138. *Sea Urchins* thrusting themselves into the mud, or striving to cover their bodies with sand, foreshews a storm; for the windy exhalations disturb the lowest waters first, in the bottome of the *Sea*, which makes the other fishes rise and trust in their swimming; and the *Urchin* unapt for that, and fearing to be hurried away with the tumultuous waves, gets neer the shoare, and there stays it self by creeping into the earth.

139. *Cockles*, and most shell fish, are observed against a tempest to have gravil sticking hard unto their shells, as a providence of *Nature* to stay or poise themselves, and to help weigh them down, if raised from the bottome by the surges.

140 *Fishes* in general, both in salt and fresh waters, are observed to sport most, and bite more eagerly against rain then at any other time, as agreeing best with their flegmatick constitutions; many other observations there be of these creatures, as concerning winds, tides, floods, and seasons of the year, well known unto Fisher-men, but not to me.

By Vegetables.

141. The *Trefoile*, or Clavergrasse, against stormy and tempestuous weather will seem rough and the leaves of it stare and rise up, as if it were afraid of an assault.

142. *Teazils*, or Fullers Thistle, being gathered and hanged up in the house, where the *Air* may come

come freely to it, upon the alteration of cold and windy weather will grow ſmoother, and againſt rain will cloſe up his prickles.

143. *Heliotropes* and *Marigolds*, do not only preſage ſtormy weather by cloſing or contracting together their leaves, but turn towards the *Sun*'s rays all the day, and in the evening ſhut up ſhop.

144. *Pine apples* hanging up in the houſe where they freely may enjoy the *Air*, will cloſe themſelves againſt wet and cold weather, and open againſt hot and dry times.

145. The leaves of trees and plants in general, will ſhake and tremble againſt a tempeſt more then ordinary.

146. All tender buds, bloſſoms, and delicate flowers, againſt the incurſion of a ſtorm, do contract and withdraw themſelves within their husks and leaves, whereby each may preſerve it ſelf from the injury of the weather.

A Paraphraſe.

IN theſe vegetables there be certain ſtrings or nerves, which by the alteration of the outward *Air* (diſtilled into them like a thin fume) do diſplay or open their leaves, or contract them like convulſion fits, according to that thin vapours diſpoſition infuſed into their veins, being grateful or oppugnant to the natural temperature of the vegetable, &c. theſe vapours do make them ſmell more fragrantly, as forerunners of dew or rain, eſpecially all odoriferous flowers to whom ſuch dews are a comfort.

By

By Minerals.

147. METTALS in general, against much wet or rainy weather, will seem to have a dew hang upon them, and be much apter to sully or foul any thing that is rubbed with the mettal, as you may see in Pewter dishes against rain, as if they did sweat, leaving a smutch upon the table-cloaths; with this *Pliny* concludes as a sign of tempests approaching.

148. *Stones* against rain will have a dew hang upon them; but the sweating of stones is from several causes, and sometimes are signs of much drought, and the reason from hence is derived; the inflamation of the *Air* over-heating the superficies of the *Earth*, attracts vapours from below, whereby to cool it, according to the nature of all things that are dry, and one part still supplies another, which makes our wells and fountains low, and tides high at or about *Michaelmas*, the Sommer past, the *Sun* having exhausted so many vapours and exhalations from the treasury of the *Earth*; the sign of wet in Mettals, as is in stones, proceeds from the moistnesse of the outward *Air*, turned into water by the coldnesse of the Earth, Mettal or Stone, the *Air* being wateriſh, and apt unto it, and this it does most usually presage.

149. *Glasses* of all sorts will have a dew upon them in moist weather: Glasse windows will also shew a frost, by turning the *Air* that touches them into water, and then congealing of it; for the *Air* within the house being warmer then that without, is by opposition, and the coldnesse of the glasse

glasse between them, quickly converted from *Air* into water, and so to Ice within-side, the outward being predominant by an *Antiperistasis*.

150. *Salt* extracted out of the Earth, Water, or any *Mineral*, hath these properties to foreshew the weather; for if well kept, in fair weather it will be dry, and apt to dissolve against wet into its proper *Element*; boards that it hath lain upon, and got into the pores of the wood, it will be dry in fair and serene weather, but when the *Air* inclines to wet, it will dissolve; and that you shall see by the board venting his brackish tears; and Salt-sellers will have a dew hang upon them; and those made of mettal look dim against rainy weather.

But some here doe question me for deserting my former intended tract and method; as in placing Salt with Minerals, being imperfectly mixt, and composed of fire and water, oppugnant to their natural qualities; as if I intended for to delude men with words, or blind their sights with casting Salt into their eyes, or dust raised with a whirl wind, against an approaching storm: No, this was not my intention; but being this could not well stand with the first signs of the weather, it made me leane or incline to the *Chymick Philosophers*, which make this a *Principle* both in *Vegetables* and *Minerals*; and my conclusion whereby to relish all the rest (being general in all) according to the *Adage*, *Sal sapit omnia*.

Natural ſigns of the four Seaſons.

Aſtronomers do divide the year into four quarters or ſeaſons, with certain and prefixed times, the *Sun* entering four cardinal points, as was ſaid already in the *Worlds Epitomy*; others again do divide it into two parts, calling the one *Winter*, and the other *Sommer*; but *Nature* does ſeem to make four *Seaſons*, and thoſe neither beginning nor terminating at any ſtrict time, but according to the temperature and diſpoſition of the *Air*, leaſt her fruitful womb ſhould produce abortives, or want time for maturity; ſo to avoid theſe inconveniencies, *Nature*, like a carefull Mother, produces every plant, and all her fruits in due and fit ſeaſons; and leaſt ſenſitive creatures ſhould miſcarry, ſhe delivers them her dictates by inſtinct, or ſome inward motion: There are obſerved many ſigns in every Climate and particular Country, which in *England* are theſe, and the diſeaſes inherent and common in the 4. quarters.

Spring.

THis a comfortable and pleaſant quarter, every thing beginning for to ſpring and raiſe up their ſpirits from their roots, buried in the *Earth*, and ſiezed upon by the cold of Winter, as by the hand of Death: The firſt bird that brings us tidings of the approaching *Spring*, is the *Wagtail*, or Water-Swallow, whom ſome call the Barly-Bird, as obſerved a convenient time to ſow that

ſeed,

ſeed, being a tender grain; next does appear the *Swallow*, but one will not make a Sommer, for when they come ſingle, and obſcure themſelves again, expect ſome cold and ſtormy weather; the *Woodcock* takes her leave, and departs the Land; next comes the *Nightingal*, making the nights pleaſant with her melodious harmony; and laſtly, the adulterous and ungrateful *Cuckow*; the plants and vegetables do ſhew the *Spring*, by adorning the fields with pleaſant and fragrant flowers; as witneſſe the oderiferous *Violet*, perfuming the *Air* with a grateful ſmell, and divers others.

Diſeaſes incident to this quarter, are, Leproſies, Tooth-ach, Feavers, Puſhes, Great and Small Pox, Falling-ſickneſſe, Ring-worms, Kings-evil, Wens, Squincies, and generally pains in the body and bones, proceeding from old fractures, bruiſes, and inveterate maladies.

Sommer.

THe days being long, and the *Sun* ſcorching hot; the Creatures of the Earth having reared and brought up their young progeny to perfection; the fruits grow now to maturity, ready to entertain them, and cheriſh their bodies, provided for the uſe of *Man*; *Ceres* injoying the fruits of her labours; the days all this ſeaſon declining, but affording many ſweet and pleaſant flowers in every Country, as *Clove-Gilliflowers*, *Roſes*, *&c.* Store of *Acorns* preſages a hard Winter to enſue.

The

The diseases most frequent in this quarter, are, pains about the Brest, Ribs, and Spleen, Pushes, and diseases of the face, Leprosies, sore eyes, Plurisies, pains of the stomach and belly; Pestilence, Feavers, Apostumes, Jaundise, and divers maladies and infirmities proceeding of Melancholy.

Autumn.

THe *Wood-cock* comes in with this season, and the *Swallow* departs, taking her young retinue. *Vindemiatrix* now provides us Wine against cold Winter, whereby to drown our cares and labours past, and refresh us to begin anew; the sap in most vegetables returns into their roots under ground, or more rational to humain capacities, the vegetable humor is contracted in their bodies with cold, and heat extenuates or dilates that infused spirit, which attracts (by vertue of the roots) a nutriment from the Earth, according to its natural faculty, which supply failing in his proper season and time of year, the radical humor and sap in the body contracting, their leaves must fall, and their glories fade, an emblem of mortality, and transitory beauty; the Earth growing white like declining age.

Diseases that reign this quarter are many; as Agues, Aches in the bone, Pains in the back, dimnesse of Sight, retention of Urine, Fluxes of blood, infirmities in the Face and Eyes, Cankers, Fistulaes, Emrods, Stone, Gravel, pains in the secret parts, and all such diseases as attend the

Spring;

Spring; all evill and inveterate humors in the Spring and Fall do increase and flow, which were detained with the heat of Sommer, and cold of Winter.

Winter.

THe flocking of small birds together foreshews the approach of this *Season*, with the coming over of Feltifers, and divers sorts of other little birds; the days being at shortest, some things do flourish, as an herb called *Christ-worte*, for at the time of *Christmas* it hath constantly flowers, if much frost and snow hinders it not; the terminating of this season is observed in *Ducks*, and divers other water-fowl.

The infirmities subject to man in this season are most usually these, *viz.* Red spots, Pushes in the face, Fluxes of blood in the inferiour parts, Scabs, Leprosies, Toothach, pains in the Eyes, Palsies, Gouts, and all cold and phlegmatick diseases; of these 4. *Seasons* thus writeth *Ovid. lib.* 1. *de Rem. Amo.*

Poma dat Autumnus; formosa est messibus Æstas;
Ver præbet flores; igne levatur Hyems.

Signs presaging good or bad Years.

1. AN overmoist Spring causeth weeds to abound, fruits to be scarce and not good; if dry and hot, grain will be good, but no great increase; if temperately hot, and moderately moist

moist it foreshews a plentiful Sommer; but if over-hot and moist, a sickly year will follow.

2. The *Broom* having plenty of blossoms, or the *Walnut-tree*, is a sign of a fruitful year of Corn, for that temperature of the weather is grateful and nourishing unto them alike.

3. All Comets and great eclipses, at the blooming of fruits, is held generally hurtful unto those which it then happens to.

4. A dry Spring, with Northern winds, following a wet Winter, with many Southern winds, causeth often abortives, and weak children, *Gallen lib. 3. Aphorism* 3.

5. Great store of *Nuts* and *Almonds*, presage a plentiful year of Corn, especially *Filberds*.

6. When *Roses* and *Violets* flourish in *Autumn*, it is an evill sign of an insuing Plague the year following, or some pestiferous disease; for much heat in this Season corrupteth the blood.

Winter over-moist and warm, is unseasonable for this Quarter, prejudicial to the husbandman, and a friend to the Physitian and Sexton, especially if it be infected with many fogs, and great mists, which causeth sterility, and corrupteth the *Air*; but much frost, with snow, presages a wholesome and plentiful year to follow.

Many other presages I could have inserted, both of the weather and seasons of the year, but such as would incumber the work, trouble the Reader, and perhaps superfluous; as leaves in the wind, or down-floating upon the water, are signs of tempests; others again doubtful, and not to be credited; as in *Autumn* (some say) in the *Gall* or *Oak-apple*, one of these three things will be found;

(if

(if cut in pieces) a *Flie* denoting want; a *Worm* plenty; but if a *Spider*, mortality.

Others obſerve the twelve days of *Chriſtmas*, to foreſhew the weather in all the twelve ſucceeding moneths reſpectively.

Some again obſerve the 25: day of *January*, celebrated for the converſion of St. *Paul*; if fair and clear, plenty; if cloudy or miſty, much cattle will die; if rain or ſnow fall that day, it preſages a dearth; and if windy, wars, as old Wives do dream; and ſince I can find no better authority for theſe, nor any days preſages, as a thing indifferent, I will leave them, and perſiſt here no longer, but ſubſcribe the Verſes upon the ſame account.

If Saint Paul's *day be fair and clear,*
It does betide a happy year:
But if it chance to ſnow or rain
Then will be dear all kind of grain:
If clouds or miſts do dark the Skie,
Great ſtore of birds and beaſts ſhall die:
And if the winds do fly aloft,
Then wars ſhall vex that Kingdome oft.

A Concluſion with a Paraphraſe upon the preſages by ſenſitive Creatures in general.

SIgns both of the weather, and the ſeaſons I have ſhewn you, yet have omitted many, but ſuch as are beſt known to thoſe who are ſenſible of them; and of theſe there be ſome who ſuppreſt with the heavy burden of many years, are forced to ſtoop and ſtrike ſail to *time*, their bodies almoſt worn out with old decrepit age, ſcarcely tenentable to the vital parts, which *Nature* can hardly inable for to keep poſſeſſion, being dayly in danger to be ejected by rigid Death, who admits no bail; ſuch as theſe are ſenſible of the *Airs* alteration; like an old ruined tenement, that lies open unto the aſſaults of every little ſtorm, and may unhappily know the weather and ſeaſons of the year.

Others there be in the glory and prime of their youth that do know all this, and more certainly then can the dictates of old age deliver it, having in every joynt a *Calender* that ſhews them the weather, with the Spring and Fall, as a *Memorandum* of their fond and licentious youth, wherein they have incurred the diſpleaſure of juſt *Heaven*, and rewarded with the fruits of ſin: Yet in this I do not cenſure all, for ſome knows it through the crimes of others, and many by caſualties, fractures of bones, bruiſes, old ſores, aches, cramps, gouts, corns of their feet, agues, and almoſt innumerable diſeaſes and imperfections of *Nature*, incident to frail man, for excepting ſuch like accidents,

dents, or ſigns derived from experience, or grounded upon ſome reaſon to be held weather-wiſe, is an argument of folly.

The cauſe why Ideots can ſo well fore-know the weathers alteration, is partly they being defective in their underſtandings (as wanting the uſe of reaſon) *Nature* does the more aſſiſt them; or they being cold and phlegmatick (as appears by their ſlavering) they are the more ſenſible of the *Airs* change, as it is agreeable or oppugnant to the temperature and conſtitution of their bodies; whereas *Man* endowed with the uſe of reaſon and diſcourſe, contemplates of the cauſe and nature of things, which ſo implies the ſenſes, that the *Air* infuſed into the poars of ſuch bodies, cannot have any powerful operation; and beſides, their conſtitutions are compoſed with a better concord of the 4 *Elements*, ſo that the *Airs* alteration cannot ſo ſoon and ſenſibly work thoſe effects in ſuch bodies, being perfectly in health, and reaſon of their counſel. For 'tis *Natures* care to provide beſt for thoſe things which are in moſt danger of ſhorteſt life, or can leaſt help or ſhift for themſelves; as to ſome ſhe gives ſtrength in arms, to others ſwiftneſſe of feet or wings, agility of body, and the like; ſome little creatures are made a prey by others, or their lives but ſhort; to theſe ſhe gives a fruitful offspring; as for example, what multitudes of little Birds, more then Eagles, or fowls of prey? Herrings in number exceeding Whales, with compariſon; behold alſo the providence of the immenſe *Creator*, that all theſe ſeveral kinds do ſubſiſt, and in ſuch Springs or Sommers whoſe temperatures of heat ſhall produce cold Winters;

there *Nature* does commonly provide plenty before hand, as Akorns, Hipps, Hawes, and divers other ſorts of Berries, for the ſubſiſtance of ſundry ſorts of little birds & animals, that otherwiſe would have periſhed with cold, and for want of meat, which is armour of proof againſt the weather.

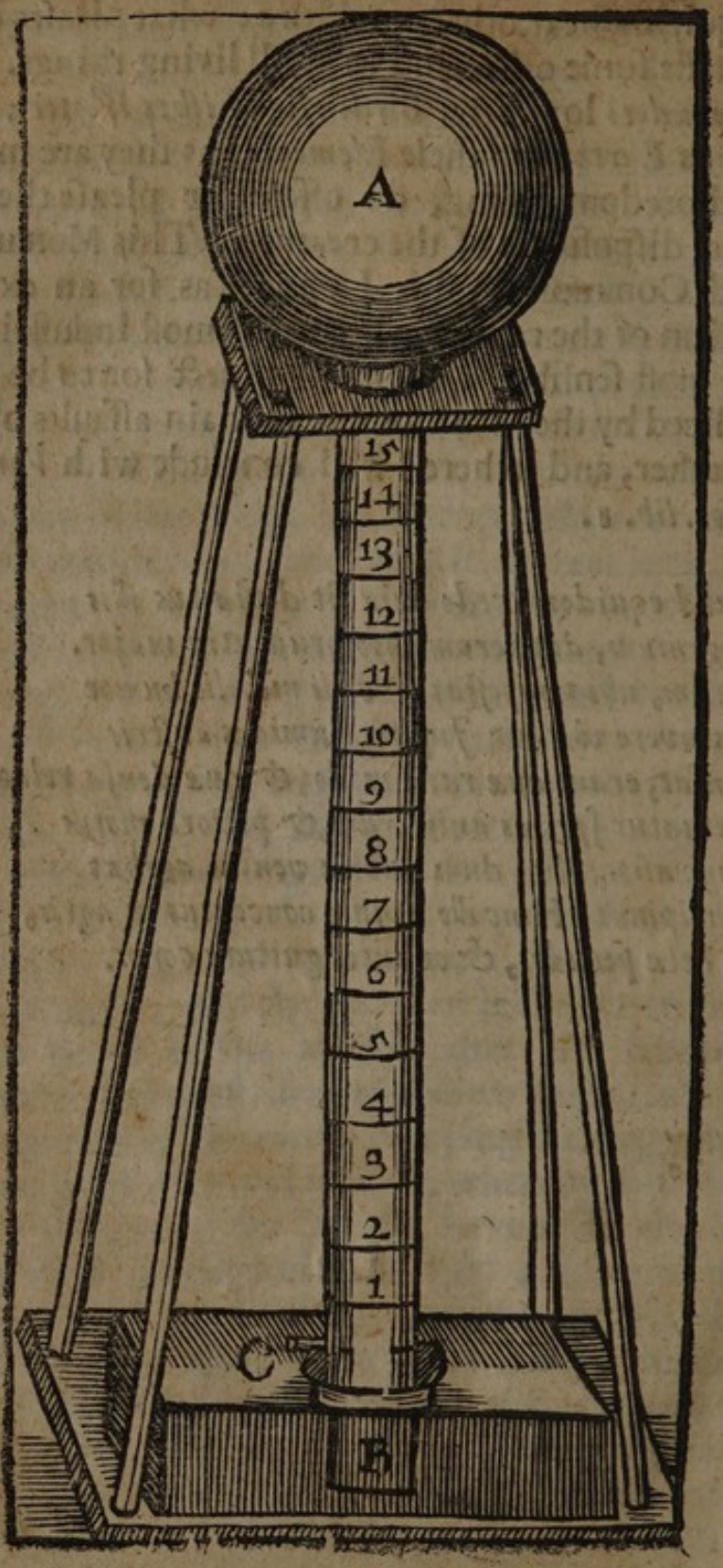
By *Natures* inſtinct from theſe, *Man* (as in a Calender) may read the weather, and the ſeaſons of the year, every body having ſmall poars, into which the *Air* does continually infuſe it ſelf; and as it is rarified or condenſed, it alters the diſpoſition of the body; but more or leſſe, according to the conſtitution, and as it is agreeable or oppugnant to the natural temperature thereof; as for an inſtance, Bees and Emmots being of a fiery nature, (as appears by their choler and induſtry) the *Air* infuſed into their little members, towards rain (being moiſt, and oppoſite to their natures) ſtupifies their ſenſes, and makes them heavy, and not apt to labour or go abroad.

This is the cauſe that Bees keep in their hives, or will not go far from thence, when the *Air* grows moiſt; and the weather inclining to rain; from hence is the motive that the laborious Emmots deſire reſt, and withdraw themſelves into the caverns of the earth, carrying their eggs with them, as by a natural inſtinct, whereby to preſerve their progeny; for by the fervour of the *Sun*, they muſt be diſcloſed, and by a ſtorm of rain they would be chill and periſh; the reaſon is generally the ſame in other ſenſitive creatures, whoſe corps are ſenſible of the *Airs* change, that alters them according to the natural temperature and diſpoſition of their bodies, ſome creatures requiring

requiring heat, others moisture; what pleases one, distasts some other, and so of all living things. *Salamanders* love *Fire*; *Birds Air*; *Fishes Water*; and *Beasts Earth*: So these *Elements* (as they are mixt) and predominating, do offend or please the natural disposition of the creature. This Monarchy and Common-wealth I choose as for an explanation of the rest, they being the most industrious, the most sensible, and most subject for to be prejudiced by the incursions or suddain assaults of the weather, and so here I will conclude with *Virgil*; *Geor. lib.* 1.

Haud equidem credo quia sit divinitus illis
Ingenium, aut rerum fato prudentia major.
Verum, ubi tempestas & cæli mobilis humor
Mutavere vias, & Jupiter humidas austris
Densat, erant quæ rara modo; & quæ densa relaxant.
Vertuntur species animorum, & pectora motus
Nunc alios, alios dum nubila ventus agebat
Concipiunt: Hinc ille avium concentus in agris,
Et lætæ pecudes, & ovantes gutture corvi.

The Weather Glaſs, or perpetual Kalender.



BY this artificial means you may at any time, either in the day, or night, discover certainly the *Airs* alteration, as it does condense, or rarifie; and so from thence presage the future weather: which the better, and the more sensible to effect, I will prescribe a proportion for the *Glass*; the manner how to devide it, and make a water that will not freez, much more beautiful and conspicuous then ordinary water.

First provide a Bolts head of a cleer transparent Glasse, in form as you see the figure; the end at *A*, like a Globe, in content to the whole $\frac{3}{4}$ or $\frac{4}{5}$: let the shanke be in circumference $\frac{1}{4}$ or $\frac{1}{5}$ of the head at *A*; then 1 $\frac{1}{2}$ or 1 $\frac{1}{3}$ of the *Globes* circle the length unto *B*, where must be a Glasse in content about half of the bolts head; as for a cestern to receive the water, which you may thus provide; if you would have a red water take *Vermilion*: a green colour is more pleasant and visible, which is thus made: take *Verdigrease*, and $\frac{1}{2}$ so much *Roman vitrial*, beaten small, and put them into the best white *Wine vinegar*, the quantity as you shall see convenient, the colour, and bigneſſe of the cestern consider'd; these being infus'd and sturr'd together, let them stand 2 or 3 days until the water be coloured to your mind; if it proves too deep a green, pour in a little more *Vinegar* or strong Water to it.

This being provided, take the circumference of the globe at *A*, (with $\frac{1}{4}$ part more or 4 diameters if you can) and place it on the shank with a string equidistant from the head, as at the cestern, there make two marks, and divide that space into

what parts you pleaſe, 15 degrees or equal parts I conceive the beſt, 8 being the Arithmetical *medium* (if the ſhank be not taper'd) write the figures on paper, and paſt them upon the glaſſe in a continued Arithmetical Progreſſion, aſcending from 1 to 15: make a Frame that the glaſſe may ſtand faſt, and about the ceſtern a rock, or what you fancy beſt. This done, put the water into the Bolts head, and holding that in your hand, put it into the Frame and Ceſtern; then turn it ſuddenly the right way, and upon the bottome let it reſt awhile.

Obſerve at what figure the water ſtands (let it at the firſt be too high,) then raiſe up gently the long glaſſe, ſo that the water may fall down into the ceſtern, and try it for two or three days; and when it is at a place that fits the temperature of the *Air*, and Seaſon of the year, *viz.* 1, 2, or 3. if it be in the heat of Sommer; but at 13, 14, or 15. in the cold of Winter: if a little froſt (ſuch as we have in *September*) place it at 9, or 10: but if very temperate weather, as between hot and cold, the water muſt ſtand at 8 a *medium*; having tri'd and fitted it well according to the temperature of the outward *Air*, (for it muſt be kept from fire and accidental heat) cloſe it or lute it up at the neck of the ceſtern, leaving onely ſome cane for a vent (as you ſee at *C*:) whereby the *Air* may paſſe in or out of the ceſtern accordingly as the water doth riſe or fall; for the long glaſſe muſt always ſtand in the water, and almoſt touch the bottome of the receiver or lower veſſel, as at *B*; if the *Air* gets into the long glaſſe anywhere, (after it is placed according to the weather) the work is fruſtrated.

A

A PERPETUAL KALENDER, OR Diurnal for the weather, with general and particular obſervations diligently ſelected, and compendiouſly inſerted, demonſtrating perſpicuouſly in a Glaſſe the Airs mutability and the weathers viciſſitude; with the preſent temper and Seaſon of the year, obſerving the water on ſerene days at theſe degrees.

Viz.
- 1, 2, 3 *Shews the extreme heat of Sommer.*
- 4 & 5 *Is exceſſive hot and ſultry weather.*
- 6 & 7 *Is more hot than cold; a pleaſant ſeaſon.*
- 8 *The* medium *betwixt Sommer & Winter.*
- 9 & 10 *More cold than hot, with gentle froſts.*
- 11 & 12 *Is exceſſive cold and froſty weather.*
- 13, 14, 15 *Shews the extreme cold of Winter.*

1. THe efficient cauſe why this water riſeth and falls, is from the condenſing or dilating of the outward Air, made viſible by a ſympathetical imitation of the parts here inclos'd, upon any alteration of the weather, preſag'd from hence

hence by experience, obſerving that *Cold* and *Drought* do contract, *Heat* and *Moiſture* rarifies.

2 The ſudden falling of the water foreſhews an immediate approaching Storm of Thunder, Lightning, Rain, Hail or Snow.

3 If the water falls a degree in 6 hours, it will Rain within 12 hours after, if not miſty, cloſe, or ſultry weather for the Seaſon.

4 If the water fals much in the day, and riſeth but little in the night (yet the weather continuing fair) expect then exceſſive heat, if not Thunder and Lightning.

5 If the water falls never ſo little between Sunſetting, and his riſing next day, it will Rain or Snow before 12 the following night, if the *Meteor* converts not to what is worſe a *Calydonian Miſt*.

6 If the water falls not in the time of artificial day, it prognoſticates northerly winds, a cold night to enſue, or ſtorms of Hail at hand.

7 If the water keeps neer any degree a natural day, the weather will continue whether it be fair or foul; but if it riſes or falls a degree, and ſtands, the weather will quickly change to ſome exceſs.

8 If the water falls no more in the day then it did riſe in the night, it is a ſign that the Air is temperate, the heat of the day equally qualifying the coldneſſe of the night, or elſe it argues the weather to be at a doubtful ſtay.

9 The often riſing and falling of the water ſhews the outward Air very mutable, the temper various, and the weather unconſtant.

10 When the water riſeth not in the night-time, expect then Miſts, dark, foul and foggy weather

weather the next day, if not Thunder and Lightning in Sommer.

11 The water rising any day in fair weather, presages a frost the following night, or cold windy weather for the Season, if no immediate storm of Hail invades the earth.

12 If the water riseth in foul weather, whether it be day or night, it prognosticates the storm is nigh past, and fair weather will consequently ensue.

13 The more that the water riseth or falls at any time, the more violent will be the change of weather, and of longer continuance, whether fair or foul, hot or cold: as if it ascends 2 degrees in the day or 3 in the night, or falls 2 in the night or 3 degrees in the day.

14 Observe at what figure or degree the water did rise or fall when the weather chang'd; for the Airs temper will continue in the same state until the water returns to that place again, excepting the extreams of Winter and Sommer.

15 So long as the water shall continue above 10 ascending 'twill be frost; if it falls below 9 'twill break, unless it rises within 12 hours after: if from above 12, it descends a degree or two and stands, expect then Snow, Sleet, cold or slabby weather.

If the *Bolts-head* be not prepar'd neer the dimensions given, the water will rise and fall, as the inclosed air contracts, or rarifies; but not in proportion to satisfie curious expectation, nor exactly ratifie all the 15 prescribed observations: Besides Countries, particular places, houses and rooms, according to their situations, or accidental causes will

will change the Airs temper; all which with other circumstances I refer to the ingenious, and my following Paraphrase to their expofition.

A Paraphrase upon the Weather GLASSE.

NAture in all her works abhors a *Vacuum*, so that no *sublunary* place can be empty or void, but is supplyed by one of the four *Elements*; from hence it is, that the *Air* in *Water-cranes* and pumps being sucked out, the waters from profound springs are forced to rise, contrary to their course and gravity; and as the *Air* is sucked up; the Water ascends, whereby to avoid a *Vacuum*, so repugnant to *Nature*; the reason is the same in this; for the outward *Air*, being condensed with cold, that contained in the globe of the glasse, must also contract it self, being a member or part of the whole *Element*; and so consequently the water in the glasse must ascend to avoid a *vacuum*, which it readily will doe, having a vent below to supply the defect of water in the lower vessel.

This is the sole cause, that glasses break in frosty weather, being close stopp'd, and not full of liquor; for the *Air* contracting, and having no pores or passage, for a supply of more, the vessel of necessity must crack: and by rarifaction the same may be effected, as common experience proves in glasse *Alembicks*, or other close and concave vessels, which are burst by restraint of the rarified incloſed Air; and if these bodies could extend themselves like bladders, the included air might

might be dilated unto an irruption at last, with a noyse like *Meteors* swell'd to Tympanies in the wombs of pregnant clouds: from rarifaction of Air proceeds this experiment; Take a globe, or round glasse luted up close, and having rarified the confined air by natural or artificial heat, you may throw the glasse against a stone, 'twill bound and not break by any violence that exceeds not the extension of the dilated imprison'd air: And here in these small things I have briefly prov'd how active this *Element* is in avoiding either excess or defect, superfluity or a *vacuum*, and in an instant contracts or rarifies as *Nature* sees aptest or most facile to be effected, and thus avoids vacuity in all bodies; for if any place be empty, 'twill be found in some extravagant defendants, or in orbicular heads, enemies to order, emblemes of a *Chaos*, *Natures* abortives or false conceptions; but lest this discourse should be so much dilated for to make some break into choller, I will return to the Weather glass (my former subject) not so fragile as they.

The falling of this incloſed Water is according to the natural property and course of all ponderous bodies, inclining towards the center and seat of gravity, if not hindred by some greater force, or natural affection to attract them; so this tends downwards accordingly as the incloſed Air can dilate it self; for the *Element* rarifying (as against rain or hot weather) that contained above the water in the glass, must imitate it, in the same proportion; which appears by this; for to be $\frac{1}{5}$ or $\frac{1}{6}$ part more in the extreme heat of Sommer then in the greatest cold of Winter; but not to be understood

derstood as general; for the extreams of heat and cold, in the Winter and Sommer-Seaſon in every year nor Country is alike, as regions under the Torrid *Zone*, admits of no froſt, and parts neer either Pole receives but little heat; ſome places enjoy a mean, and divers in exceſs, of both extreams: The diviſions of this glaſs are intended chiefly for *England*, or ſuch Countries as are neer this temperature of *Air*; yet they may be made for any other Climate; but the obſervations muſt not be in all points the ſame, for the former reaſon delivered.

The temper of your body you may try, by laying your hand upon the head of the glaſs; for the hotter you are, the more the water will fall; and take your hand off, the water will preſently riſe, recovering its former place or temper; and for a demonſtration let this ſuffice.

I have preſented to your view as in a glaſs both natural and artificial preſages of the weather: for all knowledge (meerly humane) is but as a ſhadow of *Science*, or a ſuperficial learning, reflecting upon mans imagination, as objects repreſented on a mirrour, and not ſubſtantially comprehending, the leaſt thing created: ſo expect not from me (the meaneſt of men) infallible predictions, but conjectures, and moſt of thoſe collected from the obſervations of others, bound up in this little Volume, and order'd in the beſt form I could deviſe: & as for better reaſons in theſe natural cauſes and effects of *Meteors*, I will refer them unto your *calm* and *ſerene cenſure*, for to paraphraſe upon, and explain the obſcure and hidden myſteries of

Natures

Natures secrets; and yet She not absolute of her self; but strictly tyed to the precepts of the *Immense Creator*, to whose Sacred name be all *Honour*, *Praise*, and *Glory*; These and all other being under the command of His *Omnipotent word*; And thus it is recorded in the *Regal Psalmist*, *cap.* 148. 8. *Ignis*, *grando*, *nix*, *glacies*; *spiritus procellarum*, *quæ faciunt verbum ejus.*

AN

AN INTRODUCTION TO The Fourth PART.

Shewing

The direful effects of ſome prodigious Meteors, Epidemical diſeaſes, and Memorable accidents; with brief Hiſtorical obſervations, of their events, and final cauſes, as juſt motives to the love and fear of God.

Benevolent Reader,

THe formal and material cauſe of *Meteors*, I have compendiouſly delivered you already, according to my ability, ſelected from the ableſt *Aſtronomers* and *Philoſophers*; amongſt whom, I will not raſhly preſume to give a verdict in ſuch ſtupendious conceptions, but willingly do attend their Dictates, and Hypotheſes, which in many things do not concur: a common vice, in humane learning to vary; many men, having many minds, with opinions ſo oppugnant, as not to be reconcil'd.

cil'd: Some affirming *Comets* to be of a Celestial nature, other sublunary, and extracted from the *Elements*; Some denie their motions to be equal about their center, but sometimes high, and at other times low, according to the matter that feeds them, so moving up and down in the *Air*, like an *Ignis fatuus*; And thus by refractions deceive humane sight, and frustrate these seeming demonstrations: But leaving their ambiguous arguments, and dubious opinions of men (prone unto errour) since the matter and form of them is undoubtedly held natural, their effects portentious, and observed as the forerunners of great calamities, to be inflicted upon whole Kingdoms and parts of the habitable World. And thus the *Poet Silius. Lib.* 8.

——— Non unus crine coruſco
Regnorum everſor, rubuit lethale Cometes.

Pliny in his natural History, makes a series or catalogue of these fiery apparitions, which he divides into Ten kinds; but my intention (in this little treatise) is to comprehend them under the title of *Comets*, *Blazing-Stars*, or *fiery* Impressions in general: They are the hidden and secret mysteries of *Nature*, portentious in their heights, magnitudes, courses and periods, various, and manifold in their colours and form, but are generally observed representative lights and figures of Stars; and their effects (according to the opinion of Philosophers) are to purge the *Air*, by consuming those Meteors whether exhaled, or ingendred in the Skies: But these combustions inflame that *Element* by which we draw our vital breath,

and so begetteth Choler, and makes us prone unto dissentions, and civil broiles; if the matter be extracted from the Earth it causeth sterility, by consuming the *Humidum radicale*; all this it does presage and more, the iminent scourge of God, as the observations of Historiographers and Poets do abundantly testifie, and thus writeth *Manil.* a heathen,

Nunquam sutilibus excanduit ignibus æther
Et nunquam Cælo, spectatum impune Cometem.

And although such prodigies do usually proceed from natural causes, yet God, who is Omnipotent, did know from all eternity, the actions of the Worlds inhabitants, and their rebellious proceedings against His Sacred *Majesty*; arming themselves in vain with fortifications against just *Heaven*; and combining together with the associations of evil Spirits, in League and Covenant with them; when the Immense *Creator* (if he pleases) can make, not onely the *Elements* to destroy mankind, but the very Atomes, or the most contemptible things, that ever were made for mans use, and those to execute his commands; as witnesse the *Egyptian* plagues, where *Nature* produced those stupendious effects; and little despicable creatures, almost destroyed a mighty Kingdome; Yet these had forerunning signes, with mercy, to admonish *Pharaoh* and draw his people to repentance. And thus speaks *Esdræ 2. cap. 9. Et dedisti signa atq; portenta in Pharaone, & in universis servis ejus, in omni populo terræ illius.*

The State of *Rome* at the death of *Julius Cesar* was menaced with a dreadful *Blazing Star*, presaging

saging the effusion of much blood, which quickly after did ensue, for these *Meteors* do beget choler, and from thence fury, rage and madnesse, the Parents of commotions, ushring in Sword, Plague, or Famine. Of this writes *Virg. lib.* 1. *Geor.*

Non alias Cœlo ceciderunt plura sereno
Fulgura, nec diri, toties arsere Cometæ.

The effects of *Comets*, or fiery impressions in the *Air*, are not universally seen to all Countries, nor yet oftentimes to all places within those regions; nor are their influencies obnoxious, to all men where they be visible, yet motives unto every particular man to repent. Although there hath been no calamity yet in the World so general, but God out of his Mercy hath preserved many: and in acknowledging of his goodnesse, thus it is recorded in the Sacred *Records Joshuæ, cap.*24. *v.*17. *Fecitq; videntibus nobis signa ingentia, & custodivi nos in omni via, per quam ambulavimus.*

Comets do declare the greatnesse of the *Creator*, and are as admonitions from Him, who like a Father and a merciful Judge, infinite in his Love, as in his Justice, giving us these signs as warnings, like an indulgent Parent who shews us the rod before the Sentence be pronounced; the continuance of their direful effects are as the rest in dispute, but by some observed thus: That for so many natural days, as any Blazing Star or fiery Meteor shall continue, so long will their sad effects endure, in succeeding years, answering the number of those days; this is but a meer conjectural opinion, derived rather from the annotations

of doubtful Experience, then grounded upon any humane reason: But whether this be true, or that these dreadful and stupendious Meteors be the cause of these woful ensuing events, I dare not subscribe my weak opinion; but this I will confidently affirm that they are evident Demonstrations of an Omnipotent *Dietÿ*, and motives to make the proudest Creature strike Sail, to amaze the wisest and terrifie the most valiant. *Eccles.* 3. 14, *Omnia opera sua fecerit Deus, ut timeatur.*

The un usual tumults, or disorder of the *Elements*, presages the wrath of God connexed with His Mercy, by his stupendious works, to draw us unto *Him*; if not for Love, yet for fear of punishment: For if the Elements of *Fire* and *Air* do rage, whither shall we run to save our selves? upon the Seas we shall suffer wrack by the storm, or perish in the tumultuous waves; if the *Earth* does prove unstable, where shall we set our feet? houses nor caves cannot defend us, when the bases of Rocks and Mountains shake, and the whole *Globe* of Earth shall tremble; whither shall we fly? who can secure us? Here I find comfort and hopes of safety with St. *Augustine*, *In te Domine speravi, non confundar in æternum.* And *Psal.* 121. *ver.* 2. *Auxilium meum à Domino qui fecit cœlum & terram.*

Blazing Stars, though unusualy forerunners of sorrow, yet oftentimes commixt with joy; of which there be many examples; one is recorded at the death of *Nero*, the Emperour, a Tyrant, a Parricide, a Murderer of *Christians*, and a professed enemy to Mankind; and at last (contrary to the perpetual establish'd Laws of *Nature*) kill'd himself.

ſelf. A little before his death, there appeared a fiery Comet, whoſe event in his fall was happy; This homicide raiſed the firſt perſecution, in the Primitive *Church*, and put to death St. *Peter*, and St. *Paul*, *Apoſtles*; as you may read in St. *Chryſoſtom*, and in *Lactantius*, *l.4. c.21. de vera Sapientia.*

God hath given us Signs in the *Heavens*, both of His wrath and mercy; of which I have ſhewn you here ſome precedents, and do intend to manifeſt it with a few more examples; but conclude the Introduction here with this; The *Rain-bow* which we often ſee, is from a natural cauſe, as the Comets fiery impreſſions and all Meteors are ſuppos'd to be; yet the proclamations of the *Creator*, and their ſignifications oftentimes beyond the knowledge or reach of humane reaſon: the *Rain-bow* given to *Noah* was a Sign of *Peace*. *Gen.cap.9. ver.13. A cum meum ponam in nubibus cœli: & erit Signum fœderis inter me, & inter terram.*

THE

The Fourth Part.

Shewing
The opinions of ſome Men concerning Blazing Stars, with a compendious Hiſtorical obſervation of their events; with divers other prodigies epitomiz'd.

All Comets or fiery impreſſions, are generally obſerved ſwifteſt at the firſt, and their influences of greateſt force, having then moſt matter, and peradventure more violent and obnoxious, when newly inflam'd; But all this is oppugned by *Scaliger*, who conceives no *Comet* for to conſiſt of a fiery nature, but a crude and undigeſted vapour, illuminated by the *Planets* or fixed *Stars*, as are thoſe Meteors, commonly called falling Stars, which are like gellies not enflam'd, but tranſparent, and apt to receive light; and theſe Meteors being illuminated by the Celeſtial orbs, do repreſent (as in a mirrour) their figures or apparent forms of the Stars or *Sun*, which apparitions, are common in the Northern Climates, although held portentions to us; And ſuch as do continue long, where the material cauſe is great, and the

rays

rays of the *Sun*, wanting force to diſſipate them; As for an inſtance; in the year of *Grace*, 1596. the *Hollanders* ſayling by *Nova Zembla*, to ſearch for a *N. E.* paſſage into *China* and the *Eaſt Indies*, there did appear for 17 continued days the perfect effigies of the *Sun* after the 17. of *October*; when as the true *Sun* was depreſſed; the Horizon of that place, being in the latitude of 77 degrees; The like you may read in Captain *James* ſearching for the *N. W.* paſſage into the South *Sea*. This laſt diſcovery was attempted without ſucceſs, in the Raign of *Charls* the firſt of *England*.

Some would ſeem to demonſtrate this, by a round glaſs, like a globe; which fill'd with water, and ſuſpended in a dark room, where placing a candle under it, and then t'will repreſent the form thereof, upon the ſealing: or place the light above, and ſome water underneath it; Or in a room made very dark, cauſe an augure hole to be bored through into the open air, and ſo, as that the *Sun* may ſhine in, or upon it: Take a globe glaſs fill'd with fair water, and hold it at the hole, thus perforated; and within the room (by reflection of this) you ſhall ſee many rays, repreſenting the form of a Blazing Star, or fiery impreſſion; and this ſome thinks to be a ſufficient demonſtration, that Comets are but illuminated parts of the darkned Air, or condenſed parts of the enlightned Spheres.

Rothmannus conceives that Comets are really enflamed Meteors, and that they are moved by *Angels*, as for a terrour unto mortals; but as for this ſuppoſition: *God* does commonly uſe, and employ natural means, unto natural cauſes; but

yet an Omnipotent *Creator*, not confined to one, nor the other. *Galilæus* doth ſuppoſe theſe Comets for to conſiſt of a Celeſtial nature, and generated in the Spheres, but dilated as are the clouds. *Lodovicus Molina* in his 5. diſputation of the Worlds Creation, would ſeem to gather from thence, and out of *Geneſis*, that the *Heavens*, both in *Species* and Matter, do agree with ſublunary things; and *Thomas Fiennus* inclines to this, as by his writings, concerning the Comet which appeared in the year of *Chriſt*, 1618: whereby he urges, that there may be matter in the *Heavens* both to generate and corrupt, and that there is daily permutations in the Spheres, although not viſible to our weak ſights: and this his erroneous opinion, ſeems ſomething to be confirmed by divers apparitions of new Stars, that have been made viſible in ſundry *Ages*, ſince the *Creation*; as they inſtance (who incline to him) in the Conſtellation called the *Pleiades*, accounted but 6 Stars, before the *Trojan* Wars; and ſince, as now commonly known by the name of the ſeven Stars: This ſome Hiſtoriographers do teſtifie; and likewiſe *Homer*, *Pliny*; and thus *Ovid*, *lib.* 4. *Faſt.* derived from a falſe conception of the ſight;

Pleiades incipient humeros revelare paternos:
Quæ ſeptem dici, ſex tamen eſſe ſolent.

After many and great conjunctions of the Planets, Comets and fiery impreſſions are often ſeen; which moveth ſome to ſuppoſe them to be the cauſe in raiſing the exhalation, which produceth the Meteor; and according to the Matter, it riſeth

the

the higher; and by the vertue of the fixed Stars, it may be drawn up above the Planets, even to the Firmament; But if this were gtanted, it must require an extraordinary time to elevate the Matter to that height; when as a stone let fall from the Firmament, and supposed continually to descend 100 miles an hour, this stone could not fall to the ground in 70 years; And as for these Comets, which are sublunary, if they be enlightned by the *Sun*, they would at some time happen of necessity to be eclipsed, moving within the conical shadow of the Terrestrial globe; if their motions be caused, or attracted by any one Star or constellation, they could not have contrary motions to them, as we have said already in the second part of this Book; nor could these *Meteors* change their places so much, nor be so violently swift, as they are observed: Some moving parallel with the Horizon, and others in the *Azimuths*, rather then describing parallels with the *Æquator*, which the Stars doe: Some fiery *Meteors* have seem'd fixt, and many so rapide in their stupendious accelerated motions, that they cannot be attracted by the Stars nor Planets: As the Comet in the year of *Grace*, 1618. did passe from one Tropick to another; that is, from ♑ to ♋ in the space of 10 natural days, which the ☽ that is the lowest Planet cannot perform in lesse then 13 days, 15½ hours and something more; But lets return to the final cause, and fatal events of stupendious Meteors delivered by reverend *Antiquity*.

Of

Of fiery Impressions.

Ozomenus writes of a Blazing Star, as it were suspended in the *Air*, with one end extending almost down unto the Earth; this was visible over the City of *Constantinople*. Some again have been seen to fall from the *Heavens*; of these *Scaliger* affirms one in his time that did descend: From the falling of the fiery Meteors, is derived (as some conceives) the poetical fiction of *Phaeton*; but *Tertullian* otherwise; Of these fiery precipitated impressions thus writeth *Claudian. lib.*

Præceps sanguineo delabitur igne Cometes
Prodigiale rubus ——————

Pliny lib. 2. cap. 35. writeth how *Licinius Syllanus* did see a sparkle falling from the Heavens, and in its descent to encrease unto the bigneſſe of the *Moon*; and this Meteor again drawn up, appeared like a lamp or burning torch.

About the year of *Grace*, 1450, being 3 years before the barbarous *Turks* invaded *Urope*, and took the famous City of *Constantinople*, there appear'd a fiery impression, representing the form of a two-hand Sword, which passing under the *Moon* (then at full) obscur'd her light; about this time divers Countries under the *Patriark* of *Greece* were miserably infected with the most diabolical heresie, against the incomprehensible and Sacred Mystery of the ever blessed *Trinity*; which errour (soon after) put a period to that Empire,

Empire, and brought all those Countries into a miserable captivity, and their servile necks to the yoke of a heathenish Tyrant.

Many dreadful apparitions in the *Air*, are recorded in the Books of *Machabees*, *lib.* 2. *cap.* 5. how for 40 days there was seen over the City *Jerusalem*, horse-men running in the Air, having golden robes, with spears (like armed bands) charging one another in order and manner of a fight, as hand to hand; motions of bucklers, multitudes of glittering helmets, drawn swords, throwing of darts, splendor of golden armes, and coats of Maile; This shewed the forerunning miseries of the *Jews*, persevering in their disobedience to *God*, and neglecting his just Precepts, until left unto the pleasure of the insulting foe. *Antiochus* giving Commission to his Souldiers to slay whomsoever they should meet, sparing neither Men, Women, nor Children; where there was killed in three days space the number of 80000: 40000 put in bands, and sold; Besides this, they committed sacriledge, and violently took away the vessels and ornaments of the *Temple*, with their profane and polluted hands; and left governours there more barbarous then himself. There were also strange portentious apparitions in the Air (before the Destruction of this City of *Titus Vespatian*) as a fiery sword hanging over *Jerusalem*, the space of a whole year, with many other prodigious visions; of which you may read in *Josephus*.

There happened in the Isle of *Britain* many portentious signs, presaging the effusion of much bloud, and menacing the subversion of the whole Island;

Isſand; all which quickly after came to paſs by their own inteſtine wars, and the invaſion made by *Julius Ceſar*, who ſubdued it to the State of *Rome*, the people ſubjugated to the Tyranny of the enſuing Emperours. As for the forerunning ſigns of calamities this Iſland groaned under, there were ſeen in the *Air*, globes of fire, and dreadfull ſcreaks and noiſes heard to the aſtoniſhment of the people.

Anno 1558. began deformed reformation, whoſe infatuated doctrine, was attended with a prodigious and fatal Comet, hanging over their heads, as a meſſenger of *God's* wrath; In theſe times there fell out of the Air ſuch multitudes of ſtrange and monſtruous proportion'd flies, that for many miles in *Germany*, they deſtroyed the corn in the fields, and all vegetables, until with want they died; the corruption of whoſe bodies infected the Air, and ſo begot an Epidemical diſeaſe, in teſtimony of the ptoteſtation made.

In the year of *Chriſt*, 1588. it is reported by *Snellius*, how that at *Amſterdam* (a little before *Sun*-ſetting) there was beheld in the Air the form of a Seafight, which continued the ſpace of an hour, where the conquered were ſeen to flie: this was little before the *Spaniards* proud *Armado* came inſulting into our narrow Seas, who preſuming of their ſtrength to captive *England*, were by the bleſſing of *God*, fruſtrated of their deſign, and put to flight, being ſevered with a puffe of wind, and many thrown upon our coaſt, with ſhipwrackt fortunes, craving mercy of us, whom they preſum'd to conquer, under the diſguiſe of *Religion*, when it was to enlarge their Dominions, by enthralling

thralling us; An Embleme of humane greatneſs, and how imbecile it is; a ſtory paralleld by *Xerxes*, both in their pride and ſucceſſe.

Of theſe portentions, apparitions, and direful forewarnings of *God's* juſt wrath againſt the ſinful World, there be many fearful examples, overlong to be rehearſed in this Treatiſe; ſo that all of this kind I will here forbear, and conclude with thoſe immediately following the death of *Julius Ceſar Dictator*, murdered by the *Senators* in the Senate houſe: at which time there appeared a Blazing Star, with divers other prodigious ſigns of enſuing woe, and effuſion of bloud, which preſently after followed; For ſeven nights after his death, there was heard hideous howling of Dogs and Wolves neer their great Towns, fatal Birds ſcreaking in their Cities; Beaſts did ſpeak, the Images in their Temples did ſweat, Mount *Ætna* brake forth with dreadful globes of fire, where ſtones were melted, the Earth gap'd, Rivers ſtood ſtill, the *Alpes* trembled, armed bands appear'd in the Air, Trumpets were heard to ſound, the *Sun* pale and wan, and almoſt obſcured for a year following; and of *Ceſar's* ſlaughter thus writeth *Ovid. Metam. Lib.* 15.

Arma ferunt inter nigras crepitantia nubes
Terribileſq; tubas, auditaq; cornua cœlo
Præmonuiſſe nefas: Solis quoque triſtis imago
Lurida ſolicitis præbebat lumina terris.

Of this writeth *Virgil. Geor. Lib.* 1. and alſo *Tibullus, lib.* 2. *Ele.* 5.

Of

Of Parelii, Lunary Rain-bows, and some stupendious Eclipses of the Luminaries; also light nights and dark days.

Before the bloudy conflict between *Cesar* and *Pompey* in the fields of *Pharsalia*, where blind *Fortune* was arbitrator, which of these two fond ambitious Men should rule the subingated World; at that time there appeared 3 *Suns*, or 2 *Parelii*, as if declaring the greatnesse and glory of these two Potentates, who were but as false lights, for they both soon vanish'd.

In the year of *Grace*, 1525, there appeared 6 *Suns* or 5 *Parelii*, all visible at one time, *Gem. Phri. Lib.* 1. *cap.* 8. and quickly after this, was *Francis* King of *France*, overthrown in Battail, and of a great Prince made a captive by the *Spaniards*; about this time also, many false Prophets did arise.

Pliny Lib. 2. in his natural History writes of 3 *Suns*, or 2 *Parelii* that were seen in *Bosphorus*, but neither registers the age, nor records the event; He mentions also 3 when *Lu. Plancus*, and *Marc. Lepidus* were Consuls, and when *Claudius Cesar* was Consul, and when *C. Domitius*, and *Ca. Fannius* were Consuls, there appeared at one time 3 *Moons*; he affirms also, some nights so light, as that they were not (but in respect of time) easily distinguished from the day; but what followed, he relates not: But this happned about the Nativity of our *Lord* and *Saviour*, who was the light of the World, and did disperse the clouds

clouds of errour and idolatry, which had a long time infatuated the *Heathens*, in their benighted understandings, and now to be illuminated with the *Truth*; and this recorded to be seen not only in *Judæa* but in *Spain*, and other places of *Europe*.

Aristotle lib. 3. *cap.* 2. *Mete.* writeth of two *Rain-bows*, made by the rays of the *Moon* in the night season, these were seen in his days. *Thimon* writes of two *Rain-bows* seen in the night, and both in the space of 3 years.

Albertus records one in his time, the *Moon* not at full in the Sgn of ♍ the *Sun* in ♉, ready for to enter ♊ the time of year being about the middle of *April*; the ☽ in the South, and the Rain-bow in the North part of the hemisphere. *Americus* who gave the West Indies its name, writes of one Rain-bow which he did see in the north part of the Horizon, about midnight, but very pale.

Gemma Phri. lib. 2. *cap.* 2. *Cosmo.* writes of one that was seen the 12. of *March* about midnight, the *Air* clear and temperate; this *Rain-bow*, was described with perfect colours, as those that we see in the day; And *Daniel Sennertus* a famous Physitian of *Wittenberg* reports of one *Rain-bow* which himself did behold (about Midsommer-time in the year of *Christ*, 1599, immediately after a direful Tempest of Thunder and Rain; this Rain-bow appeared very beautiful between the North and East part of the Horizon, by which it should seem 'twas after 12 at night.

Snellius lib. de Cometa, 1618 writes, how that in the year of our *Lord God*, 1617, and in the month of *December*, the *Moon* neer the full, there

did

did appear a *Rain-bow* in the night, and upon the 30. day of *December* following (going towards the *Hague*) he did see another continuing from 5 to 6 in the evening; these were a little before the beginning of the *Palatinate* wars, fatal unto *Germany* and hurtful to all *Christendome*.

Divers portentious Eclipses, both of *Sun* and *Moon*, have happened according to the course of *Nature*, although prodigious: and Egyptian darkness too hath benighted us, continuing 3 or 4 days, as *John Stow* in his Annals testifieth, and that some days in *Holland* were not distinguished from the nights; and divers men (in the time of artificial day) did miscarry (by reason of darkness) having lost their ways, mistook their Inns, and so fell into their graves, shortning their voyages to their journeys end. And *Sleidanus* records the like of this in *Germany* in the year of *Christ*, 1547, in the moneth of *April*, when the *Sun* was obscured to their Horizon for four continued days; these were as Emblems (in both places) of their rebellion against *Heaven* and *Earth*, which are the ways of the Divel; For he that follows *Christ*, walks not in darkneſſe. The *Romans* were also thus benighted when the Prince of obscurity was adored by them: which *Virgil* does apply to the death of *Julius Cesar*, and the civil wars, *Lib.* 1. *Geor.*

Sol tibi signa dabit; solem quis dicere falsum
Audeat? ille etiam cæcos instare tumultus
Sæpe monet, fraudemq; & operta tumescere bella:
Ille etiam extincto miseratus Cæsare Romam
Cum caput obscurâ nitidum ferrugine texit,
Impiaq; æternum timuerunt sæcula noctem.

Porten-

Portentious Stormes of Rain.

BEfore the Nativity of our *Lord* and *Saviour* 766, in the Raign of *Rivallus* (a Britiſh King) for three days ſpace it rained bloud, out of which corruption, there enſued multitudes of venemous Flies, which killed many men, and bred a mortality, with deſolation almoſt unto the whole Iſland; This is collected from the Britiſh antiquities.

A little before the death of *Nero* the Tyrant and Emperour of *Rome*, it rained bloud with many other prodigies, as you may read in *Livy*.

In the year ſince the Sacred *Virgin* was a Mother 1534, about the Feaſt celebrated for the Reſurrection of the *Son* of *God*, it rained bloud in *Germany*; which falling upon Mens garments, did deſcribe the form of red Croſſes, to put us in mind (peradventure) of His cruel Paſſion, a Sacrifice for the whole World. In the Low Countries (neer about this time) the skins of men and women were ſigned in this manner, in a ſhower of bloud.

In the year of our *Redeemer* 1571, at a place called *Emden* in *Friſia*, there fell in the night time a great ſhower of bloud, which diſcoloured the earth, and all it fell upon, for the ſpace of 5 or 6 miles in compaſſe; and in ſuch plenty, that divers cups were fill'd the next day with it; about theſe times, began cruel and bloudy wars by the Sacramentarians. In the year 1601 the like of theſe prodigies began and continued the ſpace of

3 years, and then was seconded with a woeful plague.

Marcus Varro affirms, how it rained Frogs in several parts, and in divers Towns of *Gallia*. *Cardanus* reports *Anno Domini* 1510, how that in *Lombardy* it rained hard Stones of a sulphurious taste, in colour like to rusty Iron; one Stone (that fell in this Storm) was presented to the King of *France*. *Avicenna* affirms how that in *Persia* it rained Iron; In the time of *Augustus Cesar* it rained Silver, as *Dion* testifieth. In *Armenia* there fell from the Clouds red Snow, as if it had received a tincture of Vermilion; And besides these (as it is recorded) there hath fallen from the Skies, Flesh, Milk, Corn, Wool, and divers other prodigies, over long to be rehearsed, because they are doubtful, and yet affirmed by *Pliny*, *Livy*, and divers other well approved Authors; yet they upon report of others have inscribed many Errours, so I will passe them over, and proceed.

Of Deluges and portentious irruptions and courses of the Waters.

Besides many wonderful flouds in particular Countries, there be three held stupendious above the rest; the General *Deluge* in the time of *Noah*, in the year from the Creation of the Stars 1656, this was 15 Cubits above the highest hills; in this Deluge all the World perished, but what was with *Noah* in his *Arke*, as you may read in *Gen. cap.* 6, *cap.* 7, and *cap.* 8.

The

The second great inundation, is accounted that of *Achaia*, in which floud, that Province was submerg'd; This Deluge was 540 years after that of *Noah*; and by Computists affirmed, to be about the 90 year of *Jacob* the *Patriark*.

Deucalion's was the third, in the Country of *Thessalia*, about 100 years after the building of *Rome*; this *Deucalion* was son to *Prometheus* Prince of *Greece*, who in a Boat, saved himself, and his Family from the fury of the floud, on mount *Parnassus*; this is that Deluge which *Ovid* mentions in his *Metam. Lib.* 1. which swallow'd up the *Atlantike*, and divers other parts, and great Territories in *Europe*; Yet it is a general received opinion, that he had perused the old *Testament*, by relating, how the World in time to come should be destroyed with Fire, as in these Verses;

Esse quoque in fatis, reminiscitur affore tempus
Quo mare, quo tellus, correptaq; regia cœli
Ardeat & Mundi moles operosa laboret.

In the last year of *Nero Cesar*'s raign, new Rivers did spring out of the Earth, and others did alter their courses and former channels, as it is recorded by *Pliny, lib.* 2. *cap.* 103: and about that time some Rivers were observed to run backward, as if they would have returned (contrary to course) into the Earths bowels again; or to shew the preposterous courses of the Tyrant, that ript open his Mothers womb, to see from whence he came.

Conimbricensis, Tract. 11. *cap.* 8. *Mete.* writeth, how that in the raign of *Emanuel*, King of *Lusitania*, the waters in the River *Tagus*, did part them-

ſelves, running with two ſtreams on either ſide, and the middle of the Channel void of water.

Nilus the famous River of *Egypt*, and wonder of the World, upon the *Coſmical* riſing of the *Dog*-Star does overflow the fruitful valleys, enriching the ſoyl, and ſo producing an annual crop: yet ſome years theſe floods have proved extraordinary; as you may read in *Pliny*, *lib.* 5. *cap.* 9. the greateſt flood that ever was obſerved there, is recorded to be 15 cubits high, in the time of *Claudius* the Emperour; the leaſt that ever was known, is reported to be a little before the bloudy and fatal field of *Pharſalia*, between *Pompey* the great, and *Ceſar* the Conquerour.

In the year of Mans Redemption 1521, the Rivers of *Rhine* and *Maze*, with ſome others of leſſer note, both in *Germany*, and the Low Countrys by the extraordinary Tides, and ſwelling of the Seas, forced theſe Rivers to overflow their banks; which inundation overwhelmed 72 villages, in which periſhed above 100,000 people, with innumerable multitudes of Cattel of ſeveral kinds: this I find recorded by Mr. *John Stow*, in his Annuals of *Henry* the 8.

Many ſtrange and portentious births have been produced in all ages, not onely to the terrour of Man, but to the aſtoniſhment even of *Nature*; and theſe with many other ſtupendious prodigies for brevity ſake I let paſs, and will conclude with thoſe recorded of the *Romans*, more furious and bloudy then the worſt of civil wars, and thus *Virg. lib.* 1. *Geor.*

Vox quoque per lucos, vulgo exaudita ſilentes
Ingens: & ſimulacra modis pallentia miris

Viſa

Visa sub obscurum noctis, pecudesq; locutæ
(Infandum) sistunt amnes, terræq; debiscunt.

Of Earth-quakes and their wonderfull effects.

THe moving of a Coach or Cart will make houses sensibly to shake and tremble, according to the motion or Weight of the Carriages; & more especially in towns where there are many vaults or Cellers, and the streets paved in one *continuum* with the building: For the pressure or violence upon one stone (the pavements being connext) must continue to some end or *dividuum*, that the Air may vent it self; The poarinesse of the Earth, and volubility of the *Air*, is made by this apparent.

In a still Evening, place upon the ground a Drum; to which lay your ear, and you shall plainly hear the Air beating upon the Drum, representing the motion by which t'was made, whether it be Men or Carriages; and this may be perceived at two or three Miles distance, especially where the Number is great, or the Motion violent, upon open Plains, or barren heaths most of all; for the ground being poary in such places, where the soyl is dry, and hath ascents, with hollow hills; These sounds will not be so plainly heard at a distance over arrable lands, as it will upon any heath; because the turffe is as the Skin to the Earth, restraining the subtile Air from evapourating forth, and by reason of the concavity, it contains the more, and gives the freer passage.

Herodotus writes how *Egypt* was once Sea: *Seneca lib. 6. cap.* 21. does record how the Isle *Theraſia* did riſe out of the *Egæon* ſea, the Mariners beholding it & the like of *Thia* in the days of *Pliny*, and now a firm Island, one of the *Sporades*. And in the year of *Grace* 1538, in the fields of *Puteoli*, there was a new mountain did riſe neer a mile high, from the foot of the hill; Mountains and lower grounds have been removed from their places, where *Nature* hath fixed them; as you may read in *Pliny, lib.* 2. *cap.* 83. how two mountains did remove, and run together with a terrible noyſe, as if aſſaulting or contending with one another; In the laſt year of *Nero Ceſar*, the meadows, and Olive gardens of *Vectius Marcellus* were removed over a common high-way, and contrary in their motions, mutually changing their ſeats and ſituations: And in the moneth of April *An. Domini* 1586, the like happned in *Ireland*, where the ground was removed with the trees, and all the lower plants growing upon it; This ſhews the *Omnipotent Creator*, as we read in *Job: cap.* 9. *ver.* 6. *Qui commovet terram de loco ſuo, & columnæ ejus, concutiuntur.*

The Cities of *Hellice* and *Buris* were buried with an Earth-quake, and nothing remaining of them, but the bare name onely: And if *Plato* may be believed, *Aeon* in the Atlantick, was equal unto *Aſia*, and now all deep under water, the Sea retaining yet the name; and it is very probable that many Countries thus have ſuffered, whoſe foundations have been ſhaken with Earth-quakes, and ſo ſubjected to the inſulting waves; For if the terreſtrial globe had been thus divided in the days

days of *Noah*, how could *America*, and divers remote Islands from any continent have been planted, as now they are, whose originals the Natives knows not?

But some do object to this; that *America* might be planted by the North or South parts of the World: First it is doubtful, whether *Greenland* be part of that continent, or no; besides it is unlikely they should seek for a plantation through so cold & unhospitable a Countrey, that can afford no relief, nor any thing but hunger and cold. Others do better conjecture the first Colonies might pass by the straigths of *Magellane*, and thither out of *Asia* by *Java*, or into new *Guinea*; but admit it were so; it is not probable they carried savage Beasts, or venemous Serpents with them to a Plantation; but for that beasts might grow wild with running in Desart places at their liberties, and serpents breed out of the slime of the Earth; as Eeles and other living and sensitive Animals, produced from corruption, and yet afterwards engender and beget others of their form; But it is generally conceived there hath been many more Lands then there be at this present, and divers Islands by which at first they passed and now devoured by the Seas; and supposed by some, that this British Isle hath been severed from *France*; *Spain* from *Africa*; *Sicily* from *Italy*; and *Ossa* from *Olympia*.

Some do inferr, how that *God* promised *Noah* not to drown the World any more, and that He had put bounds to the waters, which they should not passe; 'Tis true, but yet part of it may be submerged, of which I could instance you many

precedents, as *Rye*, and other places in *England* under the Seas irrecoverable; their Steeples visible at a low water within this hundred years, and those now quite swallowed up with the yawning waves; For where these bounds are which *God* hath placed, 'tis known to *Him*, and and not to us, nor need we care if we serve the *Omnipotent Creator*. *Propterea non timebimus dum turbabitur terra, & transferentur montes, in cor maris, Psal. 45. ver. 2.*

Before the Nativity of our *Sacred Redeemer Jesus Christ*, 374. *Brennus* a potent Prince, whose territories being over-peopled, raised a puissant Army, to gain renown, and seek new plantations; in which design, he was assisted by the then over-populous *Gauls*, through whose Country he marched into *Greece* with 300,000 Men, as some writes: on mount *Parnassus* stood the City of *Delphos, famous* in those days of darkness, for the Temple of *Apollo*, whom those Idolatrous people worshipped, whose dubious responses had drawn from all Nations a great concourse of people, by which means, it was made the richest place of all *Greece*, and by Nature fortified; the taking of this City was the sole ambition of *Brennus*; partly by reason of the wealth, and partly it being the chief City, which being subdued, all the other Provinces would easily submit unto his power; So this Prince, with his multitudes of men, Storm'd the City with Fire and Sword; at which time, part of the Mountain fell down with an Earthquake, and overwhelmed multitudes of his most valiant and forward men: this calamity was seconded by a violent tempest of Thunder, Lightning

ning and Hail, which destroyed a great part of those that had escaped the former; *Brennus* sore hurt, and in despair of future good, with his sword slew himself, as it is recorded by *Justine*. This story I have related to shew the judgement of God upon him for his covetousnesse and pride; not done as against the worshippers of the Divel, but as in contempt of a Deity. *Proper. lib.*3.

Torrida sacrilegum testantur limina Brennum
Dum petit intonsi Pythia regna Dei.

Three years before the Birth of the Worlds *Redeemer*, when *Herod* was King of the *Jews*, there happened an Earth-quake in *Judea*, by which there prished of Men, Women and Children, to the number of 30000. precursor of the massacre and number of Infants, as some records do testifie.

In the 15. year of our *Lord* and *Saviour*, and in the beginning of *Tiberius* his Empire, there were 12. Cities in *Asia* in one night overwhelmed with the inhabitants; and which is more, all swallowed up in the bowels of the Earth. In the 18. year of this Empire, the *Son* of *God* (as a sacrifice for the World) was accused by the perfidious *Jews*, condemned by *Pontius Pilate* (then Presedent of *Judea*, under *Tiberius Cæsar*) and crucified, at whose passion the World did tremble with an Earth-quake, and the greatest that ever was, or, as it is thought, ever shall be untill His coming again to judge the quick and the dead; but some say this was miraculous, and not universal; these are the words of *Didymus*; *Mei Christi tempore, non privatus*

tus aliquis terræ motus, ſed tota terra conquaſſata, & centro convulſa fuit.

In the year of grace, 1117. there was in *Lombardy* an Earth-quake, which continued 40. days, in which time it overthrew many buildings; but the greateſt wonder was, it removed one Town from its ſeat, and ſet it in another place, a good diſtance from the former ſituation, with many of the houſes ſtanding; this ſtory you may read in *Floriacenſis*: theſe are evident demonſtrations of an Omnipotent power. *Job, cap. 9. ver. 5. Qui tranſtulit montes, & neſcierunt hi, quos ſubvertit, in furore ſuo.*

In the year of grace, 1509. the City of *Conſtantinople* was ſhaken with an Earth-quake, in whoſe ruines there was overwhelmed 13000 Men, Women, and Chridren. In the year 1531, the City of *Lixborn* trembled with an Earth-quake, which ruined 1500. dwelling houſes. *Fromondus, lib. 4. Meteo.* does affirm how that in the year 1570. *Ferraria* was miſerably ſhaken with an Earth-quake, which had continued in *Italy* the ſpace of two years, as ſome Authors do write: and in the year following, being 1571, the Turks preſuming of their ſtrength, and the diviſions of *Europe* (by reaſon of the Sects and Schiſms) raiſed a mighty Army, intending to invade *Europe* both by Sea and Land, for which deſign a fleet was rigged: And for the prevention of this general calamiy, it pleaſed God to unite all the Chriſtian Princes (as againſt the common enemy) who provided another, and put to Sea; and upon the 6. day of *October* the Chriſtians gave the Turks battail, which Sea fight continued that day and the next,

and

and then the Antichriſtians fled, and many of them did run their Gallies a ground, whereby to ſave their lives: The Chriſtians in this Sea-fight ſunck, and took 230 Gallies, and ſlew 30,000 *Mahumetans*, and multitudes were taken priſoners, who with the prizes and ſpoils, were divided amongſt the contibutors, according to their adventures; In this fight 12000 *Chriſtians* were redeemed from the Turkiſh ſlavery; The *Chriſtian* Princes loſt in this fight 8 gallies, and 8000 Souldiers; This was called the famous Battail of *Lepanto.*

In the year 1601. there was a general Earthquake through *Europe*, which made it all to tremble, but not the people, nor yet ſo much as moved them to repentance for their tranſgreſſions againſt *Heaven.*

In the year of the Worlds Redemption 1638. *March* the 27. *S. N.* between 3 and 4 in the afternoon, the Kingdome of *Naples* was violently ſhaken with an Earth-quake, which ſubverted houſes and Caſtles; the City of *Necoſia* ſtanding by the Sea ſide, was made an Iſland, and five miles divided from the Continent; the Earth ſinking, *Nature* brought in the waters, to fill the lower grounds and cover her entrails: there periſhed in this Earth-quake of men, women & children (ſo neer as could be gathered) the number of 40,000. this was a forerunner of implacable tumults and commotions of the people, beſides the bloudy Tragedies acted there betwixt the Kings of *Spain* and *France.*

Many prodigies I have here omitted, as partly fearing to be prolix: ſome again I have found but

but not their ſad events, and others I have let paſſe, as from doubtful Authors; as the Earthquake and Tempeſt at the taking of *Conſtantinople* by *Mahumet* the great from *Conſtantine* the laſt Chriſtian Emperour of *Greece*; in ſtorming this City, there happned a direful Tempeſt of Thunder and Lightning, and an Earth-quake that killed 3000 Men, Women and Children, and ruined 800 houſes, but Authors do not well agree in this, nor yet of the time; When it was taken, one ſaith *Anno Domini* 1452, *May* the 27. which was Whitſunday Eve; *Knolls* writes 1453, *May* the 29. which was the *Tueſday* after *Trinity* Sunday that year; But all agrees the City was quite depopulated, putting all to the Sword, but what were reſerved for *Mahumet's* pleaſure, and thoſe led away into a miſerable captivity; the Tyrant intending this for his Antichriſtian ſeat, called in the Jews to inhabit it. Here you may ſee *Heavens* juſt revenge againſt a ſtubborn people, perverſly maintaining that diabolical Hereſy againſt the Sacred and ever bleſſed *Trinity*; at which time & *Feaſt* the Empire had a fatal period, and the *Grecians* delivered into the hands of the moſt barbarous enemy; Theſe fatal Meteors are great motives to humble Man, to make him repent his iniquities, and ſoberly remember the moſt dreadful day of *Judgement*, of which theſe prodigies are forerunning ſignes, according to *Iſaia cap.* 24. *ver.* 1. *Ecce Dominus diſſipabit terram, & nudabit eam, & affliget faciem ejus, & diſperget habitatores ejus.*

Plagues

Plagues and Epidemical Diſeaſes.

EArth-quakes are often forerunners of *Plague* and *Famine* (*Heavens* direful revenge and juſt runiſhments) proceeding from exceſſe or defect, and preſag'd ſometimes from ſubterranean vapours, reſtrained in the Earth, and by rariſaction being grown over great to be contained, they do make violent irruptions, and ſo by infecting the *Air* (in which we breath) they do breed peſtiferous diſeaſes: but theſe exhalations are generally held moſt infectious to beaſts; For their heads being prone towards the Earth and neer it, they do draw in with their breath thoſe crude exhalations into their bodies, much more then Man, who ſtands erect: but beaſts being genepally infected with the viciated *Air*, and their bloud contaminated, the eating of thir fleſh breeds contagious Deſeaſes in Man; and in ſuch times, the greedy *Graſier* ſends thoſe to the ſlaughter which he thinks to be infected, fearing they ſhould die in his hands, and keeps the ſoundeſt ſtill for ſtore; Of theſe general calamities I could inſtance many; but fearing leſt I ſhould weary you with reading (as I am with writing) I will briefly relate theſe.

Before the Nativity of *Jeſus Chriſt* (the Worlds Redeemer) 185. there happned a Plague in *Africa*, that ſwept away 30000 Romane Souldiers, and of the Natives 1080,000, which depopulated not onely many Towns and Cities, but ſome whole Provinces. In

In the year of *Christ* 171. *Antoninus* Emperour of *Rome*, it pleased *God* to visit the World with a Plague, which made whole Countrys like a Charnel house; This general Pestilence began at *Babylon*, but spread its infection over a great part of *Europe*.

In the year of *Grace* 254. there happned an Epidemical disease that raged violently, and continued in several Countries the space of 15 years, all which time the *Church* of *God* was persecuted by the Pagan and Tyrannical Emperours, possessed with infernal spirits; in *Rome* at these times it rained bloud, where this Plague continued three years, while the living in the City were not able to bury the dead.

From the Sacred *Virgin*'s being a Mother 316. *Maxentius* in the Eastern Countries, raised a terrible Persecution, putting all *Christians* to death that he could find, and with severall kinds of tortures to force them from their allegiance and service to the *Son* of *God*: This persecution constrained many to fly their Countries; and divers for fear of *Maxentius* and his unhumane competitours, obscured themselves in Caves of beasts in the Desarts, where from savage Creatures they found more mercy then from Man; But this *Christ* reveng'd, persecuting the Tyrants with Plague and Famine, which so consumed many Countrys, that they were destitute almost of Men, Women or Children, until the Emperour had nothing but beasts to rule over, and not many of them neither.

From the Birth of our *Lord* and *Saviour* 1346. there happned in that year three great conjunctions of the higher Planets, *viz.* ♄ ♃ and ♂, and these

these three all in ♂ in ♒; this year produced one of the most universal and destructive Plagues that ever was inflicted upon wretched mortals; this pestiferous infection took the original in the East Indies, and past over the world, no people safe either by Land or Sea, the Air being generally contaminated as with a deadly poyson; many that year went to Sea, hoping by that means to avoid it, but in vain, for there they were surprised with their whole families: this Epidemical disease was so dreadful, that it banished all humanity, and perverted man from being a sociable creature: Friends forsaking their Friends and Alies; Parents unnaturally forsook their Children, and ungrateful Children their Parents: This general disease continued 9. years in several Countreys, and was as mortiferous and raging as ever was Plague in any Countrey.

Some writers affirm how that this Plague began from fiery Exhalations risen out of the Earth, whose malignancy infected the Air, and from those distempers begot raging Feavers in Men, untill the sword made incision of their inflamed veins, a remedy worse then the disease. Others say this Plague took its sad Exordium from fire that fell from Heaven: the most authentick *Chronologers* record it thus; *Lamech*, a City of *Arabia*, now known by the name of *Mecha*, the *Metropolitan* of the *Antichristian Mahumetans* superstition; in this City it rained Bloud and Snakes the space of three days and nights together; the Serpents soon after perished in such multitudes, that the stench of their corrupted bodies contaminated the Air in all the adjacent Regions;

Regions; this ſtupendious ſtorm raz'd *Mahumets* Temple to the ground, and ſever'd into many pieces the Sepulchre of that infernal Impoſtor: The next year the Earth denyed her accuſtomed fruits, introducing a Famine more mortiferous then the former; theſe direful calamities not moving man to repentance, (O incredulous and obdurate hearts!) but contemning thoſe dreadful judgements, were pleaſed with their enemies fall, until they fell themſelves; Piety expulſed, fled into exile, while envy and confuſion in Arms, put the world in an uproar, the ſword licenſed in the hands of *Furies*, making a rude decimation of thoſe who had eſcaped both Plague and Famine.

Theſe three laſt deplorable afflictions, were the moſt univerſal and deſtructive that the world ever felt, or the Inhabitants groaned under ſince the general Deluge, when in 40. days all living ſouls were deſtroyed from off the face of the Earth, but what the Ark was fraighted withal, whereby to replant the world again; and thoſe for many months were wafted over the angry waves, that lav'd the Earth polluted with enormous crimes, and tranſgreſſions of unbelieving licentious men, only under the Law of Nature, to which brute Beaſts ſubject themſelves. This Ark repreſented the figure of Baptiſm, 1 *Pet.*3.20,21. And moreover St. *Hierome* calls it a Type of the Catholike Church; the raging ſtorms and tumultuous billows (in oppoſition to one another) reſemble *Hereſies* and *Perſecutions*; the Ark out-lived the fury of the Deluge, and ſo ſhall the other to the worlds conſummation; all periſhed that were not

not in the first, so I need say no more of the last.

Historiographers conjecture that more Men, Women, and Children perished in one of these Epidemical diseases, then in the universal Flood; the World being conceived more populous then in the days of *Noah*, and the continuance much longer; many will not believe these (being but humane traditions) and 'tis not strange, since they want faith in divine Records; whereof some object that if the Deluge were 15. cubits above the highest Hills, the superficies of the Waters (on which the Ark floated) was swell'd up to the middle Region of the Air, in which no living creature can subsist; besides, they make queries from whence should these magazins of Waters be extracted? the Fountains of the Earth they conceive not sufficient; the Clouds are but thin dilated vapours; the Waters mentioned above the Firmament could not descend so low in 100. years, without a miracle.

To their objections, I might answer, 'twas the providence of God which preserved them, to whom nothing is impossible, being sole Creator and Moderator of the Universe; but since an Omnipotent and divine power condescended to make Mans preservation by a humane means, humane reasons may be expected, for which I refer the over curious unto the learned *Expositors* of *Genesis*; yet not to leave them in a Sea at last, something I will say, not positively affirmed, but conjecturally intimated only.

As for their Suppositions, the whole Element of Air is held naturally hot and moist, and the middle Region cold but by accident, which

frigid and restringent cause being chang'd, the quality must cease, and so the Air (in general) might convert to vapours innumerable; and the waters in the Earth (peradventure) were dilated, and so made more fluxible, whose Fountains were opened for 40. continued days, the Catarracts descending from their overburthned clouds; which time (to humane apprehension) might encrease the inundation to submerge the terrestrial Glob 15 Cubits above the highest hills, whereof 'tis probable the *Armenian* mountains were most exalted above the Earths center; and as the clouds were exonerated by the waters that fell, 'tis like this inferiour Air did ascend, and assume the middle Regions Sphere, and so made apt for all living creatures to breath in.

The Deluge ebbing, Mount *Ararat* appear'd, on whose firm foundation the Ark rested; the Waters by an orderly summons retreated some to repleniſh the Earths entrails and exhausted veins; others confin'd to channels of spacious Rivers, ample Lakes, and Oceans almost unterminated; a great part (by the influence of Stars) might be sublim'd, and reconverted to vapours, thence rarifying to Air, ascend their proper Orbs again, the grosser parts sink to their seats of gravity, and so will I, this being above my Sphere; yet pleased in recollecting my preservation past, the hope of one in future, transports my mind beyond a Deluge, the landing Eternity.

A com-

A Compendium of Meteors, and Signs observed in former Ages, as at this preſent, moſt prodigious in Nature, ſtupendious to Mortals; and portentious in their diſmal events.

THe *Symptomes* of *Natures* diſtempers I have rendered in a Chronological breviate, with their direful effects, and ſad events in general; and as for others more particularly reflecting on *England*, I refer the Reader to my Hiſtory of *Meteors*, when it ſhall be produc'd to the publique view. In this Epitomy I have recorded ſome prodigies, and what ſucceeded them; yet not preſuming to preſage what is to come (although I have a *Solomon* for it: *Eccleſ. c.* 8. *v.* 8, and 9) that being reſerved in the *Creator's* preſcience only, and I no Expoſitor; Yet generally when the *Elements* ſeem diſtracted from their common courſe, moſt do conceive they are Admonitions to us of anger, and precurſing ſigns of puniſhment, if not remitted by repentance; and before the *Sword* (the worſt of miſchiefs) is licens'd in the hands of rude and mercileſs men, theſe and ſuch like are Alarums to the voluptuous Children of the World lull'd into a *Lethargy* by ſin, charm'd by *Oblivion*, Auditors to *Vice*, and deaf to *Vertue*.

Behold! malignant *Planets* in the loweſt Houſe conjoin, preſuming to affront the *Sun* their Prince, while *Night* uſurps the Throne of *Day*, illuminated by intervals with Lightning, or by ſome dreadful *Comet*; the drops diſtill'd from Cloudsconvert to bloud, the *Earth* denies her accuſtomed fruits,grows ſterile, or diſabled through the diſcord of the other *Elements*. to nouriſh them unto maturity; from hence corruption and Famine introduces Epidemical diſeaſes, the *Air* infected for want of motion becomes offenſive, not cool nor fit to breath in, and on a ſudden the giddy *Winds* burſt forth in *Hericanoes* from their obſtruſe Caves, hurrying all things down that hinder their bluſtering motions, until oppos'd with eddie Winds, they turn all things *topſie turvie*! the *Waters* in united ſtreams ſtand ſtill, or divide themſelves; and at other times they ſeem to ſcorn the Confines of their Channels, but in imitation of the Seas ſwell above their Banks, as if ambitious to enlarge their Dominions! The *Earth* grows unſtable, and ſhaking as with an Ague, or labouring with ſome prodigious birth, or from a *Dropſie* relapſes into a burning *Feaver*! Behold the backs of angry Clouds, as if beſtri'd by Furies hurried along by irrefrenary Tempeſts! ſometimes menacing the *World* as with a Deluge, at other times belching forth flames of Fire, proclaiming combuſtions with impetuous Thunder! and many times,ſulphureous Meteors dilated within the obſtruſe Caverns of the *Earth*, ſeem to beleagre *Nature*, and by ſpringing of Mines, blow her up from the Center! the aſpiring heads of Rocks, by concuſſion of Meteors have been levell'd

with

with their feet, Bulwarks of ſtone, ramm'd up with Mountains (made againſt the proud ſurges of the Seas) have met, and others thrown down, ſunk into valleys, permitting the tumultuous billows to enter their breaches, and ſo invade the Land; at which diſorders *Nature* ſeems frighted, and in an Agony miſcarries, producing monſtrous and abortive births.

Theſe and all ſuch prodigies are to humble the *Mighty*, and make the proud and ſtiff-neck'd *Atheiſts* ſuppreſſe their thoughts, abaſe their exalted minds, bend their irreligious knees, and ſtoop to adore a *Deity*, beholding the *Elements* in an uprore mutiny, and *Nature* (their *Miſtreſſe* and *Idæa*) fall'n into an Extaſie, as if in a conflict betwixt *Life* and *Death*, or diſenabled to rule the ſubjugated Empire of the *World*: the *Princes* and *Potentates* of the Earth ſee themſelves impotent men; the ſulphurious *Ingeniers* cannot be defended with their Baſaliſcoes and Granadoes, but frighted run to their Mines (intended for the Throne of *Horror*) to ſhroud their fearful heads from the face of incenſed *Heaven*, acknowledging their fiery inventions but Squibs and Childiſh pot-guns. Theſe *Meteors*, though the meaneſt of the *Almighties* works, be pleaſed to accept them from the meaneſt of his Servants, who truly wiſhes your preſcience of *Meteors*, and preſervation from the fury and diſtemper of the *Elements*, recommending you and all to the Sacred Protection of *Heaven*, remembring; *Protector in te ſperantium Deus, ſine quo nihil eſt validum, nihil ſanctum.*

A CONCLUSION TO *This Book of Meteors.*

Impartial Judges, and ingenious *Jury*, unto whose candid Verdict I submit, hoping my faults are not capital, my Accusers not considerable, nor my Sentence rigid; As for the escapes of the Pen and Presse, they stand in this Sheet corrected as for a Pennance, yet expect a pardon by course of Law (if my Judges be Civilians) or at least a Reprieve for another *Sessions*, and in the interim licens'd to go upon their *Paroles*, until exchang'd for better; Yet asperge not these sheets with the errors as if adulterated by me, but let them escape your censures as they have done the Corrector, since I had no Revise nor Proof but by accident; my aboad remote from the Printer, who is the lesse culpable, the Copy being much interlin'd, and the Corrector not conversant in the Subject, whose faults (I hope) transcend not the Readers humanity, wishing they would behold them as the *Optick Science* demonstrates contraction of objects through concave Glasses; and if your clemency can extend its self to annihilate a few interposed faults, I need not doubt your condescention to grant me an Indulgence,

storm'd

storm'd with injuries, rifled by pretended friends, false in their words, perfidious in their trusts; these reflecting sometimes upon my weaker cogitations, represent temporal objects that divert my mind which should direct my pen: Yet I am contented (upon second and more serious considerations) since 'tis the permissive will of *God*, who can raise me if he pleases above the assaults of *Fortune*, or reach of malicious mortals, and graciously hath plac'd me above the degrees of *Contempt*, though underneath the lowest Sphere of *Envy*: I wish those that want belief, were bound to make me reparations. If what hath been truly and positively affirm'd, be not a sufficient *Plea* (for mistakes) not yet the Printers Table of Errors satisfactory, let those reflect, examine and peruse their own, to which (while they live) they never shall subscribe

FINIS.

Manuscripts prepar'd for the Press.

Inprimis, The *Scales* of *Commerce* and *trade*: *Geometry* demonstrated both by Lines and Numbers; from thence *Astronomy*, *Cosmography* and *Navigation*, prov'd and delineated by the doctrine of Plain and Spherical Triangles, mention'd in my printed Books of *Arithmetick*. The *English Annals* from the invasion made by *Julius Cæsar*, continued to these times. *Historical prescriptions*, *Ecclesiastical* and *Moral*. *Speculum annorum*, or an *Ephemeris* for 19 years to come, ready to be publish'd by the Author *Thomas Willsford*.

The faults escap't are thus corrected.

INtro. *Page* 2. *line* 18. *dele* they ; *p.* 5. *l.* 6. *dele* so ; *p.* 9. *l.* 15. *read* miles ; *p.* 10. *l.* 32. the *r. these* ; *p.* 17. *l.* 17. *r.* counterpoysing ; *p.* 18. *l.* 21. *r.* nor conducing ; *p.* 26. *l.* 14 *r.* with the ☉ ; *p.* 30. *l.* 21. *r.* 28 days ; *p.* 33. *l.* 20. *r.* 1 H. 35 *m.* *p.* 40 *l.* 29. *r.* 1572. & *l.* 32. *r.* a Mother ; *p.* 43. *l.* 1. *r.* Alpes ; *p.* 48. *l.* 26. doth *r.* do ; *p.* 49. *l.* 3. *r.* repelled to ; *p.* 53. *l.* 28. *dele* he ; *p.* 55. *l.* 9. *r.* not going far to seek, & *l.* 25. *r.* did abrogate or alter ; *p.* 57. *l.* 9. *r.* it is ; *p.* 51. *l.* 31. as *r.* thus ; *p.* 60. *l.* 10. *r.* and they ; *p.* 58. *l.* 14. garment *r.* garland, & *l.* 32. reflection *r* reflect on ; *p.* 71. *l.* 22. *r.* & rising from low ; *p.* 73. *l.* 11. *r.* Elements ; *p.* 75. *l.* 19. 18 *r.* 28 ; *p.* 82. *l.* 29: *r.* warm at any time ; *p* 88. *l.* 15. *r.* stupifies ; *p.* 99. *l.* 7. *r.* from ♑ ; *p.* 104. *l.* 5. ♄r♈, & *l.* 16. Sommer *r.* Autumn ; *p.* 110. *l.* 3. *r.* levity ; *p.* 112. *l.* 26. *r.* forced ; *p.* 113. *l* 27. is *r.* are, & *l.* 31. *r.* dissipates ; *p.* 114. *l.* 14. warm, *r.* wan ; *p.* 126. *l.* 20. *r.* levity ; *p.* 136. *l.* 7. in, *r.* to ; *p.* 139. *l.* 20. to, *r.* in ; *p.* 140. *l.* 22. *r.* This is ; *p.* 147. *l.* 31. *r.* without comparison ; *p.* 149. *l.* 16. *r.* humidus ; *p.* 164. *l.* 28. *r.* usually ; *p.* 171. *l.* 28. *r.* by Titus ; *p.* 172. *l.* 20. *r.* protestation ; *p.* 180. *l.* 30. *r.* Romans intestine tumults predicted ; *p.* 185. *l.* 23. this *r.* his ; *p.* 189. *l.* 4. *r.* punishments

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