

Natures secrets. Or, the admirable and wonderful history of the generation of meteors. And blazing-stars. Particularly describing the temperatures and qualities of the four elements; the heights, magnitudes, and influences of the fixt and wandring stars. Shewing the efficient and final causes of comets, earthquakes, blazing-stars, deluges, epidemical diseases, and prodiges of precedent times; their presages of a weather-glass / Rendred plain and useful both for sea and land, by the industry and observation of Tho. Wilsford, gent.

Contributors

Willsford, Thomas

Publication/Creation

London : Printed for N. Brooke ..., 1665.

Persistent URL

<https://wellcomecollection.org/works/qujwhvw9>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

Gilsford

1665







C
P. 9

53362/A

No 26

Q

2600 (3) 2006

S. 236
2/12/07

Pr
1365

NATURE'S SECRETS:

O R,

The Admirable and Wonderful History
Of the Generation of

METEORS

A N D

Blazing-Stars.

Particularly describing the Temperatures
and Qualities of the four Elements; the Heights,
Magnitudes, and Influences of the Fixt
and Wandring STARS.

Shewing the Efficient and Final Causes of Comets, Earth-
quakes, BLAZING-STARS, Deluges, Epi-
demical Diseases, and Prodiges of precedent
Times; their Presages of the Weather:
with Direction for observing of
a Weather-Glass.

Rendred plain and useful both for Sea and Land, by the
Industry and Observation of *Tho. Wilsford*, Gent.

L O N D O N,

Printed for *N. Brooke*, at the Angel in Cornhill, 1665.

20068





A
DEDICATION

TO

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

Madam,

THe splendor of your re-
nowned *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 il-
lustrious to vulgar eyes, and more

A 3

stupen-

The Epistle Dedicatory.

stupendious to common capacities
gaz'd upon by the gaping Multi-
tude with terror and admiration ;
yet some of them now totally e-
clipst, others prov'd but *Ignes fa-
tui*, the greatest and highest like
enflamed *Comets*, elevated on the
wings of *Ambition*, consume them-
selves with their own glory, disco-
ver'd by their *Horoscopes* through
the Perspectives of *Reason* ; De-
monstrated by the *Parallaxes* of
their Spheres , and by *Experience*
found that the most exalted are
but Falling Stars , whose corusca-
tions shew their gross extractions,
something sublim'd from the *faces*
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 for-
mer lustre, and dissipate those Me-
teors

The Epistle Dedicatory.

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
A 4 fundry

The Epistle Dedicatory.

sundry observations plaine and
conspicuous as in a Mirrour, in
favour of your Sexe, to whom (I
hope) 'twill be acceptable, refle-
cting 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 mo-
therly affection not only visible in
Sensitive Creatures, but in all Ve-
getables, vailing their bonnets to
salute the Sun, while their blossoms
receive his vivifying beams; and
if too hot for their natures, their
leaves fan the Air, or their Husks
make *Umbrelloes* against the inflam-
mations 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 Epistle Dedicatory.

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 for-
tiſi'd with knowledge) thoſe are
refer'd to ſearch, and argue the
cauſe, or by precuſſing ſigns deriv'd
from the effects, preſage the e-
vents, as the collections of Expe-
rience. Upon theſe animadverſi-
ons in order to *Natures* Inſtincts,
I compos'd this treatiſe, your ten-
der and beautiful *Sexe* transcend-
ing 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 Gra-
titude oblig'd me to dedicate
theſe Obſervations to your Ho-
nour (as the Nobleſt in my eye)
that the World may witneſſe my
ſincere

The Epistle Dedicatory.

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, illustra-
ting here the Antiquity of this
Meteorological subject, in prog-
nosticating their effects.

Benevolent Reader,

I shall present you here with a small com-
pendium of a mighty subject, offer'd up to
the glory of God, and intended for your be-
nefit, 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 Prognosti-
cations of the Weathers variable transmuta-
tions; 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 inquiries, omit-
ting Catalogues of Philosophers, from Ari-
stotle

A preface to the Reader.

Aristotle 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 be rich 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 Ptolemaeus 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 lofty 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,

A Preface to the Reader.

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,

A preface to the Reader.

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

A Preface to the Reader.

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 o-
thers) 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 In-
genious (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 surveyd!
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 symptoms 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 darknesse; 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,

B

whereof

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* daily 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. 1. 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 *Empyrean-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* employs 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 opposition to what hath been maintain'd and generally receiv'd before: the World's environ'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 *Galileus* 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 *phenomenons*, 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, *v. z. Praesepe* 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 query, 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 Terrestrial 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-diameters, 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 *Apogeon* is from the superficies of the *Earth* 1169 semi-diameters, in his *Perigeeon* 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 *Earth*s 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 $\frac{2}{10}$ 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 $58\frac{2}{5}$ semi-diameters, in Miles 206050, and the cube made of the terrestrial *Globe's* diameter, will contain that made of the *Moon's* $42\frac{8}{15}$ 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 neereft 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 $61\frac{1}{2}$ 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 *Stoicks* 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 Eclipses 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 22000 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 quaecunque voluit Dominus fecit in Cælo & 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 4 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 effects 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) $\frac{1}{2}$ 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 characterized thus, according to their Aspects.

A Table of the 7 Planets aspects.

The Characters	♂	Conjunction	Degrees	00
	✱	Sextile	of the	60
	□	Quartile	Zodiack	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 *Moon's* 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 counterpoising 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, dissenting 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

C

Mount

Mount *Pelion*, was observed by *Dicaearchus*, 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 roundity.

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 Eclipse 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 extreames, 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 | { | <i>Choler</i> : like <i>Fire</i> , hot and dry. |
| 2 | | <i>Sanguine</i> : <i>Air</i> , hot and moist. |
| 3 | | <i>Phlegme</i> : <i>Water</i> , cold and moist. |
| 4 | | <i>Melancholy</i> : <i>Earth</i> , 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 slownesse

ness of some others ; the mildness of one creature, and the fury of another ; as the servile Ass, dull and slow, Horses valiant and nimble, Lions indomitable, always raging as with a perpetual fever, 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 than 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 persuade 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 Mistress. 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 satisfy 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
♎	Aerial	Hot and moist	Sanguine
♏	Watery	Cold and moist	Phlegmatick
♐	Fiery	Hot and dry	Cholerick
♑	Earthly	Cold and dry	Melancholy
♒	Aerial	Hot and moist	Sanguine
♓	Watery	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
♀ & ☾	Watery	Cold and moist	Phlegmatick

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

is in, or the nature of any other Planet that is in \odot , \ast , \square , \triangle , 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 Azimuths are all one; and likewise the Parallel circles and Almicanter; 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 \odot or the same \ast ; 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*

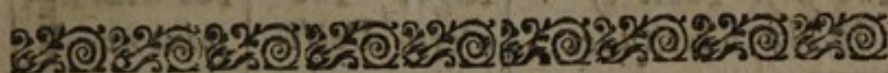
Sun or any *Star* in an oblique *Sphere*, and those degrees reckoned from γ and continued to the end of ∞ , that is to 360. degrees.

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 \odot , \star , 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 \odot , or \star in a right *Sphere*.

The *Magnitude* of a *Star* is to be understood only of the fixed, which for distinction, and the reader 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 sixth *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 year.

Dates.	Janu.	Febru.	March	April	May	June
	ho.mi.	ho.mi.	ho.mi.	ho.m.	ho.m.	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
Dates.	July	August	Septem	October	Nove.	Decem.
	ho.m.	ho.mi.	ho.mi.	ho.mi.	ho.mi.	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 Ascensions, Declinations, Natures, and Magnitudes of some one noted Starre in each Constellation of the Firmament from the North Pole to the Ecliptick.

<i>The first Table of * in North latitude.</i>	<i>Right ascen- tions ho. mi.</i>	<i>The Declina- tions de. mi.</i>	<i>The Stars mixt na- tures.</i>	<i>Magnitude</i>
<i>The Starres names.</i>				
The Polar Star	00 30	87 N 19	h & ♀	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	h & ♀	3
Delta the north Triangle	01 32	27 N 51	♀	4
The Ramms head	01 46	21 N 42	h & ♂	3
Algol, Medusas head	02 44	39 N 29	h ♀ ♀	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
Erickthonius his heel	05 00	30 N 00	♂ & ♀	2
Castor, or the head of II	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 Ass	08 22	22 N 44	♂ & ☉	4
The Lions head	09 11	24 N 38	h & ♂	3
Regulus the ☿ heart	09 49	13 N 45	♀ & ♂	1
Calisto the great Bear	10 40	63 N 43	♂ h ♀	2
Berenices hair	12 00	31 N 31	♀ & ♂	3
Vindemiatrix in ♏	12 44	13 N 9	h & ♀	3
Arcturus in Bootes	13 58	20 N 30	h & ♂	1
The bright * in ♏	14 57	7 S 57	♀ & ♀	2
The northern Crown	15 18	28 N 7	h ♀ ♀	2
The Snakes neck	15 26	7 N 45	h & ♂	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	h & ♂	3
The Vulture and Hirp	18 25	38 N 29	♀ & ♀	1

Anti

Antinous 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	h & ♂	3
The Waterman, ♀	21 12	7 S 4	h & ♀	3
Cepheus left knee	22 55	75 N 0	h	3
Pegasus right wing	23 50	11 N 10	♂ & ♀	2

The right Ascensions, 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 ascen- tions ho. mi.	The Declina- tions de. mi.	The Stars mixt natures	Magnitudes
The Stars names.					
The Phænix 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	h	3
Orions girdle		5 18	1 S 28	h ♂ ♀	2
The Dove		5 40	37 S 00	♂	2
Argonavis		6 10	52 S 30	h & ♀	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 Ass		8 24	19 N 26	♂ & ☉	4
The flying Fish		8 30	68 S 30	♀ & ♀	5
The Hydraz heart		9 9	7 S 4	h & ♀	1
The Chamelion		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. 𐌛 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 𐌛 heart	16 7	25 S 30	h & ♂	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 prognos-

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 γ) 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 bignesse, 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 γ 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 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, \hbar & ζ , 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.*

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

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, subtract the \odot 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 subtract the \odot right Ascension (for the day given) and the remainder will be 1 H. 25. so the little *Dog* will be upon the Meridian 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 *Orion's* 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 \star is 5 H. 18 minu. and the \odot 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 subtract the *Sun's* right ascension 19 H. 0 minutes.

D

and

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 subtracted 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. b. 50. m. which subtracted from 10. b. 18. m. the remainder will be 6. b. 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. b. 58. m. from whence subtract 12. hours, (for you must reckon from noon-day) and there will remain 6. b. 58. m. in the morning, and before ☉ rising 1. b. 12. m. if it were required when these or any other fixed Star will be upon the Axis of the *Æquator*, subtract 6. h. from their right ascensions, and the remainder is the thing required; as *Orions* Girdle was upon the Worlds Axis, at 4. b. 18. m. after mid-day, and *Arcturus* 58. minutes after midnight, by the right ascensions 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 Ascensions and Descensions 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 culminating; 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 \ast \square or \triangle ; 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 ascension and descension 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 ascensions and descensions 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* ascension is the rising of any Star when the ☉ sets; as when the ☉ doth enter into the sign ♊, and descending the Horizon, 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,

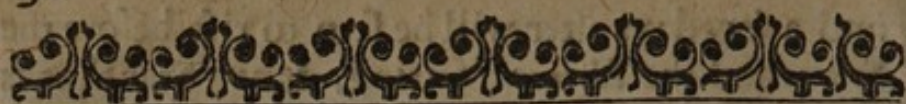
That in the night doe either rise or fall.

And those Heliacall (Astræa says)

Whom Phœbus does offuscate with his rays.

D 3

A N



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 coldness 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 *Cassiopeia* which was seen, and the height taken by *Ticho* 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 *Cassiopeia* appearing in the year of Grace, 1572. 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 *Galileus* 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 unvisibile 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. Comete 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 $9\frac{1}{2}$, and others 4. miles. There is a mountain in *Pern* called *Petriacaca* 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 than 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

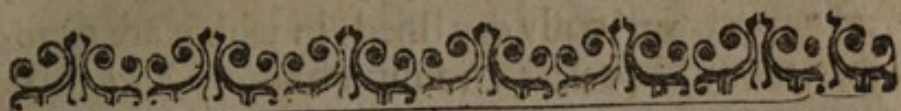
44 *An Introduction to the Second Part:*

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 coldness 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 mortals: 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 greatness 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 inueniat 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 irreconcilable 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* too 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 remotenesse 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 enlightened, 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 coldness 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 nearness 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 *Sun's* 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 conjunction 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 Stars, Meteors are elevated to the middle

E

Region

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 observe 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 Hagel*, or peradventure 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 wholesome, 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.

D*Ews* 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 *Summer*-time than in *Winter*, as in respect of the *Air* in general; for in shadowed places, in the heat of *Summer*, 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*, *Summer*, 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 sweetness 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 *Ascension 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 vegetables, and by reason of the warmth, it does

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 *Aniperistasis* 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 sowing, 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, which 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 wholesome to purge the *Air*, lest 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 extreame 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 dispers'd 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 than 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 reflect on, 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 ν 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 remoteness 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.

W*inds* 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 coldness 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* converts 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 coldness 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. I.*

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 descends 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 than 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 *Bæotia*, which being drunk of does stupifie the senses, and causeth forgetfulness. 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 mettall, 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 *Judea*.

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 *Pentafium* (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
fix

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 Baths, 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 mettall, 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 subterranean 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 coldness 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 Greatness*, *Daniel 3. Benedicite fontes Domino.*

Conjectures of the Seas saltness, 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 continued 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 saltness 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 saltness, 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 floods, 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 ruined 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 Herds-man, &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 smoke 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 tempestuous 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 celestial *Orbs*, the four *Elements*, and all *Meteors* in general the secondary causes (under God) of heat cold, wet and dry weather; from whose excessse proceeds want, discord, 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*, *Ptolomeus*, 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 Physicians do diligently observe in administering 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 than 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 Hail, 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 *Thales*, 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 Councils of the holy Catholike and Apostolike Church, to which sacred Authority I do humbly submit my self.

And

And here I will conclude this Introduction, remembering 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 sua 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 γ , and is continued to the 18. degree of *Taurus*, the first mover, and in like manner are the rest of the 12. signs.

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

28. of γ , and ending in the 4. degree of δ , do cause winds and rain; those *Stars* being of the nature of η and δ , commixed and assisted with φ , the middle part of *Aries*, from the 4. degree unto the 10. of δ 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 δ ; from the 10. degree of *Aries* to his hinder parts (being in the 17. degree of δ almost) is very hot; his horns and his neck of the nature of δ and φ , but cool by the southern *Stars* in the *Whale* being very cold of the nature of η .

δ The former parts of *Taurus*, from the 17. degree, to the 27. of δ , the *Stars* are something windy, turbulent, and cloudy, by reason of the *Pleiades* contained within those degrees, and are of the nature of δ and ν , the middle parts of δ from the 27. degree to the first of Π are temperately hot, and something moist, by reason of some *Stars* in *Perseus*, of the nature of η and φ , from the beginning of Π to the *Hyades* and the horns of *Taurus*, of the nature of δ , 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 δ , commixed with others of the nature of η , φ , and ν .

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

unto the 24. of \mathcal{S} , are of a mixt and uncertain nature inclining to drought, by reason of some *Stars* of the nature of \mathcal{J} and \mathcal{Q} , the heads of Π , of \mathcal{J} , the North part moveth winds, the South part causeth heat and drought.

\mathcal{S} The former parts of *Cancer*, from the 24. of \mathcal{S} to the first degree of \mathcal{Q} , are *Stars* of mixt and doubtful natures, of \mathcal{J} , \mathcal{Q} , and \mathcal{D} , as those nigh the feet of \mathcal{S} , *Præsepe*, &c. causing earth-quakes, or tempests; the middle parts of \mathcal{S} , from the 1. degree of \mathcal{Q} unto the 7, in which are the little *Asses* of nature \mathcal{J} , and \odot more hot and dry then formerly, from the 7. degree of \mathcal{Q} to the 13. the *Stars* in \mathcal{S} are of nature \mathcal{h} & \mathcal{J} , very dry, but not so windy as formerly; both the Northern and Southern *Stars* of \mathcal{S} are generally hot & suffocating.

\mathcal{Q} The former parts of *Leo*, from the 13. degree to the 24. of \mathcal{Q} where *Regulus* is, the *Stars* are of various natures, part of them commixed with \mathcal{h} and \mathcal{J} , others with \mathcal{h} and \mathcal{Q} , and part replenished with \mathcal{V} and \mathcal{J} , pestilent and stifling; the middle parts of \mathcal{Q} , from the 24. degree to the 4. of \mathcal{M} , temperate, and inclining to moisture but a little; the *Stars* of the nature of \mathcal{h} and \mathcal{Q} , and others with \mathcal{Q} and \mathcal{Q} , the hinder parts of \mathcal{Q} to the 17. degree of \mathcal{M} , temperately hot and moist; the *Star* in the \mathcal{Q} tail, of the nature of \mathcal{h} and \mathcal{Q} , the North part of this asterism is fiery and untable, by reason of *Ursa major*, the South part moist because of the *Hydra*, whose nature is \mathcal{h} and \mathcal{Q} .

\mathcal{M} The first part of *Virgo*, from the 17. degree unto the end, the *Stars* being of the nature of \mathcal{J} and \mathcal{Q} , are something hot and offensive, but lesse then formerly; from the beginning of \mathcal{N} 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 extreame 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 extreame 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 aerial, 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 collect these properties of the 12. Signs, of the first mover and 8. Sphere, conformable to this Age.

♂ **O**F 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

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

f Windy, but moister then formerly.

v Temperately cold, and a little moist.

m Cold and watery.

x More cold then in former ages.

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

S *Aturn* 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.*

J *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.*

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

G

Hail,

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 distributor of light unto the rest of the Stars, Monarch of the skies inabling them with his rays, and the earth with fruitfulness.

♀ *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 *S. 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.

G 2

Sommer.

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, unlesse it be

be hindred by some other *Planet* of neer affinity to the *Sun*; and the contrary when δ 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 δ with \odot argues drought, especially at the end of this season, going out of \approx into \times ; 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 γ , δ , ϵ , and φ . *Leupold*.

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

THe most tempestious *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 cause 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 ascensions 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*, *vs*, *Pisces*, \times , the *Rams* head, the *Bulls* eye, the heads of *Gemini*; *Aselli*, the *Asses*; *Præsepe*, or the *Cribbe* both in \mathfrak{S} the *Lions* head; the *Hydras* heart, *Vindemiator*, and *Spica Virginis*, or the ear of *Corn*, both in \mathfrak{M} , the *Vulture* with the *Harp*; the *Serpent* with *Æschylapius*. *Lucida Lancis*, or the bright *Star* in \mathfrak{A} 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* denotes rain, and if instigated by the approach of ♂, expect winds both by Land and Sea.

4. *Virgilie*, or the *Pleiades* setting *Cosmically*, produceth rain and storms, if joyned with ♂, and the Sky at the same time be cloudy, 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 ascensions of the fixed Stars with the Sun.

6. **O** *Rions* Girdle setting *Cosmically*, causeth a turbulent *Air*, and if Southerly winds, then rain will immediately 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* porenoreth wet and showry 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 Ascensions of the Sun and fixed Stars.

12. **T**he *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* ascension 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. *Virgilia*,

20. *Virgilie*, 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 floods 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. *S*aturn 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 sudden alterations of the Air, with often showres.

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

30. ♄, with the *Dolpbin*, 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 ascensions 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 *Provinces*, 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 divided and nomina ed, 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 oftentimes 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 *As* be observed with any mist, the Southern winds will rage; and if the Southern *As* 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 *Caniculae* days bring the Easterly winds; and the *Cosmical* setting Southerly, weather and tempests; the *Heliacal* rising or apparition of *Sirius* did begin the *Græcian* year.

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

10. *Regulus* setting *Acronycally* doth cause Westerly winds, lasting oftentimes 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. *Virgilie* 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.

General

*Generall Aphorisms in Prognosticating Storms
and tempests, selected out of Cardanus, Ma-
ginus 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 Trignes, 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 δ or \odot hot and corrupt winds; and with γ or ν moist winds. If γ changes his latitude, it argues winds; if stationary or retrograde, or going from one sign and entering the other, betokeneth great winds: γ 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 \odot or aspect either of γ , ν or δ , by reason their motions are so slow; great \odot of *Planets* that are of contrary naures, do cause contrary winds, much rain, hail or snow, according to the season of the year; hail is multiplied by the \odot 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 δ ; and stationary they do generally cause winds; and γ instability of the *Air*, and likewise many \odot 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

H

to

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 conjunction, or in any other Aspect; of which these are the chiefest, and held of greatest power in altering

altering the *Airs* temperature, viz. \odot hath the most force, and the effects of longest continuance; the next is \oslash , and then the \square ; the \triangle and \ast , much weaker, and seldome observed in prognostication of the weather, except in \bar{h} and γ , or when the others are stationary, or else \wp , \wp , \mathfrak{D} , any one of these parting with γ to joyn with \bar{h} or \oslash , portends a turbulent air, and stormy weather neer at hand; also in \oslash , 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 γ in \odot , \ast , \square , \triangle , or \oslash , 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, fleet, 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 fore-
 shew thunder, lightning, flashes of fire, and rain;
 in moist *Signs*, thunder, coruscations, 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 whirle-
 winds; 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 pro-
 duce wholesome winds or gales, fair, clear,
 warm and temperate weather, especially in airy
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

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 conjunction 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 whirlwinds 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 flood-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 \odot , \square , or δ , 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 D , in \odot , \square , or δ , 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 D , in \odot , \square , or δ , 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 administering 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 γ , δ , Π , III , IV , V , & VI , and if the D be aspected with Q it is the better, as causing the more moisture.

Plant or graft trees the D increasing in δ , IV and V .

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

Gather fruits the D 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 \odot with the Δ is accounted hurtful to planting, grafting, or sowing.

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

Cut hair, and shear sheep the Δ increasing.

Prefages of the weather by Experience, collected from the inflammation 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. **A**Ll fiery impressions and *Comets* do presage violent tempests of long continuance, and also they do denote much heat and inflammation 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 tempestuous 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 fable 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 fable vestment, expect then suddenly 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 twinckle, 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 Countreys, 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 commonly turn to rine-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. **I**F 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 waterish *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 Countreyes 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 foretells 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 thunder.

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 environing 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 outrageous, 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 undigested 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. **T**HE *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 Δ 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. **T**Here 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 waterish, 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. **T**Hese 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 terrestrial fires.

49. **W**Hen 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 fumes, 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 scorseth, 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-shoes, or mushrooms, 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 fuel, 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 fuel 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 loosened 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 alter 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 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 coldness or moisture of the present *Air* in the lower Region; this repercussion of the *Air* causeth chimneys to smoke 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 moistness 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

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, poplars, 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 ostentim's 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 fervor 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. **T**He 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 eaves 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-banks, 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

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 **T**He 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. **B**easts 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 eggs, 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. **T**He 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 gagging in the *Air* more then usual, or seem to fight, being over-greedy 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. *Heron*s 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 *Wood-peckers* cry denotes wet.

120. *Jack-daws*, if they come late home from foraging, 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 the names her self in French (*Huerite*) 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 gagging 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 than they use to do, is a sign of rainy weather.

133. *Flies* in the *Spring* or *Sommer* season, if they grow busier or blinder than 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. **P***orpoises*, or *Sea-Hogs*, when observed to sport, and chase one another about ships, expect then some stormy weather.

136. *Dolphins* in fair and calm weather pursuing 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. **T***Refoile*, 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. *Tezils*, 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. **M**ettals 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 mettall; 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 inflammation 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.

X 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 mettall 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

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*, lest 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 lest 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,

feed, 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 *Clowe-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, Pustles, and diseases of the face, Leprosies, sore eyes, Plurifies, 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. **A**N 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, *Galen 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 Physician 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.*

L. A Conclu-

*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 fail 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 *Memo-randum* 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 flaving) 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 Summers 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 subsistence 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.

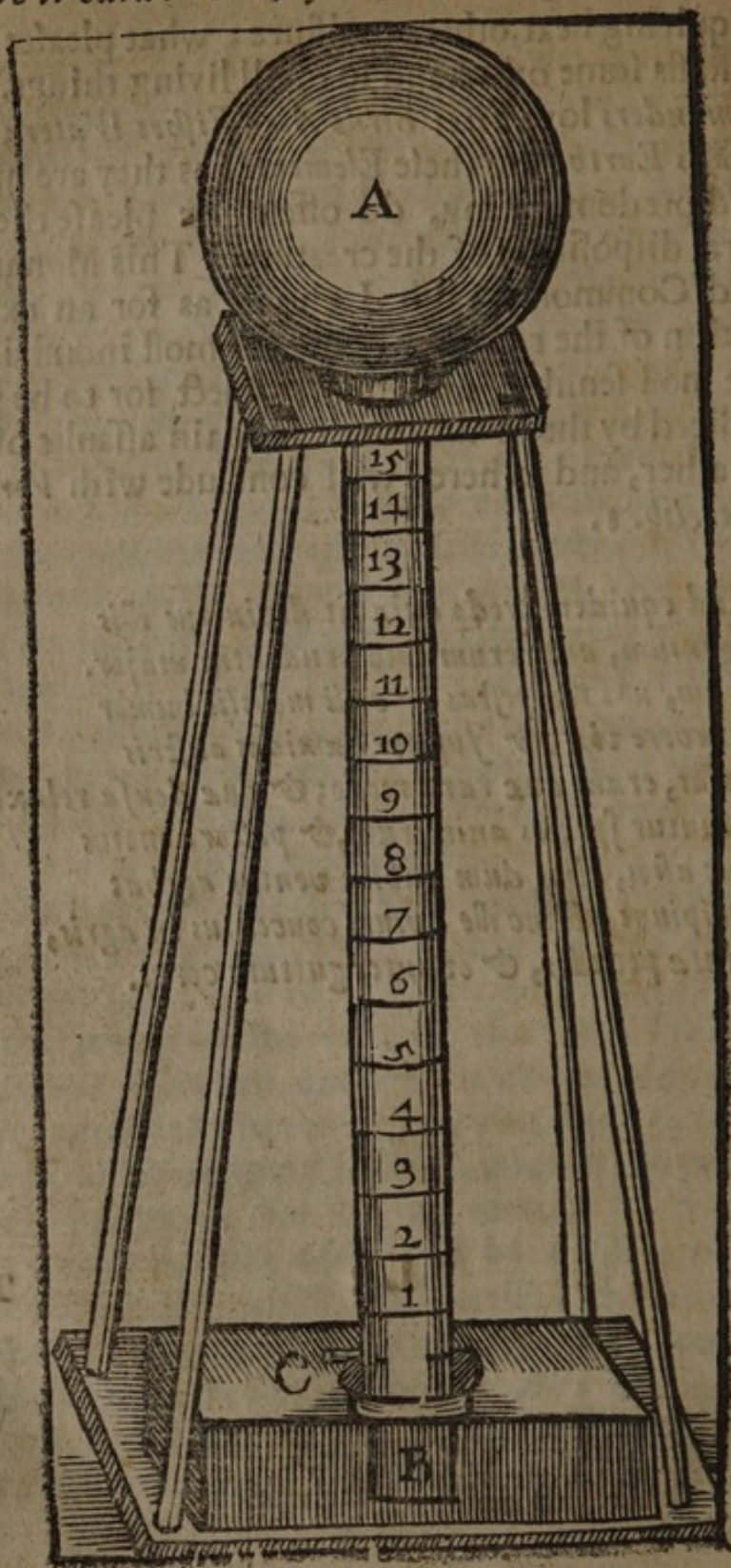
By *Natures* instinct from these, *Man* (as in a Calender) may read the weather, and the seasons of the year, every body having small poars, into which the *Air* does continually infuse it self; and as it is rarified or condensed, it alters the disposition of the body; but more or lesse, according to the constitution, and as it is agreeable or op-pugnant 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 humidæ 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 late 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 $1\frac{3}{4}$ 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 vitriol*, 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
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.

- 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.
 Viz. 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. **T**He 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 falls 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 Sun-setting, 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 coldness 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, unlesse it rises within 12 hours after: if from above 12, it descends a degree or two and stands, expect then Snow, Sleet, cold or flabby 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 satisfy 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 exposition.

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 supplied by one of the four *Elements*; from hence it is, that the *Air* in *Water-crane*s 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 rarification 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 rarification 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.

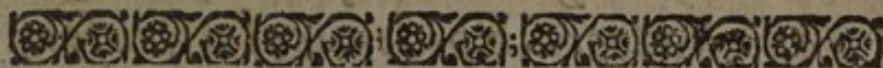
The falling of this inclosed Water is according to the natural property and course of all ponderous bodies, inclining towards the center and seat of gravity, if not hindred by some greater force, or natural affection to attract them; so this tends downwards accordingly as the inclosed Air can dilate 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 $\frac{1}{2}$ or $\frac{2}{3}$ 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 mirror, 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 *Im-mense 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 stupendous 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 error) since the matter and form of them is undoubtedly held natural, their effects portentous, 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 everfor, rubunt 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, portentous 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,

M

and

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 imminent scourge of God, as the observations of Historiographers and Poets do abundantly testifie, and thus writeth *Manil.* a heathen,

*Nunquam futilibus 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 Kingdom; Yet these had forerunning signes, with mercy, to admonish *Pharaoh* and draw his people to repentance. And thus speaks *Esdra 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*, pre-
saging

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, ultring in Sword, Plague, or Famine. Of this writes *Virg. lib. 1. Geor.*

*Non alias Cælo ceciderunt plura sereno
Fulgura, nec diris, toties arserunt 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 *Joshua, cap. 24. v. 17. Fecitq; videntibus nobis signa ingentia, & custodivit 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

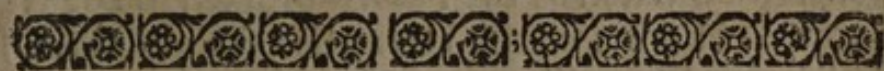
of doubtful Experience, then grounded upon any humane reason: But whether this be true, or that these dreadful and stupendious Meteors be the cause of these woful ensuing events, I dare not subscribe my weak opinion; but this I will confidently affirm that they are evident Demonstrations of an Omnipotent *Deity*, 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 unusual 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 eternum.* And *Psal. 121. ver. 2. Auxilium meum à Domino qui fecit cælum & terram.*

Blazing Stars, though unusually 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 Rainbow 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 Rainbow given to Noah was a Sign of Peace. Gen. cap. 9. ver. 13. *A cum meum ponam in nubibus cæli: & erit Signum fæderis inter me, & inter terram.*



THE

M 3



THE FOURTH PART.

Shewing

*The opinions of some Men concerning
Blazing Stars, with a compendi-
ous Historical observation of their
events; with divers other prodi-
gies 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 inflam'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 ceiling: 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. *Galileus* 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 granted, 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 enlightened 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 ν to φ in the space of 10 natural days, which the ν that is the lowest Planet cannot perform in lesse then 13 days, 15 $\frac{1}{2}$ hours and something more; But lets return to the final cause, and fatal events of stupendious Meteors delivered by reverend *Antiquity*.

A. Stone from
the firmament

of

Of fiery Impressions.

Sozomenus 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.*

*Præceptis 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 Mytery 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 sacrilege, 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 portentous apparitions in the Air (before the Destruction of this City of *Titus Vespasian*) 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 portentous signs, presaging the effusion of much blood, and menacing the subversion of the whole Island;

Island; 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 screams 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 monstrous 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 protestation 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 shipwracke fortunes, craving mercy of us, whom they presum'd to conquer, under the disguise of *Religion*, when it was to enlarge their Dominions, by en-

thralling

thralling us; An Embleme of humane greatnes,
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 sin-
ful World, there be many fearful examples, over-
long 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 blood, which pre-
sently 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 fol-
lowing; and of *Cesar's* slaughter thus writeth
Ovid. Metam. Lib. 15.

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

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

of

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

Before the bloody 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 *Pareliz*, 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 *Pareliz*, 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 *Pareliz* 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 *Glaudius 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 error 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 *Judea* 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 Physician 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 portentous 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 Slow* 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 extinctio miseratus Cæsare Romam
Cum caput obscurâ nitidum ferrugine texit,
Impiaq; æternum timuerunt secula noctem.*

Porten-

Portentious Stormes of Rain.

BEfore the Nativity of our *Lord* and *Saviour* 766, in the Raign of *Rivalus* (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 bloody wars by the Sacramentarians. In the year 1601 the like of these prodigies began and continued the space of

N

3 years,

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 sulphurous 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 Errors, so I will passe them over, and proceed.

Of Deluges and portentious irruptions and courses of the Waters.

Besides many wonderful floods 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 *Acbaia*, in which flood, that Province was submerged; 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 flood, 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* reign, 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 reign of *Emanuel*, King of *Lusitania*, the waters in the River *Tagus*, did part themselves,

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 *Claudian* the Emperour; the least that ever was known, is reported to be a little before the bloody 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 *Annals* 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 bloody 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 Cellars, and the streets paved in one *continuum* with the building: For the pressure or violence upon one stone (the pavements being connect) 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 it 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 *Egean* 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 *Veſtius 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 straights 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 Desert 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 infer, 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 *Iustine*. 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 Divil, but as in contempt of a Deity. *Proper. lib. 3.*

Torrida sacriligum 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 perished of Men, Women and Children, to the number of 30000. precursor of the massacre and number of Infants, as some records do testify.

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 Caesar*) 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 priva-*

ius 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 Children. 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 calamity, 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 sunk, and took 230 Gallies, and slew 30,000 *Mahumetans*, and multitudes were taken prisoners, who with the prizes and spoils, were divided amongst the contributors, 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 Soldiers; This was called the famous Battail of *Lepanto*.

In the year 1601. there was a general Earth-quake 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 *Necofia* 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 bloody 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 Earth-quake and Tempest at the taking of *Constantinople* by *Mahomet* 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 *Mahomet's* pleasure; and those led away into a miserable captivity; the Tyrant intending this for his Antichristian feat, 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 punishments) proceeding from excessse or defect, and presag'd sometimes from subterranean vapours, restrained in the Earth, and by rarification 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 generally infected with the viciated *Air*, and their blood contaminated, the eating of thir flesh breeds contagious Diseases 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 Countrys 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 Countrys, 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 Countrys; and divers for fear of *Maxentius* and his unhumane competitors, 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 ϕ in \approx ; 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 Mahometans* 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 licens'd 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 fraught withal, whereby to replant the world again; and those for many months were waisted 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 Man's 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
 O frigid

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 Cataracts descending from their overburchned clouds; which time (to humane apprehension) might encrease the inundation to submerge the terrestrial Globe 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 untermiated; 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 pleas'd 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 portentous in their dismal
events.*

THe Symptoms of Natures distempers I have rendered in a Chronological breviare, 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. 1. 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 Virtue.

O 2

Behold!

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 Clouds convert to blood, 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 obtruse 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 obtruse Caverns of the *Earth*, seem to beleagere *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, ramn'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* suppress 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 *Mistress* and *Idea* 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; *Protektor 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 exchange'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 abroad 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 interpolated faults, I need not doubt your condescension to grant me an Indulgence,

storm'd

storm'd with injuries, ruffled 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 seri-
ous 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 suffi-
cient *Plea* (for mistakes) nor yet the Printer's 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: Geo-
metry demonstrat'd both by Lines and Numbers;
from thence Astronomy, Cosmography and Navi-
gation, prov'd and delineated by the doctrine of
Plain and Spherical Triangles, mention'd in my
printed Books of Arithmetick. The English An-
nals from the invasion made by Julius Caesar, con-
tinued to these times. Historical prescriptions,
Ecclesiastical and Moral. *Speculum annorum*, or an
Ephemeris for 19 years to come, ready to be pub-
lish'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. repel-*
led 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. Ele-*
ments; 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. *hrV*, & 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. le-*
viry; 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*



