

PLINY the **ELDER**: A celebrated Roman naturalist—was born A.D. 23.—served in the army under **Lucius Pompeius** in Germany.—returned to Rome about the age of 30—was afterwards Procurator in Spain under **NERO**—at the time of his death was in command of a fleet at **Misenum**.

In August, A.D. 79, occurred the great eruption of **Vesuvius**, Observing the immense cloud of smoke, he embarked at **Misenum** and approached near the scene of danger to note the wonderful phenomena. He landed at **Stabia**, in the ensuing night he attempted to return to his vessel but perished on land, suffocated by ashes or sulphurous exhalations.

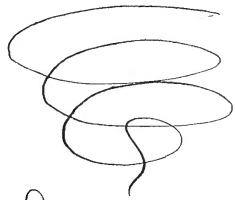
The great work of **Pliny** is the **Natural History**, of which **Cuvier** says.

“It is one of the most precious monuments that antiquity has left us and the evidence of erudition very wonderful in a Warrior and Statesman.”

This edition was translated by **HOLLAND**. and **PRINTED** in **1601**.

THE
HISTORY
OF THE WORLD
COMMONLY CALLED THE
NATURALL HISTORIE OF —
C. PLINIUS SECUNDUS

TRANSLATED INTO ENGLISH BY PHILEMON HOLLAND
DOCTOR OF PHYSICKE.



London

Printed by Adam Islip.

1634.

2 vols. folio. 600+ pages each.

Give Libet 26. Day of



TO THE RIGHT HONOURABLE
SIR ROBERT CECIL KNIGHT, PRINCIPALL
SECRETARIE TO THE QUEENS MAIESTIE, MA-
STER OF THE COVRT OF WARDS AND LIVERIES,
Chauncellor of the Vniuersitie of Cambridge, and one of her
Maiesties most Honourable priuie Counsell.



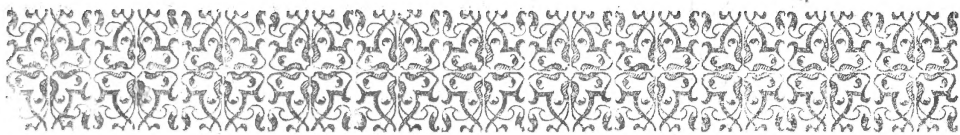
He friendly acceptance which T. Livius of Padua hath found in this Realme, since time he shewed himselfe in English weed unto her sacred Majestie, hath trained over unto him his neighbour Plinius Secundus from Verona. Whome, being now arraied in the same habit, yet fearfull to set foot forward in forreign ground, without the countenance of some worthie personage, who might both give him the hand at his first entrance in token of welcome, and also grace him afterwards with a favourable regard to win acquaintance, I humbly present unto your Honour. For considering the qualitie

of the man, a Philosopher discoursing so deeply in all Learning, where may he looke for better acceptance than of him, who is most iustly stiled, Patron of Learning? Which dignitie conferred of late upon your H. by the generall suffrages of a Noble Vniuersitie (and that for your singular insight in all literature) as a complement to those high places whereunto the fauour of a most prudent and judicious Princesse hath advanced you, and the same correspondent to the rare wisdom, justice, and eloquence, which concur in your person, like the severall beauties of the Rubie, Amethyst, and Emerald meeting in one faire Opal, giveth a lovely lustre to your other titles, no lesse, than if the nine Muses and Apollo, represented naturally in that rich Agat of K. Pyrrhus, were inserted therein. Now if, as wee read of * Alexander and * Demetrius, two mightie monarchs, who amid their desseins of making conquests and besieging citties, beheld otherwhiles Apelles and Protogenes how they handled their pencils; it may please your Honour betweene the managing of State-affaires under her Majestie, to cast your eie oft soons upon Plinie for your recreation, and see how lively he depicte Iphigene, Venus Anadyomene, drayne haply to the patterne of Campaspe a courtizan; nor Ialysus with his dog, in which picture, fecit Fortuna naturam; but even Nature herselfe, the immediat mother and nource of all things under the Almightye; I shall not onely thinke him patronized thereby and sufficiently commended to the world, but I shall knowe knowledge my selfe much devoted unto your H. and bound for ever to praye for the increase thereof, with long life and true happinesse.

* Magnus.
* Poliocestes

Your Honouris most readie at commaund

Philémon Holland



 *The Preface to the Reader.*



Appie were they in times past reputed (and not unworthily) who had that gracious and heavenly gift, *aut facere scribenda, aut scribere legenda*: that is to say, either to doe such things as deserved to be written, or to write that which was vvorth the reading. Those that could not attaine to these two branches of felicitie, and yet utterly misliked idlenes, contented themselves in a third degree, namely, to take in hand the old works of their auncients, and by new labours to immortalize their memorie. Thus *Nicophanes* (a famous painter in his time) gave his mind wholly to antique pictures, partly to exemplifie and take out their patternes after that in long continuance of time they were decayed; and in part to reparaire and reforme the same, if haply by some iniurious accident they were defaced. The ingenuous mind of this artizan thus devoted to antiquitie, as I doe highly commend; so I cannot chuse but embrace his pollicie, seeking hereby to avoid the envie and reproofe of others. In this number I must raunge those learned men in severall ages, who to illusttrat the monuments left by former writers, have annexed unto them their Commentaries; to save them entire and uncorrupt, have set thereto iudiciall observations; and to publish them for a generall benefit of posteritie, have translated the same into their mother language. As for my selfe, since it is neither my hap nor hope to attaine to such perfection, as to bring soorth somewhat of mine ovvne which may quit the pains of a reader, and much lesse to performe any action that might minister matter to a writer, and yet so farre bound unto my native countrey and the blessed state wherein I have lived, as to render an account of my yeers passed & studies employed, during this long time of peace and tranquillitie, wherein (under the most gracious and happie government of a peerelesse Princeesse, assisted with so prudent, politique, and learned Counsell) all good literature hath had free progresse and flourished, in no age so much: me thought I owed this dutie, to leave for my part also (after many others) some small memoriall, that might give testimonie another day what fruits generally this peaceable age of ours hath produced. Endeavoured I have therefore to stand in this third ranke, and bestowed those hours which might be spared from the practife of my profession, and the necessarief cares of this life, to satisfie my countrey men novv living, and to gratifie the age ensuing, in this kind. Like as therefore I have travailed alreadie in *Titus Livius* a renowned Historiographer, so I have proceeded to deale with *Plinius secundus* the elder, as famous a Philosopher. Now, albeit my intention and only end was, to do a pleasure unto them that could not read these authours in the original, yet needs I must confesse, that even my selfe have not only gained thereby encrease of the Latine tongue (wherein these works vvere vvrritten) but also groovne to a deeper knowledge of the matter and argument therein contained. For this benefit vvee reape by studying the books of such auncient authours,

That

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That the oftener we read them over, the more still we find and learne in them: as beeing so iudiciously and pithily penned, that, as the Poët said verie well, *doctis repetita placent*. Well may the newest songs and last devised plaies delight our ears at the first, and for the present ravish our senses; like as horarie and early Summer fruits content our tast and please the appetit: but surely it is antiquitie that hath given grace, vigor, & strength to writings; even as age commendeth the most generous and best wines. In which regard, and upon this experience of mine ovne, I nothing doubt but they also whome I might iustly feare as hard censours of these my labours, will not only pitie me for my pains, but also in some measure yeeld me thanks in the end, vvhhen either by the light of the English (if they bee young students) they shall be able more readily to goe away vvvith the darke phrase and obscure construction of the Latine; or (being great schollers and taking themselves for deepe Criticks) by conferring the one with the other, haply to espie vvherein I have tripped, they shall by that means peruse once againe, and consequently gather nevv profit out of that authour whom peradventure they had laid by for many yeers as sufficiently understood. When some benefit (I say) shall accrew unto them likewise by this occasion, I lesse dread their fearfull doome, to vvhich so vvilfully I have exposed my selfe. Well I wist, that among the Athenians, order vvvas taken by lavv, That an entlude newly acted should be heard vvith silence and applause: vvhich custome, as it vvvas respectiue and favourable to the first endeavours of the actours, so it implied an inevitable danger of hissing out and utter disgrace, if afterwards they chanced to misse and faile in their parts. Having sheved my selfe once before upon the stage, presuming upon this priviledge and the custesse of the theatre, I might have now sitten still and so rested: In mounting up thus soon againe, I may seeme either in the assured confidence of mine ovne worthinesse, to proclaime a challenge to all mens censures; or els upon a deepe conceit of some generall connivencie make reckning of an extraordinarie and wonderfull favour. But as the choise that I have made to publish the monuments of other men, vvithout fatering any thing of mine ovne, doth excuse and acquit me for the one; so the troyvard disposition of carpers in these daies vvherein wee live, vvill checke the other. Howbeit, considering such pains undergone by me one man, for the pleasure of so many; so much time spent of mine, for gaining time to others; and some opportunities of privat lucre overslipt and lost, to win profit unto all; I feare not but these regards may deserve a friendly acceptance, & countervveigh all defects and faults escaped, vvhatsoever. The persuasion hereof, but principally the privitie of my affectionat love unto my country (vvhich assured me of a safe-conduct to passe peaceably through their hands who are of the better fort and well affected) induced me to a resolution not onely to enter upon this nevv taske, but also to breake through all difficulties, untill I had brought the same, if not to a full and absolute perfection, yet to an end and finall conclusion. Besides this naturall inclination & hope vvhich carried me this vvay, other motives there vvvere that made saile and set me forward. I savv how divers men before me had dealt vvith this authour, whiles some laboured to reforme vvhatsoever by iniurie of time vvvas growne out of frame: others did their best to translate him into their own tongue, and namely, the Italian and French: moreover, the Title prefixed therto so universall as it is, to wit, *The Historie of*

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or Reports of Nature, imported (no doubt) that he first penned it for the generall good of mankind. Over and besides, the Argument ensuing full of varietie, furnished with discourses of all matters, not appropriat to the learned only, but accommodat to the rude paissant of the countrey; fitted for the painefull artizan in town and citie; pertinent to the bodily health of man, vvoman, and child; and in one woord, suiting with all sorts of people living in a societie and common-veale. To say nothing of the precedent given by the authour himselfe vvho endited the same, not with any affected phrase, but sorting vvell vvith the capacitie even of the meanest and most unlettered: vvho also translated a good part thereof out of the Greeke. What should I alledge the example of former times, wherein the like hath evermore been approved and practised? Why should any man therefore take offence hereat, and envie this good to his naturall countrey, which vvvas first meant for the vvhole world? And yet some there be so grosse as to give our, That these and such like books ought not to bee published in the vulgar tongue. It is a shame (quoth one) that *Livie* speaketh English as hee doth: Latinists onely are to bee acquainted vvith him: As vvho vvould say, the fouldiour vvvere to have recourse unto the universitie for militarie skill and knowvledge; or the schollar to put on arms and pitch a campe. What should *Plinie* (saith another) bee read in English, and the mysteries couched in his books divulged: as if the husbandman, the mason, carpenter, goldsmith, painter, lapidarie, and engraver, vvwith other artificers, vvwere bound to seeke unto great clearks or linguists for instructions in their severall arts. Certes, such *Momi* as these, besides their blind and erroneous opinion, thinke not so honourably of their native countrey and mother tongue as they ought: vvwho if they vvwere so vvwell affected that vvway as they should be, vvwould vvwish rather and endeavour by all means to triumph novv over the Romans in subduing their literature under the dent of the English pen, in requitall of the conquest sometime over this Island, achieved by the edge of their sword. As for our speech, vvvas not Latine as common and naturall in Italie, as English here with us. And if *Plinie* faulted not but deserved well of the Romane name, in laying abroad the riches and hidden treasures of Nature, in that Dialect or Idiome which vvvas familiar to the basest clowne; why should any man be blamed for enterprising the semblable, to the commoditie of that countrey in vvwhich and for vvwhich he vvvas borne. Are yve the onely nation under heaven unvvvorthie to tast of such knowvledge? or is our language so barbarous, that it vvwill not admit in proper terms a forrein phrase? I honour them in my heart, vvwho having of late daies troden the vvway before me in *Plutarch*, *Tacitus*, and others, have made good prooffe, that as the tongue in an English mans head is framed so flexible and obsequent, that it can pronounce naturally any other language; so a pen in his hand is able sufficiently to expresse Greeke, Latine, and Hebrevv. And my hope is, that after mee there vvwill arise some industrious *Flavij* vvwho may at length *cornicum oculos configere*. For if my selfe, a man by profession othervvvise carried avvay, for gifts farre inferiour to many, and vvwanting such helps as others be furnished vvwith, have in some sort taught those to speake English vvwho vvwere supposed verie untovvvard to bee brought unto it; what may be expected at their hands, vvwho for leisure may attend better, in wit are more pregnant; and beeing graced with the opinion of men and favour of the time, may attempt vvwhat they will, and effect vvwhatsoever

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yet they attempt with greater felicity? A painfull and tedious travaile I confesse it is; neither make I doubt but many do note me for much follie in spending time herein, and neglecting some compendious course of gathering good and pursuing up pence. But when I looke back to the example of *Plinie*, I must of necessity condemne both mine own sloth, and also reprove the supine negligence of these daies. A courtiour he was, and great favourit of the *Vespasians* both father and sonne: an oratour besides, and pleaded many causes at the barre: a martiall man withall, and served often times as a leader and commaunder in the field: within the cittie of Rome hee managed civile affairs, and bare honourable offices of State. Who would not thinke but each one of these places would require a whole man? and yet amid these occasions wherwith he was possessed, he penned Chronicles, wrote Commentaries, compiled Grammaticall treatises, and many other volumes which at this day are utterly lost. As for the Historie of Nature now in hand, which sheweth him to be an excellent Philosopher and a man accomplished in all kind of literature (the only monument of his that hath escaped all daungers, and as another Palladium been reserved entire unto our time) wherein hee hath discoursed of all things even from the starric heaven to the centre of the earth; a man would marveile how hee could possibly either write or doe any thing els. But considering the agilitie of mans spirit alwayes in motion; an ardent desire to benefit posteritie, which in these volumes hee hath so often protested; his indefatigable studie both day and night, even to the iniurie of nature, and the same continued in everie place, as well abroad as within-house; in his iourney upon the high way, where his manner was to read and to indite; in his ordinarie passage through the streets betweene court and home, where hee gave himselfe no rest, but either read, or els found his notarie worke to write; and for that purpose rode usually in an easie litter, with the said Notarie close by his side: leffe wonder it is, that he performed his service to prince and state according to his calling: and withall delivered unto posteritie so many fruits of wit and learning. For what is not the head of man able to compasse? especially making saile with a fervent desire and resolution to see an end, and besides taking the vantage of all moments, and loosing no time, where of he was *unus omnium parcissimus*. Touching his affection to search into the secrets of Nature, it was that and nothing els which shortened his daies, and hastened his untimely death: for having lived not much above the middle age of man, desirous he was to know the reason, Why the hill Vesuvius burned so as it did? and approached so neare, that with the strong vapours and smoke issuing from thence, his breath was sodainly stopped, and himselfe found dead in the place: a man worthy to have lived for ever. What remaineth now, but onely to recommend unto my countrey men this worke of his (which for mine owne part I wish to be immortal) were it not for one scruple to bee cleared, which at the first troubled my selfe a little, and might peradventure othervise offend some readers. In attributing so much unto Nature, *Plinie* seemeth to derogat from the almightie God, to him *dyvovs*; and therefore daungerous (saith one) to be divulged. Farre be it from me, that I should publish any thing to corrupt mens manners, and much lesse to preiudice Christian religion. After conference therefore with sundrie divines about this point, whom for their authoritie I reverence; whose learning I honor and embrace; and in whom for iudgement & synceritie of religio

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I rest, confirmed I was in my first purpose, and resolved to finish that which I had begun, namely, not to defraud the world of so rich a gem, for one small blemish appearing therein. And that it may appeare how I did not abound in mine owne sense, but had regard as well to satisfie the conscience of others as mine owne, I have thought good to annex immediatly hereunto, in manner of a Collarie, the opinion of one grave and learned preacher concerning this doubt, as it vvas delivered unto me in writing; which for that it is grounded upon sufficient reasons, and accordeth with the iudgement of the rest, the lesse I respect the rash proiects of some fantastick spirits; nothing doubting, but the same will settle the minds of the weake, and free my labours from the taint of irreligion.

The copie of the said Letter, written as touching the Translation of Plinie.

MY beloved, in twentie yeers and better so many tokens of our mutuall love passing betweene us, I need not now to professe my affection to your selfe; and my daily conversing with you, hath yeilded my approbation of your tedious labor in translating Plinie. These few lines therefore shall onely serve to witnesse unto others the deserved account which for your learning I have alwaies made of you, and my conceit of this your travaile in opening to your countrymen the treasure of Nature: therein to see and to admire the wisdom, power, and the goodnesse of the only true God, the Frammer of Nature. I am not of their minds, who desire that all humane learning in Arts and Naturall Philosophie should be reserved under locke and key of straunge language, without the which no other man should have accessse unto it: For as such knowledge is a branch of that excellencie wherein man was formed; so the repaire thereof (though it be not the chiefe) is yet a thing unworthily neglected, as well in regard of our owne comfort therein gained, as for the glorie of God thereby promoted. And it was the wisdom and provident hand of the All-sufficient, so to guide the wise heathen in Arts and Nature, that they should publish such their skill unto their countrey men in mother tongue: partly to correct the rudenesse which is in ignorance, and in part to leave them the more inexcusable: In which regard, they may in some sort be called, The Prophets and Teachers of the heathen. And though Plinie and the rest were not able by natures light to search so far as to find out the God of Nature, who sitteth in the glorie of light which none attaineth, but contrariwise in the Vanitie of their imagination bewrayed the ignorance of foolish hearts, some doting upon Nature her selfe, and others upon speciall creatures, as their God: yet feare we not that Christians, in so cleare light, should be so farre bewitched by such blind teachers, as to fall before those heathen idols. Yea, though some of them (as namely Plinie) have spoken dishonourably of the only true God and of his providence, because they knew him not; which speeches (if it might stand with the lawes of Translation) I could wish were utterly omitted; yet may wee hope that Christian men so long taught by the light of grace out of the holy word of God, will no lesse therefore give him his deserved honour, than when they doe in like sort heare the blasphemie of Sanncherib king of Ashur, who sent to raile upon the living God. I feare not the corrupting of unstable minds any thing so much by these foolish Gentiles which are without, as by the deceitfull spirit of error speaking in the mouth of men within: such as are within the bosome of the Church. These are the foxes by whome we feare
the

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the spoile of the Lords vines when as the grapes fist begin to cluster; for whose taking I desire that all Gods husbandmen would bee more carefull. As for the speeches of these blind heathen, the true Christian may well thereby be provoked to extoll the mercie of God, who siterh in so glorious a light as hath dasled the sharpest sight of Nature; but for our comfort hath put a vaile upon his glorie, and by his grace hath so cleared the eye of our understanding, that wee might see his face in his beloved, and know him to be the only true God, and his blessed providence upon all his creatures. And when they shall perceive that the wisest clearke in naturall skill could non learne by the booke of heaven and earth to know their maker, whose glorie they declare, and handiworks set out; nor who it was that framed Nature, when by his word he first created them in such excellencie, and then, by his blessing gave, and by his providence working all in ail, doth yet maintaine such an operative power, as by the which they are still continued in their kinds: nor how it came to passe that Nature lost her excellencie in all creatures, and her power unto good was not only weakened (whence we see her faile in many of her purposes) but also perverted unto evill; then (I say) they will the more be stirred up by Gods grace to make reverent account of the holy Scriptures, which God in rich mercie hath given to them to be a light in all things for to direct them through the errors in Natures blindnesse, and to bring them to the heavenly Ierusalem and happie world of all the holie where he dwelleth, whome they worship in unitie and trinitie. Proceed then my beloved friend to bring unto the birth your second labour; whereof I pray that God may have honour in the praise of his works throughout nature, and wish you comfort in good acceptance with the reader, and your countrie use and pleasure in the skill thereof. Vnto him which onely hath immortalitie and dwelleth in that light which none attaineth, to God only wise be all honour and glorie. Iunij xij. 1601.

Your loving friend in the Lord,

H. F.



THE FIRST BOOKE OF THE HISTORIE OF NATURE, WRITTEN BY C. PLINIUS SECVNDVS.

*The Preface or Epistle Dedicatorie to Prince *Vespasian, his [freind]
C. Plinius Secundus sendeth greeting.*

* Titus.



Hese books containing the Historie of Nature, vvhich a fevv daies since I brought to light (a newv vork in Latin, and namely among the Romanes, your citizens and countrimen) I purpose by this Epistle of mine to present and consecrate unto you, most swaet and gentle Prince [for *this title accordeth fittest unto you, seeing that the name of [*Most mightie] sorteth vvell with the age of the Emperor your father:] vvhich haply might seeme boldnesse and presumption in me, but that I know hovv at other times *you were wont to have some good opinion of my toies and fooleries. Where, by the vvvay, you must give me leave to mollifie a little the verses vvhich I borrow of my countriman *Catullus*. (See also hovv I light upon *a word used among soldiors, which you are acquainted vvvith, since time vve served both together in the camp:) For he as you vvot full well, changing the former sillables of his verses one for another, made himselve somewhat more harsh than he would seeme to be unto the fine ears of his familiar friends, the *Veranioli* & *Fabulli*. And wivhall, I would be thought by this my malapart writing unto you, to satisfie one point, which, as you complained in your antwer of late to another rude & audacious letter of mine, I had not performed, to wit, That all the world might see (as it were upon record) how the Empire is managed by you and your father equally: and notwithstanding this imperiall maiestie wherunto you are called, yet is your affabilitie and maner of conversing with your old friends, fellow-like, & the same that alwaies heretofore it had been. For albeit you have triumphed vvvith him for your noble victories, ben Censor in your time, and Confull *six times, executed the sacred authoritie of the Tribunes, patrones, and protectors of the Commons of Rome, together vvvith him: albeit I say you have othervvise shewed your noble heart in honouring and gracing both the court of the Emperor your father, and also the vvhole state of Knights and Gentlemen of Rome, vvhiles you vvore captaine of the guard, and Grand maister of his house and roiall pallace (in which places all, you caried your selfe respectively to the good of the Commonweale) yet to all your friends, and especially to my selfe, you have borne the same countenance as in times past vvvithin the campe, vvhens vve served under the same colours, and lodged together in one pavilion. So as in all this greatnesse and high estate vvherto you are mounted, there is no other change and alteration seen in your person but this, That your power is novv answerable to your vvvill, & able you are to do and performe that good vvhich you ever meant, and still intend.

And

* *Suetonius*

* *Maximus*

* *Quamvis in lebus, Meas aliquid pura nigras.*
* *Conteriane*

It seemeth Pliny read it in *Catullus*, putare namq; *Nigras esse* quid meas salbas, which deed was but an hard composition and couching of the words.

* *Sextus*, or rather *Sextus*, c. of *Suetonius*.

Plinies Epistle to T. Vespasian.

And howsoever this great maiestie, resplendent in you on every side, in regard of those high dignities above rehearsed, may induce the vvhole vvorld besides to reverence your person in all obeisance; yet I for my part am armed onely vvith a kind of audacitie and confidence to shew my dutie and devoire unto you, after a more familiar manner than others: and therefore, this my adventurous rashnes, vvhatsoever, you must impute unto your ovvn courtesie, and if I chauce to fault therein, thanke your selfe therefore, and seeke pardon at your ovvn hands. Well, bashfulnesse I have laid aside, and put on a bold face, and all to no purpose. For why? although your gentlenesse and humanitie be one way attractive and induceth me to draw neare unto your presence, yet another way you appeare in great maiestie: the sublimitie I say of your mind, your deepe reach, high conceit, and rare perfections, set me as far back: no listors & huishers marching before you, so much, that I dare not approach. In the first place: Was there ever any man, whose words passed from him more powerfull, & who more truly might be said to flash forth as lightning the force of eloquence? What Tribune was there known at any time to persuade & move the people with good language, more effectually? How admirable was your utterance in those publick Orations, wherein you thundered out the praise worthe acts of the Emperour your father, that all the grand-place rung therewith? What a singular testimonie shewed you of rare kindnesse & affection to your brother, in setting out his praises to the full? As for your skill in Poëtrie, how excellent, how accomplished is it. Oh the bountie of your mind! Oh the fertilitie of your pregnant spirit! that you should find means to imitat, yea and to match your ^{*}brother in that kind. But who is able boldly to give an estimat of these gifts to their worth? How may a man enter into the due consideration thereof, without feare of the exquisit censure and exact iudgement of your wit, especially being provoked and challenged therunto as you are. For to say a truth, the case of them who publish a worke in generall tearmes, is far unlike to theirs that will seeme to dedicat it particularly, and by name, to a prince so iudicious as your selfe. For had I set forth this my booke simply, & staid there without any personall dedication, the I might have come upon you & said, Sir, what should a mightie Commander and Generall of the field as you are, busie himselfe to read such matters? vvritten these treatises were to the capacitie of the vulgar people, for base commons, rude husbandmen, and peasants of the countrie, for poor artisans; and in one word, to gratifie them who had no other means of great employment, nor time & leasure but to studie upon such points and nothing els: What should you make your selfe a censor of this worke? And verely, when I made first shew of this enterprife of mine, I never reckned you in the number of those iudges that should passe their sentence upon these writings; I wist full well that you were a greater person far, & I supposed that you would never abase your selfe nor stoupe so low as to read this booke of mine. Over and besides, a common case it is, and incident to men of deepe learning and great conceit, that otherwhiles exception may be taken against them, and their iudgement reiected in this behalfe. Even *M. Tullius* that renoumed Orator, and who for vvit and learning had not his fellow, taking the vantage of that libertie, useth the benefit therof: and (vvhereat vve may vvell marvell) maintaineth the action by an advocat, and taketh example (for his defence) from *Lucilius*: for in one part of his vvorkes thus hee saith, *I would not have learned Persius to read these bookes of mine, loth I am that he should censure me.*

As

Per Domitian
Vespasian was
reputed an ex-
cellent Poet.

Plinies Epistle to T. Vespasian.

As for *Laelius Decimus*, I am content to submit them to his opinion. Now if such an one as *Lucilius*, who was the first that durst controule the writings of others, and tooke upon him to scoffe at their imperfections, had reason thus to say; if *Cicero* took occasion to borrow the said speech of him for to serve his own turne, and namely in his Treatise of Politiques, vvhether he vvrote of a Commonweale; how much greater cause have I to distrust my selfe, and to decline & avoid the censure of some iudge of deepe understanding? But cut I am from this refuge and meanes of defence, in that I expressely make choise of you in this dedication of my worke: for one thing it is to have a iudge, either pricked by pluralitie of voices, or cast upon a man by drawing lots; and a farre other thing to chuse and nominat him from all others: and great difference is there betweene that cheare and provision which we make for a guest solemnely bidden and invited, and the suddaine fare and intertainment which is readie for a stranger who commeth to our house unlooked for. *Cato*, that professed enemy of ambition, vainglorie, and indirect suit for offices, who took as great contentment in those estates and dignities which he refused and reiected, as in them which he enioied, attained to this good name of uprightnesse and synceritie, that when in the hottest broile about election of Magistrats that ever was in his time, they that stood therfore, put into his hands their mony upon trust, as a cautionarie pawne and assurance of their integritie and fidelitie that way; they professed that they did it in testimonie of their conceit of his equitie and innocence, the cheefe and onely thing that a man is to regard in this life: wherupon ensued that noble and memorable exclamation of *M. Cicero*, who speaking of the said *Cato*, brake out into these words: Oh gentle *M. Porcius*, how happy and blessed art thou, vvhom no man vvvas ever so hardie as to sollicite to any leaud thing, or contrary to right and honestie! *L. Scipio*, surnamed *Asiaticus*, at vvhat time as he appealed unto the Tribunes of the Commons, and besought their lawfull favour (among vvhome, *C. Gracchus* vvvas one, a man vvhom he tooke for his mortall enemy) presuming upon the goodnesse of his cause, gave out and said, That his verie enemies, if they vvvere his iudges, could not chuse but quit him and give sentence on his side. Thus vvee see how everie man maketh him peremptorily the supreme and highest iudge of his cause, vvhom himselfe chuseth and appealeth unto: which manner of choise the Latines call *Provocatio*. As for your selfe verely, vvho are set in the most eminent & cheefe place among men, & otherwise endued vvith singular eloquence and profound knowledge, no marvell is it, if those that doe their dutie unto you, salute you, kisse your hand, and come with great respect and reverence: In which regard, exceeding care above all things would be had, that vvhatsoever is said or dedicated unto you, may beseech your person, & be worth acceptation. And yet the gods reiect not the humble praiers of poore countrey peasants, yea, and of manie nations, vvho offer nothing but milke unto them: and such as have no Incense, find grace and favour manie times with the oblation of a plaine cake made onely of meale and salt; and never was anie man blamed yet for his devotion to the gods, so he offered according to his abilitie, were the thing never so simple.

For mine own part, challenged I may be more still for this my importune and inconsiderat boldnesse; in that I would seeme to present these bookes unto you, compiled of so slender stuffe & matter as they be: for therin can be couched no

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great wit (which otherwise in me was ever mean and simple) neither admit they any digressions, orations, speeches, and discourses, ne yet admirable cases & variable chaunces, nor any other occurrent, either pleasant to rehearse, or delectable to hear. The truth is this, the nature of all things in this world, that is to say, matters concerning our daily and ordinary life, are here deciphered & declared, and that in barrain tearms, without any goodly shevv of gay and glorious phrases: and vvhathsoever I have put down, concerne it doth the basest points therof, insomuch as for the most part I am to deliver the thing in hand, either in rusticall speech, or els in forrain, nay, in barbarous language, such also as may not vvell be uttered, but vwith reserving honour to the hearers, and reverence to the readers.

Moreover, the vway that I have entred into, hath not ben troden before time by other vwriters, being indeed so strange & uncouth, as a mans mind vwould not willingly travell therein. No Latin author among us hath hitherto once ventured upon the same argument, no one Grecian whatsoever hath gone through it and handled all: and no marvell, for many of us love not to take any pains, but study rather to pen matters of delight and pleasure. True it is, I must needs say, that others have made profersion hereof, but they have done it with such subtiltie and deepnesse, that all their travels and writings by that means, lie as it were dead and buried in darknesse. Now come I, & take upon me to speake of every thing, and to gather as it were a compleat body of arts and sciences (which the Greeks call *ἐγκυκλιαι*) that are either altogether unknown or become doubtful, through the overmuch curiositie of fine wits: again, other matters are deciphered in such long discourses, that they are tedious to the readers, insomuch as they loath and abhor them. A difficult enterprife it is therfore to make old stufte new, to give authoritie & credit to novelties, to polish and smooth that which is worne and out of use, to set a glosse & lustre upon that which is dim and dark, to grace & countenance things disdained, to procure beleef to matters doubtfull; & in oneword, to reduce nature to all, and all to their own nature. And verely to give the attempt only & shew a desire to effect such a desseigne as this, although the same be not brought about and compassed, were a brave and magnificent enterprife. Certes of this spirit am I, that those learned men & great students, who making no stay but breaking through all difficulties, have preferred the profit of posterity before the tickling and pleasure of itching ears in these daies; which I may protest that I have aimed at, not in this worke only, but also in other of my books already: and I professe, that I wonder much at *T. Livius*, otherwise a most renowned & famous writer, who in a preface to one of his books of the Roman historie which he cōpiled from the foundation of Rome, thus protested, That he had gotten glorie ynough by his former writing, and might sit still now & take his ease, but that his mind was so restlesse and so ill could abide repose, that contrariwise it was fed and nourished with travell & nothing els. But surely me thinks, in finishing those Chronicles, he should in durie have respected the glory of that people which had conquered the vworld and advanced the honour of the Romane name, rather than displaid his owne praise and commendation: Y wis, his demerit had been the greater, to have continued his storie as he did, for love of the subiect matter, and not for his privat pleasure; to have I say performed that peece of vwork more to gratifie the state of Rome, than to content his owne mind and affection. As touching my selfe (forasmuch as *Domitius Piso* saith, That bookes ought to be

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treasuries & store-houses indeed, and not bare & simple writings) I may be bold to say and averr, That in 36 Books I have comprised 20000 things, all worthe of regard & consideration, which I have collected out of 2000 volumes or thereabout, that I have diligently read (and yet verie few of them there be that men learned otherwise, and studious, dare meddle withall, for the deepe matter and hidden secrets therein contained) and those written by 100 severall elect and approved authors: besides a world of other matters, which either were unknown to our forefathers and former writers, or els afterwards invented by their posteritie. And yet I nothing doubt but many things there be, which either surpass our knowlege, or els our memorie hath overslipt: for men we are, & men employed in many affairs. Moreover, considered it would be, that these studies we follow at vacant times and stolne hours, that is to say, by night season onely; to the end that you may know, how wee to accomplish this, have neglected no time which was due unto your service: The daies we wholly employ & spend in attendance about your person; we sleepe only to satisfie nature, even as much as our health requireth, and no more; contenting our selves with this reward; That while we studie and muse (as *Varro* saith) upon these things in our closet, wee gaine so many hours to our life; for surely wee live then onely, when wee watch and be awake. Considering now those occasions, those lets and hindrances above-named, I had no reason to presume or promise much; but in that you have emboldened me to dedicat my books unto you, your selfe perfourmeth whatsoever in me is wanting: not that I trust upon the goodnesse and worth of the worke, so much, as that by this means it will be better esteemed and shew more vendible: for many things there be that seeme right deare & be holden for pretious, only because they are consecrated to some sacred temples.

As for us verely, we have written of you all, your father *Vespasian*, your selfe, and your brother *Domitian*, in a large volume which we compiled touching the historie of our times, beginning there where *Aufidius Bassus* ended. Now if you demand & aske me, Where that historie is? I answer, That finished it was long since, and by this time is iustified and approved true by your deeds: otherwise I was determined to leave it unto my heire, & give order that it should be published after my death, least in my life time I might have ben thought to have carried favor of those, whose acts I seemed to pen with flatterie, & beyond all truth. And therefore in this action I do both them a great favour who haply were minded before me to put forth the like Chronicle, and the posteritie also which shall come after; who, I make reckning & know, will enter into the lists with us, like as we have done with our predecessors. A sufficient argument of this my good mind & frank hart that way you shal have by this, That in the front of these books now in hand, I have set down the verie names of those writers, whose help I have used in the compiling of thē: for I have ever ben of this opinion, That it is the part of an honest minded mā & one that is full of grace & modesty, to confesse frankly by whō he hath profited & gotten any good: not as many of those unthankful persons have done, whō I have alledged for my authors. For to tell you a plaine truth, know thus much frō me, that in cōferring thē together about this work of mine, I have met with some of our modern writers, who word for word have exemplified & copied out whole books of old authors, & never vouchsafed so much as the naming of them, but have taken their labors & travels to themselves. And
this

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this they have not done in that courage and spirit to imitate, yea and to match them as *Virgil* did *Homer*: much lesse have they shevved that simplicitie & apert proceeding of *Cicero*, vwho in his books of Pollicie and Common-weale professeth himselfe to hold with *Plato*; in his Consolatorie Epistle written to his daughter, confesseth and saith plainly thus, I follow *Crautor*, & *Panætius* likewise in his Treatise concerning Offices. Which worthe monuments of his (as you know vvell) deservē not onely to be seene, handled, and read daily, but also to be learned by heart everie word. Certes, I hold it for a point of a base and servile mind, and vwherein there is no goodnesse at all, to chuse rather to be surprised and taken in theft, than to bring home borrowed good, or to repay a due debt, especially vwhen the occupying, use, and interest thereof, hath gained a man as much as the principall.

Nowv as touching the titles and inscriptions of Bookes, the Greeks therein have a vvoonderfull grace and great felicitie: some have entituled them κηρίον, vwhereby they would give us to understand of A svvet hony-combe: * others κήρας Αμαλθείας, that is to say, The horne of plentie and store: in such sort, that vvhosoever readeth these goodly titles, must needs hope for some great matters in such books, and as the proverb goeth, looke to drinke there or els no vwhere, a good draught of hens milke. You shall have moreover their books set out vwith these glorious inscriptions, The Muses, The *Pandects, *Enchiridion, * Δειμών, *Γιννακίδιον: Goodly names all, & such, as who would not make default of appearance in court, and forfeit a recognisance or obligation, to unclaspe such books and turne over the leafe? But let a man enter into them and read forvvard, Lord! howv little or no substance at all shall he find within the verie mids, ansvverable to that brave shev in the front or outside thereof? As for our countrey men (Latines I meane and Romans) they be nothing so fine and curious as the Greeks, grosse are they in comparison of them in giving titles to their books: they come with their Antiquities, Examples, and Arts, and those also be such authors as are the most pleasant and of finest invention amongst them all. *Valerius* vwho (as I take it) vvas named *Antias*, both for that he vvas a cittizen of Antium, and also because the auncestours of his house vvere so called, vvas the first that gave to a booke of his ovvn making, the title of *Lucubratio*, as a man vwould say, Candle-vvorke or Night-studie. *Varro*, he rearmeth some of his Satyres *Sesculyces* and *Flexibule*. *Diodorus* among the Greeks vvas the first that laid aside toyish titles, and because he vwould give some grave name to his Chronicles, entituled it *Bibliotheca*, i. a Librarie. *Apion* the famous Grammarian, even he vvhome *Tiberius Caesar* called the Cymball of the vworld (vwhereas indeed he deserved to be named a Timbrell or Drum rather for ringing and sounding publicke fame) vvas so vainglorious, that he supposed all those immortalized unto whome he wrote or composed any pamphlet vwhatsoever. For mine ovvne part, although I nothing repent me that I have devised no pretier Title for my Booke than plaine *Naturalis Historia*, i. The reports of Nature, vwithout more ceremonie, yet because I vwould not be thought altogether to course and rate the Greeks, I can be content, nay I am vwillling to be thought in this behalfe like unto those excellent grand-masters in Greece for Painting and Imagerie, vvhome you shall find in these Reports of mine, to have entituled those rare and absolute peeces of vvorke (vvhich the more vve viewv and looke upon, the more vvee admire and vvoonder

* To wit, *Helius Melissus*.

* Containing all things, as *Tyro Tullius* did.

* A manuell to be carried alwaies in hand. *Medow*. A Table or Index.

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wonder at for their perfection) wvith halfe titles and unperfect inscriptions, in this manner, *Apelles* * went in hand with this Picture: or, *Polycletus* was a ma-<sup>* Apelles facie-
bat.</sup> king this Image: as if they were but begun, never finished and laid out of their hands; wvwhich vvas done (no doubt) to this end, that for all the varietie and diversitie of mens iudgements scanning of their wvorkmanship, yet the artificer thereby had recourse to make excuse; had means (I say) to crave and have pardon for any faults and imperfections that could be found, as if he meant to have amended any thing therein amisse or vwanting, in case hee had not been cut off and prevented by death. These noble wvorkemen therefore herein shewed right great modestie, that they set superscriptions upon all their painted tables, pourtraitures, and personages, as if they had been the last peeces of their wvorkmanship, and themselves disabled by unexpected death that they could not make a finall end of any one of them: for there vvere not knowvne (as I take it) above three in all, which had their absolute titles vwritten upon them in this forme, *Ille fecit, i.* This *Apelles* vvrought: & those Pictures vvill I vvrite of in place convenient. By wvwhich it appeared evidently, that the said three tables vvere fully finished, and that the wvorkeman was so highly contented with their perfection, that he feared the censure of no man: No marveile then, if all three were so much envied and admired throughout the world, no marveile if everie man desired to be master of them.

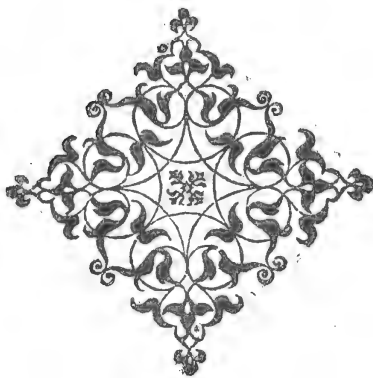
Novv for my selfe, I know full vwell & confesse freely, that many more things may be added, not to this storie alone, but to all my books that I have put forth already: which I speake by the vway, because I vvould prevent and avoid those fault-finders abroad, those correctors and * scourgers of *Homer*, (for surely that is their verie name) because I heare say there be certain Stoike Philosophers, pro-<sup>* Homeromasti-
sca.</sup> fessed Logicians, yea and Epicureans also (for at Grammarians hands and Criticks I never looked for other) who are wvith child still and travaile untill they be delivered of somewhat against my books which I have set forth as touching Grammer: and for this ten yeers space, nothing is come to light, but evermore the fruit miscarieth belike before the full time, as the slip of an unperfect birth; whereas in lesse space than so, the verie Elephant bringeth forth her calfe, be it never so big. But this troubleth me never a whit, for I am not ignorant that a silly wvoman, even a harlot and no better, durst encounter *Theophrastus* and vvrite a booke against him, notwithstanding hee vvas a man of so incomparable eloquence that thereupon he came by his divine name *Theophrastus*: from vvhence arose this proverbe and by-word, * Marie then go chuse a tree to hang thy selfe. And surely I cannot containe and hold my tongue, but I must needs let downe the verie vvords of *Cato Censorius*, so pertinent to this purpose; vvhereby it may appeare, that even *Cato* himselfe a most worthie personage, vvho vvrote of militarie Discipline, vvho had been brought up and trained to feats of vvare under Great *Scipio Africanus*, or rather indeed under *Anniball*, vvho in the end could not endure *Africanus* himselfe, but was able to controll him in martiall affaires: and vvho besides having the conduct as L. Generall of the Romane armie, achieved the better hand over his enemies in the field, and returned vvith victory: this *Cato* (I say) could not avoid such backbiters and slanderers, but knowing that there vvould bee many of them readie to purchase themselves some name and reputation by reproving the knowlledge and skill of others, brake out into

* If women may be allowed to controll mēs writings, we may be wearie of our lives and goe hāg our selves well enough.

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a certain speech against them: And what was it? I know right well (quoth he, in that booke aforesaid) that if these writings of mine come abroad once and be published to the view of the world, there will be many step forth to quarrell and cavill therewith; such fellows soonest and most of all who are quite void of vertue and honestie, and know not what belongeth to true honour. But surely say what they will, I let their words run by, like raine water. It was a prettie speech also and a pleasant apothegme, that *Plancus* uttered in the semblable case: for beeing informed that *Asinius Pollio* was devising and framing certaine invective Orations against him, which should be set forth either by himselfe or his children, after the decease of *Plancus* and not before, to the end that they might not be answered by him; hee said readily by way of a scoffe, That none but vaine bugs & hobgoblins use to fight with the dead: with which word he gave those orations such a counterbuffe, that (by the judgement of the learned) none were accounted afterward more impudent and shamelesse than they. For mine own part, being sure that these busie bodies shall never be able to bite me (and verely *Cato* hath given such fellows a proper name, and called them *Viriligatores*, by a tearme elegantly compounded of vices and quarrels: for to say a truth, what did they else but picke quarels and make brawls?) I will proceed and goe on still in my intended purpose.

Now to conclude and knit up mine Epistle: Knowing as I doe, that for the good of the Commonweale, you should be spared and not impeached by any privat businesse of your owne, and namely in perusing these long volumes of mine; to prevent this trouble therefore, I have adioyned immediatly to this Epistle and prefixed before these books, the Summarie or Contents of everie one: and verie carefully have I endeavoured, that you should not need to read them throughout, whereby all others also after your example, may ease themselves of the like labour: and as any man is desirous to know this or that, he may seeke and readily find in what place to meet with the same. This learned I of *Valerius Sorranus* one of our owne Latin vvriters, vvho hath done the like before me and set an Index to those Books which
he entituled *Επιτομή*





THE INVENTORIE OR INDEX,
CONTAINING THE CONTENTS OF XXXVII
BOOKES, TOVCHING THE HISTORIE OF NATVRE,
WRITTEN BY C. PLINIVS SECVNDVS, WHICH IS RECEI-
VED FOR THE FIRST BOOKE OF THEM.

The Summarie of every Booke.



The first Booke containeth the Dedicatorie Epistle or Preface of the vvhole vvorke, addressed to *Titus Vespasian* the Emperour. Also the names of the Authors out of vvhich he gathered the Historie, vvhich he profecuteth in 36 Bookes: together vvhith the Summarie of every Chapter: & beginneth, *The Books, &c.*

The second, treateth of the World, Elements, and Starres: and beginneth thus, *The world, &c.*

The third, describeth the first and second gulfe, which the Mediterranean sea maketh in Europe: and beginneth in this manner, *Hitherto, &c.*

The fourth, compriseth the third gulfe of Europe, beginning, *The third, &c.*

The fift, containeth the description of Affrick, and beginneth thus, *Africk, &c.*

The sixt, handleth the Cosmographie of Asia, beginning thus, *The sea called, &c.*

The seventh treateth of man, and his inventions, beginning, *Thus as you see, &c.*

The eight sheweth unto us, land creatures, and their kinds, and beginneth after this manner, *Passé we now, &c.*

The ninth, laieth before us all fishes, and creatures of the water, beginning in this wise, *I have thus shewed, &c.*

The tenth speakes of flying fouls and birds, and beginneth thus, *It followeth, &c.*

The eleventh telleth us of Insects, and beginneth thus, *It remaineth now, &c.*

The twelfth treateth of drugs & odoriferous plants, beginning, *Thus you, &c.*

The thirteenth describeth straunge and forreine trees: beginning with these words, *Thus far forth, &c.*

The fourteenth sheweth of vine-plants, &c. beginning thus, *Thus far forth, &c.*

The fifteenth comprehendeth all fruitfull trees, thus beginning, *There were, &c.*

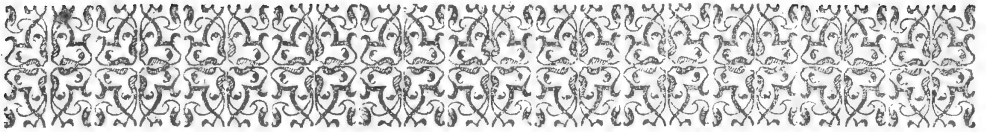
The sixteenth describeth unto us all wild trees, beginning with, *Hitherto, &c.*

The seventeenth containeth tame trees within horryards, and beginneth with these words, *As touching the nature, &c.*

The eighteenth booke treateth of the nature of corne, and all sorts thereof, together with the profession of husbandmen, and agriculture, beginning after this manner, *Now followeth, &c.*

The first Booke of

- The nineteenth discourseth of Flex, Spart, and Gardenage, beginning after this manner, *In the former booke, &c.*
- The twentieth sheweth of garden herbs, good to serve both the kitchin for meat, and the Apothecaries shop for medicine, & beginneth thus, *Now will we, &c.*
- The one and twentie treateth of flours & garlands, and beginneth, *In Cato, &c.*
- The two and twentie containeth the chaplets and medecines made of hearbs, with this beginning, *Such is the perfection, &c.*
- The three and twentie sheweth the medicinable vertues of wine, and tame trees growing in hortyards, beginning thus, *Thus have we, &c.*
- The foure and twentie declareth the properties of wild trees serving in physick, beginning thus, *Nature, &c.*
- The five and twentie treateth of the hearbs in the field comming up of their owne accord, and thus beginneth, *The excellencie, &c.*
- The six and twentie sheweth of many nevv and straunge maladies, the medicinable vertues also of certaine hearbs, according to sundrie diseases, beginning thus, *The verie face, &c.*
- The seven and twentie goeth forward to certaine other hearbs and their medecines, and thus beginneth, *Certes, &c.*
- The eight and twentie setteth downe certaine receipts of remedies in physicke, drawne from out of man and other bigger creatures, and it beginneth in this manner, *Heretofore, &c.*
- The nine and twentie treateth of the first authours and inventors of Physicke, also of medecines taken from other creatures, & beginneth, *The nature, &c.*
- The thirtith booke speaketh of Magicke, and certaine medecines appropriat to the parts and members of mans bodie, beginning thus, *The vanitie, &c.*
- The one and thirtie containeth the medicinable vertues of fishes & wwater creatures, vvith this beginning, *Now follow, &c.*
- The tvo and thirtie shevveth other properties of fishes, &c. and beginneth in this manner, *Now are we come, &c.*
- The three and thirtie treateth of gold and silver mines, and hath this beginning, *Time it is, &c.*
- The foure and thirtie speaketh of copper and brasse mines, also of lead, also of excellent brasse-founders and vvorkemen in copper, beginning after this manner, *In the next place, &c.*
- The five and thirtie discourseth of painting, colour, and painters, beginning in this sort, *The discourse, &c.*
- The six and thirtie treateth of marble and stone for building, and hath this beginning, *It remaineth, &c.*
- The seven and thirtie concludeth vvith pretious stones, and beginneth at these vvords, *To the end that, &c.*



IN THE SECOND BOOKE IS CONTAINED
the discourse of the World, of cœlestiall impressions and meteors,
as also of them that appeare in the Aire, and upon Earth.

Chap.

1. Whether the World bee finite and limited within certaine dimensions or no? whether there be many, or but one?
2. The forme and figure of Heaven and the World.
3. The motion of heaven.
4. Why the world is called *Mundus*?
5. Of the Elements.
6. Of the seven Planets.
7. Concerning God.
8. The nature of the fixed starres and planets: their course and revolution.
9. The nature of the Moone.
10. The eclipse of Sun and Moone: also of the night.
11. The bignesse of starres.
12. Divers inventions of men and their observations touching the cœlestiall bodies.
13. Of Eclipses.
14. The motion of the Moone.
15. Generall rules or canons touching planets or lights.
16. The reason why the same planets seeme higher or lower at sundrie times.
17. Generall rules concerning the planets or wandring stars.
18. What is the cause that planets change their colours?
19. The course of the Sun: his motion: and from whence proceedeth the inequality of daies.
20. Why lightnings be assigned to *Jupiter*.
21. The distances betweene the planets.
22. The harmonie of stars and planets.
23. The geometrie and dimensions of the world.
24. Of stars appearing sodainly.
25. Of comets or blasing stars, and other prodigious appearances in the skie: their nature, situation, and sundrie kinds.
26. The opinion of *Hipparchus* the Philosopher as touching the stars, fire-lights, lamps, pillars or beams of fire, burning darts, gapings

Chap.

- of the skie, and other such impressions, by way of example.
27. Straunge colours appearing in the firmament.
28. Flames and leams seen in the skie.
29. Circles or guirlands shewing above.
30. Of cœlestiall circles & guirlands that continue not, but soone passe.
31. Of many Suns.
32. Of many Moons.
33. Of nights as light as day.
34. Of meteors resembling fierie targuets.
35. A strange and wonderfull apparition in the skie.
36. The extraordinarie shooting and motion of stars.
37. Of the stars named *Castor* and *Pollux*.
38. Of the Aire.
39. Of certaine set times and seasons.
40. The power of the Dog-star.
41. The fundrie influences of stars according to the seasons and degrees of the signs.
42. The causes of raine, wind, and cloudes.
43. Of thunder and lightning.
44. Whereupon commeth the redoubling of the voice, called *Echo*.
45. Of winds againe.
46. Divers considerations observed in the nature of winds.
47. Many sorts of winds.
48. Of sodaine blasts and whirle-puffs.
49. Other strange kinds of tempests & storms.
50. In what regions there fall thunderbolts.
51. Divers sorts of lightnings, and wonderous accidents by them occasioned.
52. The observations [of the *Tuscans* in old time] as touching lightning.
53. Conjuring for to raise lightning.
54. Generall rules concerning leames and flashes of lightning.
55. What things be exempt and secured from lightning and thunderbolts.
56. Of monstrous and prodigious showres of

The first Booke of

Chap.

- raine, namely of milke, bloud, flesh, yron, wool, bricke, and tyle.
57. The rattling of harnesse and armour: the sound also of trumpets heard from heaven.
 58. Of stones falling from heaven.
 59. Of the Rainbow.
 60. Of Haile, Snow, Frost, Mists, and Dew.
 61. Of divers formes and shapes represented in clouds.
 62. The particular properties of the skie in certaine places.
 63. The nature of the Earth.
 64. The forme and figure of the earth.
 65. Of the Antipodes: and whether there bee any such. Also, as touching the roundnesse of the water.
 66. How the water resteth upon the earth.
 67. Of Seas and rivers navigable.
 68. What parts of the earth be habitable.
 69. That the earth is in the mids of the world.
 70. From whence proceedeth the inequality observed in the rising and elevation of the stars. Of the eclipse: where it is, & wherefore.
 71. The reason of the day-light upon earth.
 72. A discourse thereof according to the Gnomon: also of the first Sun-dyall.
 73. In what places and at what times there are no shadows cast.
 74. Where the shadows fall opposite and contrary twice in the yeere.
 75. Where the dayes bee longest, and where shortest.
 76. Likewise of Dyals and Quadrants.
 77. The divers observations and acceptations of the day.
 78. The diversities of regions, and the reason thereof.
 79. Of Earthquake.
 80. Of the chinks and opening of the earth.
 81. Signes of earthquake toward.
 82. Remedies and helps against earthquakes comming.
 83. Strange and prodigious woonders seene one time in the earth.
 84. Miraculous accidents as touching earthquake.

Chap.

85. In what parts the seas went backe.
86. Islands appearing new out of the sea.
87. What Islands have thus shewed, and at what times.
88. Into what lands the seas have broken perforce.
89. What Islands have ben joyned to the continent.
90. What lands have perished by water and become all sea.
91. Of lands that have settled and beene swallowed up of themselves.
92. What citties have beene overflowed and drowned by the sea.
93. Woonderfull straunge things as touching some lands.
94. Of certaine lands that alwaies suffer earthquake.
95. Of Islands that flote continually.
96. In what countries of the world it never raineth: also of many miracles as well of the earth as other elements hudled up pell mell together.
97. The reason of the Sea-tides, as well ebbing as flowing, and where the sea floweth extraordinarily.
98. Woonderfull things observed in the Sea.
99. The power of the Moone over Sea and land.
100. The power of the Sun: and the reason why the sea is salt.
101. Moreover, as touching the nature of the Moone.
102. Where the sea is deepest.
103. Admirable observations in fresh waters, as well of fountains as rivers.
104. Admirable things as touching fire and water joyntly together: also of Maltha.
105. Of Naphtha.
106. Of certaine places that burne continually.
107. Wonders of fire alone.
108. The dimension of the earth as well in length as in breadth.
109. The harmonickall circuit & circumference of the world.

In sum, there are in this booke of histories, notable matters, and worthie observations, foure hundred and eightene in number.

Latine Authors alledged in this booke.

M. Varro, Sulpitius Gallus, Tiberius Caesar Emperour, Q. Tubero, Tullius Tiro, L. Piso, T. Livius, Cornelius Nepos, Statius, Sebosus, Cassius Antipater, Fabianus, Antias, Mutianus, Cecina, (who wrote of the Tuscan learning) Tarquinius, L. Aquila, and Sergius Paulus.

Forreine

Plinies Naturall Historie.

Forreine Authours cited.

Plato, Hipparchus, Timæus, Sossigenes, Petosiris, Necepsus, the Pythagoreans, Posidonius, Anaximander, Epigenes, Gnomonicus, Euclides, Ceranus the Philosopher, Eudoxus, Democritus, Crisodemus, Thrasillus, Serapion, Dicaearchus, Archimedes, Onesicritus, Eratosthenes, Pytheas, Herodotus, Aristotle, Ctesias, Artemidorus the Ephesian, Isidorus Characenus, and Theopompus.

IN THE THIRD BOOKE ARE COMPREHENDED the regions, nations, seas, towns, havens, mountains, rivers, with their measures, and people, either at this day knowne or in times past, as followeth.

Chap.

1. Of Europe.
2. The length and breadth of Boetia, a part of Spaine, containing Andalusia, and the realme of Grenado.
3. That hither part of Spaine, called of the Romans Hispania Citerior.
4. The province Narbonensis, wherein is Dauphine, Languedoc, and Provançe.
5. Italie, Tiberis, Rome, and Campaine.
6. The Island Corsica.
7. Sardinia.
8. Sicilie.
9. Lipara.
10. Of Locri, and the frontiers of Italie.
11. The second gulfe of Europe.
12. The fourth region of Italie.

Chap.

13. The fifth region.
14. The sixth region.
15. The eighth region.
16. Of the river Po.
17. Of Italie beyond the Po, counted the eleventh region.
18. Venice, the tenth region.
19. Of Istria.
20. Of the Alps, and the nations there inhabiting.
21. Illyricum.
22. Liburnia.
23. Macedonie.
24. Noricum.
25. Pannonie and Dalmatia.
26. Moesia.

In this booke are described 26 Islands within the Adriaticke and Ionian seas: their principall citties, towns and nations. Also the chiefe and famous rivers: the highest hills: speciall Islands besides: towns and countries that be perished. In sum, here are comprised notable things, histories, matters memorable, and observations to the number of 326.

Latine Writers brought in for testimony.

Turannius Gracula, Cor. Nepos, T. Livius, Cato Censorius, M. Agrippa, M. Varro, Divus Augustus the Emperour, Varro Attacinus, Antias, Hyginus, L. Vetus, Mela Pomponius, Curio the father, Cælius Aruntius, Sebosus, Licinius Mutianus, Fabricius Thuscus, L. Atteius Capito, Verrius Flaccus, L. Piso, C. Ælianus, and Valerianus.

Forreine Authours.

Artemidorus, Alexander Polyhistor, Thucydides, Theophrastus, Isidorus, Theopompus, Metrodorus Scepsius, Callicrates, Xenophon, Lampacenus, Diodorus Syracusanus, Nymphodorus, Calliphanes, and Timagenes.

IN THE FOVRTH BOOKE ARE COMPRISED regions, nations, seas, townes, hills, havens, rivers, with their dimensions and people, either now or in times past knowne: viz.

Chap.

1. Epirus.
2. Etolia.
3. Locri.

Chap.

4. Peloponnesus.
5. Achaia.
6. Arcadia.

The first Booke of

Chap.

7. Greece, and Attica.
8. Theſſalie.
9. Magnesia.
10. Macedonia.
11. Thracia.
12. The Iſlands lying between thoſe countries; among which, Creta, Eubœa, the Cyclads, Sporades: alſo the Iſles within Hellespont neare the ſea Pontus, within Mœotis, Dacia, Sarmatia, and Scythia.
13. The Iſlands of Pontus, called Mer Major.

Chap.

14. The Iſlands of Germanie.
15. Iſlands in the French Ocean.
16. Britaine and Ireland.
17. Gaule or Fraunce.
18. Of Gallia Lugdunenſis.
19. Of Aquitaine.
20. Of high Spaine, named Citerior.
21. Of Portugal.
22. Iſlands in the Ocean.
23. The dimenſion and meaſure of all Europe.

Herein are contained many principall townes and countries, famous rivers; Iſlands alſo, beſides cities or nations that be periſhed: in ſum, divers things, hiſtories, and obſervations.

Latine Authours cited.

M. Varro, Cato Cenſorius, M. Agrippa, Divus Auguſtus, Varro Atacinus, Cor. Nepos, Hyginus, L. Vetus, Pomponius Mela, Licinius Mutianus, Fabricius Theuſcus, Atteius Capito, and Atteius Philologus.

Of forreine Writers.

Polybius, Hecateus, Hellenicus, Damastes, Eudoxus, Dicaearchus, Timotheus, Ephorus, Crater, Grammaticus, Serapion of Antioch, Callimachus, Artemidorus, Apollodorus, Agathocles, Eumachus Siculus the muſician, Alexander Polyhiſtor, Thucydides, Doſiades, Anaximander, Philſtides, Malloles, Dionyſius, Ariſtides, Callidemus, Menachmus, Edaſtbenes, Anticlidus, Heraclides, Philemon, Menephon, Pythias, Iſidorus, Philonides, Xenagoras, Aſtyonomus, Staphylus, Ariſtocritus, Metrodorus, Cleobulus, and Poſidonius.

IN THE FIFTH BOOKE ARE CONTAINED
Regions, Nations, Seas, Towns, Hills, Rivers, with their mea-
ſures, and people, either at this day being, or in times
paſt: that is to ſay,

Chap.

1. Mauritania.
2. The province Tingitana.
3. Numidia.
4. Affricke.
5. Cyrene.
6. Lybia Maræotis.
7. Iſlands lying about Affricke, & over-againſt Affricke.
8. The Æthiopiens.
9. Aſia.
10. Alexandria.
11. Arabia.
12. Syria, Palæſtina, Phœnicie.
13. Idumæa, Syria, Palæſtina, Samaria.
14. Iudæa, Galilea.
15. Iordan the river.
16. The lake Asphaltites.
17. The Eſſenes.
18. The countrey Decapolis.

Chap.

19. Tyrus and Sidon.
20. The mount Libanus.
21. Syria Antiochena.
22. The mountaine Caſius.
23. Coele-Syria.
24. The river Euphrates.
25. The region Palmyra.
26. Hierapolis the countrey.
27. Cilicia and the nations adjoining: Pamphilia, Iſauria, Homonades, Piſidia, Lycæonia, the mountaine Taurus, and Lycia.
28. The river Indus.
29. Laodicea, Apamia, Ionia, and Ephesus.
30. Æolis, Troas, Pergamus.
31. Iſlands affront Aſia, the Pamphylian Sea, Rhodus, Samus, and Chius.
32. Hellespont, Myſia, Phrygia, Galatia, Nicæa, Bithynia, Boſphorus.

Herein

Plinies Naturall Historie.

Herein you find townes and nations, Principall Rivers, Famous Hills, Islands, 117. Townes also that are lost and perished. In summe, many things, hystories and observations memorable.

Latine Authors alleadged,

Agrippa, Suetonius Paulinus, Varro Atacinus, Cornelius Nepos, Hyginus, L. Vetus, Mela, Domitius Corbulo, Licinius Mutianus, Claudius Casar, Aruntius, Livius the sonne, Sebosus, the Acts and records of the Triumphs.

Forraine writers.

King Iuba, Hecatæus, Hellenicus, Damastes, Dicaarchus, Bion, Timosthenes, Philonides, Xenogoras, Astynomus, Staphylus, Aristotle, Dionysius, Aristocritus, Ephorus, Eratosthenes, Hipparchus, Pannetius, Serapion Antiochenus, Callimachus, Agathocles, Polybius, Timæus the Mathematician, Herodotus, Myrsilus, Alexander Polyhistor, Metrodorus, Posidonius who wrate Periplus or Periegesis, Sotades, Periander, Aristarchus Sicyonius, Eudoxus, Antigenes, Callicrates, Xenophon Lampfacenus, Diodorus Syracusanus, Hanno, Himilco, Nymphodorus, Calliphon, Artemidorus, Megasthenes, Isidorus, Cleobulus, Aristocreon.

IN THE SIXTH BOOKE ARE CONTAINED
Regions, Nations, Seas, Citties, Havens, Rivers, with their dimensions, People also that be or have been, to wit:

Chap.

1. The sea called Pontus Euxinus, beforetime Axenus.
2. The nations of the Paphlagones and Cappadocians.
3. Cappadocia.
4. The nations of the countrey Themiscyra.
5. The region Colchica. The Achæi, and the rest in that tract.
6. Bosphorus Cimmerius, and Mœotis.
7. The people about Mœotis.
8. The Armeniæ both.
9. Armenia the greater.
10. Albania, Iberia.
11. The seluses and gates Caucasiæ.
12. Islands in Pontus.
13. Nations about the Scythian Ocean.
14. Media and the gates or streights Caspiæ.
15. Nations about the Hircane sea.
16. Also other nations confining upon that countrey.
17. People of Scythia.
18. The river Ganges.
19. The nations of India.

Chap.

20. The river Indus.
21. The Arians, and the nations bordering upon them.
22. The Island Taprobane.
23. Capissene, Carmænia.
24. The Persian and Arabian gulfes.
25. The Island Cassandrus, and kingdomes of the Parthians.
26. Media, Mesopotamia, Babylon, Seleucia.
27. The river Tigris.
28. Arabia, Nomades, Nabathæi, Omani, Tylos and Ogyris two Islands.
29. The goulfes of the red sea, the Troglodite and Æthyopian seas.
30. Divers nations of strange and wonderfull shapes.
31. Islands of the Æthyopian sea.
32. Of the fortunat Islands.
33. The division of the earth calculated by measures.
34. A division of the earth by climates, lines parallele, and equall shaddowes.

Townes of name. 195. Nations of account. 566. Famous rivers. 180. Notable hills. 38. Principall Islands. 108. Cities and nations perished. 195. In summe, there are rehearsed in this booke of other things, histories and observations. 2214.

Latine Authors alleadged.

M. Agrippa, Varro Atacinus, Cornelius Nepos, Hyginus, Lu. Vetus, Mela Pomponius, Domitius Corbulo, Licinius Mutianus, Claudius Casar, Aruntius Sebosus, Fabricius Thuscus, T. Livius, Seneca, Nigidius.

Forraine

The first Booke of

Forraine Writers.

King Iuba, Polybius, Hecataeus, Hellenicus, Damastes, Eudoxus, Dicaearchus, Beto, Timosthenes, Patrocles, Demodamas, Clitarchus, Eratosthenes, Alexander Magnus, Ephorus, Hipparchus, Panætius, Callimachus, Ariemidorus, Apollodorus, Agathocles, Polybius, Eumachus Siculus, Alexander Polyhistor, Amometus, Metrodorus, Posidonius, Onesicritus, Nearchus, Megasthenes, Diognetus, Aristocreon, Bion, Diodon, Simonides the younger, Basiles, and Xenophon Lampfacenus.

IN THE SEVENTH BOOKE ARE CONTAINED the woonderfull shapés of men in diverse countries.

Chap.

1. The strange formes of many nations.
2. Of the Scythians, and other people of diverse countries.
3. Of monstrous and prodigious births.
4. The transmutation of one sex into another. Also of twins.
5. Of the generation of man. The time of a womans childbearing, from seven moneths to eleven, proved by notable examples out of hystories.
6. Of conceptions, and children within the wombe. The signes how to know whether a woman goe with a sonne or a daughter, before she is delivered.
7. Of the conception and generation of man.
8. Of Agrippæ, *i.* those who are borne with the feet forward.
9. Of strange births, namely, by means of incision, when children are cut out of their mothers wombe.
10. Of Vopisci, *i.* such as being twins were born alive, notwithstanding the one of them was dead before.
11. Hystories of many children borne at one burden.
12. Examples of those that were like one to another.
13. The cause and manner of generation.
14. More of the same matter and argument.
15. Of womens monthly tearmes.
16. The manner of fundrie births.
17. The proportion of the parts of mans body and notable things therein observed.
18. Examples of extraordinarie shapés.
19. Strange natures of men.
20. Of bodily strength and swiftnesse.
21. Of excellent sight.
22. Who excelled in hearing.
23. Examples of patience.
24. Who were singular for good memorie.
25. The praise of *C. Iulius Cæsar.*

Chap.

26. The commendation of *Pompey* the Great.
27. The praise of *Cato*, the first of that name.
28. Of valour and fortitude.
29. Of notable wits, or the praises of some for their singular wit.
30. Of *Plato, Ennius, Virgill, M. Varro,* and *M. Cicero.*
31. Of such as carried a majestie in their behaviour.
32. Of men of great authoritie and reputation.
33. Of certaine divine and heavenly persons.
34. Of *Scipio Nasica.*
35. Of Chastitie.
36. Of Pietie, and naturall kindnesse.
37. Of excellent men in diverse sciences, and namely, in Astrologie, Grammer, and Geometrie, &c.
38. *Item.* Rare peeces of worke made by sundry artificers.
39. Of servants and slaves.
40. The excellencie of diverse nations.
41. Of perfect contentment and felicitie.
42. Examples of the variety and mutabilitie of fortune.
43. Of those that were twice outlawed and banished: of *L. Sylla* and *Q. Metellus.*
44. Of another *Metellus.*
45. Of the Emperour *Augustus.*
46. Of men deemed most happie above all others by the Oracles of the gods.
47. Who was cannonized a god whiles hee lived upon the earth.
48. Of those that lived longer than others.
49. Of diverse nativities of men.
50. Many examples of strange accidents in maladies.
51. Of the signes of death.
52. Of those that revived when they were caried forth to be buried.
53. Of suddaine death.
54. Of sepulchres and burials.

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Chap.

55. Of the soule: of ghosts and spirits.
56. The first inventors of many things.
57. Wherein all nations first agreed.

Chap.

58. Of antique letters.
59. The beginning of Barbaris first at Rome.
60. The first devisers of Dials and Clockes.

In summe, there be in this booke of stories straunge accidents and matters memorable 747.

Latine Authors alledged.

Verrius Flaccus, Cn. Gellius, Licinius Mutianus, Mutius, Masurius, Agrippina wife of Claudius, M. Cicero, Asinius Pollio, Messala, Rufus, Cornelius Nepos, Virgil, Livie, Cordus, Melissus, Sebosus, Cornelius Celsus, Maximus Valerius, Trogus, Nigidius Figulus, Pomponius Atticus, Pedianus Asconius, Sabinus, Cato Censorius, Fabius Vestalis.

Forraine Writers.

Herodotus, Aristeeus, Beto, Isigonus, Crates, Agatharcides, Calliphanes, Aristotle, Nymphodorus, Apollonides, Philarchus, Damon, Megasthenes, Ctesias, Tauron, Eudoxus, Onesicritus, Clitarchus, Duris, Artemidorus, Hippocrates the Physician, Asclepiander the Physician, Hesiodus, Anacreon, Theopompus, Hellenicus, Damasthes, Ephorus, Epigenes, Beresius, Pelsiris, Necepsus, Alexander Polyhistor, Xenophon, Callimachus, Democritus, Duillius, Polyhistor the Historian, Strato who wrate against the Propositions and Theoremes of Ephorus, Heraclides Ponticus, Asclepiades who wrote Tragodamena, Philostephanus, Hegecius, Archimachus, Thucydides, Mnesigiton, Xenagoras, Metrodorus Scepsius, Anticledes, and Critodemus.

IN THE EIGHTH BOOKE ARE CONTAINED the natures of land beasts that goe on foot.

Chap.

1. Of land creatures: The good and commendable parts in Elephants: their capacite and understanding.
2. When Elephants were first yoked and put to draw.
3. The docilitie of Elephants, and their aptnesse to learne.
4. The clemency of Elephants: that they know their owne daungers. Also of the felnesse of the Tigre.
5. The perceivance and memory of Elephants.
6. When Elephants were first seene in Italie.
7. The combats performed by Elephants.
8. The manner of taking Elephants.
9. The manner how Elephants be tamed.
10. How long an Elephant goeth with young, and of their nature.
11. The countries where Elephants breed: the discord and warre betweene Elephants and Dragons.
12. The industrie & subtile wit of Dragons and Elephants.
13. Of Dragons.
14. Serpents of prodigious bignesse: of Serpents named Box.
15. Of beasts engendered in Scythia, and the

Chap.

- North countries.
16. Of Lions.
17. Of Panthers.
18. The nature of the Tygre: of Camels, and the Pard-Cammell: when it was first seene at Rome.
19. Of the Stag-Wolfe named Chaus: and the Cephus.
20. Of Rhinoceros.
21. Of Onces, Marmosets called Sphinges, of the Crocutes, of common Marmosets, of Indian Boeufes, of Leucrocutes, of Eale, of the Æthyopian Bulls, of the beast Manti-chora, of the Licorne or Vnicorne, of the Catoblepa, and the Basiliske.
22. Of Wolves.
23. Of Serpents.
24. Of the rat of India called Ichneumon.
25. Of the Crocodile, the Skinke, and the River-horse.
26. Who shewed first at Rome the Water-horse and the Crocodiles. Diverse reasons in Phyficke found out by dumbe creatures.
27. Of beasts and other such creatures which have taught us certaine hearbes, to wit, the red Deere, Lizards, Swallowes, Tortoises, the

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Chap.

- the Weasell, the Stork, the Bore, the Snake, the Panther, the Elephant, Beares, Stocke-Doves, House-Doves, Cranes, and Ravens.
28. Prognostications of things to come, taken from beasts.
 29. What cities and nations have ben destroyed by small creatures.
 30. Of the Hiæna, the Crocuta and Manticora: of Bievers and Otters.
 31. Of Frogs, Sea or sea-Calves, and Stellions.
 32. Of Deere both red and fallow.
 33. Of the Tragelaphis: of the Chamæleon, and other beasts that chaunge colour.
 34. Of the Tarand, the Lycaon, and the Wolfe called Thoes.
 35. Of the Porc-espines.
 36. Of Beares, and how they bring forth their whelpes.
 37. The rats and mice of Pontus and the Alps: also of Hedgehogs.
 38. Of the Leontophones, the Onces, Graies,

Chap.

- Badgers, and Squirrels.
39. Of Vipers, Snailles in shels, and Lizards.
 40. Of Dogs.
 41. Against the biting of a mad dog.
 42. The nature of Horses.
 43. Of Asses.
 44. Of Mules.
 45. Of Kine, Bulls, and Oxen.
 46. Of the Bœufe named Apis.
 47. The nature of sheepe, their breeding and generation.
 48. Sundrie kinds of wooll and cloths.
 49. Of sheepe called Musinones.
 50. Of Goats and their generation.
 51. Of Swine and their nature.
 52. Of Parkes and Warrens for beasts.
 53. Of beasts halfe tame and wild.
 54. Of Apes and Monkies.
 55. Of Hares and Connies.
 56. Of beasts halfe savage.
 57. Of Rats and mice: of Dormice.
 58. Of beasts that live not in some places.
 59. Of beasts hurtfull to strangers.

In summe, there be in this Booke principall matters, stories, and observations worth the remembrance 788.

Latine Authors alleadged.

Mutianus, Procilius, Verrius Flaccus, L. Piso, Cornelius Valerianus, Cato Censorius, Feneſtella, Troguſ, Aëtius, Columella, Virgil, Varro, Lu. Metellus Scipio, Cornelius Celfus, Nigidius, Trebius Niger, Pomponius Mela, Manlius Sura.

Forraine writers.

King Iuba, Polybius, Onesicritus, Isidorus, Antipater, Aristotle, Demetrius the naturall Philosopher, Democritus, Theophrastus, Euanthes, Agrippa who wrote of the Olympionica, Hiero, king Attalus, king Philometer, Ctesias, Duris, Philistus, Architas, Philarchus, Amphilocheus the Athenian, Anaxipolis the Thasian, Apollodorus of Lemnos, Aristophanes the Milesian, Antigonus the Cymæan, Agathocles of Chios, Apollonicus of Pergamus, Aristander of Athens, Bacchus the Milesian, Bion of Soli, Chareas the Athenian, Diodorus of Pyreæum, Dio the Colophonian, Epigenes of Rhodes, Evagoras of Thassus, Euphranius the Athenian, Hegesias of Maronea, Menander of Pyreæum, Menander also of Heraclea, Menecrates the Poet, Androcion who wrote of Agriculture or Husbandrie, Aeschriion who likewise wrote of that argument, Dionysius who translated Mago, Diophanes who collected an Epitome or Breviarie out of Dionysius, king Archelaus, and Nicander.

IN THE NINTH BOOKE ARE CONTAINED the stories and natures of Fishes
and water-creatures.

Chap.

1. The nature of water-creatures.
2. The reason why the creatures of the sea are of all other biggest.
3. The monstrous beasts of the Indian sea.

Chap.

4. The greatest fishes and beasts in everie part of the Ocean.
5. Of Tritones, Nereides, and sea Elephants: their shapes and formes.

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Chap.

6. Of great Whales, called Balænae and Orcae.
7. Whether fishes doe take and deliver their breath? whether they sleepe or no?
8. Of Dolphins and their wonderfull properties.
9. Of the Turfiones.
10. Of the sea Tortoises, and how they bee taken.
11. Who first devised to flive the Tortoise shels into leaves.
12. The skins and shels of the sea creatures: the division of them into their severall kinds.
13. Of the Seale or sea Calfe.
14. Of fishes smooth and without haire: how they spawn and breed: and how many sorts there be of them.
15. The names and natures of many fishes.
16. The presages by fishes, and their varietie.
17. Of the Mullet & other fishes. That the same fishes are not in request in all places.
18. Of the Barble, the sea Raven Coracinus: of Stockfish and Salmon.
19. Of the Exocærus, Calamaries, Lampreies, &c.
20. The division of fishes by the shapes of their bodies.
21. Of Eeles.
22. The manner of taking them in the lake Benacus.
23. The nature of the Lamprey.
24. Of flat and broad fishes.
25. Of the stay-ship Echeneis, and his wonderfull nature.
26. The changeable nature of fishes.
27. Of the fish called the Lanterne, and the sea Dragon.
28. Of fishes wanting bloud.
29. Of the Pourcuttle, the Cuttle fish, the Calamarie, and the fish called the Saylor or Marriner.
30. The fish Ozæna, and Nauplius: also of Lobstars.
31. Of Crabs, sea Porckespines: and of the greater sort named Echinometræ.
32. Of Wilkes, Cockles, and shell fishes.
33. Of Scallops, Porcellanes, of the shell fish Murex, and other such.
34. The riches and treasures of the sea.

Chap.

35. Of pearles, how they be engendered, and where: also how they be found.
36. The nature of the Purple fish and the Burrets or Murices.
37. How many kinds there be of purple fishes.
38. How the purple fishes be taken.
39. When purple was first worne in the citie of Rome.
40. The price of purple cloths at Rome.
41. The dying of the Amethyst colour, of the Skarlet in graine, and the light Skarlet Hyfginus.
42. Of the fish called the Nacre, and his guide or keeper Pinnoteres: also the intelligence of fishes and water creatures.
43. Of Scolopendres, sea Foxes, and the fishes Glani.
44. Of the fish called the sea Ram.
45. Of those things which have a third nature, beeing neither living creatures, ne yet plants, to wit, of sea Nettles and Spunges.
46. Of Houndfishes or sea dogs.
47. Of sea fishes that have stonie shels: of those that have no fence at all: of other nastie and filthie creatures.
48. Of sea fishes venomous.
49. The diseases incident to fishes.
50. The admirable generation of fishes.
51. *Item*, Another discourse of their generation: and what fishes they bee which doe lay egges.
52. The matrices or wombes of fishes.
53. What fishes live longest.
54. Of Oyfter pits, and who did first devise them.
55. Who first invented stews and ponds to feed Lampreies in.
56. The stews and ponds for other shell Fishes, and who brought them up first to be used.
57. Of fishes that haunt the land.
58. The rats of Nilus.
59. Of the fish called Anthias, and how hee is taken.
60. Of the sea starres.
61. Of the fishes Dactyli, and their admirable properties.
62. What fishes do entertaine amitie one with another, and which be ever at warre.

In summe, this Booke containeth stories, notable things, and observations, to the number of 650, collected

The first Booke of

Out of Latine Authors.

Turanius Gracula, Trogus, Meccenas, Alsius Flavius, Cornelius Nepos, Laberius, the writer of merry Epigrams, Fabianus, Feneftella, Mutianus, Aelius Stilo, Staius Sebofus, Meliffus, Seneca, Cicero, Macer Aemylus, Meffala Corvinus, Trebius Niger, and Nigidius.

Out of Forraine Writers.

Aristotle, king Archelaus, Callimachus, Democritus, Theophrastus, Thrafyllus, Hegesidemus of Cythnos, and Alexander Polyhiflor.

IN THE TENTH BOOKE ARE CONTAINED the natures and stories of Foules and flying creatures.

Chap.

1. The nature of Foules.
2. Of the Phoenix.
3. Of Ægles.
4. When the Romane legions used the Æagle stander, and other ensignes. Also with what creatures Ægles maintaine fight.
5. A strange and woonderfull case as touching an Ægle.
6. Of the Vultures or Geires.
7. Of the foule Sangualis.
8. Of Faulcons and Hawkes.
9. Of the Cuckow, which is killed by birds of her owne kind.
10. Of Kites or Puttockes.
11. A division of birds into generall kinds.
12. Of unluckie and ominous birds, the Crow, the Raven, and the Like-owle.
13. Of the foule that carieth fire in her mouth.
14. Of the bird Clivina.
15. Of many birds unknowne.
16. Of foules that flie by night.
17. Of Howlers.
18. Of the Wood-pecker.
19. Of birds which have claws and crooked tallons.
20. Of Peacockes: and who killed them first for to be served at the table.
21. Of Cockes: how they be cut: of a dunghill cocke that spake.
22. Of Geese: who first devised to make a dain-tie dish of the Goose liver: the gravie or fat of Geese, called Comagenum.
23. Of Cranes, Storkes, Swans, straunge fouls of outlandish countries, of Quailes, and the bird Glotis.
24. Of Swallows and Martins, of Blackbirds, Thrushes, and Merles, of Sterlings, Turtle-doves, and Quoists or Ringdoves.
25. Of birds that tarie with us all the year long,

Chap.

- of birds that be for halfe a yeare only, and others that remaine but three months.
26. Marvellous stories of birds.
27. Of the birds called Seleucides.
28. Of the foule Ibis.
29. What birds will not abide in all places: which they be that chaunge both hew and voice: also of Nightingales.
30. Of Merles or Oufels.
31. The time wherein birds breed, lay, and sit.
32. Of the birds Halciones, the navigable daies that they doe shew: of the Sea-gulls and Cormorants.
33. The industrie and subtiltie of birds in building their neasts: of the ordinarie Swallow, the river Swallow Argatilis: the birds Cinnamologi that steale Cinnamon, and of Partridges.
34. Of House-doves.
35. Of Stock-doves.
36. Of Sparrowes.
37. Of the Kestrell or Stannell.
38. Of the flight and gate of birds.
39. Of certaine foodlesse Martinets, called Apodes.
40. Of certain Guls that milke and suck Goats udders, and be named Caprimulgi: also of Pelicanes named Plateæ.
41. The perceivance and naturall wit of birds.
42. Of the Linnet, Popinjay, or Parret, & such birds that will learne to speake.
43. The intelligence and understanding that Ravens have.
44. Of *Diomedes* his birds.
45. Of dull witted birds that will be taught nothing.
46. The manner how birds drinke.
47. Of foules called Himantipodes, and Onacrotali, and of other such strange birds.
48. The

Plinies Naturall Historie.

Chap.

48. The names of many birds & their natures.
49. Of straunge and new birds, such also as bee holden for fabulous.
50. Who devised first to cram Hens & Capons; of bartons, mewes, and coupes to keep and feed foules, and the first inventour thereof.
51. Of *Æsopes* platter.
52. The generation of birds, and what fourfooted beasts do lay eggs as well as birds.
53. The knitting of eggs within the bodie, the laying, couving and sitting of them, the manner and time of birds engendering.
54. The accidents that befall to broodie birds while they sit, and the remedies thereof.
55. Auguries and prefaces by egges.
56. What Hens be of the best kind.
57. The diseases incident to Hens, & the cure.
58. The maner how birds conceive: what number of eggs they lay, & how many they hatch.
59. Of Peacockes and Geese.
60. Of Herons and Bitters. The way to preserve and keepe egges.
61. The only bird that bringeth forth her yong alive, & feedeth the same at the pap with milk.

Chap.

62. The conception of the Viper, and how she is delivered of her young, also what land creatures lay egges.
63. The ordinary generation of land creatures.
64. The diversitie of living creatures in the manner of their engendering.
65. The yong ones that mice and rats do breed.
66. Whether of the marrow of a mans backe bone a serpent will engender.
67. Of the Salamander.
68. What things be engendered of those that were never engendered, and contrariwise; what creatures they be, which being engendered themselves, breed not.
69. The fences of living creatures.
70. That fishes doe both heare and smell.
71. That the fence of feeling is common to all living creatures.
72. What creatures live of poysons, and eat earth.
73. Of the meat and drinke of diverse creatures.
74. What creatures evermore disagree: and which they bee that agree well together.
75. Of the sleepe of living creatures.

This booke hath in it of notable matters, hystories and observations 904, gathered out of

Latine Authors and records.

Manilius, Cornelius Valerianus, the publicke records and registers, Vmbrius surnamed Melior, Massurius Sabinus, Antistius Labeo, Trogus Crematius, M. Varro, Macer Aemylus, Melissus, Mutianus, Nepos, Fabius Pictor, T. Lucretius, Cornelius Celsus, Horatius, Desalo, Hyginus, Sarsenna, both father and sonne, Nigidius, and Manlius Sura.

Forraine Writers.

Homer, Phamones, Philemon, Boethius who wrote a treatise called Ornithogonia, Hylas who made a discourse of Auguries, Aristotle, Theophrastus, Callimachus, Aeschylus, Hiero, Philometor, Archytas, Amphilocheus the Athenian, Anaxipolis the Thasian, Apollodorus of Lemnos, Aristophanes the Milesian, Antigonus the Cymeian, Agathocles of Chios, Apollonius of Pergamus, Aristander the Athenian, Bacchius the Milesian, Bion of Soli, Chereas the Athenian, Diodorus of Pryene, Dion the Colophonian, Democritus, Diophanes of Nicea, Epigenes of Rhodes, Evagoras of Thasos, Euphonius of Athens, king Iuba, Androcion who wrote of Husbandrie, and Aeschirion likewise who wrote thereof, Dionysius who translated Mago, and Diophanes who reduced his worke into an Epitome, Nicander, Onesicritus, Philarchus, and Hesiodus.

IN THE ELEVENTH BOOKE ARE CONTAINED THE STORIES AND NATURES OF SMALL CREATURES
and such as creepe on the ground.

Chap.

1. Of Insects in generall.
2. The naturall industrie of those Insects.
3. Whether Insects do breath, & whether they have bloud or no?

Chap.

4. The matter & substance of the Insects bodie.
5. Of Bees.
6. The government and order which Bees keep by instinct of nature.

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7. Divers

The first Booke of

Chap.

7. Divers operations of the Bees, & the tearms thereto belonging.
8. Of what flowers Bees do make their cellars, combs, and other workes.
9. What persons tooke a great love to Bees, and delighted to nourish them.
10. The manner of Bees when they be at their businesse.
11. Of Drones.
12. The nature of Honey.
13. Which is the best Honey.
14. The severall and particular kinds of Honey in diverse places.
15. The marks and tokens of good Honey.
16. Of a third kind of Honey, and how a man should know good bees.
17. The regiment and pollicie that Bees observe.
18. Diverse sorts of Bees, and what things bee hurtfull to Bees.
19. The diseases incident to Bees.
20. How to keepe the cast of Bees when they swarme, that they flie not away, also how to recover Bees, in case their breed and race be lost.
21. Of Wespes and Hornets.
22. Of silke flies, their wormes and Iackes called Bombylis and Necedalus, and who first devised silke cloth.
23. Of the silkworme in the Island Coos.
24. Of the Spiders and their generation.
25. Of Scorpions.
26. Of Stellions and Grashoppers.
27. In what countries there bee no Grashoppers, and where they sing not.
28. The wings of Insects, of Beetles and their kinds.
29. Of Locusts.
30. Of Ants or Pismires in Italie.
31. Of Indian Ants or Emmets.
32. The diverse sorts of Insects.
33. Of certaine creatures breeding of wood, and living of wood.

In summe, this Booke containeth notable things, stories, and observations, 2270.

Latine Authors cited.

M. Varro, Hyginus, Scropha, Sarcena, Celsus Cornelius, Aemilius Macer, Virgil, Columella, Iulius Aquila, who wrate of the Tuscan discipline, Tarquilius, who likewise wrote of the same, and Vmbritius that travelled in that argument, Cato Censorius, Domitius Calvinus, Trogus, Melissus, Favonius, Fabianus, Mutianus, Nigidius, Manilius, and Opius.

Forreine Writers.

*Aristotle, Democritus, Neoptolemus, who wrote *Meliturgia, Aristomachus, who likewise made a Treatise*

Chap.

34. Of a certain creature that hath no passage to void excrements.
35. Of Moths and Gnats.
36. Of flies living in the fire, named Pyrales or Pyrausta.
37. A discourse Anatomically of all parts and members of the bodie.
38. Of Bloud. Also in what creatures bloud will soonest clutter and congeale, and whose will not at all. What creatures have the grossest and heaviest bloud, and which the finest and thinnest: and lastly, who have no bloud at all.
39. Whether the soveraigntie and excellencie of fence consisteth in bloud. Of the skin and hide, of the haire and dugs of living creatures.
40. What creatures have notable dugs or teats above the rest.
41. Of Milke, and what milke will make no cheefe.
42. Divers kinds of Cheefe.
43. How the lims and members of mans body differeth from other creatures.
44. The resemblance that Apes have to us.
45. Of Nailes.
46. Of Houses.
47. Of birds feet and their clawes.
48. Of Insects feet, from two to an hundred.
49. Of Dwarves in each kind, and the genitall parts.
50. Of Tailles.
51. Of Voices.
52. Of superfluous members of the bodie. The sayings of *Aristotle* as touching long life.
53. Of the wind & breath that living creatures take. What things if they bee tasted, bee venomous and deadly. The food of man, as well for meat as drinke. What causes they be that hinder digestion.
54. How to encrease or diminish the corpulencie of the bodie, and what things with tast onely, will allay hunger and quench thirst.

* As touching the worke of Bees.

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Treatise of the same, and Philistus also that did the like, Nicander, Menecrates, Dionysius that translated Mago, Empedocles, Callimachus, king Artalus, Apollodorus who wrote of venomous beasts, Hippocrates, Eriphilus, Erasistratus, Asclepius, Themiso, Posidonius the Stoicke, the two Menanders, one of Priene and the other of Heraclea, Euphronius of Athens, Theophrastus, Hesiodus, and king Philometor.

IN THE TWELFTH BOOKE ARE CONTAINED discourses of Trees.

Chap.

1. The honor done to trees, of the Plane trees: when they were first brought into Italy, and of their nature.
2. Of the dwarfe Planes growing low, and who was the first that cut and shred trees into arbours.
3. Of straunge trees, and principally of the Citron tree in Assyria.
4. Of India trees, and when Ebene was first seen at Rome.
5. Of a certaine Thorne and Figg tree of India.
6. Of a tree named Pala: also of other Indian trees that are namelesse, and of those that beare wooll and cotton.
7. Of Pepper trees and Clove trees, and manie others.
8. Of Macir or Sugar, and the trees growing in the region Ariana.
9. Of Bdellium, and of trees along the Persian gulfe.
10. Of trees growing in the Island within the Persian gulfe, and those that beare Cotton.
11. Of Gossampine trees, and those which serve to make cloth, and wherein consisteth the fruit of certaine trees.
12. Of Costus, Spikenard, & divers sorts of Nard.
13. Of Asarabacca, Amomum, Amonius and Cardamomum.

Chap.

14. Of Frankincense, & trees that yeeld Incense.
15. Of Myrrhe and Myrrhe trees.
16. Of sundrie sorts of Myrrhe, the nature thereof and the price.
17. Of Malticke, Ladanum, and Bruta, of Enhæmum, Strobilus, and Styraç.
18. Of the felicitie and happinesse of Arabia.
19. Of Cinnamon, and the wood therof called Xylocinnamum, and of Casia.
20. Of Isocinnamon or Canel, of Caucamum and Tarum.
21. Of Serichatum, Gabalium, and Ben, otherwise called Myrobalanus.
22. Of Dates called Phœnicobalanus, & sweet Calamus.
23. Of Ammoniacum, and the sweet mosse called Sphagduus or Vinea.
24. Of Cyprus, Aspalathus and Marum.
25. Of Baulme, as well the liquor called Opopalsantium, as the wood Xylobalsamum, of Storax and Galbanum.
26. Of Panace, Spondylium, and Malobathrum or Folium Indicum.
27. Of the oyle of green Olives called Omphacium, and of Verjuice.
28. Of Bryon, and the wild Vine Oenanthe, of the Firre Elate, of Cinnamon, and the oyle of Nuts called Caryopus.

In summe, this booke containeth in it of notable matters, hystories, and observations, 974.

Latine Authours alleaged.

M. Varro, Mutianus, Virgil, Fabian, Sebosus, Pomponius Mela, Flavius Proculus, Trogus, Hyginus, Claudius Cesar, Cornelius Nepos, Sextius Niger who wrate in Greeke of Physicke, Cassius Hemina, L. Piso, Tuditanus, and Antias.

Forreine Writers.

Theophrastus, Herodotus, Callisthenes, Isidorus, Clitarchus, Anaximenes, Dioris, Nearchus, Onesicratus, Polycritus, Olympiodorus, Diognetus, Nicobulus, Anticlidus, Charax of Mitylene, Menechmus Dorotheus, Xenias the Athenian, Lycus, Antaus, Ephippus, Chareas, Democles, Ptolemaus, Lagus, Marsyas the Macedonian, Zoilus likewise of Macedonie, Democritus, Amphilocheus, Aristomachus, Alexander Polyhistor, king Iuba, Apollodorus the author of the treatise concerning sweet odours, Heraclides the Physician, Archidemus likewise the Physician, Dionysius, Democlidus, Euphron, Obsevides, Diagoras, Joll. (all six Physicians) Heraclides of Tarentum, Xenocritus of Ephesus, and Eratosthenes.

The first Booke of

IN THE THIRTEENTH BOOKE ARE CONTAINED Treatises of Ointments and of Trees by the sea side.

Chap.

1. Of sweet ointments & perfumes: when they came to bee first knowne at Rome, and of their composition.
2. What ointment was that which they called Roiall: which be Diapasmate or drie perfumes, and how they be kept.
3. The roiotous and superfluous expences that the Romanes were at for such ointments: and when they were first taken up and used in Rome.
4. Of Palmes or Date trees, their nature and sundrie sorts.
5. The trees of Syria.
6. Of the Terebinth tree.
7. Of the Ægyptian Figtree or Sycomore, and that of Cypresse.
8. Of the fruit which is called Ceraunia Siliqua.
9. Of the Peach-tree or Persica of Ægypt: and the Ægyptian thorn, wherof commeth Acacia.
10. Of the Plum tree and others about Memphis.
11. Sundrie sorts of gums, and of the Papyr reed.
12. Divers kinds of Paper, how Paper is made,

Chap.

- the triall of good Paper, the faults of Paper, and the paste that goeth to the making of Paper.
13. The bookes of king *Numa*.
 14. The trees of Æthyopia.
 15. The trees of Atlas, Citron trees, what points are commendable or otherwise faultie therein.
 16. Of the tree *Thya*.
 17. Of the tree *Lotos*.
 18. Of the bodie and root of *Lotus*.
 19. Of *Patyurus*, of the Pomgranat, and the flower of the Pomgranat.
 20. Of plants and shrubs in Asia and Greece.
 21. Of *Thymelæa*, *Chamelæa*, *Tragacanthæ*, *Tragium* or *Scorpio*, of *Tamariske*, *Brya*, and *Galla*.
 22. Of *Euonymus* or *Spyndle tree*, of *Adrachne*, *Congytria*, and *Thapsia*.
 23. Of *Capparis* or *Cynosbatos*, or *Opheostaphyle*, and of *Sari*.
 24. Of the royall thorne of Babylon, and *Cytisus* or tree *Trifolie*.
 25. Of shrubs and trees growing upon our Mediterranean seas, the red sea, and the Indian sea.

In summe, there be comprised in this booke of notable things, stories, and observations, foure hundred fiftie and eight.

Latine Authors cited.

Marcus Varro, *Mutianus*, *Virgil*, *Fabianus*, *Sebosus*, *Pomponius Mela*, *Flavius Proculus*, *Trogus*, *Hyginus*, *Claudius Cesar*, *Cornelius Nepos*, *Sextius Niger*, who wrote in Greeke of *Physicke*, *Cassius Hemina*, *L. Piso*, *Tuditanius*, and *Antias*.

Forraine writers.

Theophrastus, *Herodotus*, *Callisthenes*, *Isidorus*, *Clitarchus*, *Anaximenes*, *Duris*, *Nearchus*, *Onesicritus*, *Policritus*, *Olympiodorus*, *Diogenes*, *Cleobulus*, *Anticlides*, *Charax the Milylæan*, *Menechmus*, *Dorotheus*, *Xenias the Athenian*, *Lycus*, *Antæus*, *Ephippus*, *Dio*, *Adimantus*, *Ptolomeus Lagus*, *Marsyas* and *Zoilus*, both *Macedonians*, *Democritus*, *Amphilochus*, *Alexander Polyhistor*, *Aristomachus*, king *Iuba*, *Apollodorus* who wrate of *Odours*, *Heraclides the Physician*, *Botrys*, *Archidemus*, *Dionysius*, *Democles*, *Euphron*, *Mnesicles*, *Diagoras* and *Iolla*, *Physicians* all, *Heraclides of Tarentum*, and *Xenocritus the Ephesian*.

Plinies Naturall Historie.

IN THE FOURTEENTH BOOKE ARE contained Treatises of Vine trees and Vine-yards.

Chap.

1. Of Vines and their nature, the manner how they beare grapes.
2. Sundry kinds of Vines in generall.
3. More kinds of Vines according to the propertie of countries where they grow.
4. Notable considerations as touching the planting and ordering of Vines.
5. The nature of wine.
6. The best and most kindly wines.
7. Wines outlandish and beyond sea.
8. Of the wine called *Biaxon*, seven kinds thereof.
9. Of sweet wines foureteene sorts.
10. Of second wines or household wines.
11. What good wines began of late to bee in request at Rome.
12. Observations of wine, set down by king *Romulus*.

Chap.

13. The auncient usage of wine, and the wines of old time.
14. Of cellars for wine, and the wine *Opiminianum*.
15. *Cæsars* liberalitie in wine, & when first there were foure sorts of wine set downe.
16. Of artificiall or set wines.
17. Of *Hydromell* and *Oxymell*.
18. Prodigious and strange kinds of wine.
19. What wines might not bee used in sacrifices, and with what sorts new wines are sophisticated.
20. Sundrie sorts of *Pitch* and *Rosin*: of the manner of sophisticating new wines: of *vinegre* and *wine lees*.
21. Of wine cellars.
22. Of avoiding drunkennesse.

In summe, it containeth notable matters, histories and observations 510, gathered out of

Latine Authors.

Cornelius Valerianus, Virgil, Celsus, Cato Censorius, Sarsennas both father and sonne, Scrophæ, Varro, Decimus Syllanus, Fabius Pictor, Trogus Hyginus, Flaccus Verrius, Gracinus Iulius, Accius, Columella, Masurius Sabinus, Feneſtella, Tergilla, M. Aclius Plautus, Fabius, Dorsennus, Scævola, Aelius, Asteius Capito, Cotta Meſſalinus, L. Piſo, Pompeius Lenæus, Fabianus, Sextius Niger, and Vibius Rufus.

Forraine Writers.

Hesiodus, Theophrastus, Aristotle, Democritus, king Attalus, K. Philometer, Architas, Xenophon, Amphilocheus the Athenian, Anaxipolis the Thasian, Apollodorus the Lemnian, Aristophanes the Milesian, Antigonus the Cymæan, Agathocles the Chian, Apollonius of Pergamus, Aristander of Athens, and likewise Batrys the Athenian, Bacchius the Milesian, Bion of Soli, Chereas the Athenian, and Cheristus likewise of Athens, Diodorus of Priene, Dio the Colophonian, Epigenes the Rhodian, Evagoras the Thasian, Euphron of Athens, Androcion, Aescrion and Lyſimachus, who wrote all three of Agriculture, Dionysius who translated Mago, Diophanes who brought Dionysius into an Epitome, Aſclepiades the Physician, Onesicritus, and king Iuba.

THE FIFTEENTH BOOKE TREATETH OF the nature of trees fruitfull, and plan- ted in Hort-yards.

Chap.

1. The nature of fruitfull trees.
2. Of the oyle of Olives.
3. The nature of the Olive & yong Olive trees.
4. The nature of the oyle Olive.
5. The manner of husbanding Olive rowes.
6. How to keepe Olives and make oyle thereof.

Chap.

7. Of artificiall oyle.
8. Of the dregs or Olive cake, being pressed.
9. Of fruits of trees good to eat, their severall kinds and natures.
10. Of Pine nuts foure kinds.
11. Of the *Quince*.

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Chap.

12. Of Peaches foure sorts.
13. Of Plums eleven kinds.
14. Sundrie kinds of Apples, and namely, nine and twentie sorts.
15. Of Peares & Wardens: of sundrie strange devises to graffe trees.
16. Of preserving & keeping Apples and such like fruits.
17. The manner how to keepe Quinces, Pomgranats, Peares, Wardens, Sorvifes, and Grapes.
18. Of Figs nine and twentie sorts.
19. Of the wild Figtree: of caprification or the manner how to bring Figs to maturitie by the meanes of certaine flies.
20. Of Medlars, and three sorts of them.

Chap.

21. Foure kinds of Sorvoifes.
22. Of the Walnut.
23. Of Chestnuts eight kinds.
24. Of Charobs called Siliquæ, of Apples, of Mulberies, of Graines, Pippins and Kernils within fruits, also of berries.
25. Of Cherries eight sorts.
26. Of the Corneill fruit, and Lentisks.
27. Sundrie sorts of juices, and odours.
28. Of the iuices in fruits and trees: of colours, sinels, and the natures of diverse fruits, also the singularities and commendations of them.
29. Of the Myrtle, eleven kinds thereof.
30. Of the Lawrell or Bay tree, thirteene sorts of it.

In summe, there be comprised in this booke of notable matters, stories, and observations 520, collected out of

Latine Authors.

Fenestella, Fabianus, Virgil, Cornelius, Valerianus, Celsus, Cato Censorius, Sarsenna (both father and sonne) Scropha, Mar. Varro, D. Syllanus, Fabius Pictor, Trogus, Hyginus, Flaccus Verrius, Gracianus, Atticus, Julius Sabinus, Tergilla, Cotta Messalinus, Columella, L. Piso, Pompeius Lenæus, M. Accius Plantius, Fabius Dorconus, Scævola, Aelius, Atteius Capito, Sextus Niger, and Vibius Rufus.

Forraigne writers.

Hesiodus, Aristotle, Democritus, king Hiero, Archytas, king Philometor, king Attalus, Xenophon, Amphiloehus the Athenian, Anaxipolis the Thasian, Apollodorus of Lemnos, Aristophanes the Milesian, Antigonus the Cymæan, Agathocles of Chios, Apollodorus of Pergamus, Aristander the Athenian, Bacchius the Milesian, Bion of Soli, Chæreas of Athens, and Charistius likewise the Athenian, Diodorus of Priene, Dion the Colophonian, Epigenes the Rhodian, Evagoras the Thasian, Euphronius the Athenian, Androcion and Aeschion (who writ both of Husbandrie) Dionysius that translated the bookes of Mago, and Dionysius the Epitomist, who brought them all into a Breviarie, Asclepiades and Erasistratus, both Physicians, Comiades, who wrote as touching the confections of wine, Aristomachus, Hicesius, who both treated of the same matter, Themison the Physician, Onesicritus, and king Iuba.

IN THE SIXTEENTH BOOKE ARE CONTAINED the natures of wild Trees.

Chap.

1. Countries wherein no trees doe grow: miraculous woonders of trees in the North countries.
2. Of the great Forrest Hercynia.
3. Trees that beare Mast.
4. Of the Civick guirland, and who in old time were adorned and honoured with chaplets of tree leaves.
5. Of Mast thirteene kinds.
6. Of Beech Mast, and other sorts of Mast: of

Chap.

- Coale, and the feeding of Hogs.
7. Of Gals, and how many things besides Mast and Acornes Mast trees doe beare.
8. Of Cachrys, and of the Skarlet graine: also of Agaricke and Corke.
9. Of what trees the bark is in usage.
10. Of shindles to cover houses, of the Pine-tree and the wild Pine, of the Firre & Pitch-tree, of the Larch tree, of the Torch tree Tœda, and the Eugh tree.

Plinies Naturall Historie.

Chap.

11. The manner of making fundrie sorts of Pitch and Tar: how the virgin pitch called Cedrium is made: of the thicke stone pitch how it is made: and the ways to boile rosin.
12. Of the ship pitch called Zopissa: of Sapium: and those trees that yeeld timber good for building.
13. Of the Ash tree, foure kinds.
14. Of the Teil or Linden tree, two severall sorts thereof.
15. Ten divers sorts of Maples.
16. Of the knot in Maple called Bruscus and Molluscum: of a kind of Fisticke tree called Staphylodendron: of Box tree three sorts.
17. Of the Elme, foure kinds.
18. The nature of trees according to their situation and places where they grow.
19. A generall division of trees.
20. What trees never shed their leaves quite: of the Oleander tree called Rhododendron.
21. Againe what trees loose not their leaves, but shew alwaies greene, which be they that shed their leaves in part. In what countries no trees at all doe loose their leaves.
22. The nature of those trees which let fall their leaves, and which have leaves of fundrie colours.
23. Three sorts of Asps or Poplars: & of what trees the leaves doe alter their forme and fashion.
24. What leaves use to turne everie yeere: the manner how to order the leaves of Date trees and to use them. Also straunge and admirable things as touching leaves.
25. The order and course that Nature holdeth in plants: the blossoms of trees: their manner of conception, blouming, budding, and bearing fruit: and in what order they put out floures.
26. Of the Corneil tree: the right season when everie tree beareth fruit: what trees bee fruitlesse, and therefore are supposed unhappie: which they bee that soone loose their fruit: and last of all what trees shew fruit before they put forth leaves.

Chap.

27. Of trees that beare fruit twice and thrice in one yeere: what trees sodainly wax old: the age of trees.
28. Of the Mulberrie tree.
29. Of trees growing wild.
30. Of the Box tree, and the great Beane tree or Lotus.
31. Of the boughs, branches, barke, rind, and root of trees.
32. Of prodigious trees that presage somewhat to come: of trees that spring and grow of themselves. Also a discourse, that all trees grow not in everie place: and what trees will not live but in this or that one place.
33. Of the Cypresse tree. Also, that the ground will bring forth some new plants that never were set, sowne, or growing there before.
34. Of Yvie.
35. Of the Ivie called Smilax.
36. Of Reeds, Canes, and shrubs growing in water.
37. Of the osier or willow, eight sorts thereof: also what twiggs besides osiers and willowes are good for windings and to bind withall: of bushes and grieves.
38. The juice and liquor of trees: the nature of their wood and timber: also of hewing downe and falling trees.
39. Of the Larch tree, the Fir, and the Sapine: the time of cutting them downe, and such like.
40. Sundrie sorts of wood: the extraordinary bignesse of trees: what wood is not subject to be worm-eaten nor to decay: other trees that be everlasting.
41. Of wood-worms.
42. Of timber fit for carpentrie and building: what timber is good for this or that use; and namely, which is best and more firme and durable for roufs of houses.
43. The manner of glewing bourds & planks: also of rent or cloven stufte.
44. The age of trees: which bee they that last not long: of Misselto, and of the Priests Druydæ.

In summe, this booke comprehendeth of notable things, histories, and observations, an hundred and five and thirtie.

Latine Authours cited.

M. Varro, Fecialis, Nigidius, Cornelius Nepos, Hyginus, Massurius, Cato, Mutianus, Lucius Piso, Trogius, Calphurnius, Bassus, Cremutius, Sextius Niger, Cornelius Bocchus, Viruvius, and Gracinus.

Forreins

The first Booke of

Forreine Writers.

Alexander Polyhistor, Hesiodus, Theophrastus, Democritus, Homer, Timæus the Mathematician.

THE SEVENTEENTH BOOKE CONTAINETH the nature of trees planted, set, and well kept in Hortyards.

Chap.

1. Trees of wonderfull price.
2. Of the nature of heaven and the skie respective unto trees: and what part of the skie they ought to regard.
3. The societie and accord of the climate and the soile requisit for trees.
4. The qualities of the ground in divers regions.
5. Sundrie kinds of ground and earth.
6. Of a kind of earth or marle that they in Britaine and Fraunce set much store by.
7. What the Greekes have taught, and what rules they have given as touching this point.
8. Of more kinds of earth.
9. The use of ashes, and of dung: what plants will enrich the ground and make it more battell: contrariwise, which they bee that burne out the heart thereof.
10. The planting or setting of trees: how to make a sion or slip to take and grow againe that is plucked from the root of the stocke.
11. Of transplanting out of seminaries, yong trees that came of pepins and seeds.
12. The spaces betweene and distance to bee regarded in planting trees: the shadow and droppings, either from house eaves or other trees.
13. What trees grow apace, and which thrive but slowly: also of the Savine.
14. The setting and graffing imps and sions of trees in the stocke or cliffe.
15. Of the manner how to graffe a vine.
16. Of inoculation or graffing in the leafe or scutcheon with a plaistre.

Chap.

17. An example or experiment of this kind of graffing.
18. The order of planting and husbanding olives: and which is the proper time for graffing.
19. What trees love the companie and societie of others: the skill of baring the roots about trees, cutting off their superfluous spurns, and raising hills about the roots.
20. Of willow banks and rows of osiers: of places where reeds and canes are nourished: of other plants used to be cut, for poles, pearches, stakes, and forkes.
21. The manner of planting vines: the skill of trimming them.
22. The furrow about vines: and the pruning of them.
23. The manner of planting trees to serve for vines to run upon.
24. How to keepe and preserve grapes: the diseases incident to trees.
25. Of sundrie prodigious and monstrous sights shewed in trees: also of an olive yard which in old time removed, and was transplanted from one side of a great high way to the other.
26. Remedies against the diseases and imperfections or faults in trees.
27. Of scarification and paring of trees: and the manner of dunging them.
28. Divers medicines against venemous beasts and pismires, and other creatures noisome and hurtfull to trees.

In summe, here bee contained notable matters, stories, and observations, to the number of five hundred eghtie and one.

Latine Authors alledged.

Cornelius Nepos, Cato Censorius, M. Varro, Celsus, Virgill, Hyginus, Sarsenna both father and sonne, Scrophas, Calphurnius, Bassus, Trogus, Æmilius Macer, Gracinus, Columella, Atticus, Iulius, Fabianus, Sura Manlius, Dorsenus Mundus, Caius Epidicus, and L. Piso.

Forreine Authours.

Isidorus, Theophrastus, Aristotle, Democritus, Theopompus, K. Hiero, K. Attalus, K. Philometor, Archytas,

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Archytas, Xenophon, Amphilocheus the Athenian, Anaxipolis the Thasian, Apollodorus of Lemnos, Aristophanes the Milesian, Antigonus the Cymeian, Agathocles the Chian, Apollonius of Pergamus, Bacchius the Milesian, Bion, Charea the Athenian, also Charistus of Athens, Diodorus of Priene, Dion the Colophonion, Epigenes the Rhodian, Euagon the Thasian, Euphron the Athenian, Androcion, Eschirion, Lysimachus, who all three wrote of Agriculture: Dionysius who translated the books of Mago, and Diophanes who out of Dionysius collected a breuiarie, and Aristander who made a treatise of Wonders and portenteous tokens.

THE EIGHTEENTH BOOKE IS A TREATISE of Agriculture or Husbandrie.

Chap.

1. That our auncetors in old time were exceeding much given to husbandrie. Also, the singular care that men had to looke unto hortyards and gardens.
2. Of the first chaplets and guirlands used at Rome.
3. Of the acre of ground and halfe acre, called at Rome Iugeris & Actus. The ancient ordinances concerning cattell: in what time the market for victuals was exceeding cheap at Rome: and who were famous & renowned for husbandrie and tilling the ground.
4. The auncient manner of tilling the earth.
5. Where a ferme house is to be feared & built conveniently: certain rules in old time concerning tillage.
6. A discourse as touching the praise of husbandmen: what rules are to be observed to come by a good peece of land.
7. Divers kinds of corne, and their nature.
8. That all sorts of graine will not grow euerie where. Of other kinds of corne in the Levant or East countries.
9. Of baking and pastrie: of grinding and of meale.
10. Of the fine cocked floure: of the white floure of wheat, and of other sorts of floure: the manner of moulding and making dough, and baking.
11. The manner of making and laying leaven: also of making past & bread: and when Bakers were first knowne at Rome. Of sieves, ferces, and bulters; and of sodden wheat or frumentie.
12. Of pulse.
13. Of Rapes and Navewes in the Amiternine tract.
14. Of Lupines.
15. Of Vetches and Ervile.
16. Of Fenigreeke: of Messelline or Dredge-corne: of Mung-corne or Bollimong for provander: of Claver or three-leafed grass

Chap.

- called Medica; and of another Trefoile named Cytifus.
17. The faults and diseases in corne, graine, and pulse, and their remedies: what corne or pulse ought to be sowne with respect to the ground.
18. Of prodigious tokens observed in corne. The skill of ploughing the ground: the divers sorts of culters & shares in the plough.
19. The seasons of the yeere fit to till & plough the ground. The manner of putting oxen in the yoke for the plough.
20. Of breaking clods or harrowing: of another kind of tilling: the earing or second tilth or stirring the ground. And cutting the corne.
21. The manner of tilling and husbanding land.
22. Examples of divers grounds: of such as are woonderous fertile: of a vine that beareth grapes twice in the yeare. The difference of waters.
23. The qualitie of the ground or soile: of compost or dunging lands.
24. The goodnesse of choice seeds: the manner of good sowing: how much seed of any corn an acre will take to bee well sowne: The seasons of seednes.
25. The observation of the stars for their apparition or occultation, their rising & setting, as well for day as night.
26. A recapitulation and brieft summarie of all things belonging to husbandrie. What is to bee done in the field euerie moneth of the yeere.
27. That husbandmen should not so much regard the signe or the stars, as the fit season of the time for seednes. The rising or fall, the apparition or occultation of plannets observed in some hearbs. Of the rising and setting of stars.
28. Of medows: how they are to bee repaired and

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Chap.

- and brought into hart: of sith-stones, hooks, sickles, and sithes: the time of sowing corne, and what fixed starres are of power about that time.
29. Of the seasons and times to be marked as well in summer as winter: what remedie for barraine and leane ground.
30. Of the harvest: of wheat, of chaffe: how to keepe corne.

Chap.

31. Of vintage, and autumn, and the constitution thereof.
32. What regard is to be had in the moone and her age, in husbandrie. (ture.
33. The consideration of the winds for agriculture.
34. The bounds, limits, bawks, and waies, to be observed in corne fields.
35. Signes whereby a man may prognosticate the disposition of the weather.

In summe, there be contained in this booke of notable matters, stories, and observations, two thousand and six hundred.

Latine Authors alledged in this booke.

Massarius Sabinus, Cassius Hemina, Verrius Flaccus, L. Piso, Cornelius Celsus, Tarannius Graculus, D. Syllanus, M. Varro, Cato Censorius, Scrofa, Sarsenna both father and sonne, Domitius Calvinus, Hyginus, Virgill, Trogus, Ovid, Gracinus, Columella, Tubero, L. Aruntius who wrote in Greeke of Astronomie, and Caesar Dictator who likewise wrote of the same argument, Sergius Paulus, Sabinus Fabianus, M. Cicero, Calphurnius Bassus, Atteius Capito, Manlius Sura, and Actius who compiled a booke called Praxidica.

Forreine Authours.

Hesiodus, Theophrastus, Aristotle, Democritus, K. Hiero, K. Philometor, K. Attalus, K. Archelauts, Archytas, Xenophon, Amphilocheus of Athens, Anaxipolis of Thasus, Aristophanes the Milesian, Apollodorus the Lemnian, Antigonus the Cymean, Agathocles of Chios, Apollonius of Pergamus, Aristander the Athenian, Bacchius the Milesian, Bion of Soli, Cherea of Athens, Charistus likewise the Athenian, Diodorus of Priene, Dion of Colophon, Epigenes of Rhodes, Evagoras the Thasian, Euphronius the Athenian, Andracion, Aeschrio, and Lysimachus, who wrote all three of Husbandrie, Dionysius that translated the works of Mago, and Diophanes who drew the same into an Epitome, Thales, Eudoxus, Philippus, Callippus, Dositheus, Parmeniscus, Meliton, Criton, Oenopides, Zeno, Euctemon, Harpalus, Hecateus, Anaximander, Sositenes, Hipparchus, Aratus, Zoroastres, and Archibius.

THE NINETEENTH BOOKE CONTAINETH a discourse of the nature of Flax, and other wonderfull matters.

Chap.

1. The sowing of Line seed: divers kinds of Flax: how it is dressed: of naperie and napkins: of linnen that will not burn nor consume with fire: & when curtans were devised at Rome about the theatres.
2. The nature of a kind of broom called Spart, when it came to be used first, how it is to be ordered & dressed, what plants both spring and also live without roots.
3. Of Myfy, and of Mushroms, of Tadstoles or Mulhromes that bee broad and without a taile called Pezici, of Laserpitium, and Magydaris, of Maddir, and the Fullers root Radicula, i. Sopeweed.
4. The manner of dressing and trimming gardens: also the ordering and due placing of other plants good for to be eaten; over and

Chap.

- besides corn, & the fruit of trees and shrubs,
5. The nature, the sundrie sorts, and the stories of many plants that grow in gardens.
6. Of the roots, leaves, floures, and colours of garden hearbs.
7. How many dayes it will be after the seeds of hearbs bee sowne, or their slips set, ere they come up: the nature of seeds: how hearbs are to be sown or set, and in what course and ranke: which hearbs are but one of a kind, and which they be that have many kinds.
8. The nature of such garden hearbs as are good for the pot, or to make fallads, and to season meat withall; their kinds to the number of 46, with their stories & descriptions.
9. Of Fennell, and Hempe.
10. The diseases and maladies that annoy gardens:

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Chap.

dens, the remedies against the same: as also how to kill ants, caterpillers, and gnats.

21. What seeds be more or lesse able to endure any hardnesse or injurie, and which they be that salt waters are good for.

Chap.

22. The manner of watering gardens: what hearbs they be, which beeing transplanted and removed, proove the better: and finally, the juice, the sweet favours, and relishes of garden-hearbs:

In summe, here are comprised memorable things, stories, and observations, a thousand one hundred fortie and three.

Latine Authours cited.

M. Aelius Plautus, M. Varro, D. Syllanus, Cato Censorius, Hyginus, Virgill, Mutianus, Celsus, Columella, Calphurnius Bassus, Manlius Sura, Sabinus Tyro, Licinius Macer, Q. Hirtius, Vibius Rufus, Ctesennius who wrote Ceperica, [i. a treatise of Gardening] Castitius likewise, and Firminus, (who both twaine made a worke of the same matter) and last of all Petreus.

Forraine Writers.

Herodotus, Theophrastus, Democritus, Aristomachus, Menander, (who wrote a booke entituled Brochresta, i. of things profitable for our life and diet) and Anaxilaus.

THE TWENTITH BOOKE COMPRISETH medecines out of those Simples vvhich are set and sowed in Gardens.

Chap.

1. Of the wild Cucumber, and the juice therof Elaterium.

2. Of the Cucumber as well that which wandereth & groweth abroad called Anguinum, as that of the garden: also of the Pompion.

3. Of the wild Gourds, and the Rape or Naves.

4. Divers sort of Navewes: of the wild Radish, of the garden Radish, and the Parsnip or Carot.

5. Of Staphylinum or the tame Parsnip. The hearb Gingidium or Chervill: of Sefelis or Siler-mountaine: of Elecampane, and of Onyons.

6. Of Porret or Leekes used to bee cut, and of cabbage Leekes or headed, also of Garlicke.

7. Of wild Lettuce or Hawkweed, called also Lactuca Caprina, of another kind named Esopus, of Woad, & tame garden Lettuce.

8. Divers kinds of Beets, of Endive, and Cichorie, of garden Endive.

9. Of Cawle or Coleworts, of the wild Coleworts Lapsana, of Soldanella, of Squilla or the Sea-onion, of Scallions or Chibbols, and of Dogleeks.

10. Of Sparage both tame and wild, of Libycum and Clarie.

11. Of Parsley, of Baulme, Smallage, & mountaine Parsley.

12. Of Alifanders, and garden Basill.

Chap.

13. Of wild Basill, of Rocket, of Cresses, and Rue.

14. Of wild Mints, of garden Mints, of Peniroyall, of Nep, and Cumin.

15. Of Æthiopian Cumin, which staieth urine, of Capers, of Lovach, of Panace, of wild Origan or Majoram savage.

16. More of wild Origan and Heracleotica, called also Gallinacea Cunila, i. Small majoram, Savoric or Orgament, Rosemarie, sweet Majoram of the garden and of the mountaine.

17. Of Cockweed, Pepperwort, or Dittander, of garden Origan, of a kind of Orgament called Onitis or Prason, of Tragoriganum or wild Peniroyall, the water Lillie or Nenuphar, of Lepidium, of Gith or Nigella Romana, and of Anise.

18. Of Dill, of Sacopænum, of Sagapen, of Poppies both white and blacke: the maner how to draw the juice of hearbs: and of Opium.

19. Of the wild Poppie, of horned Poppie, of Glaucium or Paralium, of Heraclium or Aphrum, of the confection Diacodium made of Poppie heads, of Tithymall.

20. Of Purcellane or Peplium, of Coriander and Orach.

21. Of Mallowes, and Malope, of Althæa, or Marth-

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Chap.

- Marshmallow, of Dockes, soure Docke or Sorell, the water Docke, the hearb Patience or Bulapathum.
 22. Three kinds of Senvie, of Horehound, of running Thyme, of water Mints or Savorie, of Linefeed and Bletes.

Chap.

23. Of Meu, of garden Fennell, of wild Fennell or Myrsineum, of Hempe, of Fennellgeant, of Thyftles, and Artichokes.
 24. The confectiō called Triacle, the composition of *Antiochus*.

In summe, there be comprised in this booke of medicines, stories, and observations, one hundred sixtie and seven.

Out of Latine Authoꝛs.

Cato Censorius, Mar. Varro, Pompeius Lenaus, Gallio, Hyginus, Sextius Niger who wrote in Greeke, and Iulius Bassus likewise, who wrote in the same language, Celsus, and Antonius Casar.

Forraine writers.

Democritus, Theophrastus, Orpheus, Menander who made the booke Biochresta, Pythagoras, and Nicander.

Out of Physicians.

*Nicander, Hippocrates, Chrysippus, Diocles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus of Tarentum, Apollodorus the Citien, Praxagoras, Philistonicus, Medius, Dienches, Cleophantus, Philistio, Asclepiades, Cratevas, Petronius, Diodorus, Iolla, Erasistratus, Di. goras, Andreas, Mnesicles, Epiccharmus, Damion, Dalion, Sofimenes, Theopolemus, Metrodorus, Solon, Lycus, * Olympiades of Thebes, Phyllinus, Petreius, Miction, Glaucia and Xenocrates.*

* A woman who was a Midwife.

IN THE XXI. BOOKE ARE CONTAINED the natures of Flowvers and Hearbes to make Guirlands of.

Chap.

1. The nature of flowers and hearbs that serue for Chaplets, the woonderfull varietie of flowers.
2. Of Chaplets and nosegaias of flowers. Who first devised to set flowers in order one with another. When Coronets or Guirlands of flowers were invented and took their name, and upon what occasion.
3. Who first gave a present of a Chaplet garnished with silver and gold foile. In what honour and estimation such Guirlands were in old time. The honor done of old to *Scipio*. Of Coronets or Chaplets platted, wrythed, and braided. Also of a notable act of queen *Cleopatra* in making of Chaplets.
4. Of Roses set in Guirlands. Diverse sorts of Roses, and where they be set and doe grow.
5. Three kinds of Lillies. The straunge manner of setting them.
6. Of Violets, Marigolds, of Baccharis, Combretrum, Alarabacca or Folefoot, and Saffron.
7. Of the flowers used in ancient time in Guir-

Chap.

- lands & Chaplets. The great diversitie that is in aromaticall and odoriferous simples: of Lavander, Spike, and Polium.
8. The colours of cloth resembling flowers. Of flower Gentill or Passce-velours: of Chryfome or Chrysites.
 9. The honor done by Guirlands, and their excellencie: of Cyclaminum, of Melilot, of Claver or Trefoile, whereof there be three sorts.
 10. Of Origan, Thyme, Honey of Athens, of Doniza or Fleabane, of Iupiters flower, of Helenium or Elecampane, of Sothernwood, and Camomile.
 11. Of Majoran, of Nyctigretum and Melilote, the white Violet or stocke Gillofie, of Codiaminum, also of wild Bulbs or Rampions, of Heliochrylum, & Lychnis or Rose Campion, and many other hearbes growing on this side the sea.
 12. The manner how to nourish and keepe Bees: of their maladies, and remedies thereto.

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Chap.

13. Of Honey that is venomous, remedies against such venomous Honey, as also against another kind thereof, which maketh folke to be mad that tast thereof.
14. Of a certain Hony that flies will not touch nor come neare to. Of Bee-hives. The way how for to keepe the Bees when they are at a fault for meat: and how their Wax is made.
15. Of hearbes good to eat which come up of their owne accord, and namely, those that are prickie.
16. Of Thyttles, of Parietarie of the wall, of Brambles and Orchanet.
17. The difference of many sorts of hearbes in their lease. Which they be that doe floure all the yeare long, of the Daffodill, of Pissana, and of the Gladen or Sword-grasse.
18. Of diverse sorts of Reeds, and of Cyperus, of the medicinable vertues which they have, of Cypirus, and Squinanth.
19. The medicinable vertues of Roses, of the Lillie, of Narcissus, of the Violet, and of Baccharis or Ladies gloves, of Combretum and Asarabacca.
20. Of Nard Celticke and Saffron, the vertues thereof and use in Phylicke, of the sweet ointment Crocomagna made of Saffron,

Chap.

- of Spike or Lavender, of Polium, and Flour delis, of Heliochrysum, Chryfocome, and Melilot.
21. Of sweet Trifolie, of Thyme, the wild yellow Lillie Hemerocallis or the Day-flower, of Elecampane and Sothernwood.
22. The medicinable vertues of Camomile and Marjoram.
23. The vertues of Corne Rose or Passe-flowers Anemone.
24. The properties medicinable of Filipendula.
25. The vertues of Heliochrysum.
26. The medicines of Crowtoes.
27. The vertues of the Perywinckle, Butchers broome, of Sawpier, and wild Bassill.
28. The medicinable vertues of Colocasia or the Egyptian Beane.
29. The properties of Anthalum.
30. The vertues of Fewerfue.
31. The vertues of Nightshade or petie Morrell, and Alkakengi.
32. Of Corchorus, *i.* Chickweed, and of Cnicus, *i.* Carthanus or bastard Saffron.
33. Of the hearbe Persoluta.
34. Of the weights and measures used in old time.

In summe, there be in this booke to be found medicines, stories, and worthe observations, seven hundred and thirtie.

Latine Authours alleadged.

Cato Censorius, M. Varro, Massurius, Annius, C. Helius, Vestimus, Vibius Rufinus, Hyginus, Pomponius Mela, Pompeius Lenæus, Cornelius Celsus, Calphurnius Bassus, P. Largius, Licinius Macer, Sextius, and Iulius Bassus, who both wrate in Greeke, and Antonius Castor.

Forreine Writers.

Theophrastus, Democritus, Orpheus, Pythagoras, Mago, Menander who wrate the Treatise Biochrestia, Nicander, Homer, Hesiodus, Musæus, Sophocles, and Anaxilans.

Physicians.

Mnesibius and Callimachus who wrate both of Guirlands made of flowers, Phanias the naturall Philosopher or Physician, Simus, Timaristus, Hippocrates, Chryssippus, Dioeles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus of Citia, Apollodorus of Tarentum, Praxagoras, Plistonius the Physician, Diouches, Cleophantus, Philistio, Asclepiades, Cratevas, Petronius, Diodotus, Iolla, Erasistratus, Diagoras, Andreas, Mnesicles, Epicharmus, Damion, Dalion, Zosimenes, Theopolemus, Merrodorus, Solon, Lycus, Olympias the midwife of Thebes, Phillinus, Petreius, Miction, Glaucias, and Xenocrates.

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IN THE XXII. BOOKE ARE CONTAINED discourses as touching the estimation of Hearbes.

Chap.

1. Of certain nations that use hearbes to beautifie their bodies.
2. Of clothes died with the juice of hearbes.
3. Of the Chaplet made of the common meddow grasse.
4. How rare these Guirlands of grasse were.
5. Which were the onely men that had the honour to be crowned with the said Chaplets.
6. The onely Centurion allowed to weare the said Guirland.
7. Medicinable vertues observed in the rest of hearbs and flowers that serve for Guirlands, and first of Eringe or sea Holly.
8. Of the Thistle or hearbe which they call Centum-capita.
9. Of Acanus and Liquirice.
10. Of Brambles or Thistles called Tribuli, their kinds and vertues.
11. The vertues and properties of the hearbe Stoebe.
12. Of Hippophyes, and of Hippope, *i.* the Tazill, and their properties.
13. Of the Nettle and the medicinable vertues of it.
14. Of the white dead Nettle or Archangell Lamium, and the vertues of it.
15. Of the hearbe Scorpius or Caterpillers the kinds and vertues thereof.
16. Of Leucacantha or our ladies Thistle, and the vertues of it.
17. Of Parietarie of the wall called Helxine or Perdicum, of Feverfew or Motherwort, Par-

Chap.

- thenium, of Sideritis, *i.* wall Sauge or stone Sauge, and the vertues thereof good for Physicke.
18. Of Chamæleon, the sundrie sorts and properties that it hath.
19. Of Coronopus, *i.* Crow-foot Plantaine or Buckhorne Plantain, and the vertues thereof.
20. Of Orchanet, as well the right as the bastard, and the vertues of them both.
21. Another kind of Orchanet called Onocchelis, of Camomile, of the hearbe Lotus or common Melilot, of Lotometra, which is a kind of garden Lotus or fallade Claver, of Heliotropium, *i.* Turnsole or Solsium, and Tricocum, a kind thereof, of Maidenhaire called Adiantum, and Callitrichum.
22. Of bitter Lettuce or wild Cichorie, of Thesium, of Daffodill, of Halimus, of Brankursine, of Buprestis, of Elaphoboscum or Gratia Dei, of Scandix, *i.* wild Chervill or shepherds needle, of the wild wort Iasione, of bastard Parsly, Caucahis, of Laver, of Sillybum, of Scolimus, *i.* the Artichoke or Limonia, of Sowthistle, of Ghondrilla, and of Mushromes.
23. Of Toadstools, of Silphium, & of Laser juice
24. The nature of Hony, of Mead or Hydromel: how it commeth that the fashions are changed in certaine kinds of meat, of honied wine, of wax. A discourse against the composition of many simples.
25. The medicinable vertues of corne.

In summe, here you shall find of medicines, stories, and observations, 906. gathered out of

The same Authours which were named in the booke before, and besides out of *Chrysermus*, *Erastobenes*, and *Alcaeus*.

IN THE XXIII. BOOKE IS CONTAINED a Treatise of Hortyard trees.

Chap.

1. The medicinable qualities of grapes fresh and new gathered, of Vine cuttings and of grape kernils, of the grape Theriace, or Treacle grape, of dried Grapes or Raisins, of Astaphus, of Stavescare, cal-

Chap.

led also Pituitaria, of the wild Vine, of the white Vine which is called Bryonie, of the blacke Vine, of new wines, of diverse and sundrie sorts of wines and also of vinegre.

Plinies Naturall Historie.

Chap.

2. Of the medicinable vertues of vinegre Squillicke, of Oxymell or honied vinegre, of cuit, of the dregs or lees of wine, vinegre, and cuit.
3. The vertues of Olives, of the leaves of the Olive, of the floure and ashes of the Olive: also of the dregs or grounds of oile.
4. Medicinable properties observed in the leaves of the wild Olive, of the oile made of the wild vine flowers, of the oile Cicinum, the oyles of Almonds, Baies, and Myrtles, the oile of Chamamyrsine or grand Myrtle, also of Cypresse, of Cytrons, & walnuts, &c.
5. The Ægyptian Palmtree that beareth Ben,

Chap.

- also of the Date tree called Elate, and the vertues of them.
6. The medicinable vertues of fundrie plants; namely, in their flower, leafe, fruit, boughs, barke, wood, juice, root, and ashes.
7. Of Peares, and the observations to them belonging, of Figges both wild and savage: of Erineum, and other sorts of plants, with their vertues.
8. Of Pine-nuts, and Almonds, of the Filbard and Walnut, of Fisticke and Chestnuts, of Charobs, Corneils, Strawberrie trees, and Baies.
9. Of the Myrtle gentle, of Myrtidanum, and the wild Myrtle.

In summe, there bee noted in this booke medicines, stories, and observations, a thousand foure hundred and nineteene.

Latine Authors cited.

C. Volgius, Pompeius Lenæus, Sextius Niger, and Iulius Bassus, who wrot in Greeke both, Antonius Castor, M. Varro, Cornelius Celsus, and Fabianus.

Foraine Writers.

Theophrastus, Democritus, Orpheus, Pythagoras, Mago, Menander the author of the booke Biochrestia, Nicander, Homer, Hesiodus, Musæus, and Anaxilaus.

Physicians.

Mnestheus, Callimachus, Phamias the naturall Philosopher, Simus, Tamaristus, Hippocrates, Chrysippus, Diocles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus of Citia, Apollodorus the Tarentine, Praxagoras, Plistonicus, Medius, Dieuches, Cleophrantus, Philistio, Asclepiades, Cratevas, Petronius, Diodotus, Iolla, Erasistratus, Diagoras, Andreas, Mnesicles, Epicharmus, Damion, Dalion, Sosimenes, Theopolemus, Metrodorus, Solon, Lycus, Olympias the midwife of Thebes, Phyllinus, Petreius, Miction, Glancia, and Xenocrates.

THE XXIII. BOOKE TREATETH OF Trees growing vvild.

Chap.

1. Medicinable vertues observed in wild trees.
2. The Ægyptian Beane tree, Lotus.
3. Mast and Acornes.
4. The grain or berie of the tree Ilex, of Gals, of Misselto, of little bals and mast of trees, the root of Cirrus, and of Corke.
5. Of the Beech, the Cypresse tree, the tall Cedar, the fruit or berie therof, and of Galbanum.
6. Of Ammoniacum, Storax, Spondylium, Spagnus, the Terebinth tree, of Chamæpitys or Iva Muscata, of Esula or Pityusa, of Rosins, of the Pitch-tree and the Lentiske.

Chap.

7. Of stiffe Pitch, of Tarre, of Pitch twice boyled, of Pittasphalt, of Zopiffa, of the Torch tree, and Lentiske.
8. The vertues of the Plane tree, the Ash, the Maple, the Aspe, the Elme, the Linden tree or Teil, the Elder, and Iuniper.
9. Of the Willow, the Sallow Amerina, and such like, good for windings and bands, also of Heath or Ling.
10. Of Virga Sanguinea, of the Oisier, of the Privet, the Aller, of Yvie, of Cistus or Giffus, of Erythranum, of ground Yvie or Alehouse, of Withwind, of Perwinke or Lesseron.

The first Booke of

Chap.

11. Of Reeds, of Paper cane, of Ebene, of Oleander, of Rhus or Sumach, of Madder, of Alyssum, of Sopeweed, of Apaynum, of Rosemarie and the seed thereof, of Selago, of Samulus, of Gums, and the medicinable vertues of them all.
12. Of the Arabian thorne or thistle, of Bedegnar, of Acanthium and Acacia.
13. Of the common and wild thistle, of Erysi-sceptum, of the thorne or thistle Appendix, of Pyxacanthum or the Barbarie tree: of Paliurus, of the Holly, of the Eugh tree and other bushes, with their vertues in Physicke.
14. Of the sweet Brier or Eglantine, of the Respise bush, of the white bramble Rharnnus, of Lycium, of Sarcocolla, of the composition named Oporice, and all their medicines.
15. Of Germander, of Perwinke or Lowrie, of Chamælaea or Olivell, of Chamæsyce, of ground yvie, of Lavander Cotton, of Ampeloprasos or Vine Porret, of Stachys or wild Sauge, of Clinopodium or Horse-

Chap.

- time, of Cudweed, of Perwinke of Ægypt; and their properties.
16. Of Wake Robin, of Dragonwort or Serpentine of the garden, the greater Dragonwort, of Arifaron, of Yarrow, and Millefoile: of bastard Navew, of Myrrhis, and Onobrychis, with their vertues.
17. Of Coriacea, Callicia, and Menais, with three and twentie other hearbes, and their properties, which are held by some to serve in Magicke. Of Considia and Aproxis: with others that reduce and revive love againe.
18. Of Eriphia, Lanaria, and water Yarrow, with their vertues.
19. Of the hearbs that groweth upon the head of statues and images, of the hearbes that come out of rivers, of the hearb called Lingua simply, of the toung: of hearbes growing within sieves, and upon dunghils, of Rhodora, of the hearb Impia, of the child before the parents, of the hearb Pecten veneris, of Nodia, of Cleivers or Goose Erith, of Burs, of Tordile, of Dent de chien or Quiches, of Dactylus and Fenigreek, with their vertues.

In summe, herein are comprised medicines, stories, and observations, a thousand foure hundred and eighteene: collected out of

Latine Authors.

C. Volgius, Pompeius Lenæus, Sextius Niger, and Iulius Bassus, who wrate both in Greeke; Antonius Castor, M. Varro, Cornelius Celsus, and Fabianus.

Forreine Writers.

Theophrastus, Apollodorus, Democritus, Orpheus, Pythagoras, Mago, Menander the author of the booke Biocrestia, Nicander, Homer, Hesiodus, Musæus, Sophocles, and Anaxilinus.

Physicians.

Mnestheus, Callimachus, Phanias the naturall Philosopher, Simo, Timaristus, Hippocrates, Chrysippus, Diocles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus of Cirtia, Apollodorus the Tarentine, Praxagoras, Plistonicus, Medius, Dieuches, Cleophantus, Philistio, Asclepiades, Cratevas, Petronius Diodotus, Iolla, Erasistratus, Diagoras, Andreas, Mnesicles, Epicharmus, Damion, Sosimenes, Theopolemus, Solon, Lycus, Metrodorus, Olympias the midwife of Thebes, Phyllinus, Petreius, Miction, Glaucia, and Xenocrates.

IN THE XXV. BOOKE ARE CONTAINED
the natures of hearbes and vveeds that come up of themselves.

The reputation that hearbes have been of. When
they began first to be used.

Chap.

1. The properties and natures of wild hearbes growing of their owne accord.
2. What Authours have written in Latine of

Chap.

the nature and use of hearbes. When the knowledge of simples began first to be practised at Rome. What Greeke Authours first

Plinies Naturall Historie.

Chap.

first wrote of hearbs, the invention and finding out of sundrie hearbes, the Physicke of old time. What is the cause that Simples are not so much in request and use for Physicke as in old time. The medicinable vertues of the Eglantine and Serpentarie or Dragon.

3. Of a certaine venomous fountaine in Aimaïne, the vertues and properties of the hearbe Britannica, what diseases cause the greatest paines.
4. Of Moly, of Dodocatheos, of Pæonium, named otherwise Pentorobus, and Glycyfide, of Panace or Asclepios, of Heraclium, of Panace Chironeum, of Panace Centaureum or Phatnaceum, of Heraclium Siderium, of Henbane.
5. Of the hearbe Mercurie female, of Parthenium, of Hermu-Pœa, or rather Mercurie: of Yarow, of Panace Heracleum, of Sideritis, of Millefoile, of Scopa regia, of Hemionium, Teucium, Splenium, Melampodium or blacke Ellebore, and how many kinds there be of them. The medicinable vertues of blacke and white Ellebore: when Ellebore is to be given, how it is to be taken, to whom it is not to be given, also that it killeth Mice and Rats.
6. Of Mithridatium, of Scordotis or Scordium, of Polemonia, otherwise called Philetæria or Chiliodynamia, of Eupatorie or Agrimonie, of great Centaurie, otherwise called Chironium, of the lesse Centaurie or Libadium, called Fel Terræ, i. the gall of the Earth. Of Triorches, and their vertues.
7. Of Clymenus, Gentian, Lyfimachia, and Parthenius or Motherwort, Mugwort, Ambrose, Nenuphar, Heraclium, and Euphor-

Chap.

- bia, with all their vertues medicinable.
8. Of Plantaine, Buglosse, Hounds tongue, Oxe eye or May weed, of Scythica, Hippice and Ischæmon, of Bètonie, Cantabrica, Serratwort, of Dittander or Hiberis, of Celendine the greater, Celendine the lesse or Pilewort, of Canaria, of Elaphoboscus, of Dictamnium, of Aristolochia or Hartwort, how fishes will come to it for love of bait, and so are soone caught. The counterpoisons against stinging of serpents, by these hearbes abovenamed.
 9. Of Argemonia, of Agaricke, Echium, Henbane, Vervaine, Blattaria, Lemonia, Cinquefoile, Carot, Persalata, the Cloe Butte, Swines bread or Cyclaminus, Hartstrang: all verie good for the sting of serpents.
 10. Of Danewort or Walwort, of Mullin, of Thelyphonon. Remedies against the sting of Scorpions, the biting of Toades and mad Dogs, and generally against all poysons.
 11. Receipts and remedies against headach and diseases of the head.
 12. Of Centaurie, Celendine, Panace, and Henbane, and Euphorbium, all soveraigne medicines for the eyes.
 13. Of Pimpernell or Corchorus, of Mandragoras or Circeium, of Henbane, of Crethmoagron, of Molybdæna, of Fumiterre, of Galangale, of Floure de lis, of Cotyledon, or Vmbilicus Veneris, of Houfleeke or Sengreene, of Pourcellane, of Groundswell, of Ephemerum, of great Tazill, of Crow-foot: which affoord medicines against the infirmities and diseases of the eyes, eares, nostrils, teeth, and mouth.

In summe, this booke doth yeeld of medicines, stories, and observations, a thousand two hundred ninetie and two.

Latine Authors cited.

M. Varro, C. Volgius, Pompeius Lenæus, Sextius Niger, and Iulius Bassus, who both wrot in Greeke, Antonius Castor, and Cornelius Celsus.

Forraïne Writers.

Theophrastus, Apollodorus, Democritus, king Iuba, Orpheus, Pythagoras, Mago, Menander who wrote Biochrestæ, Nicander, Homer, Hesiodus, Musæus, Sophocles, Xanthus, and Anaxilaus.

Physicians.

Mnestheus, Callimachus, Phanius the naturall Philosopher, Timaristus, Simus, Hippocrates, Chryssippus, Diocles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus the Tarentine, Praxagoras,

The first Booke of

Plistonicus, Medus, Diouches, Cleophrantus, Philistio, Asclepiades, Cratevas, Iolla, Erasistratus, Diagoras, Andreas, Mnesicles, Epickarmus, Damion, Theopolemus, Metrodorus, Solon, Lycus, Olympias the midwife of Thebes, Phyllinus, Petreius, Michon, Glaucias and Xenocrates.

IN THE XXVI. BOOKE ARE CONTAINED the medicines for the parts of mans bodie.

Chap.

1. Of new maladies, and namely of Lichenes, what they be, and when they began to raige in Italie first, Of the Carbuncle, of the white Morpew or Leprosie called Elephantiasis, and of the Collicke.
2. The praise of *Hippocrates*.
3. Of the new practise in Physicke, of the Physician *Asclepiades*, and by what meanes hee abolished the old manner of practise and set up a new.
4. The superstitious follie of Magicke is derided. Also a discourse touching the foule tetter called Lichenes, the remedie therof: and also of the infirmities of the throat and chawes.
5. Receipts and remedies against the kings evill: also for the diseases of the fingers and the breast, and against the Cough.
6. Of Mullin, of Cacalia, Tussilage or Fole-foot, of Bechium, and Sauge, all hearbes for to cure the cough.
7. For the paines of the sides and chist, for the difficultie of breath, and those that cannot take wind but sitting or standing upright, for the paine of the liver and the heartach, medicines appropriat to the lungs, difficultie of urine, and the cough, for the breast, for inward ulcers, for the kidneies and imbecilitie of the liver, to stay vomit and yexing, also for the pleurisie and disease of the sides and flankes.
8. Of all diseases of the bellie and the parts either within it or neare unto it. How to stay the flux thereof, or to make it loose and soluble.
9. Of Peniroyall and Argemone.
10. Of water Lillie or Nenuphar, of abstinence

Chap.

- from *Venus*, of provocation to fleshy lust, of Ragwort or Satyrium, called Erythraicum, of Crategis and Syderitis.
11. Generall remedies for infirmities of the feet, ankles, joints, and sinewes. Remedies against diseases that hold and possesse the whole bodie. Of Mirthryda. Medicines and meanes to procure sleepe: against the palfie, agues with cold fits, feavers or agues incident unto labouring Horses, Asses, and Mules: against franticke persons. Of the hearbe Chamæacta, of Housleek or Stonecrop, and Pricke-madame, of *S. Antonies* fire.
 12. Remedies against dislocations in the joints, against the yellow jaundise, fellons, fistulaes, swellings of ventositie, burnes, scalds, and other diseases, for sinewes, and to staunch blood.
 13. Of the hearb called Horse-taile, Nenuphar, Harstrang, Syderitis: of many other remedies good to restraine the flux of blood: of *Stephanomelis* and *Erisithale*, remedies against the wormes.
 14. For ulcers, old sores, and greene wounds: to take away werts, and of the hearb *Polycnemom*.
 15. Manie good experiments either for to provoke or to stay the flux of womens months: soveraigne remedies for the diseases of the matrice: also to cast forth the fruit within the wombe, or to containe it the full time, for to take away the blemishes and spots in the skin, and namely of the face, to colour the haire, to cause the haire to fall, also against the scab or maunge of fourefooted beasts.

In summe, this booke leadeth you to medicines, stories and observations, a thousand two hundred ninetie and two: collected out of

Latine Authors.

M. Varro, C. Volgius, Pompeius Lenaus, Sextius Niger, and Iulius Bassus who writ both in Greeke, Antonius Castor, and Cornelius Celsus.

Forreine

Plinius Naturall Historie.

Forraine Writers.

Theophrastus, Apollodorus, Democritus, Iuba, Orpheus, Pythagoras, Mago, Menander the author of Biobrestia, Nicander, Homer, Hesiodus, Musæus, Sophocles, Xanthus and Anaxilæus.

Physicians.

Mnestheus, Callimachus the professor of Physicke, Timaristus, Simus, Hippocrates, Chrysippus, Diocles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus the Tarentine, Praxagoras, Plistonius, Medius, Diuchbes, Cleophrantus, Philistio, Asclepiades, Cratenas, Iolla, Erasistratus, Diagoras, Andreas, Mnesicles, Epicharmus, Damion, Theopolemus, Metrodorus, Solon, Lycus, Olympias the midwife of Thebes, Phyllinus, Petreius, Miction, Glaucias and Xenocrates.

IN THE XXVII. BOOKE COMPREHENDETH all other sorts of hearbes.

Chap.

1. The rest of Hearbes.
2. Of Aconitum, and how this hearbe killeth Leopards or Panthers.
3. That God is the creator of all things.
4. Of the hearbe Æthiopsis, Ageratum, Aloe, Alcea, Alypum, Alfine, Androsacum, Androsæmon, Ambrosia, Restharrow, Anagyron, and Anonymon.
5. Of the great Burre, of Clivers or Goose grass, Asplenium, Asclepias or Swallowwort, Aster or Bubonium, Ascyrum or Ascyroides, Aphacc, Alcibium, and Cockes combe.
6. Of Alus.
7. Of sea Weeds or Reits, of Elder, wild Vine, and Wormewood.
8. Of Ballote or stinking Horehound, of Botrys or Oke of Ierusalem, of Brabyla, of Bryon or Corallina, of Bupleuron, and Cattanance, of Calla, Circeia, Cirsium and Crætagonum, Thelygonum, Crocodilium, Dogs stone, Chrysolachanum, Cacubalum, and Conferva or the river Spunge.
9. Of the graine called Coccus Gnidia, of Tazill, of Oke fearne, of Dryophonum, of Ela-

Chap.

- tine, of Empetrum or Perce-pierre, of Epipactus or Elleborius, of Epimedum, Enneaphyllon, i. the nine leaved hearbe, of Ofmund or Fearne, of Fenmur Bubulum, i. Ox thigh, of Galeopsis or Galeobdolon, of Glaux or Eugalactum.
10. Of Glaucium, of Pæonie, Cudweed or Chamæzelum, of Galedragum, Holcos, Hyofitis, Holosteum, and Hypophæstum.
11. Of Hypoglossa, and Hypecoon, Idæa, Isopyron, Spurge, Pat-delion, Lycopsis, Greimile, &c.
12. Of Medium, Mouse-ear, Myagros, an hearb called Natrix, Othone, Onosma, Onopordos, Toads flax, Woodsoure or Alleluiah, Crowfoot, Knotgrasse, Camomile, Phyteuma, Phyllon, Phellandriion, Phalaris, Polyrhizon, Proserpinaca or Knotgrasse, Rhacoma, Reseda, and Stœchas.
13. Of Nightshade and Dwale, of Smyrnium, Orpinum, Trichomanes, Thaliertum, Thlaspi, Tragonias, Tragonis and Tragopogos, the serpent Spondylis: To conclude, that some diseases and venomous things be not in all countries.

In summe, herein are comprehended medicines, stories, and notable observations, 702.

Latine Authors cited.

Pompeius Lenæus, Sextius Niger, and Iulius Bassus, who wrate both in Greeke; Antonius Castor and Cornelius Celsus.

Greeke Writers.

Theophrastus, Apollodorus, Cittiensis, Democritus, Aristogiton, Orpheus, Pythagoras, Mago, Menander that wrate the Treatise Biobrestia, and Nicander.

Physicians.

Mnestheus and his fellowes, as they went in the former booke,

The first Booke of

IN THE XXVIII. BOOKE ARE COMPRE-
hended the medicinable vertues from
living creatures.

Chap.

1. The medicines & vertues observed in living creatures.
2. Whether charmes and bare words or characters availe ought in Physicke. That prodigious tokens and presages may take effect in some, and may bee averted and made frustrat by others.
3. Remedies even in the bodies of men against enchantments and Magicke.
4. Of certain forceries, also the vertue of a mans spittle.
5. The regard of diet for a mans health.
6. Of sneesing, the moderation to bee used in the act of *Venus* or companie with a woman, of other preservatives of health.
7. What remedies and medicines a womans bodie doth affourd.
8. The medicinable properties in certaine strange beasts, namely, the Elephant, Lion, Cammell, Hyæna, Crocodile, Chamaeleon, Skinke, River-horse, and Once.
9. The medicines which we have from the bodies of wild beasts and tame of the same kind. The vertue of milke, butter, and cheefe: the observations thereto belonging: also of fat or greafe.
10. Remedies received from Bores and Swine, from Goats and wild Horses: also from other beasts, serving to cure all manner of diseases.
11. Other remedies for many kinds of mala-

Chap.

- dies taken from living creatures.
12. For the spots and wems in the visage: for the infirmities of the necke and of the breast.
13. Against the diseases of the stomack, loines, and reins.
14. To stay a laske, against the loosenesse of the stomacke, to cure the blondie flux: the inflations of the bellie, ruptures, the provocation to the seege without effect, the broad flat long wormes in the bellie, and the collicke.
15. Against the torments and paines in the bladder, against the stone, the infirmities in the privie parts of man or woman: as also in the fundament, and the twist or groine, and the cure thereof.
16. For the gout, the falling evill, for those that bee blasted or strucken with a planet, and bones broken.
17. Against Melancholic, and those whose braines bee troubled with fancies, the lethargie, dropsie, wild fire or tetter, and the paines or ach of the sinewes, apt remedies.
18. To staunch blood, to cure ulcers or old sores, cankers, and scabs.
19. Medicines appropriat to womens diseases.
20. Strange and wonderous things observed in fundric beasts.

In summe, here be reported medicines, stories, and observations, to the number of a hundred eightie and five.

Latine Authours alleadged,

M. Varro, L. Piso, Fabianus Verres, Antias, Verrius Flaccus, Cato Censorius, Servius Sulpitius, Licinius Macer, Celsus, Massurius, Sextius Niger who wrate in Greeke, Bythus the Dyrhachian, Ophilus the Physician, and Granius the Physician.

Forreine Writers.

Democritus, Apollonius who wrote a booke intituled Myrsis, Miletus, Artemon, Sextilius, Anteus, Homer, Theophrastus, Lysimachus, Attalus, Xenocrates who wrote a booke called Diopros, and Archelaus likewise that wrote such another, Demetrius, Sotira, Elephantis, Salpe, and Olympias of Thebes, five women and midwives, Diotimus, Iolla, Micion of Smyrna, Aeschines the Physician, Hippocrates, Aristotle, Metrodorus, Icacidus the Physician, Hesiodus, Dialcon, Cecilius, Bien the author of the booke Peri Dynamean, Anaxilau, and king Iuba.

¶ IN

IN THE XXIX. BOOKE ARE CONTAINED
medecins from other living creatures.

Chap.

1. The first beginning and originall of the Art of Physicke: when Physicians began first to visit patients lying sicke in their beds: the first Physicians that practised the cure of sick persons, by frictions, ointments, baths, hot-houses, &c. Of *Chryssippus* and *Erasistratus* their course and manner of practise: of Empiricke Physicke: of *Herophilus* and other famous Physicians: how often the Art and state of Physicke hath altered: the first professed Physician at Rome; when it was that he practised: what opinion the auncient Romans had of Physicians: finally the imperfections and faults in that Art.
2. The medecinable vertues and properties observed in wooll.
3. The nature of eggs, and the vertues thereof

Chap.

- good in Physicke.
4. Remedies in Physicke received from doggs and other creatures that are not tame but wild: also from foules: and namely against the stings of the venomous spiders *Phalangia*.
 5. Of the Ostrich greace, and the vertues thereof: of a mad dogg: also remedies had from him, a lizard, geese, doves, and weasils.
 6. Medecines against the falling of the haire, and to make it grow againe: to kill nits: to recover the haire of the eyelids: to cure the dimnesse and rednesse, and generally all diseases and accidents of the eyes, as also the swellings and inflammations in the kernils under the ears.

In sum, there be medecins and other things worth observation in this booke, to the number of five hundred twentie and one.

Latine Authors alledged.

M. Varro, L. Piso, Verrius Flaccus, Antias, Nigidius, Cassius Hemina, Cicero, Plantus, Celsus, Sextius Niger who wrote in Greeke, Caelius the Physician, Metellus Scipio, Ovid the Poet, and Licinius Macer.

Forreine Authours.

Philopator, Homerus, Aristotle, Orpheus, Democritus, Anaxilau.

Physicians.

Botrys, Apollodorus, Archidemus, Anaxilau, Ariston, Xenocrates, Diodorus, Chryssippus the Philosopher, Horus, Nicander, Apollonius of Pitane.

IN THE XXX. BOOKE ARE CONTAINED
medecins from living creatures, such as were not observed
in the former Booke.

Chap.

1. The beginning of the blacke Science & Art magicke, when it began, who practised it first, and who were they that brought it into request and reputation. Also the rest of the medecins taken from beasts.
2. Sundrie kinds of Magicke: the execrable and cursed parts plaid by *Nero*, and of Magicians.
3. Of Wants or Mouldwarps: of living creatures as well tame as savage which affourd

Chap.

- remedies, and those are digested in order according to the diseases.
4. How to make the breath sweet: against mols and spots disfiguring the face: remedies for to cure the diseases of the throat and chaws.
 5. Against the Kings evil, and namely when the swelling is broken and doth run: to ease the pain of the shoulders, the heart and the parts about it.

6. For

The first Booke of

Chap.

6. For the diseases of the lungs and liver: also to cure the casting and rejection of blood upward.
7. Remedies for the bloudie flux, and generally for all diseases of the bellie and the guts.
8. For the gravell and stone, for paines of the bladder, for swelling of the stones and the groine, of apostems or swellings in the kernels and emunctories.
9. Against the gout of the feet and paines of other joynts.
10. Remedies against many diseases that hold the whole bodie.
11. Against the jaundise, the phrensie, fevers,

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- and dropfie.
12. Against the wild fire, carbuncles, fellons, or uncoms, burns, scaldings, and shrinking of the finews.
13. To staunch blood, to allay swellings in wounds: also to cure ulcers, greene wounds, and other maladies, divers remedies, all taken from living creatures.
14. To cure womens secret maladies, and to helpe conception.
15. Many receipts and remedies huddled together one with another.
16. Certaine miraculous things observed in beasts.

In sum, this booke sheweth unto us medicins and memorable observations 54.

Latine Authours cited.

M. Varro, Nigidius, M. Cicero, Sextius Niger who wrate in Greeke, and Licinius Macer.

Forraine writers.

Eudoxus, Aristotle, Hermippus, Homer, Apion, Orpheus, Democritus, and Anaxilau.

Physicians.

Botrys, Horus, Apollodorus, Menander, Archimedes, Ariston, Xenocrates, Diodorus, Chrysspus, Nicander, Apollonius, Pitaneus.

THE XXXI. BOOKE SHEWETH MEDECINES gathered from fishes and vwater creatures: also it delivereth unto us *strange and wonderfull things as touching the waters.*

Chap.

1. Admirable matter observed in the waters.
2. The difference of waters.
3. The nature and qualitie of waters: how to know good and holesome waters from them that be naught.
4. The reason of some waters that spring on a suddaine, & so likewise cease and give over.
5. Many historical observations of waters.
6. The manner of water conduits, and how to draw them from their heads: when and how waters are to bee used which naturally are medicinable: how farre forth navigation or sailing upon the salt water is good for the

Chap.

- health: medicines made of sea water.
7. Divers kinds of salt: the preparing and making thereof, together with the vertues medicinable of salt, and other considerations thereto belonging.
8. Of the fish Scamber or the Mackrell: of fish pickle: of Alex, a kind of brine or fish sauce.
9. The nature of Salt, and the medicins made of it.
10. Sundrie sorts of nitre, the handling & preparation thereof, the medicins and obseruation to it pertaining.
11. The nature of Spunges.

This booke comprehendeth medicins and notable observations 266.

Latine Authors alleadged.

M. Varro, Cassius of Parma, Cicero, Matius, Cor. Celsus, Trogus, Ovid, Polybius, and Sornatius.

Forraine Writers.

Callimachus, Ctesias, Eudicrus, Theophrastus, Eudoxus, Theopompus, Polyclitus, Iuba, Lycus, Apion, Epigenes,

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Epigenes, Pelops, Apelles, Democritus, Thrasillus, Nicander, Menander the comickall Poet, Attalus, Sallustius, Dionysius, Andreas, Niceratus, Hippocrates, Anaxilaus.

IN THE XXXII. BOOKE ARE CONTAINED other medicins behind, from fishes and vwater creatures.

Chap.

1. Of the fish Echeneis, his wonderfull proprietie: of the Torpedo, and the Sea-hare: marvellous things reported of the red sea.
2. The naturall industrie, docilitie, and gentleness of some fish: where they will come to hand and take meat at a mans hand: in what countries fishes serve in stead of oracles.
3. Of those fishes that live both on land and water: the medicins and observations as touching Castoreum.
4. Of the sea Tortoise: many vertues medicinable observed in sundrie fishes.
5. Receipts of medicins taken from water creatures, digested and set in order according to sundrie diseases; & first against poison and

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- venomous beasts.
6. Of Oysters, Purple shell-fishes, and sea-weeds called Reits: their vertues medicinable.
7. Medecins against the shedding of the haire: how to fetch haire againe: also against the infirmities of eies, ears, teeth, and to amend the unseemly spots in the face. (ly.
8. Many medicins set downe together unorder
9. Remedies for the diseases of the liver & sides, stomacke and bellie: others also disorderly put downe.
10. Against fevers and agues of all sorts, and many other infirmities.
11. A rehearfall of all creatures living in the sea, to the number of 166.

In summe, yee have here medecins, stories, and observations, 928.

Latine Authors.

Licinius Macer, Trebius Niger, Sextius Niger who wrote in Greeke, Ovid the Poet, Cassius Hemina, Mecenas, and L. Atteius.

Forreine Writers.

*K. Iuba, Andreas, * Salpe, Pelops, Apelles of Thasos, Thrasillus, and Nicander.*

* A woman.

THE XXXIII. BOOKE DECLARETH the natures of Mettals.

Chap.

1. In what estimation were the mines of gold at the first in the old world: the beginning of gold rings: the proportion of gold that our aunccestors had in their treasure: the degree of knights or gentlemen at Rome: the priviledge to weare gold rings, and who onely might so doe.
2. The courts and chambers of judges or justices at Rome: how often the gentlemen of Rome and men of arms chaunged their title: the presents given to valiant souldiours for their brave service in the warrs: the first crowns of gold that were seene.
3. The auncient use of gold besides, both in men & women: of the golden coine: when copper and brasse money was first stamped: when gold and silver was put into coine: before mony was coined, how they used brasse

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- for exchange in old time. At the first taxation and levie made of tribute, what was thought to bee the greatest wealth; and at what rate were the best men seised. How often and at what times gold grew into credit and estimation.
4. The mines of gold, and how naturally it is found: when the statue or image of gold was first seen: medicinable vertues in gold.
5. Of Borrax, and six properties of Borrax in matters of physicke: the wonderfull nature that it hath to foder all mettals & give them their perfection.
6. Of Silver, Quick-silver, Antimonie, or Alabaster: the drosse or refuse of silver: also the scum or some of silver called Litharge.
7. Of Vermilion: in what account it was in old time among the Romanes: the invention thereof:

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Chap.

thereof: of Cinnabaris or Sangdragon used in painting and Physick: divers sorts of vermillion, and how painters use it.

8. Of Quicksilver artificiall: the manner of gilding silver: of touchstones: divers experiments to trie silver: the sundrie kinds thereof.
9. Of mirrors or looking-glasses: of the silver in Ægypt.
10. Of the excessive wealth of some men in money: who were reputed for the richest men: when it was that at Rome they began to make largesse and scatter money abroad

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to the commons.

11. Of the superfluitie of coine, and the frugality of others as touching silver plate, beds and tables of silver: when began first the making of excessive great and massive plates and chargers of silver.
12. Of silver statues: the gravings and chasing in silver, & other workmanship in that metall.
13. Of Sil, of Azur, of superface Azur named Nestorianum: also of the Azur called Cœlum: that everie yeer these kinds be not sold at one price.

This booke hath in it of medecins, stories, and observations, 1215.

Latine Authors alleadged.

L. Piso, Antias, Verrius, M. Varro, Cor. Nepos, Messala, Rufus, Marsus the Poet, Butus, Julius Bassus, and Sextius Niger, (who wrote both of Physicke in Greeke) and Fabius Vestalis.

Forraine writers.

Democritus, Metrodorus Scepsius, Menachmus, Xenocrates, and Antigonus, who wrate all three of the feat and skill of graving, ch: sing, and embosing in mettall: Heliodorus, who wrate a booke of the rich ornaments and oblations of the Athenians: Pasicles, who wrate of wonderfull peeces of worke: Nymphodorus, Timæus who wrate of Alchymie or minerall Physicke: Iolla, Apollodorus, Andreas, Heracleides, Diagoras Botryensius, Archimedes, Dionysius, Aristogenes, Democritus, Mnescles, Attalus the Physician, Xenocrates the sonne of Zeno, and Theomnestes.

THE XXXIIII. BOOKE TREATETH of other Mettals.

Chap.

1. Mines of Brasse, Copper, Iron, Lead, & Tin.
2. Sundrie kinds of Brasse, namely Corinthian, Deliacke, and Ægineticke.
3. Of goodly candlesticks, & other ornaments of temples.
4. The first images made at Rome: the original of statues: the honour done to men by statues: sundry sorts and divers forms of them.
5. Of statues pourtraied in long robes; and of many others who first erected images upon columns and pillars at Rome: when they were allowed first at the cities charges: also what maner of statues the first wer at Rome.
6. Of statues without gowne or cassocke, and some other: the first statue pourtraied on horsebacke at Rome: when the time was that all images as well in publicke places as privat houles were abolished at Rome and put downe: what women at Rome were allowed to have their statues; and which were the first erected in publick place by forreine nations.

Chap.

7. The famous workemen in casting & making images: the excessive price of images: of the most famous & notable coloffes or gyantlike images in the citie of Rome.
8. Three hundred sixtie and six peeces of worke wrought in brasse by most curious and excellent artificers.
9. What difference there is in Brasse: the divers mixtures with other mettals: how to keepe brasse.
10. Of Brasse ore called Cadmia, and for what it is good in Physicke.
11. The refuse or scum of brasse, Verdegris: the skales of brasse and copper, steele, copper rust, or Spanish greene: of the collyric or eyesalve called Hieracium.
12. Of a kind of Verdegris named Scolecia: of Chalcitis, *i.* red Vitrioll, Mysy, Sory, and Copperose or Vitrioll, *i.* blacke Nil.
13. Of the foile of Brasse named white Nil or Tutia: of Spodium, Antispodium, of Diphryges, and the Trient of Servilius.

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14. Of Iron, and mines of Iron: the difference also of Iron.
15. Of the temperature of Iron: the medecina- ble vertues of Iron, and the rust of Brasse and Iron: the skales of Iron, and the liquid plastre named of the Greekes Hygemplastrum.

Chap.

16. The mines of Lead: of white and blacke Lead.
17. Of Tin, of Argentine Tin, and some other minerals.
18. Medecins made of Lead and refuse of Lead, of Lead ore, of Ceruse or Spanish white, of Sandaracha or red Orpiment.

In sum, here are contained notable matters, stories, and observations, 815.

Latine Authours cited.

L. Piso, Antias, Verrius, M. Varro, Messala, Rufus, Marsus the Poet, Butbus, Julius Bassus, and Sextius Niger, who wrote both in Greeke of Physicke, and Fabius Vestalis.

Forreine Writers.

Democritus, Metrodorus Scepsius, Menechmus, Xenocrates, Antigonus, and Duris, (who all foure wrote of graving, chasing, and embossing mettals, a worke entituled Toreutice :) Heliodorus, who described the ornaments and oblations hanged up in Athens: Nymphedorus, Andreas, Heraclides, Diagoras, Botryensis, Iolla, Apollodorus, Archimedes, Dionysius, Aristogenes, Diomedes, Mutiscles, Xenocrates the sonne of Zeno, and Theomnestus.

IN THE XXXV. BOOKE IS SHEWED IN what account Painting vvas in old time.

Chap.

1. The honour and regard of Pictures in times past.
2. In what price Images were of old.
3. When Images were first erected and set up in publicke place, as also in private houses, with their scutcheons and arms: the beginning of Pictures: the first draught of Pictures in one simple colour: the first Painters, and how auncient they were in Italie.
4. Of Roman Painters: the first time that Painting and Pictures grew into credit: who they were that drew their victories in colors upon tables, and set them forth to be seen: and when forreine Pictures began to be of some good reckoning at Rome.
5. The art and cunning of drawing pictures: the colours that Painters use.
6. Of colours naturall and artificiall.
7. What colours will not abide to be laid wet: what colours they painted withall in old time: at what time first the combats of sword fencers at utterance, were set foorth in painted tables to be seene.
8. How auncient the art of Painting is, when it began: a catalogue of the excellent workemen in that kind, and how their workmanship was prized and esteemed.
9. The first that contended & strove who could

Chap.

- paint best: also who first used the pencill.
10. Of Pictures so lively drawne that birds were deceived therewith: what is the hardest point in Painting.
11. The way to still birds that they sing and chatter not: who was the first that devised to enamell, or to set colours with fire, and with the pencill painted arched roufs and vaults; and among, the wonderfull prices that Pictures were set at in old time.
12. The first inventours of potterie: of images made of clay & cast in moulds: also of vessels made of earth, and their price.
13. Sundrie sorts of earth for potters: of the dust or sand of Puteoli: of other kinds of earth which turne to be hard stone.
14. Of walls made by casting in moulds: also of bricke walls, and the manner of making them.
15. Of Brimstone and Alume, their divers kinds and use in Physicke.
16. Of fundrie sorts of earth, & namely Samia, Eretria, Chia, Selenusia, Pingitis, and Ampelitis, and the use they have in medecins.
17. Sundrie sorts of chalke for Fullers to scoure clothes, to wit, Cimolia, Sarda, Vmbrica, of a kind of earth called Saxum, as also that giveth a silver color & is called Argentaria.
18. Who

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18. Who were they that enriched their slaves after they were enfranchised, and who they were of slaves came up and grew to great wealth and power.

Chap.

19. Of the earth that commeth out of the Island Galata: of the earth Clupea: also, of that which commeth from the Balear Islands, and the Isle Ebusa.

In sum, the medecins, histories, and observations in this booke, amount to 956.

Latine Authors alledged.

Messala the Oratour, Messala the elder, Fenestella, Atticus, Verrius, M. Varro, Cor. Nepos, Decius Eucleo, Mutianus, Melissus, Vitruvius, Cassius Severus Longulanus, Fabius Vestalis who also wrote of Painting.

Forraine Writers.

Pasiteles, Apelles, Melanthius, Asclepiodorus, Euphranor, Parasius, Heliodoros who wrote of the pictures and other ornaments set up at Athens, Metrodorus (who likewise wrote of Architecture, to wit Masonrie and Carpentrie:) Democritus, Theophrastus, Apion the Grammarian who also made a booke of Minerall or Chymick Physicke, Nymphodorus, Andreas, Heraclides, Iolla, Apollodorus, Diagoras Botryensis, Archidemus, Dionysius, Aristogenes, Demanes, Mnesticles, Xenocrates the scholler of Zeno, and Theomnestus.

THE XXXVI. BOOKE TREATETH of Stones.

Chap.

1. The nature and propertie of stones: the superfluitie and expense about buildings, of marble.
2. Who first shewed at Rome columns of marble in publicke place.
3. The first that brought columns of marble to Rome out of foriein countries.
4. The first workemen that were commended for cutting in marble: and at what time that invention began.
5. Excellent peeces of worke in marble to the number of 126. The cunning and curious workemen themselves. Of the white marble of the Island Paros. The stately and admirable sepulchre Mausoleum.
6. When they began at Rome to build with marble: who was the first that overcast the outside of walls with marble: at what times this or that kind of marble was taken up in building at Rome: who cut marble first and brought it into leaves or thin plates by cutting: the manner thereof: also of sand.
7. Of the hard stone of Naxos, and Armenia: sundrie kinds of marble.
8. Of the Alabastre marble of Lygdinum and Alabandicum.
9. Of the great obeliske at Thebes in Ægypt, and at Alexandria: of that also which is in the great cirque or shew-place at Rome.

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10. Of that obeliske which standeth in Mars field at Rome, and serveth for a Gnomon or Stile in a quadrant or dyall.
11. Of a third obeliske at Rome in the Vatican.
12. Of the Pyramides in Ægypt, and a monstrous Sphynx of a wonderfull heighth.
13. Of the Mazes or Labyrinths in Ægypt, the Isle Lemnos, and in Italie.
14. Of hanging gardens made upon terraces: of a great towne where all the houses were built upon vaults and arches seeming to hang in the aire: also of the temple of Diana in Ephesus.
15. Of the stately temple of Cyzicum: of a certaine rocke of stone called Fugitive: of an Echo that rendreth the voice seven fold: of an house built without naile or pin: of the sumptuous and woonderfull buildings at Rome.
16. Sundrie kinds of the Loadstone: the medicinable vertues and properties thereof.
17. Of certaine stones which soone eat & consume dead bodies that be laid therein: of others againe that preserve them long: of the stone Asius, and the vertues of it.
18. Of Ivorie digged out of the earth: of stones converted into bones: of stones that represent palms imprinted in them, and of other kinds.

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Chap.

19. Of Curalius, or a kind of Marquesite called Pyrites, and the vertues thereof: of the stone Ostracites, and Amiantus & the properties of it: of the stone Melitites, and the power thereof: of the Geat and his medicinable properties: of Sponge stones: of the stone Phrygius and his nature.
20. Of the Bloud-stone, and five sorts of it; and of Schistus.
21. Foure kinds of the Ægle stone, of the stone within the bellie of them called Callimus: of the stones Samius & Arabus: also of Pumish stones.
22. Of stones meet for to make Apothecaries mortars, of soft stones, of the stone Specularis, & of Flints, of the shining stone Phenigites, of whetstones, and other stones meet for building: of stones that will resist the fire and abide all weather and tempest.

Chap.

23. Of Cesterns, of Limestone, sundrie sorts of sand, the tempering of sand and lime for mortar: the ill building of some walls: of parget and roughcast: also of columns and buttresses in building.
24. The medicinable vertues of Quickelime, of Maltha, and Plastre.
25. Of pavements: when they were first used at Rome: of terraces and paved floores lying open to the aire above: of certaine pavements called Græcanica: and when arched and embowed worke first began.
26. The first invention of glasse: the manner of making it of a kind of glasse called Obsidianum: sundrie sorts of glasse in great varietie.
27. Wonderfull operations of fire: the vertues thereof medicinable, and the prodigious significations and presages given by fire.

In sum, here you may find medecins, stories, and observations, in all 523.

Latine Authors.

M. Varro, Calius, Galba, C. Ælius, Mutianus, Cor. Nepos, L. Piso, Tubero, Seneca, Fabius Vestalis, Annius, Facialis, Fabius, Cato Censorius, & Vitruvius.

Forraine writers.

Theophrastus, Praxiteles, K. Iuba, Nicander, Sotacus, Sadines, Alexander Polyhistor, Apion, Plistonius, Duris, Herodotus, Eumerus, Aristagoras, Dionysius, Artemidorus, Butoridas, Antisthenes, Democritus, Demoteles, and Lyceas.

IN THE XXXVII. BOOKE IS DECLARED the originall of pretious stones.

Chap.

1. The pretious stone of Polycrates the tyrant, also of K. Pyrrhus: who were the best lapidaries, & could cut excellently well in stone: the first man that at Rome ware a pretious stone upon his finger.
2. The rich stones that were shewed in the triumph of Pompey the Great: the nature and vertues of the Crystall stone: the costly vessels made thereof, and the superfluous expence that way: when the vessels of Cassidoine called Myrrhina, were first invented: the wastfull expence in them: the nature and properties of them: what lies the Greekes have told as touching Ambre.
3. The true originall and beginning of Ambre: the medicinable vertues therof: the sundrie kinds, and the excessive cost that folke were at to get them: of Lincutium and the pro-

Chap.

4. Of Diamonds, and their kinds: their vertues: also of Pearls.
5. Of the Hemerauld and the divers sorts of it: of other greene pretious stones cleare and transparent.
6. Of the true Opale stones, their divers kinds, and which be counterfeit: the meanes how to try them: also of divers other rich stones.
7. Of Rubies and Carbuncles: which be counterfeit: the wayes to prove whether they be good or no. Also of other ardent stones like fire.
8. Of the Topaze, and all the kinds: of the Turquois: of other greene stones that bee not cleare through.
9. Sundrie sorts of the Iasper stone.
10. Of certaine pretious stones set downe in order

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order according to the Alphabet.

11. Of some pretious stones which take their denomination of the parts of mans bodie: also from other living creatures, & of those which have the names from other things.

Chap.

12. Of other new stones growing naturally: of counterfeit and artificiall stones: of their sundrie forms and fashions.

13. The manner and way how to proove fine stones from other.

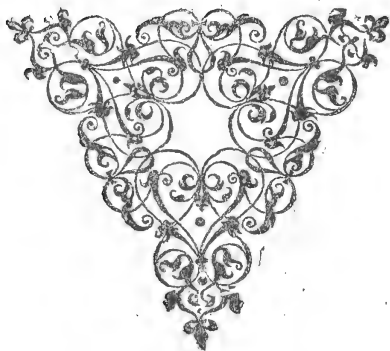
In summe, here are to be red of notable matters, worthie histories, and speciall observations, to the number of 1300, gathered out of

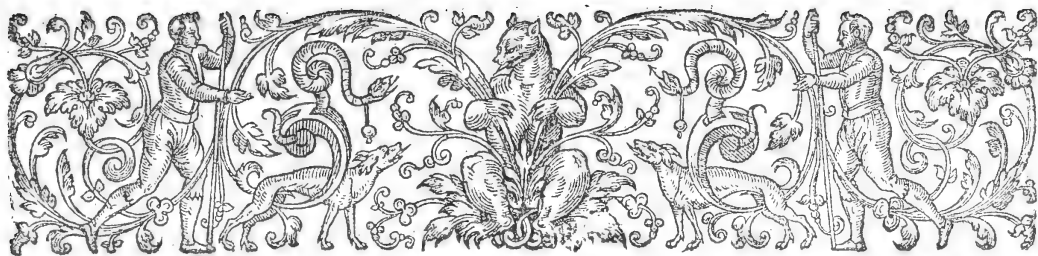
Latine Authors.

M. Varro, the Records of Romane triumphs, Meccenas, Iacchus, and Cornelius Bocchus.

Forreine Writers.

K. Iuba, Xenocrates the disciple of Zeno, Sudines, Æschylus, Philoxenus, Euripides, Nicander, Sasyrus, Theophrastus, Chares, Philomenes, Democrates, Xenotimus, Metrodorus, Sotacus, Pytheas, Timæus the Sicilian, Niceas, Theochrestus, Asaruba, Mnasea, Theomenes, Ctesias, Mithridates, Sophocles, K. Archelaus, Callistratus, Democritus, Ismenias, Olympicus, Alexander Polyhistor, Apion, Horus, Zoroastres, and Laetalias.





THE SECOND BOOKE OF
THE HISTORIE OF NATVRE,
WRITTEN BY C. PLINIVS
SECVNDVS.

CHAP. I.

¶ *Whether the World be finite, and but one.*



THE World, and this, which by another name men have thought good to call Heaven (under the pourprise and bending cope whereof, all things are emmanteled and covered) beleewe we ought in all reason to be a God, eternall, unmeasurable, without beginning, and likewise endlesse. What is without the compasse hereof, neither is it fit for men to search, nor within mans wit to reach and conceive. Sacred it is, everlasting, infinite, all in all, or rather it selfe all and absolute: finite and limited, yet seeming infinite: in all motions, orderly and certaine: howbeit in shew and judgement of man, uncertaine: comprehending and containing all whatsoever, both without and within: Natures work, and yet very Nature it selfe, producing all things. Great follie it is then, and meere madnesse, that some have devised and thought in their mind to measure it; yea, and durst in writing set down the dimensions thereof: that others againe, by occasion hereupon taken or given, have delivered and taught, That worlds there were innumerable: as if we were to beleewe so many natures as there were Heavens: or if all were reduced to one, yet there should bee so many sunnes and moones neverthelesse, with the rest also of those unmeasurable and innumerable starres in that one: as though in this pluralitie of worlds we should not alwaies meet with the same question still at every turne of our cogitation, for want of the utmost and some end to rest upon: or, if this infinitenesse could possibly be assigned to Nature, the worke-mistresse and mother of all; the same might not bee understood more easly in that one Heaven which we see; so great a worke especially and frame as it is. Now surely a fantastickall follie it is of all other follies, to goe forth of it, and so to keepe a seeking without, as if all things within were well and cleerely knowne alreadie: as who would say, a man could take the measure just of any third thing, who knoweth not his owne: or the mind of man see those things, which the very world it selfe may not receive.

CHAP. II.

¶ *Of the forme and figure of the World.*



THAT the forme of heaven is round, in fashion of an absolute and perfect globe, the name thereof principally, and the consent of all men agreeing to call it in Latine *Orbis*, i. a roundle; as also many naturall reasons, do evidently shew: to wit, not only for that such a figure every way falleth and bendeth upon it selfe, is able to beare and uphold it selfe, includeth and compriseth it selfe, having need thereto of no joints, as finding in any part thereof no end nor beginning: or because this forme agreeth best to that motion, whereby ever and anon it must turne about:

The second Booke of

(as hereafter it shall appeare) but also because the eyesight doth approve the same: in that, looke **G** which way soever you will thereupon, it seemeth to bend downward, round and even on all sides, shewing a just Hemisphere; a thing not incident possibly to any other figure.

CHAP. III.

Of the motion of Heaven.



That the World thus framed, in a continuall and uncessant circuit, with unspeakeable swiftnesse turneth round about in the space of foure and twentie houres, the rising and setting ordinarily of the sun hath left cleere and doubtlesse. Now, whether it being in height infinite, and therefore the sound of so huge a frame, whiles **H** it is whirled about, and never resteth in that revolution, cannot be heard with our eares, I cannot so easily resolve and pronounce: no more I assure you, than I may avouch the ringing of the starres that are driven about therewith, and roll with all their owne spheres: or determine, that as the heaven mooveth, it doth represent indeed a pleasant and incredible sweet harmonie both day and night: although to us within, it seemeth to passe in silence. That there be imprinted therein the pourtraicts of living creatures, and of all things besides without number, as also that the bodie thereof is not all over smooth and slicke (as we see in birds eggs) which excellent authors have tearmed *Tenerum*, is shewed by good arguments: for that by the fall of naturall seeds from thence of all things, and those for the most part blended and mixed one with another, there are engendred in the world and the sea especially, an infinite number of strange **I** and monstros shapes. Over and besides, our eyesight testifieth the same; whiles in one place there appeareth the resemblance of a waine or chariot, in another of a beare, the figure of a bull in this part, of a *letter in that, and principally the middle circle over our head, more white than the rest, toward the North pole.

CHAP. IIII.

Why the World or Heaven is called *Mundus*.



Verily for mine owne part, moved I am and ruled by the generall consent of all nations. For, the World, which the Greekes by the name of ornament, called *κοσμος*, wee for the perfect neatnesse and absolute eleyancie thereof, have tearmed *Mundus*. And without all question, Heaven wee have named *Celum*; as it were, Engraven and garnished, according as *M. Varro* interpreteth it. And hereto maketh much the orderly ranke of things therein, and namely the circle called *Signifer*, or the *Zodiake*, set forth and divided by the formes of twelve living creatures therein portraied: together with the manner of the sunnes race throughout them, keeping ever the same course still, for so many ages past.

CHAP. V.

Of the foure Elements.




Neither see any doubt made as touching the elements, That they bee foure in number. The highest, Fire: from whence are those bright eyes of so many shining starres. The next, Spirit, which the Greekes and our countymen by one name called Aire: Vitall this element is, and as it giveth life to all things, so it soone passeth through all, and is intermedled in the whole: by the power whereof, the Earth hangeth poised and ballanced just in the midst, together with the fourth element, of the Waters. Thus by a mutuall intertainment one of another, divers natures are linked and knit together: so as the light elements are kept in and restrained by certaine weights of the heavier, that they flie not out: and contrariwise, the massier bee held up, that they **M** fall not downe, by meanes of the lighter, which covet to be aloft. So, through an equall endeavor to the contrarie, each of them hold their owne, bound as it were by the restlesse circuit of the very world: which, by reason that it runneth evermore upon it selfe, the earth falleth to bee lowest, and the middle of the whole: and the same hanging steadily by the poles of the Heaven, peiseth those

A those elements by which it hangeth in a counterballance. Thus it alone resteth vnmoooveable, whiles the whole frame of the world turneth about it : and as it is knit and united by all, so all rest and beare upon the same.

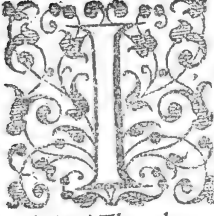
CHAP. VI.

¶ Of the seven Planets.

B  Etweene the earth and heaven, there hang in the same spirit or element of aire abovenamed, seven starres, severed one from another, and distant asunder certaine spaces, which of their variable motion we call wandering planets, where- as indeed none stray and wander lesse than they. In the midst of them the Sunne taketh his course, as being the greatest and most puissant of all the rest : the very ruler, not of times and seasons onely, and of the earth, but also of the Starres and Heaven it selfe. Beleeve we ought, this Sunne to be the very life, and (to speake more plainly) the soule of the whole world, yea, and the principall governance of nature : and no lesse than a God or divine power, considering his workes and operations. He it is that giveth light to all things, and riddeth them from darkenessse : hee hideth the other starres, and sheweth them againe : he ordereth the seasons in their alternative course : he tempereth the yeere, arising ever fresh and new againe, for the benefite and good of the world. The lowing dimnessse of the skie he dispatcheth, yea, and cleareth the darke mists and clowdinessse of mans mind : to other stars likewise he lendeth out his owne light. Most excellent, right singular hee is, as seeing all, and hearing all. For this, I see, is the opinion of *Homer* (the prince of learning) as touching him alone.

CHAP. VII.

¶ Of Gods.

D  Suppose therefore that to seeke after any shape of God, and to assigne a forme and image to him, bewraieth mans weakenesse. For God, who to ever he be [if haply there be any other, but the very world] and in what part so ever resiant, all sense he is, all sight, all hearing : hee is all life, all soule, all of himselfe. And verily to beleeve that there be gods innumerable, and those according to mens vertues and vices, to wit, Chastitie, Concord, Vnderstanding, Hope, Honour, Clemencie, Faith ; or (as *Democritus* was of opinion) That there are two gods onely, and no more, namely, Punishment, and Benefic : these conceits, I say, make mens idlenessse and negligence the greater. But all commeth of this, That fraile and crasse mortall men, remembering well their owne infirmitie, have digested these things a part, to the end that each one might from thence chuse to worship and honour that whereof he stood in need most. And hereupon it is, that in sundrie nations we find the same gods named diversly, according to mens devotion : and in one region ye shall have innumerable gods. The infernall powers beneath likewise, yea, and many plagues have been raunged by themselves, and reckoned for gods in their kind, whiles with trembling feare wee desire that they were pacified. Which superstition, hath caused a chappel to be dedicated to the Fever, in the mount Palatium, even by publick order from the State : likewise an altar to *Orbona*, neere the temple of *Lares* : besides another erected to Bad fortune in *Esquiliaz*. And thereby we may conceive that there are a greater number of gods in heaven above, than of men upon earth : since that every one of their own accord make so many gods as they list, fitting themselves with *Juno*es and *Genij* for their patrons. Now, certain nations there be that account beasts, yea, & some filthy things, for gods ; yea, and many other matters more shamefull to be spoken : swearing by stinking meats, by garlick, and such like. But surely, to beleeve that gods have contracted marriage, & that in so long continuance of time no children should bee borne betweene them : also that some are aged, and ever hoarie and gray : others againe young and alwaies children : that they be blacke of colour and complexion, winged, lame, hatched of eggs, living and dying each other day ; are meere fooleries, litle better than childish toies. But it passeth and exceedeth all shamelesse impudencie, to imagine adulteries among them : estfoones also chiding, scolding, hatred, and malice : and more than that, how there bee gods, patrones of theft and wickednessse. Whereas in very deed, a god

unto a man is he, that helpeth a man : and this is the true and direct pathway to everlasting glorie. In this way went the noble Romans in old time : and in this tract at this day goeth, with heavenly pace, *Vespasian Augustus*, both he and his children : *Vespasian*, I say, the most mightie ruler of the whole world: whilcs hee relieveth the afflicted State of the Romane Empire and Commonweale. And this is the most auncient manner of requitall to such benefactors, That they should be canonized gods. And hereof came the names as well of all other gods, as of the stars and planets (which I have mentioned before) in recognifance of mens good deserts. As for *Jupiter* verily and *Mercurie*, and other princes raunged among the gods, who doubteth that they were called otherwise among themselves? and who confesseth not how these bee celestiall denominations, to expresse and interpret their nature?

Now, That the soveraigne power and deitie, whatsoever it is, should have regard of mankind, **H** is a toy and vanitie worthie to be laughed at. For can wee chuse but beleewe, can wee make any doubt, but needs that Divinitie and Godhead must be polluted with so base and manifold a ministerie? And hardly in manner may it be judged, whether of the twaine be better and more expedient for mankind to beleewe, that the gods have regard of us; or to bee persuaded that they have none at all: considering, That some men have no respect and reverence at all of the gods, others againe so much, as it is a very shame to see their superstition. Addicted these are and devoted to serve them by forraigne magicke ceremonies: they weare their gods upon their fingers in rings, yea, they worship and adore monsters: they condemne and forbid some meats; yet they devise others for them. Impose they doe upon them hard and vengible charges to execute, not suffering them to rest and sleepe in quiet. They chuse neither marriages, nor children, ne yet any one thing els, but by the approbation and allowance of sacred rites and mysteries. Contrariwise, others there are so godlesse, that in the very Capitoll they use deceit, and forswear themselves even by *Jupiter*, for all that he is readie to shoor his thunderbolts. And as some speed well ynough with their wicked deeds and irreligion: so others againe seele the smart and are punished by the saints whom they adore, and the holy ceremonies which they observe.

Howbeit, betwene both these opinions, men have found out to themselves a middle godhead and divine power, to the end that wee should give still a more uncertaine conjecture as touching God indeed. For, throughout the whole world, in every place, at all times and in all mens mouths, Fortune alone is sought unto and called upon: shee only is named and in request; shee alone is blamed, accused, and endited. None but shee is thought upon; shee only is praised, shee only is reproved and rebuked: yea, and worshipped is shee with railing and reprochfull tearms: and namely when shee is taken to be wavering and mutable: and of the most sort supposed also blind: roving at randon, unconstant, uncertaine, variable, and favouring the unworthie: whatsoever is laid forth, spent and lost, whatsoever is received, woon & gotten: all that comes in, all that goes out, is imputed to Fortune: and in all mens reckonings and accounts, shee makes up the booke, and sets all streight. So abject wee are, so servile also and enthralled to Lots, that even the very chance of Lots is taken for a god, than which nothing maketh us more doubtfull and ignorant of God.

Now there are another sort, that reject Fortune and Chance both, & wil not abide them: but attribute the events and issues of things, to their owne severall starres, and goe by the fatall horoscope or ascendent of their nativitie: affirming that the same shal ever befall, which once hath been set downe and decreed by God: so as hee for ever after may sit still and rest himselfe. And this opinion beginneth now to settle and take deepe roor, insomuch as both the learned, and also the rude and ignorant multitude, run that way on end. From hence (behold) proceed the warnings & admonitions of lightnings, the fore-knowledge by Oracles, the predictions of Soothsaiers, yea, and other contemptible things not worthie to bee once spoken of; as sneezing, and stumbling with the foot, are counted matters of presage. *Augustus Caesar* of famous memorie hath made report and left in writing, that his left foot shoe was untowardly put on before the right, on that very day, when hee had like to have miscarried in a mutinie among his souldiors.

Thus these things every one doe enwrap and entangle filie mortall men, void of all forecaft and true understanding: so as this only point among the rest remaineth sure and certain, namely, That nothing is certaine: neither is there ought more wretched and more proud withall, than man. For all lively creatures els take care onely for their food: wherein Natures goodnesse and bountie of it selfe is sufficient: which one point verily is to bee preferred before all good things

*Here let Christians take heed, and bee thankfull to God for the light revealed unto them out of the holy scriptures.

the Historie of Nature.

A things whatsoever, for that they never thinke of glorie, of riches, of seeking for dignities and promotions, nor over and above, of death. Howbeit, the beleefe that in these matters the gods have care of mens estate, is good, expedient, and profitable in the course of this life: as also that the vengeance and punishment of malefactours may well come late (whiles God is busily occupied otherwise in so huge a frame of the world) but never misseth in the end: and that man was not made next in degree unto God, for this, That he should bee welneere as vile and base as the brut beasts. Moreover, the cheefe comfort that man hath, for his imperfections in nature, is this, That even God himselfe is not omnipotent, and cannot do all things. For neither is he able to worke his owne death, would hee never so faine, as man can doe when hee is wearie of his life; the best gift which he hath bestowed upon him, amid so great miseries of his life: nor endow mortall men with everlasting life: ne yet recall, raise, and revive those that once are departed and dead: nor bring to passe, that one who lived, did not live: or hee that bare honourable offices, was not in place of rule and dignitie. Nay, he hath no power over things done and past, save onely oblivion: no more than he is able to effect (to come with pleasant reasons and arguments to prove our fellowship therein with God) that twise tenne should not make twentie: and many such things of like sort. Whereby (no doubt) is evidently proved, the power of Nature, and how it is free, and nothing els, which wee call God. I thought it not impertinent thus to divert and digresse to these points, so commonly divulged, by reason of the usuall and ordinarie questions as touching the Essence of God.

CHAP. VIII.

§ Of the nature of Planets, and their circuit.



Let us returne now to the rest of Natures workes. The Starres which we said were fixed in the heaven, are not (as the common sort thinketh) assigned to every one of us; and appointed to men respectively: namely, the bright and faire for the rich; the lesse for the poore: the dimme for the weak, the aged and feeble: neither shine they out more or lesse, according to the lot & fortune of every one, nor arise they each one together with that person unto whom they are appropriate; and die likewise with the same: ne yet as they set and fall, do they signifie that any bodie is dead.

D There is not, ywis, so great societie betweene heaven and us, as that together with the fatall necessitie of our death, the shining light of the starres should in token of sorrow go out and become mortall. As for them, the truth is this; when they are thought to fall, they doe but shoot from them a deale of fire, even of that abundance and overmuch nutriment which they have gotten by the attraction of humiditie and moisture unto them: like as we also observe daily in the wikes and matches of lampes or candles burning, with the liquor of oile. Moreover, the coelestial bodies, which make and frame the world, and in that frame are compact and knit together, have an immortall nature: and their power and influence extendeth much to the earth: which by their effects and operations, by their light and greatnesse might be knowne, notwithstanding they are so high and subtile withall, as we shall in due place make demonstration. The manner likewise of the heavenly Circles and Zones shall bee shewed more fitly in our Geographical treatise of the earth, for as much as the consideration thereof appertaineth wholly thereunto: onely we will not put off, but presently declare the devisers of the Zodiake, wherein the signes are.

The obliquitie and crookednesse thereof, *Anaximander* the Milesian is reported to have observed first, and thereby opened the gate and passage to Astronomie, and the knowledge of all things: and this happened in the 58 Olympias. Afterwards *Cleostratus* marked the signes therein, and namely those first of *Aries* and *Sagittarius*. As for the Sphere it selfe, *Atlas* devised long before. Now for this time we will leave the very bodie of the starrie heaven, and treat of a] the rest betwene it and the earth.

F Certaine it is, that the Planet which they call *Saturne*, is the highest, and therefore seemeth least: also that hee keepeth his course, and performeth his revolution in the greatest circle of all: and in thirtie yeeres space at the soonest, returneth againe to the point of his first place. Moreover, that the mooving of all the Planets, and withall of Sunne and Moone, go a contrarie course unto the starrie heaven, namely, to the left hand, (*i. Eastward*;) whereas the said heaven alwaies

hasteneth to the right [i. Westward.] And albeit in that continual turning with exceeding celeritie, those planets be lifted up aloft, and carried by it forcible into the West, and there set: yet by a contrarie motion of their owne, they passe every one through their severall waies Eastward; and all for this, that the aire rolling ever one way, and to the same part, by the continuall turning of the heaven, should not stand still, grow dull, and as it were congealed, whiles the globe thereof resteth idle; but dissolve and cleave, parted thus and divided, by the reverberation of the contrarie beames, and violent crosse influence of the said planets. Now, the Planet *Saturne* is of a cold and frozen nature, but the circle of *Jupiter* is much lower than it, and therefore his revolution is performed with a more speedie motion, namely, in twelve yeares. The third, of *Mars*, which some call the Sphere of *Hercules*, is fire and ardent, by reason of the Sunnes vicinitie, and well neere in two yeares runneth his race. And hereupon it is, that by the exceeding heat of *Mars*, and the vehement cold of *Saturne*, *Jupiter* who is placed betwixt, is well tempered of them both, and so becommeth good & comfortable. Next to them is the race of the Sunne, consisting verily of 360 parts [or degrees:] but to the end that the observation of the shaddowes which hee casteth, may returne againe just to the former markes, five daies be added to every yeere, with the fourth part of a day over and above. Whereupon, every fift yeere leapeth, and one odde day is set to the rest: to the end that the reckoning of the times and seasons might agree unto the course of the Sunne. Beneath the Sunne a goodly faire starre there is, called *Venus*, which goeth her compasse, wandering this way and that, by turnes: and by the very names that it hath, testifieth her emulation of Sunne and Moone. For all the while that shee preventeth the morning, and riseth Orientall before, she taketh the name of *Lucifer* (or Day-starre,) as a second sun hastening the day. Contrariwise, when shee shineth from the West Occidental, drawing out the day light at length, and supplying the place of the Moone, shee is named *Vesper*. This nature of hers, *Pythagoras* of Samos first found out, about the 42 Olympias: which fell out to bee the 142 yeere after the foundation of Rome. Now this planet, in greatnesse, goeth beyond all the other five: and so cleere and shining withall, that the beames of this one starre cast shaddowes upon the earth. And hereupon commeth so great diversitie and ambiguitie of the names thereof: whiles some have called it *Juno*, others *Isis*, and other some the Mother of the gods. By the naturall efficacie of this starre, all things are engendred on earth. For whether she rise East or West, she sprinkleth all the earth with dew of generation, and not onely filleth the same with seed, causing it to conceive, but stirreth up also the nature of all living creatures to engender. This planet goeth through the circle of the Zodiacke in 348 daies, departing from the sunne never above 46 degrees, as *Timaeus* was of opinion. Next unto it, but nothing of that bignesse and powerfull efficacie, is the starre *Mercurie*, of some cleped *Apollo*: in an inferiour circle hee goeth, after the like manner, a swifter course by nine daies: shining sometimes before the sunne rising, otherwhiles after his setting, never farther distant from him than 23 degrees, as both the same *Timaeus* and *Sosigenes* doe shew. And therefore these two planets have a peculiar consideration from others, and not common with the rest abovenamed. For those are seene from the sunne a fourth, yea, and third part of the heaven: oftentimes also in opposition full against the sunne. And all of them have other greater circuits of full revolution, which are to be spoken of in the discourse of the great yeare.

CHAP. IX.

Of the Moones nature.



At the planet of the Moone, being the last of all, most familiar with the earth, and devised by Nature for the remedie of darknesse, outgoeth the admiration of all the rest. She with her winding and turning in many and sundrie shapes, hath troubled much the wits of the beholders, fretting and fuming, that of this star, being the nearest of all, they should be most ignorant; growing as it doth, or els waining, evermore. One while bended pointwise into tips of horns: another whiles divided just in the halfe, and anon againe in compasse round: spotted sometime and darke, and soone after on a suddain exceeding bright: one while big and full, and another while all at once nothing to be seene. Sometime shining all night long, and otherwhiles late it is ere she riseth: she also helpeth the sunnes light some part of the day: eclipsed, and yet in that eclipse to be seene. The same at the moneths end lieth hidden, at what time (it is supposed) shee labour-
resth

A reth and travaileth not. At one time yee shall see her below, and anon aloft: and that not after one manner, but one while reaching up close to the highest heaven, and another while readie to touch the mountains: sometimes mounted on high into the North, & sometime cast downe below into the South. Which severall constitutions and motions in her, the first man that observed, was *Endymion*: and therupon the voice went, That he was enamoured upon the Moone: Certes, thankfull we are not, as we ought to be, unto those who by their travaile and carefull endeavor, have given us light in this Light. But delighted rather we are wonderously (such is the pestilent wit and wicked disposition of man) to record in Chronicles, bloudshed and murders: that leaud acts and mischeevous deeds should be knowne of them, who otherwise are ignorant of the world it selfe. Well, to proceed, the Moone being next to the centre, and therefore of least


B compasse, performeth the same course and circuit in seven and twentie daies, and one third part of a day: which *Saturne* the highest planet runneth (as we said before) in thirtie yeers. After this, making stay in conjunction with the Sun two daies, forth she goeth, and by the thirtieth day at the most, returneth to the same point and ministerie againe: the mistresse, if I may so say, and the teacher of all things Astronomicall, that may be knowne in heaven. Now by her meanes are we taught that the yeare ought to be divided into twelve moneths: for as much as, the Moone meeteth or overtaketh the Sun so many times before hee returneth to the same point where he began his course. Likewise that shee looſeth her light (as the rest of the planets) by the brightness of the Sunne when shee approacheth neere. For borrowing wholly of him her light, shee doth shine: much like to that which we see glittering & flying too and fro in the reflection and reverberation of the Sunne-beames from the water. And hereupon it is, that shee, by her more mild

C and unperfect power dissolveth, yea and encreaseth, so great moisture as she doth; which the Sun beames may consume. Hence it commeth also, that her light is not even and equal in sight, because then only when she is opposite unto the Sunne, she appeareth full: but all other daies she sheweth no more to us here on earth, than she conceiveth light of the Sunne. In time verily of conjunction or change, she is not seene at all: for that whiles she is turned away, all the draught of light, she casteth thither backe againe, from whence shee received it. Now, that these planets are ted doubtlesse with earthly moisture, it is evident by the Moone: which so long as she appeareth by the halfe in sight, never sheweth any spots, because as yet shee hath not her full power of light sufficient, to draw humour unto her. For these spots bee nothing els but the dregs of the

D earth, caught up with other moisture among the vapors.

CHAP. X.

Of the Sunne and Moones eclipse: and of the Nights.

E oreover, the eclipse of the Moone and Sunne (a thing throughout the universall contemplation of Nature most mervellous, and like a strange and prodigious wonder) doth shew the bignesse and shadow of these two planets. For evident it is, that the Sun is hidden by the comming betweene of the Moon: and the Moone again by the opposition of the Earth: also that the one doth quit the other, in that the Moone by her interposition bereaveth the Earth of the Sunnes raies, and the Earth again doth the semblable by the Moone. Neither is the Night any thing els but the shade of the Earth. Now the figure of this shaddow resembleth a pyramis; pointed forward, or a top turned upside downe: namely, when as it falleth upon it with the sharp end thereof, nor goeth beyond the heights of the Moone; for that no other starte is in that manner darkened: and such a figure as it, alwaies endeth point-wise. And verely, that shaddows grow to nothing in great space of distance, appeareth by the exceeding high flight of some foules. So as the confines of these shadowes, is the utmost bound of the aire, and the beginning of the fire: Above the Moone all is pure and lightsome continually. And we in the night doe see the stars, as candles or any other lights from out of darknes. For these causes also the Moone in the night season is eclipsed onely. But the reason why the Sunne and Moone are not both in the eclipse as set times and monthly, is the winding obliquitie of the Zodiake, and the wandering turnings of the Moone one while farre South, and another while as much North (as hath been said:) and for that these planets do not alwaies in their motion meet just in the points of the eclipticke line, to wit in the head or taile of the Dragon.

CHAP. XI.

Of the magnitude of Starres.



He reason of this listeth up mens minds into heaven: and as if they beheld and looked downe from thence, discover unto them, the magnitude of the three greatest parts of the whole world. For the Sunnes light could not wholly be taken away from the earth, by the Moone comming betweene, in case the earth were bigger than the Moone. But the huge greatnesse of the Sun is more certainly knowne, both by the shadow of the Earth, and the bodie of the Moone: so as it is needlesse to search and inquire into the largenesse thereof, either by proove of eyesight, or by conjecture of the mind. How unmeasurable it is, appeareth evidently by this, That trees which are planted in limits from East to West, casteth shaddowes equall in proportion; albeie they be never so many miles afunder in length: as if the Sunne were in the midst of them all. This appeareth also about the time of the equinoctiall in all regions meridionall, when the sun shineth directly plumbe over mens heads, and causeth no shadow. In like manner, the shaddowes of them that dwell Northerly under the Solstitiiall circle in summer, falling all at noone-tide, Northward, but at sun rising, Westward, doing the same demonstration. Which possibly could not be, unlesse the sunne were farre greater than the earth. Moreover, in that, when he riseth, hee surpasseth in breadth the hill Ida, compassing the same at large both on the right hand and the left, and namely, being so farre distant as he is. The eclipse of the Moone doth shew also the bignesse of the Sun, by an infallible demonstration; like as himselfe eclipsed, declareth the littleness of the earth. For whereas there be of shadowes three formes and figures: and evident it is, that if the darke materiall bodie which casteth a shadow, bee equall in bignesse to the light, then the shadow is fashioned like a columne or pillar, and hath no point at the end: if it bee greater, it yeeldeth a shadow like a top directly standing upon the point, so as the nether part therof is narrowest, and then the shadow likewise is of infinite length: but if the said bodie bee lesse than the light, then is represented a pyramidall figure like an hey-cock, falling out sharpe pointed in the top; which manner of shadow appeareth in the Moones eclipse: it is plaine, manifest, and without all doubt, that the sunne is much bigger than the earth. The same verily is seene by the secret and covert proofes of Nature it selfe. For why in deviding the times of the yeere, departeth the Sunne from us in the winter? marry, even because by meanes of the nights length and coolnesse, he would refresh the earth, which otherwise no doubt he should have burnt up: for, it notwithstanding, he burneth it in some measure, so excessive is the greatnesse thereof.

CHAP. XII.

The inventions of men as touching the observation of the heavens.



He reason verily of both eclipses, the first Romane that published abroad and divulged, was *Sulpitius Gallus*, who afterwards was Consull, together with *M. Marcellus*: but at that time being a Colonell, the day before that king *Perseus* was vanquished by *Paulus*, he was brought forth by the Generall into open audience before the whole hoast, to fore-tell the eclipse which should happen the next morrow: whereby he delivered the armie from all pensiveness and fear, which might have troubled them in the time of battaile, and within a while after hee compiled also a booke thereof. But among the Greekes, *Thales Miletus* was the first that found it out, who in the 48 Olympias, and the fourth yeere thereof, did prognosticate and foreshew the Sunnes eclipse that happened in the raigne of *Halyattes*, and in the 170 yeere after the foundation of the citie of Rome. After them, *Hipparchus* compiled his Ephemerides, containing the course and aspects of both these planets, for sixe hundred yeeres ensuing: comprehending withall the moneths according to the calculation and reckonings of sundrie nations, the daies, the houres, the situation of places, the aspects, and latitudes of divers townes and countries; as the world will beare him witnesse: and that no lesse assuredly, than if he had been privie to Natures counsels. Great persons and excellent these were doubtlesse, who above the reach of all capacitie of mortall men, found out the reason of the course of so mightie starres and divine powers: and whereas the filie mind of men

A was before sett and to seeke, fearing in these eclipses of the starres some great wrong & violence, or death of the planets, secured them in that behalfe: in which dreadfull feare stood *Stesichorus* and *Pindarus* the poets (notwithstanding their loftie stile,) and namely at the eclipse of the Sun, as may appear by their poemes. As for the Moone, mortall men imagine that by Magicke forcerie, and charmes, she is inchaunted, and therefore helpe her in such a case when she is eclipsed by dissonant ringing of basons. In this fearefull fit also of an-eclipse, *Nicias* the Generall of the Athenians (as a man ignorant of the course thereof) feared to set saile with his fleet out of the haven, and so greatly endaugered and distressed the state of his countrie. Faire chieve yee then for your excellent wit, ô noble Spirits, interpretours of the heavens, capable of Natures workes, and the devisers of that reason whereby ye have surmounted both God and man. For who is he, that seeing these things, and the painful ordinarie travels (since that this tearme is now taken up) of the starres; would not beare with his owne infirmitie, and excuse this necessitie of being borne to die? Now, for this present I will breiefely and summarily touch those principall points which are confessed and agreed upon as touching the said eclipses, having lightly rendered a reason thereof in most needfull places: For neither such proving and arguing of these matters, belongeth properly to our purposed worke; neither is it lesse wonder to bee able to yeeld the reasons and causes of all things, than to be resolute and constant in some.

CHAP. XIII.

Of Eclipses.



Certaine it is, that all eclipses in 222 moneths have their revolutions, and returne to their former points: as also that the Sunnes eclipse never happeneth but about the change of the Moone, namely, either in the last of the old, or first of the new, which they call the Conjunction: and that the Moone is never eclipsed but in the full, and alwaies somewhat preventeth the former eclipse. Moreover, that every yeere both planets are eclipsed at certain daies and hours under the earth. Neither be these eclipses in all places seene, when they are above the earth: by reason sometimes of cloudie weather, but more often, for that the globe of the earth hindereth the sight of the bending convexitie of the heaven. Within these two hundred yeares found out it

D was by the wittie calculation of *Hipparchus*, that the Moone sometime was eclipsed twice in five moneths space, and the sunne likewise in seven. Also that the Sunne and Moone twice in thirtie daies were darkened above the earth: howbeit seene this was not equally in all quarters, but of divers men in divers places: and that which maketh mee to marvell most of all in this wonder, is this, that when agreed it is by all, that the Moone light is dimmed by the shadow of the earth, one while this eclipse happeneth in the West, and another while in the East: as also, by what reason it happened, that seeing after the Sunne is up, that shadow which dusketh the light of the Moone, must needs be under the earth: it fell out once, that the Moone was eclipsed in the West, and both planets to be seene above the ground in our horison. For that in twelve daies both these lights were missing, and neither Sun nor Moone were seene: it chanced in our time, when

E both the *Vespasians* (Emperors) were Consuls, the father the third time, and the son the second.

CHAP. XIII.

Of the Moones motion.



Cleare it is, that the Moone alwaies in her encreasing, hath the tips of her hornes turned from the Sunne toward the East: but in the waine, contrariwise Westward. Also that shee shineth (the first day of her apparition) $\frac{1}{4}$ parts, and the 24 part of one houre, and so riseth in proportion the second day forward unto the full: and likewise decreaseth in the same manner to the change. But alwaies she is

F hidden in the change within foureteeene degrees of the Sunne. By which argument wee collect, That the magnitude of the other planets is greater than the Moones, for as much as they appeare otherwhiles when they be but seven degrees off. But the cause why they shew lesse, is their altitude: like as the fixed starres, which by reason of the Sunnes brightnesse are not seene in the day time: whereas indeed they shine as well by day as night: and that is manifestly proved by some

some

some eclipses of the Sunne, and exceeding deepe pits, for so they are to bee seene by day light. G

CHAP. XV.

¶ *Generall rules touching the motions and lights of other Planets.*



Hose three, which we say are above the Sunne, bee hidden when they goe their course together with him. They arise in the morning, and be called Orientall Matutine: and never depart farther than eleven degrees. But afterwards meeting with his raies and beames, they are covered: and in their triple aspect retrograde, they make their morning stations 120 degrees off, which are called the first: and anon in a contrarie aspect or opposition 180 degrees off, they arise in the evening, and are Occidentall Vespertin. In like sort approaching from another side within 120 degrees, they make their evening Stations, which also they call the second, untill he overtake them within twelve degrees, and so hide them: and these are called the evening settings. As for *Mars*, as he is neerer to the Sunne, so feeleth he the sunne beames by a quadrant aspect, to wit, ninetie degrees: whereupon that motion tooke the name, called the first and second Nonagenarie, from both risings. The same planet keepeth this stationarie residence sixe moneths in the signes: whereas otherwise of his owne nature, but two moneths. But the other planets in both stations or houses continue not all out foure moneths apeece. Now the other two inferiour planets under the Sunne, goe downe and are hidden after the same manner in the evening Conjunction: and in as many degrees, they make their morning rising: and from the farthest bounds of their distance, they follow after the Sunne: and after they have once overtaken him, they set againe in the morning) and so outgoe him. And anon keeping the same distance, in the evening they arise againe unto the same limits which wee named before, from whence they are retrograde, and returne to the Sunne, and by the evening setting, they be hidden. As for *Venus*, she likewise maketh two stations according to the two manners of her apparance, morning and evening, when she is in farthest bounds and utmost points of her Epicycle. But *Mercurie* keepeth his stations so small a while, that they cannot be observed. This is the manner and order as well of the lights and appearances of the planets, as of their occultations and keeping close intricate in their motion, and enfolded within many straunge wonders. For change they doe their magnitudes and colours: sometime they approach into the North, the same againe goe backe toward the South, yea, and all on a suddaine, they appeare one while neerer to the earth, and another while to the heaven: wherein, if we shall deliver many points otherwise than former writers, yet confesse we doe, that for these matters we are beholden unto them, who first made demonstration of seeking out the waies thereto: howbeit, let no man despaire, but that he may profit and go forward alwaies in farther knowledge from age to age. For, these straunge motions fall out upon many causes. The first is, by reason of those eccentricque circles or Epicycles in the Stars, which the Greekes call *Absides*: for needs we must use in this Treatise the Greeke tearmes. Now every one of the planets have particular Auges or circles afore said by themselves, and these different from those of the starrie heaven: for that the earth from those two points, which they call Poles, is the very centre of the heaven, as also of the Zodiacke, situate overthwart betweene them. All which things are certainly knowne to be so, by the compasse, that never can lie. And therefore for every centure there arise their owne *Absides*, whereupon it is, that they have diverse circuits and different motions, because necessarie it is, that the inward and inferiour *Absides* should bee shorter. L

CHAP. XVI.

¶ *Why the same Planets seeme sometime higher, and sometime lower.*



He highest *Absides* therefore from the centre of the earth are of *Saturn*, in the signe M Scorpio: of *Iupiter* in Virgo: of *Mars* in Leo: of the Sunne in Gemini: of *Venus* in Sagittarius: of *Mercurie* in Capricorne: and namely in the middle or fifteenth degree of the said signes: and contrariwise the said planets in the same degrees of the opposite signes are lowest, and to the centre of the earth neereft. So it cometh to passe, that they seeme to move more slowly, when they go their highest circuit: not, for that

A that naturall motions doe either hasten or slacke, which bee certaine and severall to every one: but because the lines which are drawne from the top of the *Absis*, must needs grow narrow and neere together about the centre, as the spokes in cart wheelles: and the same motion by reason of the neerenesse of the centre, seemeth in one place greater, in another lesse. The other cause of their sublimities is; for that in other signes they have the *Absides* elevated highest from the centre of their owne eccentricque circles. Thus *Saturne* is in the height of his Auge in the 20 degree of *Libra*, *Jupiter* in the 15 of *Cancer*, *Mars* in the 28 of *Capricorne*, the Sunne in the 29 of *Aries*, *Venus* in the 16 of *Pisces*, *Mercurie* in the 15 of *Virgo*, and the Moone in the 4 of *Taurus*. The third reason of their altitude or elevation, is not taken from their Auges or circles eccentricque, but understood by the measure and convexitie of heaven, for that these planets seeme to rise as they rise and fall, to mount up or settle downward through the aire. Hereunto is knit and united another cause also, to wit, the *Zodiakes* obliquitie, & latitude of the planets, in regard of the eclipticke: For through it the starres which we called wandering, doe move and take their course. Neither is there any place inhabited upon earth, but that which lieth under it. For all the rest without the poles, are fruitlesse, desert, and ill favored. Only the planet *Venus* goeth beyond the circle of the *Zodiacke*, two degrees: which is supposed to be the very efficient cause, that certaine living creatures are engendered and bred even in the desert and inhabitable parts of the world. The Moone likewise raungeth throughout all the breadth of it, but never goeth out of it. Next after these the starre of *Mercurie* hath the largest scope in the *Zodiacke*, but yet so, as of 12 degrees (for that is the bredth thereof) he wandereth but eight, and those not equally, but two in the middelt, foure above, and two beneath. Then the Sunne in the midtt, goeth alwaies betweene the two extremities of the *Zodiacke*: but in his declining course from South and North, he seemeth to wind bias after the manner of *Dragons* or *Serpents*, unequally. *Mars* in his latitude leaveth the eclipticke line foure halfe degrees, *Jupiter* two degrees and a halfe, *Saturne* no more but two, like as the Sunne. Thus you see the manner of the latitudes, as they descend Southward, or ascend Northward. And upon this is the reason grounded also of the third opinion of them, who imagine that the planets doe arise and mount from the earth upward into heaven. For very many have thought, although vntruly, that they climbe in this manner. But to the end that they may be reprov'd and confuted, we must lay open an infinite and incomprehensible subtiltie, and that which containeth all those causes & reasons abovesaid. First therefore this is agreed upon and resolved, that these stars or planets in their evening setting, are neerest to the earth, both in regard of latitude, & also of altitude: and then they be called Occidentall Vespertine, when the Sun toward the evening, covereth them with his raies: also, when they be farthest from the earth, aswell in latitude as elevation, they be Orientall Matutine, & arise or appear in the morning before the Sun is up: as also that then they are Stationaries in their houses, which be in the middle points of the latitudes, which they call eclipticks. Likewise, confessed it is, that so long as the planets are neer to the earth, their motion seemeth to encrease & be quicke: but as they depart on high, to decrease and be slow. And this reason is approved & confirmed principally by the elevations and depressions of the Moone. As doubtlesse it is also, and held for an infallible rule, that every planet being Orientall Matutine, riseth every day higher than other. The superior three above the Sun diminish even from their first stations unto the second. Which being so, it will plainly appeare, that every planet Orientall Matutine, rising before the Sun, beginneth to mount the latitude Septentrionall, & decline from the Ecliptick Northward: in such sort, that from the time that they begin to dismarch, their motion increaseth by little & little more sparely. But in the first Stations, they are at the highest altitude & ascent: for then and not before, the numbers begin to be withdrawn, & the planets to go backward, and be retrograde. Whereof a particular reason by it selfe may be given, in this manner: The Planets being smitten in that part whereof we spake, they are both inhibited by the triangular beames or Trine aspect of the Sun, to hold on a streight and direct course in the longitude of the heaven, and so be retrograde: & so are raised up aloft by the fire power of the said Sun. This cannot presently at the first be understood by our eyesight: whereupon they are supposed to stand, and hereof their Stations tooke the name. Then proceedeth forward the violence of the Sunne beames or aspect, and the vapor thereof by repercussion, forceth them to be evidently retrograde, and goe backward. And much more is this perceived in their even rising, when they be Orientall Vespertine, when the Sunne is wholly against them, and when they be driven to the very top of their *Absides*, and so not seene at all, because they are at the

the highest, and goe their least motion, which is so much the lesse, when as it happeneth in the highest signes of their Auges or *Absides*. From the even arising after the Sunne setting, they descend toward the latitude meridionall, for now the motion lesse diminisheth, but yet encreaseth not before the second Stations: for that they are forced to descend, by reason of the sun beames coming from the other side of their Epicycle: and the same force beareth them downward againe to the earth, which by the former triangular aspect raised them aloft toward heaven. So much skilleth it whether the said beames came from beneath or above. The same happeneth much more in the even setting when they be hidden with the raies of the Sunne. This is the reason of the superiour planets above the Sunne: but the Theorique is more difficult of the rest, and hath by no man before us been delivered.

CHAP. XVII

General rules as touching the Planets.



First and formost therefore let us set downe the cause why *Venus* starre never departeth from the Sunne more than 46 degrees, and *Mercurie* not above 23: and (being as they are diverse Planets) why oftentimes they retire backe unto the Sunne within that compasse. For to be resolved in this point, note wee must, that both of them have their *Absides* turned opposite to the rest, as being seated under the sun: and to much of their circles is underneath, as the forenamed were above: and therefore farther off they cannot bee, because the curvature and roundle of their *Absides* in that place, hath no greater longitude. Therefore both edges of their *Absides*, by a like proportion keepe an indifferent mean, & their course is limited: but the short spaces of their longitudes, they recompence again with the wandering of their latitudes. But what is the reason that they reach not alwaies to 46 degrees, and to 23? yes ywis doe they: but this the Canonick Astronomers have missed of in their Aphorismes. For it is apparent, that their *Absides* also or Auges doe moove, because they never overpasse the Sunne. And therefore when their edges from either side are perceived to fall upon the very point, then the planets also are supposed to reach unto their longest distances: but when their edges or the points of their Epicycles, be short so many degrees, the starres themselves are thought to returne more speedily in their retrogradation, than in their direct course forward, albeit the utmost extremitie which they both have, is ever the same. And from hence is the reason understood of the contrarie motions of these two planets. For the superiour planets move most swiftly in the even setting, but these most slowly. They, I say, be farthest from the earth, when they move slowest; and these, when they goe swiftest: for as in the former the neerenesse of the centre hasteneth them; so in these, the extremitie of the circle: they, from their morne rising begin to slake their celeritie; but these, to encrease it: they returne back from their morning Station to their evening mansion; but *Venus* contrariwise is retrograde from the Station Vespertine, to the Matutine. Howbeit, she from the morne rising beginneth to climbe the latitude Septentrionall: but to follow the altitude and the Sunne, from the morning station: as being most swift and at the highest in the morne setting. Moreover she beginneth to digresse in latitude, and to diminish her motion from the morne rising: but, to be retrograde, and withall to digresse in altitude, from the evening station. Again the Planet *Mercurie*, being Oriental Matutin, beginneth both waies to climbe, that is, to mount higher day by day; but to digresse in latitude, being Oriental Vespertine: and when the Sunne hath overtaken him within the distance of fifteene degrees, he standeth still for foure daies unmoveable. Within a while he descendeth from his altitude daily, and goeth backe retrograde from the even setting, namely, when the Sunne hideth him with his raies, to the Moone rising, when hee appeareth before the Sunne is up. This starre onely, and the Moone, descend in as many daies as they ascend. But *Venus* ascendeth up to her station in fifteene daies and the vantage. Again, *Saturne* and *Jupiter* are twice as long descending, and *Mars* foure times. See how great varietie is in their nature, but the reason thereof is evident. For they which goe against the vapour and heat of the Sunne doe also hardly descend. Many secrets more of Nature, and lawes whereunto she is obedient, might bee shewed about these things. As for example: The planet of *Mars*, whose course of all others, can bee least observed, never maketh station but in quadrate aspect: as for *Jupiter*, in triangle aspect; and very seldome severed from the Sunne 60 degrees, which number maketh fixe angled formes of the heaven,

A heaven, that is to say, is the just sixt part of the heaven: neither doth *Iupiter* shew his rising in the same signe this yeer, as in the former, save only in two signes, *Cancer* and *Leo*. The planet of *Mercurie* seldome hath his even rising in *Pisces*, but very often in *Virgo*; and the morne rising in *Libra*. In like manner, the morne rising in *Aquarius*, but very seldome in *Leo*. Neither becommeth he retrograde in *Taurus* and *Gemini*: and in *Cancer*, not under the 25 degree. As for the Moone, she entreth not twise in Conjunction with the Sunne in any other signe, but in *Gemini*: and sometime hath no Conjunction at all and that only in *Sagittarius*. As for the last and first of the Moone, to be seene in one and the selfesame day or night, happeneth in no other signe but in *Aries*, and few men have had the gift to see it. And hereupon came *Linceus* to be so famous for his eyesight. Also, the Planets *Saturne* and *Mars* are hidden with the Sunne beames, and appear not in the heaven at the most 170 daies: *Iupiter* 36, or at least tenne daies wanting: *Venus* 69, or when least, 52: *Mercurie* 13, or at least, 17.

CHAP. XVIII.

¶ What is the cause that the Planets alter their colours.



T Hereason of the Planets altitudes is it that tempereth their colours, according as they be neerer or farther off from the earth. For they take the likenesse of the aire, into the coats whereof they enter, in their ascent: and the circle or circumference of another planets motion, coloureth them as they approach either way, ascending or descending. The colder setteth a pale colour, the hotter a red, and the windie a searefull and rough hue. Onely the points and conjunctions of the *Absides*, and the utmost circumferences, shew a darke blacke. Each planet hath a severall colour, *Saturne* is white, *Iupiter* cleere and bright, *Mars* fierie and red, *Venus* Orientall (or *Lucifer*) fair, Occidentall (or *Vesper*) shining, *Mercurie* sparkling his raies, the Moon pleasant, the Sunne when he riseth burning, afterwards glittering with his beames. Vpon these causes the sight is entangled, and discovereth even those starres also which are contained and fixed in the skie, more or lesse. For one while a number of them appeare thicke, about the halfe Moone, when in a cleare and calme night she gently beautifieth them: another while they are teene but here and there, insomuch as we may wonder, that they are fled upon the full Moone, which hideth them: or when the beames either of the Sunne or other abovesaid have dazzeled our sight. Yea, the very Moon her selfe hath a feeling, doubtlesse, of the Sunne beames, as they come upon her: for those raies that come sidelong, according to the convexitie of the heaven, give but a darke and dim light to the Moone, in comparison of them that fall directly with streight angles. And therefore in the quadrangle aspect of the Sunne, she appeareth divided in halfe: in the triangle, she is well neere environned, but her circle is halfe emptie and void: howbeit in the opposition she seemeth full. And againe, as she is in the waine, she representeth the same formes, decreasing by quarters as she increased: with like aspects, as the other three planets above the sun.

CHAP. XIX.

¶ The reason of the Sunnes motion, and the unequalitie of daies.



S for the Sunne himselfe, a man may observe foure differences in his course: twice in the year making the night equal to the day, to wit, in the Spring, and Autumne: for then he falleth just upon the centre of the earth, namely, in the eight degree of *Aries* and *Libra*. Twise likewise exchanging the compasse of his race: to lengthen the day from the *Bruma* or midwinter, in the eight degree of *Capricorn*; and again to lengthen the night from the summer sunnesteed, being in as many degrees of *Cancer*. The cause of unequal daies, is the obliquitie of the Zodiake: whereas the one halfe just of the world, to wit, sixe signes of the Zodiake, is at all times above and under the earth. But those signs which mount upright in their rising, hold light a longer tract, and make the daies longer: whereas they which arise crooked and goe bias, passe away in shorter and swifter time.

CHAP. XX.

¶ Why lightnings are attributed to *Iupiter*.



Most men are ignorant of that secret, which by great attendance upon the heavens, deepe clearkes and principall men of learning have found out: namely, that they see the fires of the three uppermost planets, which falling to the earth, carrie the name of lightnings, but those especially which are seated in the middest, to wit, about *Iupiter*, haply, because participating the excessive cold and moisture from the upper circle of *Saturn*, and the immoderate heat from *Mars* that is next under, by this meanes he dischargeth the superfluitie: and hereupon it is commonly said, That *Iupiter* shooteth and darteth lightenings. Therefore, like as out of a burning peece of wood a cole of fire flieth forth with a cracke, even so from a starre is spit out as it were and voided forth this cœlestial fire, carrying with it presages of future things: so as the heaven sheweth divine operations, even in these parcels and portions which are rejected and cast away as superfluous. And this most commonly happeneth when the aire is troubled, either because the moisture that is gathered, mooveth and stirreth forward that abundance to fall; or else for that it is disquieted with the birth (as it were) proceeding from a great bellied star, and therefore would be discharged of such excrements.

CHAP. XXI.

¶ The distances of the Planets.



Many have assaid to find out the distance and elevation of the Planets from the earth, and have set downe in writing, that the Sunne is distant from the Moone 18 degrees, even as much as the Moone from the earth. But *Pythagoras*, a man of a quicke spirit, hath collected, that there are 126000 furlongs from the earth to the Moone, and a duple distance from her to the Sunne, and so from thence to the twelve signes three times so much. Of which opinion was also our countrieman *Gallus Sulpitius*.

CHAP. XXII.

¶ Of the Planets musicke and harmonie.



As *Pythagoras* otherwhiles using the tearmes of musicke, calleth the space betweene the earth and the Moone a Tonus, saying, that from her to *Mercurie* is halfe a tone: and from him to *Venus* in manner the same space. But from her to the Sunne as much and halfe againe: but from the Sunne to *Mars* a Tonus, that is to say, as much as from the earth to the Moone. From him to *Iupiter* halfe a Tonus: likewise from him to *Saturne* halfe a Tonus: and so from thence to the Signifer Sphære or Zodiake so much, and halfe again. Thus are composed seven tunes, which harmonie they cal Diapason, that is to say, the Generalitie or whole state of concent and accord, which is perfect musicke. In which, *Saturne* moveth by the Dorick tune: *Mercurie* by Phthongus, *Iupiter* by the Phrygian, and the rest likewise: a subtiltie more pleasant ywis than needfull.

CHAP. XXIII.

¶ The Geometrie or dimension of the world.



Stadium or furlong maketh of our paces 125, that is to say, 625 foot. *Pofidonius* saith, That from the earth it is no lesse than fortie stadia to that height or altitude wherein thicke weather, winds and clouds, doe engender. Above which, the aire is pure, cleere, and light, without any troubled darkeness. But from the cloudie and muddie region to the Moone, is twentie hundred thousand Stadia: from thence to the Sunne five thousand. By meanes of which middle space betweene, it commeth to passe, that so exceeding great as the Sunne is, he burneth not the earth. Many there be moreover, who have taught, that the clouds are elevated to the heighth of nine hundred stadia. Vnknowne these points are,

Are, and such as men cannot wind themselves out of: but as well may they now be delivered to others, as they have been taught to us: in which notwithstanding, one infallible reason of a Geometricall collection which never lieth, cannot be rejected, if a man would search deep into these matters. Neither need a man to seeke a just measure hereof (for to desire that, were in manner a point of fond and foolish idlenesse, as if men had nothing els to doe) but onely to make an estimate, and resolve upon a guesse and conjecture thereof. For, whereas it is plaine and apparent by the course of the Sunne, that the circle through which he passeth, doth containe three hundred threescore, and almost sixe degrees: and alwaies the dimetrent line, or diameter, taketh a third part of the circumference, and little lesse than a seventh part of a third: it is plain, that deducting one halfe thereof (by reason that the earth, situate as a centre, commeth betweene) the sixt part well neere of this great circuit which he maketh about the earth (so farre as our mind doth comprehend) is the very heighth from the earth up to the Sunne; but the twelfth part to the Moone; because she runneth so much a shorter compasse than the Sunne: whereby it appeareth, that she is in the middest betweene the earth and the Sunne. A wonder it is to see how farre the presumptuous mind and heart of man will proceed, and namely being invited and drawne on by some little successe, as in the abovenamed matter. The reason whereof ministrerth plenteous occasion of impudencie, for they who dared once to give a guesse at the space betweene the Sunne and the earth, are so bold to doe the like from thence to heaven. For presuming, that the Sunne is in the middest, they have at their fingers ends by and by the very measure also of the whole world. For looke how many seven parts the dimetrent hath, so many 22 parts or thereabout, hath the whole circle: as if they had gotten the just and certaine measure of the heaven by levell, and the plumb or perpendicular line. The Ægyptians according to the reckoning which *Petofiris* and *Necepos* have invented, doe collect, That every degree in the circle of the Moone, which is the least (as hath been said) of all other, containeth 33 stadia, and somewhat more: in *Saturne* the greatest of all the rest, duple so much, and in the Sunne: which we said was the middest, the halfe of both measures. And this computation hath very great importance, for he that will reckon the distances betweene the circle of *Saturne* and the Zodiake, by this calculation shall multiplie an infinite number of Stadia.

CHAP. XXIII.

Of suddaine starres.

D Here remaine yet some few points as touching the world: for in the very heaven there be starres that suddainely arise and appeare, whereof be many kinds.

CHAP. XXV.

Of Comets or blazing stars, and caelestiall prodigies, their nature, situation, and diverse sorts.



E Hese blazing starres the Greekes call *Cometas*, our Romanes *Crintas*: dreadfull to be seene, with bloudie haire, and all over rough and shagged in the top like the bush of haire upon the head. The same Greekes call those starres *Pogonias*, which from the nether part have a maine hanging downe, in fashion of a long beard. As for those named *Acontie*, they brandish and shake like a speare or dart, signifying great swiftnesse. This was it, whereof *Tiberius Cesar* the Emperour wrote an excellent Poeme in his sifst Consulship, the last that ever was seene to this day. The same, if they be shorter and sharpe pointed in the top, they use to call *Xiphie*: and of all other palest they be, and glitter like a sword, but without any raies or beames: which, another kind of them, named *Discus* (resembling a dish or coit, whereof it beareth the name, but in colour like to amber) putteth forth here and there out of the brimmes and edges thereof. As for *Pitheus*, it is seene in forme of tunnes, environned within a smokie light, as if it were a concavities *Cerantias* resembleth an horne: and such a one appeared when the whole manhood of Greece fought the battaile of *Salamis*. *Lampadias* is like to burning torches: and *Hippus* to horse maines, most swift in motion, and turning round. There is also a white Comet with silver haire, so bright and shining, that hardly a man can endure to looke upon it, and in mans shape it sheweth the verie image of a god. Moreover, there be blazing starres that become all shaggie, compassed round with hairie fringe, and a kind of maine. One heretofore appearing in the forme of a main, changed

Pogonias

Aconias

Xyphias

Discus

Pitheus

Cerantias

Lampadias

Hippus

ged into a speare, namely in the hundred and eight Olympias, and the 398 yeere from the foundation of Rome. Noted it hath ben, that the shortest time of their appearance is a seven night, and the longest eightie daies. Some of them move like the wandering planets: others are fixed fast, and stir not. All in manner are seene under the very North star called *Charles maignes* waine: some in no certaine part thereof, but especially in that white, which hath taken the name of the *Milke circle. *Aristotle* saith, That many are seene together: a thing that no man but hee hath found out, so farre as I can learne. Mary, boisterous winds, and much heat of weather, are foretold by them. There are of them seene also in winter season, and about the Antarticke South pole: but in that place without any beames. A terrible one likewise was seene of the people in *Aethyopia* and *Aegypt*, which the king who raigned in that age, named *Typhon*. It resembled fire, and was plaited or twisted in maner of a wreath, grim and hideous to be looked on; and no more truly to be counted a starre, than some knot of fire. Sometimes it falleth out, that the Planets and other stars are bespreat all over with haire. But a Comet lightly is never seene in the West part of the heaven.

A fearefull starre for the most part this Comet is, and not easily expiated: as it appeared by the late civile troubles when *Oclavius* was Consul: as also a second time by the intestine warre of *Pompey* and *Caesar*. And in our daies about the time that *Claudius Caesar* was poysoned, and left the Empire to *Domitius Nero*, in the time of whose raigne and government, there was another in manner continually seene, and ever terrible. Men hold opinion, that it is materiall for presage to observe into what quarters it shooteth, or what starres power and influence it receiveth: also what similitudes it resembleth, and in what parts it shineth out and first ariseth. For if it be like unto flutes or hautboies, it portendeth somewhat to Musicians: if it appeare in the privie parts of any signes, let ruffians, whoremaisters, and such filthy persons take heed. It is respective to fine wits and learned men, if it put forth a triangular or fouresquare figure with even Angles, to any situations of the perpetuall fixed starres. And it is thought to presage, yea, and to sprinkle and put forth poyson, if it be seene in the head of the Dragon, either North or South.

In one onely place of the whole world, namely, in a temple at Rome, a Comet is worshipped and adored: even that, which by *Augustus Caesar* himselfe of happie memorie, was judged very luckie and fortunate to him: who, when it began to appeare, gave attendance in person as overseer to those plaies and games which he made to *Venus Genetrix*, not long after the death of his father *Caesar*, in the colledge by him instituted and erected. For, that joy of his he testified in these words, *In those very daies during the solemnitie of my Plaies, there was seene a blazing star for seven daies together, in that region of the skie which is under the North starre Septentriones. It arose about the eleventh houre of the day, bright it was and cleere, and evidently seene in all lands. By that starre it was signified (as the common sort beleeveth) that the soule of (Iulius) Caesar was received among the divine powers of the immortall gods. in which regard, that marke or ensigne of a starre was set to the head of that Statue of Iulius Caesar, which soone after we dedicated in the Forum Romanum.* These words published he abroad: but in a more inward joy to himselfe, hee interpreted and conceived thus of the thing, That this Comet was made for him, and that himselfe was in it borne. And verily, if we will confesse a truth, a healthfull, good and happie presage that was, to the whole world. Some there be who beleeveth, that these be perpetuall stars, and go their course round, but are not seene, unlesse they be left by the Sunne. Others againe are of opinion, that they are engendred casuall by some humor and the power of fire together, and therby do melt away and consume.

CHAP. XXVI.

255 *Hipparchus* his opinion of the starres. Also historickall examples of Torches, Lampes, Beames, Fierie darts, opening of the Firmament, and other such impressions.



Hipparchus the foresaid Philosopher (a man never sufficiently praised, as who proved the affinitie of starres with men, and none more than he; affirming also, that our soules were parcell of heaven) found out and observed another new starre engendred in his time, and by the motion thereof on what day it first shone, he grew presently into a doubt, Whether it happened not very often that new starres should arise? and whether those starres also mooved not, which we imagine to be fast fixed? The same man went so farre, that he attempted (a thing even hard

A ~~l~~ to performe) to deliver unto posteritie the just number of starres. Hee brought the said starres within the compasse of rule and art, devising certaine instruments to take their severall places, and set out their magnitudes: that thereby it might be easily discerned, not only whether the old died, and new were borne, but also whether they moved, and which way they tooke their course? likewise, whether they encreased or decreased? Thus he left the inheritance of heaven unto all men, if any one haply could be found able to enter upon it as lawfull heire.

There be also certaine flaming torches shining out in the skie, howbeit never seen but when they fall. Such a one was that, which at the time that *Germanicus Caesar* exhibited a shew of sword-fencers at utterance, ran at nooneride in the sight of all the people. And two sorts there be of them. Namely, *Lampades*, which they call plaine torches; and the other *Bolides*, i. Launces, such as the Mutinians saw in their calamitie, when their cittie was sacked. Herein they differ, for that those lampes or torches, make long traines, whiles the forepart onely is on a light fire. But *Bolts* burneth all over, and draweth a longer taile. There appeare and shine out after the same manner certaine beames, which the Greekes call *Docus*. Like as, when the Lacedemonians being vanquished in sea fight, lost the Empire and dominion of Greece. The firmament also is seene to chinke and open, and this they name *Chasma*.

*Lampades
Bolides*

Docus

Chasma

CHAP. XXVII.

Of the strange colours of the Skie.



Here appeareth in the Skie also a resemblance of blood, and (than which nothing is more dread and feared of men) a fierie impression, falling from out of heaven to earth: like as it happened in the third yeere of the hundred and seven Olympias, at what time asking *Philip* made all Greece to shake with fire and sword. And these things verily, I suppose to come at certaine times by course of Nature, like as other things; and not, as the most part thinke, of sundrie causes, which the subtile wit and head of man is able to devise. They have indeed been fore-runners of exceeding great miseries, but I suppose those calamities happened not because these impressions were, but these therefore were procreated to foretell the accidents that ensued afterward. Now, for that they fall out so seldome, the reason therefore of them is hidden and secret, and so not knowne, as the rising of planets abovesaid, the eclipses, and many other things.

Armo Domi

CHAP. XXVIII.

Of the heaven flame.

Likewise there are seene starres together with the Sunne all day long: yea, and very often about the compasse of the Sunne, other flames, like unto garlands of corne eares: also circles of sundrie colours, such as those were when *Augustus Caesar* in the prime of his youth entred the citie of Rome (after the decease of his father) to take upon him that great name and imperiall title of his.

CHAP. XXIX.

Of celestiaall crownes.

Also the same garlands appeare about the Moone, and other goodly bright stars which are fixed in the firmament. Round about the Sunne there was seene an Arch, when *L. Opimius* and *Q. Fabius* were Consuls: as also a round circle, when *L. Porcius* and *M. Acilius* were Consuls.

CHAP. XXX.

Of suddaine Circles.

Here appeared a Circle of red colour, when *L. Iulius* and *P. Rutilius* were Consuls. Moreover, there are strange eclipses of the Sunne, continuing longer than ordinarie, as namely, when *Caesar* Dictatour was murdered. Moreover, in the warres of *Antonie*, the Sunne continued almost a yeere long with a pale and wan colour.

CHAP. XXXI.

Many Sunnes.

Ver and besides, many Sunnes are seene at once, neither above nor beneath the bodie of the true Sunne indeed, but crosse wise and overthwart: never neere, nor directly against the earth, neither in the night season, but when the Sunne either riseth or setteth. Once they

they are reported to have bene scene at noone day in Bosphorus, and continued from morne to even. Three Sunnes together our auncitors in old time have often beheld, as namely, when *Sp. Posthumius* with *Q. Mutius*, *Q. Martius* with *M. Porcius*, *M. Antonius* with *P. Dolabella*, and *Mar. Lepidus* with *L. Plancus*, were Consuls. Yea, and we in our daies have scene the like, in the time of *Cl. Caesar* of famous memorie, his Consulship, together with *Cornelius Orfitus* his Colleague. More than three we never to this day find to have been scene together.

CHAP. XXXII.

☿ *Many Moones.*

Three Moones also appeared at once, and namely, when *Cn. Domitius* and *C. Fannius* were Consuls, which most men called Night-Sunnes.

CHAP. XXXIII.

☿ *Day light in the night.*

Of the firmament by night, there was scene a light, when *C. Caelius* and *Cn. Papyrius* were Consuls, yea, and oftentimes besides, so as the night seemed as light as the day.

CHAP. XXXIIII.

☿ *Burning shields or targuets.*

A Burning shield ran sparkling from the West to the East, at the Sunnes setting, when *L. Valerius* and *C. Marius* were Consuls.

CHAP. XXXV.

☿ *A strange sight in the Skie.*

They report there was once scene, and never but once, when *Cn. Octavius*, and *C. Scribonius* were Consuls, a sparkle to fall from a starre: and as it approached the earth, for to waxe greater, and after it came to the bignesse of the Moone, to shine out and give light, as in a cloudie and darke day: then, being retired again into the skie, it became (to mens thinking) a burning lampe. This, *Licinius Syllanus* the Proconsull saw, together with his whole traine.

CHAP. XXXVI.

☿ *The running of stars too and fro in the Skie.*

There bee also starres to shoot hither and thither, but never for nought and to no purpose: for, from the same quarter where they appeare, there rise terrible winds, and after them stormes and tempests both by sea and land.

CHAP. XXXVII.

☿ *Of the starres called Castor and Pollux.*

I have scene my selfe in the campe, from the souldiours sentinels in the night watch, the resemblance of lightening to sticke fast upon the speares and pikes set before the rampiar. They settle also upon the crosse saile-yards; and other parts of the ship, as men doe saile in the sea: making a kind of vocall sound, leaping too and fro, and shifting their places as birds doe which flie from bough to bough. Daungerous they be and unluckie, when they come one by one without a companion: and they drown those ships on which they light, and threaten shipwrack, yea, and they set them on fire if haply they fall upon the botome of the Keele. But if they appeare two and two together, they bring comfort with them, and foretell a prosperous course in the voiage, as by whose comming, they say, that dreadfull, cursed, and threatening Meteor called *Helena*, is chased and driven away. And thereupon it is, that men assigne this mightie power to *Castor* and *Pollux*, and invoke them at sea, no lesse than gods. Mens heads also in the even-tide are scene many times to shine round about, and to be of a light fire, which presageth some great matter. Of all these things there is no certain reason to be given, but secret these be, hidden with the majestie of Nature, and reserved within her Cabinet.

CHAP. XXXVIII.


☿ *Of the Aire.*

It remaineth now (thus much and thus farre being spoken of the world it selfe, to wit, the starrie heaven and the planets) to speake of other memorable things observed in the Skie. For even that part also have our forefathers called *Celum*, i. the Skie, which otherwise they name *Aire*: even all that portion of the whole, which seeming like a void and emptie place, yeeldeth this vitall spirit whereby all things do live. This region is seated beneath the Moone, and farre under that planet (as I observe it is, in manner by all men agreed upon.) And mingling together an infinite portion of the superiour coelestiall nature or elementarie fire, with

A with an huge deale likewise of earthly vapours, it doth participate confusedly of both. From hence proceed clouds, thunders, and those terrible lightnings. From hence come haile, frosts, shoures of raine, stormes and whirlewinds: from hence arise the most calamities of mortall men, and the continual warre that Nature maketh with her owne selfe. For these grosse exhalations as they mount upward to the heaven, are beaten backe and driven downward by the violence of the starres: and the same againe when they list, draw up to them those matters, which of their owne accord ascend not. For thus we see, that shoures of raine doe fall, foggie mists and light clouds arise, rivers are dried up, haile stormes come downe amaine, the sunne beames doe scorch and burne the ground, yea, and drive it every where to the middle centre: but the same againe unbroken, and not loosing their force, rebound backe and take up with them whatsoever they have drunke up and drawne. Vapours fall from aloft, and the same returne againe on high: winds blow forcibly, and come emptie, but backe they goe with a bootie, and carrie away every thing before them. So many living creatures take their wind and draw breath from above: but the same laboureth contrariwise, and the earth infuseth into the aire a spirit and breath, as if it were cleane void and emptie. Thus whiles Nature goeth too and fro, as forced by some engine, by the swiftnesse of the heaven, the fire of discord is kindled and groweth hot. Neither may thee abide by it, and stand to the fight, but being continually carried away, she rolleth up and downe: and as about the earth shee spreadeth and pitcheth her tents, as it were, with an unmeasurable globe of the heaven, so ever and anon of the clouds she frameth another skie. And this is that region where the winds raigne. And therefore their kingdome principally is there to bee seene, where they execute their forces, and are the cause well neere of all other troubles in the aire. For thunderbolts and flashing lightnings most men attribute to their violence. Nay, more than that, therefore it is supposed that otherwhiles it raineth stones, because they were taken up first by the wind: so as we may conclude, that they cause many like impressions in the aire. Wherefore many matters besides, are to be treated of together.


CHAP. XXXIX.

Of ordinarie and set seasons.

D  T is manifest, that of times and seasons, as also of other things, some causes bee certaine; others, casual and by chaunce; or, such as yet the reason thereof is unknowne. For who need to doubt, that Summers and Winters, and those alternative seasons which wee observe by yearely course, are occasioned by the motion of the Planets. As therefore the Sunnes nature is understood by tempering and ordering the yeare: so the rest of the starres and planets also, have every one their proper and peculiar power, and the same effectuall to shew and performe their owne nature. Some are fruitfull to bring forth moisture, that is turned into liquid raine: others to yeeld an humour either congealed into frosts, or gathered and thickened into snow, or els frozen and hardened into haile: some affourd winds: others warmth: some hote and scorching vapours: some, dewes: and others, cold. Neither yet ought these starres to be esteemed so little as they shew in sight, seeing that none of them is lesse than the Moone: as may appear by the reason of their exceeding heighth. Well then, every one in their owne motion, exercise their severall natures: which appeareth manifestly by *Saturne* especially, who setteth open the gates for raine and shoures to passe. And not onely the seven wandering starres bee of this power, but many of them also that are fixed in the firmament; so often as they bee either driven by the accessse and approach of those Planets, or pricked and provoked by the casting and influence of their beams: like as we find it happeneth in the seven starres called *Sucula*, which the Grecians of raine name *Hyades*, because they ever bring foule weather. Howbeit some, of their owne nature, and at certaine set times doe cause raine; as the rising of the Kids. As for *Arcturus*, he never lightly appeareth without some tempestuous and stormie haile.

CHAP. XL.

The power of the Dog starre.

F  Ho knoweth not, that when the Dog starre ariseth, the heat of the Sunne is fierie and burning? the effects of which starre are felt exceeding much upon the earth. The seas at his rising do rage and take on, the wines in sellars are troubled, pooles also and standing waters doe stirre and move. A wild beast there is in *Ægypt*, called *Orix*, which the *Ægyptians* say, doth stand full against the Dog starre when it riseth,

rifeth, looking wistly upon it, and testifieth after a sort by sneeing, a kind of worship. As for dogs, no man doubteth verily, but all the time of the canicular daies they are most readie to run mad.

CHAP. XLI.

¶ That the starres have their severall influences in sundrie parts of the signes, and at divers times.



Moreover, the parts of certaine signes, have their peculiar force, as appeareth in the equinoctiall of Autumne, and in mid winter; at what time wee perceive, that the Sunne maketh tempests. And this is proved, not onely by raines and stormes, but by many experiments in mens bodies, and accidents to plants in the countrey. For some men are stricken by the Planer, and blasted: others are troubled and diseased at certaine times ordinarily, in their bellie, sinews, head, and mind. The Olive tree, the Aspe or white Poplar, and Willows, turn or writh their leaves about at Midsummer, when the Sun entreth Cancer. And contrariwise, in very Mid-winter, when he entreth Capricorn, the hearb Penyroial floureth fresh, even as it hangs within house drie and readie to wither. At which time all parchments and such like bladders or skins are so pent and stretched with spirit and wind, that they burst with all. A man might marvell hereat, who marketh not by daily experience, that one hearbe called *Heliotropium, regardeth and looketh toward the Sunne ever as he goeth, turning with him at all houres, notwithstanding he be shaddowed under a cloud. Now certaine it is, that the bodies of oysters, muskles, cockles, and all shell-fishes, grow by the power of the Moone, and thereby again diminish: yea, and some have found out by diligent search into Natures secrets, that the fibres or filaments in the livers of rats and mice, answere in number to the daies of the Moones age: also that the least creature of all others, the Pismire, feeleth the power of this Planer, and alwaies in the change of the Moon ceaseth from worke. Certes, the more shame it is for man to be ignorant and unskilfull, especially seeing that hee must confesse, that some labouring beasts have certaine diseases in their eies, which with the Moone doe grow and decay. Howbeit the excessive greatnesse of the heaven and exceeding heighth thereof, divided as it is into 72 signes, maketh for him, & serveth for his excuse. Now these signes are the resemblances of things or living creatures, into which the skilfull Astronomers have with good respect digested the firmament. For example sake, in the taile of Taurus there be seven, which they named in old time *Vergilia*; in the forehead other seven called *Sucula*: and *Boötes* who followeth after the waine, or great Beare *Septentriones*.

*Some take it for Rudor: Wert wort: others for Turn-sol, or the Marygold.

CHAP. XLII.

¶ The causes of raine, showers, winds, and clouds.



Cannot denie, but without these causes there arise raines and winds: for that certaine it is, how there is sent forth from the earth a mist sometimes moist, otherwhiles smokie, by reason of hote vapours and exhalations. Also, that clouds are engendred by vapours which are gone up on high, or els of the aire gathered into a waterie liquor: that they bee thicke, grosse, and of a bodily consistence, wee guesse and collect by no doubtfull argument, considering that they overshaddow the Sunne, which otherwise may be seene through the water, as they know well, that dive to any depth whatsoever.

CHAP. XLIII.

¶ Of Thunder and Lightning.



Enie I would not therefore, but that the fierie impressions from stars above, may fall upon these clouds, such as wee oftentimes see to shoo in cleare and faire weather: by the forcible stroke whereof, good reason it is, that the aire should bee mightily shaken, seeing that arrowes and darts when they are discharged, sing and keepe a noise as they flie. But when they encounter a cloud, there ariseth a vapour with a dissonant sound (like as when a red hot yron maketh

A keth an hissing being thrust into water) and a smokie fume walmeth up with many turnings like waves. Hereupon stormes doe breed. And if this flatuositie or vapour doe struggle and wrestle within the cloud, from thence it commeth that thunderclaps be heard; but if it breake through still burning, then flieth out the thunderbolt: if it bee longer time a struggling; and cannot peirce through, then leames and flashes are seene. With these, the cloud is cloven; with the other, burst in sunder. Moreover, thunders are nothing els but the blows and thumps given by the fires beating hard upon the clouds: and therefore presently the fierie chinkes and rifts of those clouds do glitter and shine. Possible it is also, that the breath and wind elevated from the earth, being repelled backe, and kept downe by the starres, and so held in and restrained within a cloud; may thunder, whiles Nature choketh the rumbling sound, all the while it striveth and quarrelleth; but sendeth forth a cracke when it breaketh out; as wee see in a bladder puffed up with wind. Likewise it may be, that the same wind or spirit whatsoever, is set on fire by fretting and rubbing, as it violently passeth headlong downe. It may also be stricken by the conflict of two clouds, as if two stones hit one against another; and so the leames and flashes sparkle forth. So as all these accidents happen by chance medley, and be irregular. And hereupon come those brutish and vaine lightnings, such as have no naturall reason; but are occasioned by these impressions above-said. With these are mountaines and seas smitten: and of this kind bee all other blasts and bolts that doe no hurt to living creatures. As for those that come from above, and of ordinarie causes, yea, and from their proper starres, they alwaies presage and foretell future events. In like manner as touching the winds, or rather blasts, I would not denie but that they may proceed from a drie exhalation of the earth, void of all moisture: neither is it impossible, but that they doe arise out of waters, breathing and sending out an aire, which neither can thicken into a mist, nor gather into clouds: also they may be driven by the ligation and impulsion of the Sunne, because the wind is conceived to bee nought els but the fluctuation and waving of the aire, and that by many meanes also. For some wee see to rise out of rivers, firths, and seas, even when they be stil and calme: as also others out of the earth, which winds they name *Aliani*. And those verily when they come backe againe from the sea, are called *Tropaei*: if they goe onward, *Apogei*.

CHAP. XLIII.

¶ *What is the reason of the resounding and doubling of the Eccho:*

B Ut the windings of hils, and their often turnings, their many tops, their crests and ridges also bending like an elbow or broken, and arched as it were into shoulders, together with the hollow noukes of vallies, do cut unequally the aire that reboundeth thence fro: which is the cause of reciprocall voices called Ecchoes, answering one another in many places, when a man doth holla or houpe among them.

CHAP. XLV.

¶ *Of winds againe.*

E Now, there be certaine caves and holes which breed winds continually without end: like as that is one which we see in the edge of Dalmatia, with a wide mouth gaping, and leading to a deepe downefall: into which if you cast any matter of light weight, be the day never so calme otherwise, there ariseth presently a stormie tempest like a whirlepuffe. The places name is Senta. Moreover, in the province Cyrenaica there is reported to bee a rocke consecrated to the South-wind, which without prophanation may not be touched with mans hand; but if it be, presently the South wind doth arise and cast up heapes of sand. Also in many houses there be hollow places devised and made by mans hand for receipt of wind, which being enclosed with shade and darke...esse, gather their blasts. Whereby we may see how all winds have one cause or other. But great difference there is betweene such blasts, and winds. As for these, they bee settled and ordinarie, continually blowing; which, not some small tracts & particular places, but whole lands doe feele; which are not light gales, nor stormie pusses, named *Anra* and *Procella*, but simply called Winds, by the Masculine name *Venti*: which whether they arise by the continuall motion of the Heaven, and the contrarie course of the Planets; or whether this wind bee that spirit of Nature that engendreth all things, wandering to and fro as it were in some wombe; or rather

the

The second Booke of

the aire, beaten and driven by the unlike influences and raies of the straying starres or planets, and the multiplicite of their beames: or whether all winds come from their owne starres, namely these planets neerer at hand; or rather fall from them that be fixed in the firmament. Plaine and evident it is, that guided they be by an ordinarie law of Nature, not altogether unknowne, although it be not yet throughly knowne.

CHAP. XLVI.

The natures and observations of the Winds.



He old Greeke writers, not so few as twentie, have set downe and recorded their observations of the Winds. Imervell so much the more, that the world being so at discord, and divided into kingdomes, that is to say, dismembred as it was; so many men have had care to seeke after these things, so intricate and hard to bee found out, and namely in time of warres and amid those places, where was no safe lodging nor abode, and especially when pirates and rovers, common enemies to mankind, held well neere all passages: I mervaile, I say, that at this day each man in his owne tract and countrey taketh more light and true knowledge of some things by their commentaries and bookes, who never set foot there, than they doe by the skill and information of home-borne inhabitants; whereas now in time of so blessed and joyous peace, and under a prince who taketh such delight in the progresse of the State and of all good arts, no new thing is learned by farther inquisition, nay, nor so much as the inventions of old writers are throughly understood. And verily it cannot bee said, that greater rewards were in those daies given, considering that the bountie of fortune was disperfed, and put into many mens hands: and in truth most of these deepe clearkes and learned men, fought out these secrets for no other reward or regard, than to doe good unto posteritie. But now, mens manners are waxen old and decay; now, all good customes are in the waine: and notwithstanding that the fruit of learning bee as great as ever it was, and the recompence as liberall, yet men are become idle in this behalfe. The seas are open to all, an infinite multitude of Sailers have discovered all coasts whatsoever, they saile through and arrive familiarly at every shore: all for gaine and lucre, but none for knowledge and cunning. Their minds altogether blinded, and bent upon nothing but covetousnes, never consider that the same might with more safetie be performed by skill and learning. And therefore seeing there be so many thousand poore sailers that hazard themselves on the seas, I will treat of the Winds more curiously and exquisitly than perhaps becometh the present worke that is begun.

CHAP. XLVII.

Many sorts of Winds.



En in old time observed foure Winds only, according to so many quarters of the world (and therefore *Homer* nameth no more:) a blockish reason this was, as soone after it was judged. The Age ensuing, added eight more; and they were on the other side in their conceit too subtile and concise. The Moderne sailers of late daies, found out a meane betweene both: and they put unto that short number of the first, foure winds and no more, which they tooke out of the later. Therefore every quarter of the heaven hath two winds apeece. From the equinoctiall sunne-rising bloweth the East wind *Subsolanus*: from the rising thereof in Mid-winter, the Southeast *Vulturnus*. The former of these twaine the Greekes call *Apeliotes*, and the later *Eurus*. From the mid day, riseth the South wind: and from the sunne-setting in mid-winter the Southwest, *Africus*. They also name these two, *Notus* and *Libs*. From the equinoctiall going downe of the Sunne, the West wind *Favonius* commeth: but from that in Summer season, the Northwest *Caurus*: and by the same Greekes they are teamed *Zephyrus* and *Argesfes*. From the North-waine or pole Arctike, bloweth the North wind *Septentrio*: betweene which and the Sunne rising in Summer, is the Northeast wind *Aquilo*, named *Aparctias* and *Boreas* by the Greekes. A greater reckoning than this for number, is brought in by some, who have thrust in foure more betweene; namely, *Thracias* betweene the North and the Summer setting of the Sunne: in like manner

Cecias

A *Cacias* in the middest betweene the Northeast *Aquilo*, and that of the Sunne rising in the equinoctiall *Sub-solanus*. Also, after the Sunne rising in Summer, *Phaniceas* in the middest, betweene the Southeast and the South. Last of all, betweene the South and the Southwest, *Lybonotus*, just in the middest, compounded of them both, namely, betweene the Noone steed, and the Sun setting in Winter. But here they could not lay a straw, and see to make an end. For others have set one more yet, called *Mese*, betweene the Northeast wind *Boreas*, and *Cacias*: also *Euronotus*, betweene the South and the Southwest winds. Besides all these, there be some Winds appropriate and peculiar to every nation, which passe not beyond one certaine tract and region: as namely *Seyros* among the Athenians, declining a little from *Argestes*; a Wind unknowne to other parts of Greece. In some other place it is more aloft; and the same then is called *Olympias*, as comming from the high hill *Olimpus*. But the usuall and customable manner of speech, understandeth by all these names *Argestes* only. Some call *Cacias*, by the name of *Hellespontias*: and give the same Winds in fundrie places divers names. In the province likewise of *Narbone*, the most notorious Wind is *Circius*, and for violence inferiour to none, driving directly before it very often, the current at *Ostia* into the *Ligurian* sea. The same wind is not onely unknown in al other climates of the heaven, but reacheth not so much as to *Vienna*, a citie in the same province. As great & boisterous a wind as he is otherwise, yet, a restraint he hath before he come thither, and is kept within few bounds by the opposition of a meane and small hill. *Fabianus* also avoucheth, that the South winds enter not so farre as into *Ægypt*. Whereby, the law of Nature sheweth it selfe plainly, that even Winds have their times and limits appointed.

C To proceed then, the Spring openeth the Sea for sailers: in the beginning whereof, the West Winds mitigate the winter weather, at what time as the Sun is in the 25 degree of *Aquarius*, and that is the sixt day before the Ides of *Februarie*. And this order holdeth in manner with all other winds, that I will set down one after another: so that in every leap yeer ye anticipate & reckon one day sooner, and then againe keepe the same rule throughout all the foure years following. Some call *Favonius* (which beginneth to blow about the seventh day before the Calends of *March*) by the name of *Chelidonius*, upon the sight of the first swallows: but many name it *Orinthias*, comming the 71 day after the shortest day in Winter; by occasion of the comming of birds: which wind bloweth for nine daies. Opposite unto *Favonius* is the Wind which we called *Sub-solanus*. Unto this Wind is attributed the rising of the *Vergilie* or seven stars, in as many degrees of *Taurus*, sixe daies before the Ides of *May*; which time is a southerly constitution: and to this Wind the North is contrarie. Moreover, in the hottest season of the Summer, the Dog-stare ariseth, at what time as the Sun entred into the first degree of *Leo*, which commonly is the fifteenth day before the Calends of *August*. Before the rising of this Starre for eight daies space or thereabout, the Northeast winds are aloft, which the Greekes call *Prodromi*, i. forerunners. And two daies after it is risen, the same winds hold still more stiffely, and blow for the space of fortie daies, which they name *Ebelsie*. The Sunnes heat, redoubled by the hotnesse of that starre, is thought to be assuaged by them: and no winds are more constant, nor keepe their set times better than they. Next after them come the Southerne winds againe, which are usuallly up, untill the Starre *Arcturus* riseth, and that is nine daies before the Æquinoctiall in *Autumne*. With it entereth *Corus*,

D and thus *Corus* beginneth the *Autumne*. And to this *Vulturinus* is contrarie. A fier that equinoctiall, about foure and fortie daies, the *Vergilie* goe down, and begin Winter, which season usuallly falleth upon the third day before the Ides of *November*. This is the Winter Northeast wind, which is farre unlike to that in Summer, opposite and contrarie to *Africus*. Now, a seven-night before the Mid-winter day, and as much after, the sea is alliaied and calme for the sitting and hatching of the birds *Halciones*, whereupon these daies tooke the name *Alcionis*: the time behind, plaieth the part of Winter. And yet these boisterous seasons full of tempests, shut not up the sea: for pyrates and rovers at the first forced men with present perill of death, to run headlong upon their death, and to hazard themselves in Winter seas; but now a daies covetousnesse causeth men to doe the like.

E The coldest winds of all other, be those which we said to blow from the North pole, and together with them their neighbour, *Corus*. These winds doe both allay and still all others, and also scatter and drive away clouds. Moist winds are *Africus*, and especially the South wind of *Italie*, called *Auster*. Men report also, that *Cacias* in *Pontus* gathereth and draweth to it selfe clouds. *Corus* and *Vulturinus*, are drie, but onely in the end when they give over. The Northeast and the North,

North, engender snow. The North wind also bringeth in haile, so doth *Caurus*. The South wind is exceeding hote and troublous withall. *Fulturnus* and *Favonius* bee warme. They also bee drier than the East: and generally all winds from the North and West, are drier than from the South and East. Of all winds the Northerne is most healthfull: the Southerne wind is noisome, and the rather when it is drie; haply, because that when it is moist, it is the colder. During the time that it bloweth, living creatures are thought to bee lesse hungrie. The *Etesie* give over ordinarily in the night, and arise at the third houre of the day. In Spaine and Asia they blow from the East: but in Pontus, from the North: in other quarters, from the South. They blow also after the Mid-winter, when they be called *Oribia*; but those are more mild, and continue fewer daies. Two there be that change their nature together with their site and place: The South wind in Affricke bringeth faire weather, and the North wind there is cloudie. All winds keepe their course in order for the more part, or els when one ceaseth, the contrarie beginneth. When some are laid, and the next to them doe arise, they goe about from the left hand to the right, according to the Sunne. Of their manner and order monthly, the prime or fourth day after the change of the Moone, doth most commonly determine. The same winds will serve to saile contrarie waies, by meanes of setting out the sailes: so as many times in the night, ships in sailing run one against another. The South wind raiseth greater billowes and more surging waves than the North: for that the South wind ariseth below from the bottome of the sea; the other blustereth aloft, and troubleth the top of the water. And therefore after Southerne winds, earthquakes are most hurtfull. The South wind in the night time is more boisterous, the Northerne wind in the day. The winds blowing from the East, hold and continue longer than those from the West. The Northren winds give over commonly with an odde number: which observation serverth to good use in many other parts of naturall things, and therefore the male winds are judged by the odde number. The Sun both raiseth and also laieth the winds. At rising and setting he causeth them to be aloft: at noone-tide, he represseth and keepeth them under, in Summer time. And therefore at mid-day or midnight commonly the winds are downe and lie still, for both cold and heat if they be immoderate, doe spend and consume them. Also raine doth lay the winds: and most commonly from thence they are looked for to blow, where clouds breake and open the skie to be seene. And verily *Eudoxus* is of opinion (if wee list to observe the least revolutions) that after the end of every fourth yeere, not onely all winds, but other tempests and constitutions also of the weather, returne againe to the same course as before. And alwaies the Lustrum or computation of the five yeers, beginneth at the leape year, when the Dog star doth arise. And thus much concerning general winds.

CHAP. XLVIII.


Of suddaine blasts.

Now will we speake of suddaine blasts: which being risen (as hath beene said before) by exhalations of the earth, and cast downe againe; in the meane while appeare of many fashions, enclosed within a thin course of clouds newly overcast. For such as be unconstant, wandering, and rushing in manner of land floods (as some men were of opinion, as wee have shewed) bring forth thunder and lightening. But if they come with a greater force, sway, and violence, and withal burst and cleave a drie cloud asunder al abroad, they breed a storm, which of the Greekes is called *Ecnephas*: but if the clift or breach bee not great, so that the wind be constrained to turn round, to rol and whirle in his discent, without fire, that is to say lightning, it makes a whirlepuffe or ghust called *Typhon*, that is to say, the storm *Ecnephas* aforesaid, sent out with a winding violence. This takes with it a peece broken out of a congealed cold cloud, turning winding, and rolling it round, and with that weight maketh the owne fall more heavie, and changeth from place to place with a vehement and suddaine whirling. The greatest danger and mischief that poore sailers have at sea, breaking not onely their crosse saile-yards, but also writhing and bursting in peeces the very ships: and yet a smal matter is the remedie for it, namely, the casting of vinegre out against it as it commeth, which is of nature most cold. The same storme beating upon a thing, is it selfe smitten backe againe with a violence, and snatcheth up whatsoever it meeteth in the way aloft into the skie, carrying it backe, and swallowing it up on high. But if it breake out from a greater hole of the said cloud, by it so borne downe, and yet not altogether so broad, as the abovenamed storme *Procella* doth, nor without a cracke; they call this boisterous wind

A wind *Turbo*, casting downe and overthrowing all that is next it. The same, if it be more hote and catching a fire as it rageth, is named *Prester*; burning, and withall laying along, whatsoeuer it toucheth and encountreth.


CHAP. XLIX.

Other enormous kinds of Tempests.

B  *Typhon* commeth from the North, ne yet any *Ecephias* with Snow, or while Snow lieth on the ground. This tempestuous wind, if when it brake the cloud burned light withall, hauing fire of the owne before, and caught it not afterward, it is verie lightning; and differeth from *Prester*, as the flame from a cole of fire. Againe, *Prester* spreadeth broad with a flash and blast; the other gathereth round with forcible violence. *Typhon* moreouer or *Vortex*, differeth from *Turben* in flying backe: and as much as a crash from a cracke. The storme *Procella* from them both, in breadth: and to speake more truly, rather scattereth than breaketh the cloud. There riseth also upon the Sea, a darke mist, resembling a monstrous beast; and this is euer a terrible cloud to the sailers. Another likewise called a *Column* or *Pillar*, when the humour and water ingendred, is so thicke and stiffe congealed, that it standeth compact of it selfe. Of the same sort also is that cloud which draweth water to it, as it were into a long pipe.


CHAP. L.

In what Lands lightnings fall not.

C  *W*inter and Summer seldome are there any lightnings, and that is long of contrarie causes: because in winter the aire is driuen close together, and thickened with a deeper course of clouds: besides, all the exhalations breathing and rising out of the earth being starke, congealed, and frozen hard, doe extinguish cleane what fierie vapour soeuer otherwise they receiue: which is the reason that *Scythia* and other cold frozen quarters thereabout, are free from lightnings. And *Aegypt* likewise upon the contrarie cause, and exempt from lightnings; namely, exceeding heat: for the hote and drie exhalations of the earth, gather into very slender, thin, and weake clouds. But in the Spring, and Autumne, lightnings are more rise; because in both those seasons, the causes as well of Summer as Winter, are confused and corrupt. And this is the reason also, that lightnings are common in our *Italie*; for that the aire being more moveable and wauering, by reason of a kinder *W*inter and a cloudie Summer, is alwaies of the temperature of Spring or Autumne. In those parts also of *Italie* which lie off from the North, and encline to warmth, (as namely in the tract about *Rome* and *Campania*) it lighteneth in *W*inter and Summer alike, which happeneth in no other part thereof.

CHAP. LI.

Sundry sorts of Lightnings, and Wonders thereof.

E  *V*erie many kinds of Lightnings are set downe by Authours. Those that come drie, burne not at all, but onely dissipate and disperse. They that come moist, burne not neither, but blast things, and make them looke duskyish. Now a third kind there is, which they call *Bright* and *Cleare*, and that is of a most straunge and wonderfull nature; whereby tunnes and such like vessels are drawne drie, and their sides, hoopes, and heads, neuer toucht therewith or hurt, nor any other shewe and token thereof is left behind: *Gold*, *copper*, and *siluer* money is melted in the bagges, and yet the verie bagges no whit scortched, no nor the waxe of the scale hurt and defaced, or put out of order. *Maria* a noble Ladie of *Rome* being great with child, was strucke with lightning: the child shee went withall was killed within her, and shee without any harme at all lived still. Among the *Catiline* prodigies it is found upon record, that *M. Herennius* (a Counsellor and States-man of the incorporate towne *Pompeianum*) was in a faire and cleare day smitten with lightning.



The auncient Tuscans by their learning doe hold, that there be nine gods that send forth Lightnings, and those of eleven sorts: for *Iupiter* (say they) casteth three at once. The Romanes haue obserued two of them, and no more; attributing those in the day time to *Iupiter*: and them in the night, to *Summanus* or *Pluto*. And these verily be more rare, for the cause afore-named; namely, the coldnesse of the aire above. In Hetruria, they suppose that lightnings breake also out of the earth, which they call *Inferna*, i. Infernall; and such be made in mid-winter. And these they take to be terrene and earthly, and of all most mischieuous and execrable: neither be those generall and vniuersall lightnings, nor proceeding from the starres, but from a verie neare and more troubled cause. And this is an evident argument for distinction, that all such as fall from the upper skie about, strike assant and side-wise: but those which they call earthly, finite straight and directly. But the reason why these are thought to issue forth of the earth is this; because they fall from out of a matter nearer to the earth, for as much as they leaue no markes of a stroke behind: which are occasioned by force not from beneath, but coming full against. Such as haue searched more subtiltie into these matters, are of opinion, that these lightnings come from the Planet *Saturne*, like as the burning lightning from *Mars*: And with such lightning was *Volsinij* (a most wealthy cittie of the Tuscans) burnt full and whole to ashes. Moreover, the Tuscans call those lightnings Familiar, which presage the fortune of some race, and are significant during their whole life: and such are they that come first to any man, after he is newly entred into his owne patrimonie or familie. Howbeit, their judgement is, that these private lightnings are not of importance and fore-tokening above ten yeeres; unlesse they happen either upon the day of first marriage, or of wedding. As for publicke lightnings, they be not of force above 30 yeeres, except they chaunce at the very time that townes or colonies be erected and planted.



It appeareth vpon record in Chronicles, that by certaine sacrifices and prayers, Lightnings may be either compelled or easily entreated to fall upon the earth. There goeth a report of old in Hetruria, that such a lightning was procured by exorcisms and conjurations, when there entred into the cittie *Volsinij* (after all the territory about it was destroyed) a monster, which they named *Volta*. Also, that another was raised and conjured by *Porfenna* their King. Moreover, *L. Piso* (a writer of good credit) reporteth in his first booke of *Annales*, that *Numa* before him practised the same feat many a time and often: and when *Tullus Hostilius* would haue imitated him and done the like (for that he obserued not all the ceremonies accordingly) was himselfe stricke and killed with lightning. And for this purpose, sacred groues we haue and altars, yea and certaine sacrifices due thereto. And among the *Iupiters* furnamed *Statores*, *Tonantes*, and *Feretrii*, we haue heard that one also was called *Elicius*. Sundry and diuers are mens opinions as touching this point, and euery man according to his owne liking and fanisie of his mind. To beleue that Nature may be forced and commaunded, is a very audacious and bold opinion: but it is as blockish on the other side and senselesse, to make her benefits of no power and effect; considering that in the interpretation of Lightning, men haue thus farre forth proceeded in skill and knowledge, as to foretell when they will come at a set and prescript day: and whether they will fordoe and frustrate the daungers pronounced, or rather open other destinies, which lie hidden: and an infinite sort of publicke and privat experiments of both kinds are to be found. And therefore (since it hath so pleased Nature) let some men be resolved herein, and others doubtfull: some may allow thereof, and others condemne the same. As for us, we will not omit the rest which in these matters are worth remembrance.




That the Lightning is seene before the thunderclap is heard, although they come indeed joyntly both together, it is certainly knowne. And no marveile, for the eye is quicker to see light, than the eare to heare a sound. And yet Nature doth so order the number and measure,

A measure, that the stroke and the sound should accord together. But when there is a noise, it is a signe of the lightning proceeding of some naturall cause, and not sent by ~~some~~ God: and yet evermore this is a breath or wind that commeth before the thunderbolt: and hereupon it is, that every thing is shaken and blasted ere it be smitten: neither is any man stricken, who either saw the lightning before, or heard the thunderclap. Those lightnings that are on the left hand, be supposed to be luckie and prosperous, for that the East is the left side of the world: but the coming therof is not so much regarded as the returne; whether the fire leape back after the stroke given; or whether after the deed done and fire spent, the spirit and blast abovesaid, retire backe againe. In that respect the Tuscanes have devided the Heaven into 16 parts. The first, is from the North to the Sunnes rising in the Equinoctiall line: the second, to the Meridian line, or the

B South: the third, to the Sunne setting in the Equinoctiall: and the fourth, taketh up all the rest from the said West to the North starre. These quarters againe they have parted into 4 regions apeece: of which 8 from the Sun-rising, they called the Left; and as many againe from the contrary part, the Right. Which considered, most dreadfull and terrible are those lightnings, which from the Sunne-setting reach into the North: and therefore it skilleth very much, from whence lightnings come, and whither they goe: the best thing observed in them is, when they returne into the Easterly parts. And therefore, when they come from that first and principall part of the skie, and have recourse againe into the same, it is holden for passing good hap: and such was the signe and token of victories given (by report) to *Sylla* the Dictatour. In all other parts of the clement, they be lesse fortunate or fearfull. They that haue written of these matters, have delivered in writing, that there be lightnings, which to utter abroad is held unlawfull; as also to give eare unto them, if they be disclosed, unlesse they be declared either to parents, or to a friend and guest. How great the vanitie is of this observation, was at Rome, upon the blasting of *Juno's* temple, found by *Scavrus* the Consull, who soone after was President of the Senat. It lightneth without thunder, more in the night than day time. Of all creatures that have life and breath, man onely it doth not alwaies kill; the rest, it dispatcheth presently. This priviledge and honour, wee see Nature hath given to him; whereas otherwise so many great beasts surpasse him in strength. All other creatures smitten with lightning, fall downe upon the contrarie side; man onely (unlesse he turne upon the parts stricken) dyeth not. Those that are smitten from above upon the head, stie downe and sinke directly. Hee that is stricken watching, is found dead with his eyes winking and close shut: but whosoever is smitten sleeping, is found open eyed. A man thus coming by his death, may not by law be burned: Religion hath taught, that hee ought to be enterred and buried in the earth. No living creature is set a fire by lightning, but it is breathlesse first. The wounds of them that be smitten with thunderbolts, are colder than all the bodie besides.


CHAP. LV.

¶ *What things are not smitten with Lightning.*

E  All those things which growe out of the earth, Lightning blasteth not the Laurell tree; nor entureth at any time above five foot deepe into the ground: and therefore, men fearfull of lightning, suppose the deeper caves to be the surest and most safe: or els booths made of skines of sea-bealts, which they call Seales, or Sea calves; for of all creatures in the sea, this alone is not subject to the stroke of lightning: like as of all flying foules the *Ægle*, (which for this cause is imagined to be the armour-bearer of *Jupiter*, for this kind of weapon.) In Italie betweene *Tarracina* and the temple of *Feronia*, they gave over in time of warre, to make towres and forts; for not one of them escaped, but was overthrowne with lightning.

CHAP. LVI.

¶ *Of strange and prodigious raine, to wit, of Milke, Blood, Flesh, Iron, VVool, Tyles, and Bricks.*

B  Besides these things above, in this lower region under Heaven, we find recorded in monuments, that it rained milke and blood, when *M. Acilius* and *C. Porcius* were Consuls. And many times els besides it rained flesh, as namely, whiles *L. Volturnus* and *Serv. Sulpitius*

pitius were Consuls: and looke what of it the foules of the aire caught not up nor carried away, it never putrified. In like manner, it rained yron in the Lucanes countrey, the yeere before that *M. Crassus* was slaine by the Parthians, and together with him all the Lucanes his souldiers, of whome there were many in his armie. That which came downe in this raine, resembled in some sort Sponges: and the *Wifards* and *Soothsayers* being sought unto, gave warning to take heed of wounds from above. But in the yeere that *L. Paulus* and *C. Marcellus* were Consuls, it rained wooll about the castle *Carissa*, neare to which a yeare after, *T. Annius Milo* was slaine. At the time that the same *Milo* pleaded his owne cause at the barre, there fell a raine of tyles and bricks, as it is to be seene in the records of that yeere.

CHAP. LVII.

Of the rustling of Armour and sound of Trumpets heard from Heaven.

IN the time of the Cimbrian warres, we have been told, that Armour was heard to rustle, and the Trumpet to sound out of Heaven. And this happened very often both before and after those warres. But in the third Consulship of *Marius*, the Amerines and *Turdertes* saw men in armes in the skie, rushing and running one against another from the East and West; and might behold those of the West discomfited. That the very firmament it selfe should be of a light fire, it is no marvaile at all; for often times it hath been seene, when clouds have caught any greater deale of fire.

CHAP. LVIII.

Of Stones falling downe from the skie.

AMong the Greekes there is much talke of *Anaxagoras Clazomenius*, who by his learning and skill that he had in Astronomie, foretold in the second yeere of the 78 Olympias, what time a stone should fall from out of the Sunne: and the same happened accordingly in the day time, in a part of Thracia neere the river *Aegos*; which stone is shewed at this day as bigge as a waine load, carrying a burnt and adust colour: at what time as a comet or blazing starre also burned in those nights. Which if any man beleeve that it was fore-signified, must needs also confesse, that this divinitie or fore-telling of *Anaxagoras* was more miraculous and wonderfull than the thing it selfe: and then farewell the knowledge of Natures workes, and welcome confusion of all, in case we should beleue that either the Sunne were a stone, or that ever any stone were in it. But, that stones fall often times downe, no man will make any doubt. In the publicke place of Exercise in *Abydos*, there is one at this day upon the same cause preserved and kept for to be seene, and held in great reverence: It is but of a meane and small quantitie, yet it is that which the selfesame *Anaxagoras* (by report) fore-signified that it should fall in the mids of the earth. There is one also at *Cassandria*, which was in old time usually called *Poridæa*, a colonie from thence deducted. I my selfe have seene another in the territorie of the *Vocantians*, which was brought thither but a little before.

CHAP. LIX.

Of the Rainebow.

THose which wee call Rainebowes, are seene often without any wonder at all, or betokening any great matter: for they portend not so much as rainy or faire daies, to trust upon. But manifest it is, that the Sunne beames striking upon an hollow cloud, when their edge is repelled, are beaten backe against the Sunne: and thus ariseth varietie of colours by the mixture of clouds, aire, and fiery light together. Certes, they neuer are knowne but opposite to the Sunne; nor at any time otherwise than in forme of a Semicircle: ne yet in the night season, although *Aristotle* saith there was a Rainebow seen by night: howbeit he confesseth, that it could not possibly be but at the full of the moone. Now they happen for the most part in winter, namely, from the Autumne Equinoctiall, as the daies decrease and waxe shorter. But as daies growe longer againe, that is to say, after the Spring Equinoctiall, they be not seen no more than about the summer Sunstead, when daies are at longest. But in *Bruma*, that is to say, when they be shortest,

A rest, they chauce very often. The same appeare aloft, when the Sunne is low; and below, when he is aloft. Also, they be of narrower compasse, when the Sunne either riseth or setteth, but their body spreadeth broad: and at noone narrower it is and small, yet greater and wider in circumference. In Summer time they be not seene about noon-tide, but after the Autumne Equinoctiall, at all houres; and never more at once than twaine. The rest of the same nature, I see few men doe make any doubt of.

CHAP. LX.

Of Haile, Snow, Frost, Mist, and Dew.

HAile is ingendred of Raine congealed into an Ice: and Snow of the same humor growne together, but not so hard. As for Frost, it is made of dewe frozen. In winter Snowes fall, and not Haile. It haileth oftner in the day time than in the night, yet haile sooner melteth by farre than snow. Mists be not seene neither in Summer, nor in the cold weather. Dewes shew not either in frost, or in hote seasons; neither when winds be up, but only after a calme and cleere night. Frostes drie up wet and moisture; for when the yce is thawed and melted, the like quantitie of water in proportion is not found.

CHAP. LXI.

Of the Shapes of Clouds.

SVndry colours and diuers shapes are seene in clouds, according as the fire intermingled therein, is either more or lesse.

CHAP. LXII.

Of the properties of weather in diuers places.

Moreover, many properties there be of the Weather, peculiar to certaine places: the nights in Africke, be dewie in winter. In Italie, about Locri and the lake Velinus, there is not a day but a Rainbow is seene. At Rhodes and Syracusæ, the aire is never so dimme and cloudie, but one houre or other the Sunne shineth out. But such things as these shall be related more fitly in due place. Thus much of the Aire.

CHAP. LXIII.

Of Earth and the nature thereof.

THe Earth followeth next: unto which alone of all parts of the world, for her singular benefites wee have given the reverent and worshipfull name of Mother. For like as the Heaven is the (mother) of God, even so is she of men. She it is that taketh us when we are comming into the world, nourisheth us when we are new born: and once being come abroad, ever sustaineth & beareth us up: and at the last when we are rejected and forlorne of all the world besides, she embraceth us: then most of all other times, like a kind mother, she covereth us all over in her bosome: by no merit more sacred than by it, wherewith she maketh us holy and sacred; even bearing our tumbes, monuments, and titles, continuing our name, and extending our memorie, thereby to make recompence and weigh against the shortnesse of our age: whose last power wee in our anger wish to be heaue unto our enemy, and yet she is heaue to none, as if we were ignorant that she alone is never angry with any man. Waters ascend up, and turn into clouds, they congeale and harden into haile, swell they doe into waves and billowes, and downe they haste headlong into brookes and land floods. The aire is thickened with clouds, and rageth with winds and stormes. But she is bountifull, mild, tender over us and indulgent, readie at all times to attend and wait upon the good of mortall men. See what she breeds being forced! nay, what she yeeldeth of her owne accord! what odoriferous smells, and pleasant favours! what wholesome iuices and liquours, what soft things to content our feeling, what lovely colours doth shee give to please our eie, how faithfully and justly doth shee repay with usurie that which was lent and credited out unto her! Finally, what store of all things doth shee feed and nourish for our sake! Alas

poore wretch, pestiferous and hurtfull creatures, when the vitall breath of the aire was too blame to give them life, shee could not otherwise chuse but receive them, after they were sowne in her; and being once engendred and bred, keepe and maintaine them. But in that they proved afterwards bad and venomous, the fault was to bee laid upon the parents that engendred them, and not to bee imputed unto her. For, shee entertaineth no more a venomous serpent after it hath stung a man: nay, more than that, shee requireth punishment, for them that are slow and negligent of themselves to seeke it. Shee it is that bringeth forth medicinable hearbes, and evermore is in travaile to be delivered of some thing or other, good for man. Over and besides, it may be thought and beleevd, that for very pittie of us she ordained and appointed some poisons, that when wee were wearie of our life, cursed famine (most adverse and croffe of all other to the merits of the earth) should not consume and waft us with languishing and pining consumption, and so procure our death; that high and steepe rocks should not dash and crush our bodies in peeces; nor the overthwart and preposterous punishment by the halter, wreath our neckes, and stop that vitall breath, which we seeke to let out and be rid of: last of all, that we might not worke our owne death in the deepe sea, and being drowned, feed fishes, and be buried in their bellies, ne yet the edge and point of the sword cut and pierce our bodie, and so put us to dolorous paine. So that it is no doubt, but in a pittifull regard and compassion of us, she hath engendred that poyson, by one gentle draught whereof, going most easily downe, wee might forgoe our life, and die without any hurt and skin broken of our bodie, yea, and diminish no one drop of blood: without greevous paine, I say, and like onely to them who be athirst: that being in that manner dead, neither foule of the aire, nor wild beast prey upon or touch our bodies, but that he should be reserved for the earth, who perished by himselfe and for himselfe: and, to confesse and say the troth, the earth hath bred the remedie of all miseries, howsoever we have made it a venome and poison to our life. For after the like sort we employ yron and steele, which wee cannot possibly bee without. And yet we should not doe well and justly to complaine, in case she had brought it forth for to doe hurt and mischeefe. Now surely to this onely part of Nature and the world, wee are unthankfull, as though shee served not mans turne for all dainties; not for contumelie and reproch to bee misused. Cast shee is into the sea, or els to let in peeres and frithes, eaten away with water. With yron tooles, with wood, fire, stone, burdens of corn tormented shee is every houre: and all this much more to content our pleasures and wanton delights than to serve us with naturall food and necessarie nourishment. And yet, these misusages which shee abideth above, and in her outward skin, may seeme in some sort tollerable. But wee, not satisfied therewith, peirce deeper and enter into her very bowels, wee search into the vaines of gold and silver, wee mine and dig for copper and lead mettals. And for to seeke out gemmes and some little stones, we strike pits deep within the ground. Thus wee plucke the very heart-strings out of her, and all to weare on our finger one gemme or pretious stone, to fulfill our pleasure and desire. How many hands are worne with digging and delving, that one joint of our finger might shine againe. Surely, if there were any devils or infernal spirits beneath, ere this time verily these mines (for to feed covetousnes and riot) would have brought them up above ground. Marvaile we then, if she hath brought forth some things hurtfull and noisome? But savage beasts (I well thinke) ward and save her, they keep sacrilegious hands from doing her injurie. Nay ywis it is nothing so. Dig wee not amongst dragons and serpents? and together with veines of gold, handle we not the roots of poisoned and venomous hearbes? Howbeit, this goddesse wee find the better appaied and lesse discontented for all this misusage, for that the end and issue of all this wealth, tendeth to wickednesse, to murder and warres, and her whome wee drench with our blood, wee cover also with unburied bones. Which neverthelesse, as if shee did reprove and reproch us for this rage and furie of ours, shee her selfe covereth in the end, and hideth close even the wicked parts of mortall men. Among other imputations of an unthankfull mind, I may well count this also, That wee bee ignorant of her nature.

CHAP. LXIII.

Of the forme of the earth.



He first and principall thing that offereth it selfe to bee considered, is her figure, in which by a generall consent we doe all agree. For surely wee speake and say nothing more commonly, than the round ball of the earth; and confesse that it is a globe enclosed within two poles. But yet the forme is not of a perfect and absolute roundle, considering so great heighth

of

A of hills, & such plains of downs: howbeit, if the compasse thereof might be taken by lines, the ends of those lines would meet just in circuit, and prove the figure of a just circle. And this the very consideration of naturall reason doth force and convince, although there were not those causes which we alleadged about the heaven. For in it the hollow bending convexitie boweth and beareth upon it selfe, and every way resteth upon the centre thereof, which is that of the earth. But this, being solid and close compact, ariseth still like as if it swelled, stretching and growing without forth. The heaven bendeth and inclineth toward the centre, but the earth goeth from the centre, whiles the world with continuall volubilitie and turning about it, driveth the huge and excessive globe thereof into the forme of a round ball.

CHAP. LXV.

Of the Antipodes, whether there be any such. Also of the roundnesse of water.



Much ado there is here, and great debate betweene learned men; and contrariwise those of the leaud and ignorant multitude: for they hold, that men are overspread on all parts upon the earth, and stand one against another, foot to foot: also that the Zenith or point of the Heaven is even and alike unto all: and in what part soever men be, they go still and tread after the same manner in the middes. But the common sort, aske the question and demaund, How it happeneth that they opposite just against us, fall not into Heaven? as if there were not a reason also readie, That the Antipodes againe should marvaile why we fell not downe? Now there is reason that commeth betweene, carrying a probabilitie with it even to the multitude, were it never so blockish and unapt to learne; That in an uneven and unequal Globe of the Earth, with many ascents and degrees, as if the figure thereof resembled a Pine apple, yet neverthelesie it may be well enough inhabited all over in every place. But what good doth all this, when another wonder as great as it ariseth? namely, That it selfe hangeth, and yet falleth not together with us: as if the power of that Spirit especially which is enclosed in the World, were doubted: or that any thing could fall, especially when Nature is repugnant thereto, and affordeth no place whither to fall: for like as there is no seat of Fire, but in fire; of Water, but in water; of Aire and Spirit, but in aire; even so, there is no roome for Earth but in earth, seeing all the Elements besides, are readie to put it backe from them. Howbeit, wonderfull it remaineth still, How it should become a Globe, considering so great flatnesse of Plaines and Seas? Of which doubtrfull opinion, *Dicearchus* (a right learned man as any other) is a favourer; who, to satisfie the curious endeavors of Kings and Princes, had a charge and commission to levell and take measure of mountaines: of which he said, that Pelion the highest, was a mile and a halfe high by the plumb rule; and collected thereby, that it was nothing at all to speake of, in comparison of the universall rotunditie of the whole. But surely in my conceit, this was but an uncerteine guesse of his, since that I am not ignorant, that certaine tops of the Alpes, for a long tract together, arise not under fiftie miles in heighth.

E But this is it that troubleth the vulgar sort most of all, if they should be forced to beleve, that the forme of water also, gathereth round in the top. And yet there is nothing in the whole world more evident to the sight, for the drops every where not onely as they hang, appeare like little round bals, but also if they light upon dust, or rest upon the hairie downe of leaves, we marke to keepe a perfect and exquisite roundnesse. Also in cups that are filled brim full, the middle part in the top swell most. Which things, considering the thinnesse of the humour, and the softnesse thereof setting flat upon it selfe, are sooner found out by reason than the eie. Nay, this is a thing more wonderfull, that when cups are filled to the full, put never so little more liquor thereto, the overplus will run over all about: but contrariwise it falleth out, if you put in any solide weights, yea, and it were to the weight of twentie deniers or French crownes in a cup. Forsooth the reason is this, that things received within forth, lift up the liquor aloft to the top, but poured upon the tumour that beareth aloft above the edges, must needs glide off and run by. The same is the reason why the land cannot be seene by them that stand upon the hatches of the ship, but verie plainly at the same time from the top of the mastes. Also as a ship goeth asarre off from the land, if any thing that shineth and giveth light bee fastened to the top-gallant, it seemeth from the land side to goe downe and sinke into the sea by little and little, untill at last it bee hidden cleane.

cleane. Last of all, the very Ocean, which we confesse to bee the utmost and farthest bound envi-
 toning the whole globe, by what other figure els could it hold together and not fall downe, since
 there is no banke beyond it to keepe it in? And even this also commeth about to bee as great a
 wonder, how it commeth to passe, although the sea grow to be round, that the utmost edge ther-
 of falleth not downe? Against which, if that the seas were even, flat, and plaine, and of that forme
 as they seeme to be, the Greeke Philosophers to their owne great joy and glorie doe conclude:
 & prove by Geometrical subtil demonstration, that it cannot possibly be that the water should
 fall. For seeing that waters run naturally from aloft to the lower parts, and that all men confesse,
 that this is their nature, and no man doubteth that the water of the sea, came ever in any shore so
 farre as the devexitie would have suffered: doubtlesse it appeareth, that the lower a thing is, the
 neerer it is to the centre; and that all the lines which from thence are sent out to the next waters,
 are shorter than those which from the first waters reach to the utmost extremity of the sea. Here-
 upon the whole water, from every part thereof, bendeth to the centre, and therefore falleth not
 away, because it inclineth naturally to the inner parts. And this we must beleieve, that Nature the
 workemaistris framed and ordained so, to the end that the earth, which being drie, could not by it
 selfe alone without some moisture, keepe any consistence; and the water likewise could not abide
 and stay, unlesse the earth upheld it: in which regard they were mutually to embrace one ano-
 ther, and so be united, whiles the one opened all the creekes and noukes, and the other ran whol-
 ly into the other, by the meanes of secret veines within, without and above, like ligaments to clasp
 it, yea, & so break out at the upmost tops of the hills: whether being partly carried by a spirit, and
 partly expressed forth by the ponderositie of the earth, it mounteth as it were in pipes: and so far
 is it off from danger of falling away, that it leapeth up to the highest and loftiest things that bee.
 By which reason it is evident also, why the seas swell not and grow, notwithstanding so many ri-
 vers daily run into them.

CHAP. LXVI.

How the water is united and knit to the earth.



The earth therefore in his whole globe is in the middest thereof, hemmed in with the sea,
 running round about it. And this needeth not to be sought out by reason & argument,
 for it is knowne alreadie by good prooffe and experience.

CHAP. LXVII.

Navigation upon the sea and great rivers.



From Gades and *Hercules* pillars, the West sea is at this day navigable, and sailed all
 over, even the whole compasse of Spaine and France. But the North Ocean was for the
 most part discovered, under the conduct of *Augustus Caesar* of famous memorie, who
 with a fleet compassed all Germanie, and brought it about as farre as to the cape of the
 Cimbrians: and so from thence having kenned and viewed the vast & wide sea, or els taken know-
 ledge thereof by report, he passed to the Scythian climate and those cold coasts, frozen & aboun-
 ding with too much moisture. For which cause there is no likelyhood, that in those parts the seas
 are at an end, whereas there is such excessive wet that all stands with water. And neer unto it from
 the East, out of the Indian sea, that whole part under the same clime of the world which bendeth
 toward the Caspian sea, was sailed throughout by the Macedonian armies, when *Seleucus* & *Anti-
 ochus* reigned, who would needs have it so, that *Seleucus* & *Antiochus* should beare their names.
 About the Caspian sea also many coasts and shores of the Ocean have been discovered, and by
 peecemeale, rather than all whole at once, the North of one side or other, liath beene sailed
 or rowed over. But yet to put all out of conjecture, there is a great argument collected by the
 Meere Maëotis, whether it bee a gulfie and arme of that Ocean (as I perceive many have be-
 lieved) or an overflowing of the same, and devided from it by a narrow peece of the conti-
 nent. In another side of Gades from the same, West, a great part of the South or Meridian
 goulfe, round about Mauritania is at this day sailed. And the greater part verily of it, like as
 of the East also, the victories of great *Alexander* viewed and compassed on everie side,
 even as farre as to the Arabian goulfe. Wherein, when *Caius Caesar*, the sonne of *Augustus*,
 warred

A warred in those parts, the markes and tokens, by report, were seen remaining after the Spaniards shipwracke. *Hanno* likewise, in the time that Carthage flourished in puissance, sailed round about from Gades to the utmost bounds and lands-end of Arabia, and set downe that navigation and voiage of his in writing: like as also *Himilco*, at the same time was sent out in a voiage to discover the utter coasts of Europe. Moreover, *Cornelius Nepos* writeth, that in his time one *Eudoxus* (a great sailer) at what time as hee fled from king *Labyrinthus*, departed out of the Arabian gulf, and held on his course as farre as Gades. Yea, and *Cælius Antipater* long before him, reporteth, That he saw the man who had sailed out of Spaine into *Æthiopia* for trafficke of merchandise. The same *Nepos* maketh report as touching the compassing about of the North, that unto *Qu. Metellus Celer* (Colleague to *C. Afranius* in the Consulship, but at that time Proconsull in *B* Gaule) certaine Indians were given by a king of the Suevians, who as they sailed out of India for trafficke, as merchants, were driven by tempest, and cast upon Germanie. Thus the seas flowing on every side about this globe of the earth, divided and cut into parcels, bereave us of a part of the world: so as neither from thence hether, nor from hence thither, there is a thorow faire and passage. The contemplation wherof, serving fit to discover and open the vanitie of men, seemeth to require and challenge of me, that I should project to the view of the eie, how great all this is whatsoever it bee, and wherein there is nothing sufficient to satisfie and content the severall appetite of each man.

CHAP. LXVIII.

What portion of the earth is habitable.



Now first and formost me thinkes, men make this reckoning of the earth, as if it were the just halfe of the globe, and that no portion of it were cut off by the Ocean: which notwithstanding, clasping round about all the middest thereof, yeelding forth and receiving againe all other waters besides, and what exhalations soever that go out for clouds, and feeding withall the very starres, so many as they be, and of so great bignesse; what a mightie space thinke you, will it be thought to take up and inhabite, and how little can there be left for men to inhabite? Surely the possession of so vast and huge a deale, must needs bee exceeding great and infinite. What say you then to this, That of the earth which is left, the heaven hath taken away the more part? For whereas there bee of the heaven five parts, which they call Zones: all that lieth under the two utmost, to wit, on both sides about the poles, namely, this here which is called *Septentrio*, i. the North, and the other overagainst it, named the South, it is overcharged with extreme and rigorous cold, yea, and with perpetuall frost and yce. In both Zones, it is alwaies dim and darke, and by reason that the aspect of the more mild and pleasant planets is diverted cleane from thence, the light that is, sheweth little or nothing, & appeareth white, with the frost onely. Now, the middle of the earth, wheras the Sunne hath his way, and keepeth his course, scorched and burnt with flames, is even parched and fried againe, with the hote gleames thereof, being so neer. Those two onely on either side about it, namely, betweene this burnt Zone and the two frozen, are temperate: and even those have not accessse and passage the one to the other, by reason of the burning heat of the said planet. Thus you see, that the heaven hath taken from the earth three parts: and what the Ocean hath plucked from it besides, no man knoweth. And even that one portion remaining unto us, I wot not whether it be not in greater danger also. For, the same Ocean entring (as we wil shew) into many armes and creekes, keepeth a roaring against the other gulfes and seas within the earth, & so neer commeth unto them, that the Arabian gulf is not from the Egyptian sea above 115 miles: the Caspian likewise from the Ponticke but 375. Yea, and the same floweth betweene, and entreth into so many armes, as that thereby it devideth *Affricke*, *Europe*, and *Asia* asunder. Now, what a quantitie of the land it taketh up, may be collected and reckoned at this day by the measure and proportion of so many rivers, and so great *Meres*. Adde thereto both lakes and pooles: and withall take from the earth the high mountaines, bearing up their heads aloft into the skie, so as hardly the eie can reach their heigths: the woods besides, and steep descents of the vallies, the wildernesses, and wast wilds left desert upon a thousand causes. These so many peeces of the earth, or rather as most have written, this little pricke of the world (for surely the earth is nothing els in comparison of the whole) is the onely matter of our glorie. This, I say,

is the very seat thereof: here wee seeke for honours and dignities, here wee exercise our rule and G
 authoritie: here we cover wealth and riches: here all mankind is set upon stirres and troubles: here we raise civile warres still one after another: and with mutuall massacres and murders we make more rounne in the earth. And to let passe the publick furious rages of nations abroad, this is it, wherein we chase and drive out our neighbour borderers, and by stealth dig turfe from our neighbours soile to put it unto our owne: and when a man hath extended his lands, and gotten whole countries to himselfe farre and neere, what a goodly deale of the earth enioieth hee? and say that hee set out his bounds to the full measure of his covetous desire, what a great portion thereof shall he hold when he is once dead, and his head laid.

CHAP. LXIX.

¶ *That the earth is in the midst of the world.*

Hat the earth is in the midst of the whole world, it appeareth by manifest and undoubted reasons: but most evidently, by the equall houres of the equinoctiall. For, unlesse it were in the midst, the Astrolabe and instruments called *D. opha*, have proved, that nights and daies could not possibly bee found equall: and those abovesaid instruments above all other, confirm the same: seeing that in the equinoctiall by one and the same line both rising and setting of the Sun are seene, but the Summer Sunne rising, and the Winter setting, by their owne severall lines. Which could by no meanes happen, but that the earth resteth in the Centre.

CHAP. LXX.

¶ *Of the unequal rising of the Starres: of the Eclipse, both where and how it commeth.*

Now three Circles there be enfolded within the Zones afore named, which distinguish the inequalities of the daies: namely, the Summer Solstitiall Tropicke, from the highest part of the Zodiacke in regard of us, toward the North clime. And against it, another called the Winter Tropicke, toward the other Southerne Pole: and in like manner the Equinoctiall, which goeth in the mids of the Zodiacke circle. The cause of the rest, which we wonder at, is in the figure of the very earth, which together with the water, is by the same arguments knowne to be like a Globe: for so doubtlesse it commeth to passe, that with us the stars about the North pole, never go down; and those contrariwise of the Meridian, never rise. And again, these here be not seen of them, by reason that the globe of the earth swelleth up in the mids between. Again, Trogloditine and Ægypt, confining next upon it, never set eie upon the North pole stars: neither hath Italie a sight of Canopus, or that which they name *Berenicis haire*. Likewise another, which under the Empire of *Augustus*, men surnamed *Cæsaris Thronon*: and yet they be starres there, of speciall marke. And so evidently bendeth the top of the earth in the rising, that Canopus at Alexandria seemeth to the beholders, elevate above the earth almost one fourth part of a signe: but if a man looke from Rhodes, the same appeareth after a sort, to touch the very Horizon: and in Pontus, where the elevation of the North pole is highest, not seene at all: yea, and this same Pole at Rhodes is hidden, but more in Alexandria. In Arabia, all hid it is at the first watch of the night in November; but at the second, it sheweth. In Meroe, at Mid-summer in the evening, it appeareth for a while: but some few daies before the rising of Arcturus, seene it is with the very dawning of the day. Sayers by their voyages, find out and come to the knowledge of these itarres most of any other, by reason that some leas are opposit unto some starres; but other lie flat and encline forward to other: for that also, thote pole starres appeare sôdainly, and rising out of the sea, which lay hidden before under the winding compassse, as it were of a ball. For the heaven riseth not aloft in this higher pole, as some men have given out: else should these stars be seene in every place: but those that unto the next Sayers are supposed to be higher, the rie same seeme to them as farre off drowned in the sea. And like as this North pole seemeth to be aloft unto those that are situate directly under it; so to them that be gone so farre as the other devexitie or fall of the earth, those abovesaid stars rise up aloft there, whiles they decline downward which here were mounted on high. Which thing could not possibly fal out but in the figure of

A of a ball. And hereupon it is, that the inhabitants of the East perceive not the eclipses of Sunne and Moone in the evening, no more than those that dwell West, in the morning; but those that be at noone in the South, they see verie often. At what time as *Alexander* the Great won that famous victorie at Arbela, the moone (by report) was eclipsed at the second houre of the night: but at the very same time in Sicilie, she arose. The eclipse of the Sunne, which chaunced before the Kalends of Maij, when as *Vipsanus* and *Fonteius* were Consuls, (and that was not many yeeres past) was seene in Campania betweene the 7 and 8 houres of the day: but *Corbulo* (a generall Commaunder then in Armenia) made report, that it was seene there betweene the tenth and eleventh houres of the same day: by reason that the compasse of the globe discovereth and hideth some things to some, and other to others. But, and if the earth were plaine and leuell, all things should appeare at once to all men; for neither should one night be longer than another, ne yet should the day of 12 houres appeare even and equall to any, but to those that are seated in the mids of the earth, which now in all parts agree and accord together alike.

CHAP. LXXI.

¶ *What is the reason of the day light upon earth.*

AND hence it commeth, that it is neither night nor day at one time in all parts of the world; by reason that the opposition of the globe bringeth night, and the round compasse and circuit thereof, discovereth the day. This is knowne by many experiments. In Affricke and Spaine, there were raised by *Annibal*, high watch towres: and in Asia for the same feare of rovers and pyrats, the like helpe of beacons was erected. Wherein it was observed often times, that the fires giving warning afore-hand (which were set a burning at the sixt houre of the day) were descried by them that were farthest off in Asia, at the third houre of the night. *Philonides*, the courier or Post of the same *Alexander* above-named, dispatched in nine houres of the day a 1200 stadia, even as farre as from Sicyone to Elis: and from thence againe (albeit he went down-hill all the way) he returned oftentimes, but not before the third hour of the night. The cause was, for that he had the Sunne with him in his first setting out to Elis; and in his returne backe to Sicyone, he went full against it, met with it, and ere he came home over-passed it, and left it in the West behind, going from him. Which is the reason also, that they who by day-light saile Westward in the shortest day of the yeere, rid more way than those who saile all the night long at the same time, for that the other doe accompanie the Sunne.

CHAP. LXXII.

¶ *The Gnomonicke Art of the same matter: as also of the first Diall.*

ALso the Instruments serving for the houres, as Quadrants and Dials, will not serve for all places: but in every 300 stadia, or 500 at the farthest, the shadowes that the Sunne casteth, doe change: and therefore the shadow of the Style in the Dyall, which they call the *Gnomon*, in *Ægypt*, at noone-tide, in the Equinoctiall day, is little more in length than halfe the *Gnomon*. But in the cittie of Rome, the shadowe wanteth the ninth part of the *Gnomon*. In the towne Ancona, it is longer than it a 35 part. But in that part of Italie which is called Venice, at the same time and houre, the shadow and the *Gnomon* be all one.

CHAP. LXXIII.

¶ *Where and when there be no shadowes at all.*

IN like manner they say, that in the towne Syene (which is above Alexandria 50 stadia) at noone-tide in the middes of Summer there is no shadow at all: and for farther experiment thereof, let a pit be sunke in the ground, and it will be light all over in every corner: whereby it appeareth, that the sunne then is just and directly over that place, as the very Zenith thereof. Which also at the same time happeneth in India, above the river Hypafis, as *Onesivertus* hath set downe in writing. Yea and it is for certaine knowne, that in Berenice, a cittie of the Troglodites, and from thence 4820 stadia in the same country, at the towne of Ptolemais (which was built at the first upon the very banke of the Red-sea, for the pleasure of chafing and hunting

The second Booke of

of Elephants) the selfesame is to be seene 45 daies before the Summer Sunstead, and as long after: and that for 90 daies space, all shadowes are cast into the South. Againe, in the Iland Meroc, which is the capitall place of the Æthiopian nation, and is inhabited 5000 stadia from Syene upon the river Nilus, twice in the yeere the shadowes are gone, and none at all seene: to wit, when the sunne is in the 18 degree of *Taurus*, and in the 14 of *Leo*. In the country of the Oretes within India, there is a mountaine named Maleus, neere unto which the shadowes in Summer are cast into the South, and in winter to the North. There, for 15 nights and no more, is the starre Charles-waine neere the pole to be seene. In the same India, at Patales (a most famous and frequented port) the Sunne ariseth on the right hand, and all shadowes fall to the South. Whiles *Alexander* made abode there, *Onesicritus* a captaine of his, wrote that it was observed there, That the North starre was seene the first part only of the night: also in what places of India there were no shadowes, there the North starre appeared not: and that those quarters were called * *Ascia*, neither kept they any reckoning of houres there.

* Without shadow.

CHAP. LXXIII.

¶ Where twice in the yeere, the shadowes goe contrarie waies.

BVt throughout all Trogliditine, *Cratosthenes* hath written, that the shadowes two times a yeere for 45 daies, fall contrary waies.

CHAP. LXXV.

¶ Where the day is longest, and where shortest.

T commeth thus to passe, that by the variable increment of the day-light, the longest day in Meroc doth comprehend 12 Equinoctiall houres, and eight parts of one houre above: but in Alexandria 14 houres, in Italie 15, in Britaine 17: where, in Summer time the nights being light and short, by infallible experience shew that which reason forceth to beleeve: namely, that at Midsummer time as the Sunne approacheth neere to the pole of the world, the places of the earth lying underneath, hath day continually for six moneths: and contrariwise night, when the Sunne is remote as farre as Bruina. The which, *Pythias* of Massiles hath written of Thule, an Iland distant Northward from Brittain sixe daies sailing: yea, and some affirme the same of Mona, which is an Iland distant from Camalodunum, a towne of Brittain, about two hundred miles.

CHAP. LXXVI.

¶ Of Dials and Quadrants.

His cunning of shadowes and skill named Gnomonice, *Anaximenes* the Milesian, the disciple of *Anaximander* abovenamed, invented: and he was the first also that shewed in Lacedæmon the Horologe or Diall, which they call Sciotericon.

CHAP. LXXVII.

¶ How the daies are observed.

He very day it selfe men have after diverse manners observed. The Babylonians count for day all the time betweene two sunne risings. The Athenians, betweene the settings. The Vmbrians from noone to noone. But all the common sort every where, from day-light untill it be darke. The Romane Priests, and those that have defined and set out a civile day, likewise the Ægyptians and *Hipparchus*, from midnight to midnight. That the spaces betweene lights, are greater or lesse betwixt Sunne risings, neer the Sunne-steeds, than the equinoctials, it appeareth by this, that the position of the Zodiake about the middle parts thereof, is more oblique and crooked, but toward the Sunne-steed more streight and direct.

CHAP. LXXVIII.

¶ The reason of the varietie and difference of sundrie countries and nations.

Ereunto we must annex and join such things as are linked to cœlestiall causes. For doubtlesse it is, that the Æthiopians by reason of the Sunnes vicinitie, are scorched and tanned with the heat thereof, like to them that be adust and burnt, having their beards and bush of haire cutled. Also, that in the contrarie clime of the world to it, in the frozen and icie regions

A gions, the people have white skins, haire growing long downward, & yellow; but they be fierce & cruell by reason of the rigorous cold aire: howbeit, the one as wel as the other in this change and mutabilitie, are dull and grosse: and the very legs doe argue the temperature. For in the *Æthiopi*ans the juice or bloud is drawne upward again by the nature of heat: but among the nations *Septentrionall*, the same is driven to the inferiour parts, by reason of moisture apt to fall downward. Here there breed noisome and hurtfull wild beasts: but there, bee engendred creatures of sundrie and divers shapes, especially foules and birds of many formes and figures. Tall they are of bodily stature, as well in one part as the other: in the hote regions, by occasion of the naturall motion of fire; in the other, for the nourishment by moisture. But in the middest of the earth, there is an holesome mixture from both sides: the whole tract is fertile and fruitfull for all things, the habite of mens bodies of a meane and indifferent constitution. In the colour also there sheweth a great temperature. The fashions and manners of the people are civile and gentle, their fences cleare and lightsome, their wits pregnant and capable of all things within the compassse of Nature. They also beare soveraigne rule, and sway Empires and Monarchies, which those uttermost nations never had: yet true it is, that even they who are out of the temperate Zones, may not abide to bee subject nor accommodate themselves unto these: for such is their savage and brutish nature that it urgeth them to, living solitarie by themselves.

CHAP. LXXIX.

¶ Of Earthquakes.

C **T**He Babylonians were of this opinion, that earthquakes and gaping chinkes, and all other accidents of that nature, are occasioned by the power and influence of the Planets: but of those three onely, to which they attribute lightnings. And by this means, namely, as they keepe their course with the Sunne, or meet with him: and especially when this concurrence is about the quadratures of the heaven. And surely if it be true that is reported of *Anaximander* the Milesian naturall Philosopher, his prescience and foreknowledge of things, was excellent & worthy of immortalitie: who, as they say, fore-warned the *Lacedæmonians* to looke well unto their citie and dwelling houses, for that there was an earthquake toward: which fell out accordingly: when not onely their whole citie was shaken, overthrowne, and fell downe, but also a great part of the mountaine *Taygetus*, which bare out like to the poupe of a ship, broken as it were from the rest, came downe too, and with the fall, covered all over the foresaid ruins. There is reported another shrewd guesse of *Pherecydes*, who was *Pythagoras* his maister, and the same likewise divine and propheticall: hee by drawing water out of a pit, both foresaw and also foretold an earthquake there. Which if they be true, how farre off, I pray you, may such men seeme to bee from God, even whiles they live here upon earth? But as for these things verily, I leave it free for every man to weigh and deeme of them according to their owne judgement: and for mine owne part I suppose that without all doubt the winds are the cause thereof. For never becommeth the earth to quake, but when the sea is still; and the weather so calme withall, that the birds in their flying cannot hover and hang in the aire, by reason that al the spirit and wind which should beare them up, is withdrawne from them: ne yet at any time, but after the winds are laid, namely, when the blast is pent and hidden within the veines and hollow caves of the earth. Neither is this shaking in the earth any other thing, than is thunder in the cloud: nor the gaping chinke thereof ought els, but like the clift whereout the lightning breaketh, when the spirit enclosed within, struggleth and stirreth to goe forth at libertie.

CHAP. LXXXI.

¶ Of the gaping chinkes of the earth.

F **A**fter many and sundrie sorts the earth therefore is shaken, and thereupon ensue wondrous effects. In one place the walls of cities are laid along: in another they be swallowed up in a deepe and wide chawme: here are cast up mightie heapes of earth; there, are let out rivers of water; yea, and sometimes fire doth breath forth, and hote springs issue abroad: and in another place the course and channell of rivers is turned clean away, and forced backward. There goeth before and commeth with it a terrible noise: one while a rumbling more like the loowing

and bellowing of beaſts : otherwhile it reſembleth a mans voice, or els the clattering and ruſtling of armour and weapons, beating one upon another; according to the qualitie of the matter that catcheth and receiveth the noiſe, or the faſhion either of the hollow cranks within, or the cranie by which it paſſeth, whiles in a narrow way it taketh on with a more ſlender and whiſtling noiſe : and the ſame keepeth an hoarſe din in winding and crooked caves ; rebounding again in hard paſſages ; roaring in moiſt places ; waving and ſtoring in ſtanding waters ; boiling and chaſing againſt ſolide things. And therefore oftentimes a noiſe is heard without any earthquake : and never at any time ſhaketh it ſimply after one and the ſame manner, but trembleth and waggeth to and fro. As for the gaping chinke, ſometimes it remaineth wide open, and ſheweth what it hath ſwallowed up : otherwhiles it cloſeth up the mouth, and hideth all : and the earth is brought together ſo againe, as there remaine no markes and tokens to be ſeene : notwithstanding many a time it hath devoured cities, and drawne into it a whole tract of ground and fields. Sea coaſts and maritime regions moſt of all other, ſeele earthquake : neither are the hillie countries without this calamitie. For, I my ſelfe have knowne for certaine, that the Alpes and Apenine have oftentimes trembled. In the Autumne alſo & Spring there happen more earthquakes than at other times, like as lightnings. And hereof it is, that Fraunce and Ægypt leaſt of all other, bee ſhaken : for that in Ægypt the continuall Summer, and in Fraunce the hard winter, is againſt it. In like maner earthquakes are more riſe in the night than in day time. But the greateſt of all others uſe to be in the morning and evening. Toward day light there bee many : and if by day, it is uſually about noone. They fortune alſo to be when the Sunne and Moone are eclipsed, becauſe in thoſe times all tempeſts are aſleepe and laid to reſt. But eſpecially, when after much raine there followeth a great time of heat ; or after heat, ſtore of raine.

CHAP. LXXXI.

⌘ *Signes of earthquake comming.*

SAilers alſo have a certaine fore-knowledge thereof, and gueſſe not doubtfully at it : namely, when the waves ſwell ſuddainly without any gale of wind, or when they in the ſhip are ſhocked with billowes ſhaking under them. And then are the things ſeene to quake which ſtand within the ſhips, as well as thoſe in houſes, and with a ruſtling noiſe give warning beforehand. The foules likewiſe of the aire ſit not quietly without feare. In the ſkie alſo there is a ſigne thereof: for when there will bee an earthquake, there goeth before, either in day time, or ſoone after the Sunne is gone downe, a thin ſtreake or line, as it were, of a cloud lying out in a great length. Moreover, the water in wels and pits is more thicke and troubled than ordinarie, and not without a ſinking ſent.

CHAP. LXXXII.

⌘ *Remedies or helpes againſt earthquakes toward.*

BUt a remedie there is for the ſame, ſuch as vaults and holes in many places do yeeld: for they vent out and breath forth the wind that was conceived there before: a thing obſerved in certaine townes, which by reaſon they ſtand hollow, and have many ſinkes and vaults digged to rid and convey away their filth, are leſſe ſhaken. Yea, and in the ſame townes, thoſe parts which be pendant, are the ſafer : as is well ſeene in Naples, where that quarter thereof which is ſolide and not hollow, is ſubject to ſuch casualties. And in houſes the arches are moſt ſafe, the angles alſo of walls, yea, and thoſe poſts which in ſhaking will jog to and fro every way. Moreover, walls made of bricke or earth, take leſſe harme when they be ſhaken in an earthquake. And a great difference there is in the very kind and manner of earthquakes, for the motion is after many ſorts. The ſafeſt is, when houſes as they rocke, keepe a trembling and warbling noiſe : alſo when the earth ſeemeth to ſwell up in riſing : and againe to ſettle downe and ſinke with an alternative motion. Harmeleſſe it is alſo, when houſes run on end together by a contrarie ſtroke, and butt or jure one againſt another : for the one moving doth withſtand the other. The bending downward in maner of waving, and a certaine rolling like to ſurging billowes, is it that is ſo dangerous & doth all the miſcheefe : or when the whole motion beareth and forceth it ſelfe to one ſide. Theſe quakings and tremblings of the earth give over when the wind is once vented out : but if they continue ſtil, then they ceaſe not until forrie daies end : yea, and many times it is longer ere they ſtay : for as much as ſome of them have laſted for the ſpace of a yeere or two.

CHAP. LXXXIII.

⌘ *Monstrous Earthquakes seene never but once.*

THere happened once (which I found in the bookes of the Tuscanes learning) within the territorie of Modena, (whiles *L. Marius* and *Sex. Julius* were Consuls) a great strange wonder of the Earth: for two hilles encountred together, charging as it were, and with violence assaulting one another, yea and retiring againe with a most mightie noise. It fell out in the day time: and betweene them there issued flaming fire and smoke mounting up into the skie: while a great number of Romane Gentlemen (from the high way *Æmylia*) and a multitude of servants, yea and passengers by, or wayfaring men, stood and beheld it. With this conflict and running of them together, all the villages upon them were dashed and broken in peeces: verie much cartell that was within, dyed therewith. And this happened the yeere before the warre of our associates: which I doubt, whether it were not more pernicious to the whole land of *Italie*, than the civile warres. It was no lesse monstrous a wonder that was knowne also in our age, in the very last yeere of *Nero* the Emperour (as we have shewed in his actes) when medowes and olive rowes (notwithstanding the great publicke port-way lay betweene) passed overthwart one into anothers place, in the *Marrucine* territorie, within the lands of *Vettius Marcellus* a Gentleman of Rome, Procurator under *Nero* in his affaires.

CHAP. LXXXIII.

⌘ *Wonders of Earthquakes.*

THere happen together with Earthquakes, deluges also and inundations of the sea, to wit, infused and entring into the earth with the same aire and wind, or else received into the hollow recepracle, as it fetleth downe. The greatest Earthquake within the remembrance of man, was that which chaunced during the Empire of *Tiberius Casar*, when 12 cities of Asia were over-turned and laid flat in one night. But the Earthquakes came thickest and most together in the Punick warre, when within one yeere there were reported at Rome to have ben seven and fiftie. In which yeere verily, when the Carthaginians and Romans fought a battaile at *Thra-symenus* lake, neither of both armies tooke knowledge of a right great earthquake. Neither is this a simple evill thing, nor the daunger consisteth onely in the very Earthquake and no more; but that which it portendeth, is as bad or worse. Never abode the citie of Rome any earthquake, but it gave warning before-hand, of some straunge accident and unhappie event following.

CHAP. LXXXV.

⌘ *In what places the Seas have gone backe.*

THe same cause is to be rendred of some new hill or peece of ground, not seene before; when as the said wind within the earth, able to huffe up the ground, was not of power sufficient to breake foorth and make issue. For there groweth firme land not onely by that which rivers bring in (as the Ilands *Echinades*, which were heaped and raised up by the river *Achelous*; and so by *Nilus* the greater part of *Ægypt*, into which, if we beleecue *Homer*, from the Iland *Pharus*, there was a cut by sea of a day and nights sailing;) but also by the retiring and going backe of the sea; as the same Poet hath written of the *Circeia*. The like (by report) happened both in the haven of *Ambracia*, for ten miles space; and also in that of the Athenians, for five miles, neere *Pireæum*: also at *Ephesus*, where sometime the sea beat upon the temple of *Diana*. And verily (if we give care to *Herodotus*) it was all a sea from above *Memphis* to the *Æthiopian* hills: and likewise from the plaines of *Arabia*. It was sea also about *Ilium*, and the flat of *Teuthrania*; and all that levell whereas the river *Mæander* now runneth by goodly medowes.

CHAP. LXXXVI.

⌘ *The reason of Islands that newly appeare out of the sea.*

THere be lands also that put forth after another manner, and all at once shew on a sodaine in some sea: as if Nature cryed quittance with her selfe, and made even, paying one for another; namely, by giving againe that in one place, which those chawmes and gaping gulfs tooke away in another.

¶ *What Ilands have sprung up, and at what times.*

THose famous Ilands long since, to wit, Delos and Rhodes, are recorded to have growne out of the sea: and afterwards, others that were lesse, namely, Anaph beyond Melos; and Nea, betweene Lemnus and Hellespont, Alone also, betweene Lebedus and Teos: Thera likewise, and Therasia, among the Cyclades; which shewed in the fourth yeere of the 135 Olympias. Moreover, among the same Ilands 130 yeeres after, Hiera, which is the same that Automate. And two furlongs from it, after 110 yeeres, Thia, even in our time, upon the 8 day before the Ides of Iuly, when *M. Iunius Syllanus* and *L. Balbus* were Consuls.

¶ *What Lands the Seas have broken in betweene.*

EVEN within our kenning and neare to Italie, betweene the Ilands *Æoliæ*; in like manner neare to Creta, there was one shewed it selfe with hote fountaines out of the sea, for a mile and a halfe: and another in the third yeere of the 143 Olympias, within the Tuscan gulfe, and this burned with a violent wind. Recorded it is also, that when a great multitude of fishes flocked ebbe about it, those persons died presently that fed therof. So they say, that in the Campaine gulfe, the *Pithecusæ* Ilands appeared. And soone after, the hill *Epopos* in them (at what time as sodainly there burst forth a flaming fire out of it) was laid level with the plain champion. Within the same also there was a towne swallowed up by the sea: and in one earthquake there appeared a standing poole; but in another (by the fall and tumbling downe of certaine hills) there grew the Iland *Prochyta*: For after this manner also Nature hath made Ilands. Thus, she disjoyned *Sicilie* from *Italie*, *Cyprus* from *Syria*, *Eubœa* from *Bœœtia*, *Atalante* and *Macris* from *Eubœa*, *Besbycus* from *Bithynia*, *Leucostia* from the promontorie and cape of the *Syrenes*,

¶ *What Ilands became to ioeyne unto the Main.*

AGAINE, shee hath taken Ilands from the Sea, and joyned them to the firme land; and namely, *Antissa* to *Lesbos*, *Zephyria* to *Halicarnassus*, *Æthusa* to *Myndus*, *Dromiscos* and *Perne* to *Miletus*, and *Nartheclusa* to the promontorie *Parthenius*. *Hybanda*, sometime an Iland of *Ionias*, is now distant from the sea 200 stadia. As for *Syrie*, *Ephesus* hath it now in the midland parts far from the sea. So *Magnesia*, neighbour to it, hath *Derasitas* and *Sophonia*. As for *Epidaurus* and *Oricuti*, are no more Ilands at this day.

¶ *What Lands have been turned wholly into Sea.*

NATURE hath altogether taken away certaine Lands: and first and formost where as now the sea *Atlanticum* is, it was sometime the Continent for a mightie space of ground; if wee give credit to *Plato*. And soone after in our *Mediterranean* sea, all men may see at this day how much hath been drowned up, to wit, *Acarmania* by the inward gulfe of *Ambracia*; *Achaia* within that of *Corinth*; *Europe* and *Asia* within *Propontis* and *Pontus*. Over and besides, the sea hath broken through *Leucas*, *Antirrhium*, *Hellespont*, and the two *Bosphori*.

¶ *What Lands have swallowed up themselves.*

AND now to passe over armes of the sea and lakes. The very earth hath devoured and buried her selfe: to wit, that most high hill *Cybotus*, with the town *Curites*; *Sipylus* in *Magnesia*: and in the same place before-time, the most noble citie called *Tantalus*: the territories of *Galanis* and *Gamale* in *Phœnice*, together with the very cities. *Phogium* also, a passing high hill in *Æthiopia*, as if the very stronds and Continent were not to be trusted, but they also must worke hurt and mischief.

A

CHAP. XCII.

¶ *What Citties have been drowned with the Sea.*

THe sea Pontus hath overwhelmed Pyrrha and Antyssa about Mæotis, Elice, and Bura, in the gulfe of Corinth: whereof, the markes and tokens are to be seene in the deepe. Out of the Iland Cea, more than 30 miles of ground was lost sodainly at once, with many a man besides. In Sicilie also the sea came in, and had away halfe the citie Thindaris, and whatsoever Italy nourseth, even all betweene it and Sicilie. The like it did in Bœotia and Eleusina.

B

CHAP. XCIII.

¶ *Of the strange wonders of the Land.*

FOr, let us speake no more of Earthquakes, and whatsoever else of that kind; and namely, of the graves and Sepulchres of Citties, buried and extant to be seene. But discourse we rather of the wonders, than the mischiefs wrought by Nature in the earth. And surely the Storie of coelestiall things was not more hard to be uttered and declared: the wealth is such of mettals and mines, in such varietie, so rich, so fruitfull, rising still one under another for so many ages; notwithstanding that daily there is so much wasted and consumed throughout the world, with fires, ruines, shipwracks, warres, and fraudulent practises: yea and so much spent with ryot and superfluous vanities, by so many men living, that it is infinite: yet see, how many sorts of jemmes there be still, so painted and set out with colours? In precious stones, what varietie of fundrie colours? and how bespotted are they! And among them, behold the whitnesse and bright hew of some one, excluding all else but only light. The vertue and power of medicinable fountaines: the continuall burning so many hundred yeeres together of fire issuing forth in so many places: the deadly dampes and exhalations in some places, either sent out of pits when they were funke, or else from the very native seat and position of the ground; present death in one place to the birds and foules of the aire only (as at Soracte, in a quarter neere unto the citie:) in other, to all other living creatures, save onely man: yea, and sometime to men also, as in the territories of Sinuessâ and Puteoli. Which dampes holes, breathing out a deadly aire, some call, *Charoneæ Scrobes*, i. *Charons* ditches. Likewise in the Hirpines land, that of Amfanctus, a cave neere unto the temple of *Nephtes*, which as many as enter into, die presently. After the like manner, at Hierapolis in Asia there is another such, hurting all that come to it but only the Priest of *Cybele*, the great mother of the Gods. In other places there be also caves and holes of a Prophetical power: by the exhalation of which, men are intoxicate, and as it were drunken, and so foretell things to come, as at Delphi, that most renowned Oracle. In all which things, what other reason can any mortall man make, than the divine power of Nature diffused and spread through all, which breaketh forth at times in sundry sorts?

C

D

CHAP. XCIII.

¶ *Of certaine Lands that evermore doe quake.*

Some parts of the earth there be, that shake and tremble under mens feet as they goe: and namely, in the territorie of the Gabians, not farre from Rome citie, there be almost two hundred acres of ground which tremble as horsemen ride over them: and likewise in the territorie of Reate.

CHAP. XCV.

¶ *Of Islands ever floating and swimming.*

Certaine Islands are alwaies waving and never stand still, as in the countrey about Cæcubum, Reate abovenamed, Mutina, and Statonia. Also in the Lake Vadimonis, and neer the waters Curyliæ, there is a shaddowie darke grove, which is never seene in one place a day and night together. Moreover, in Lydia, the Isles Calanucæ, are not onely driven to and fro by winds, but also many be shoved and thrust with long poles, which way a man will: a thing that fa-

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ved many a mans life in the warre against *Mithridates*. There be other little ones also in the river Nymphæus called *Saltuares* [or *Dauncers*,] because in any consort of Musicians singing, they stirre and move at the stroke of the feet, keeping time and measure. In the great Lake of Italie *Tarquiniensis*, two Islands carrie about with them groves and woods: one while they are in fashion three square, another while round, when they close one to the other by the drift of winds, but never fouresquare.

CHAP. XCVI.

¶ *In what lands it never raineth. Also many strange wonders and miracles of the earth, and other elements heaped together.*

PAphos hath in it a famous temple of *Venus*: upon a certaine floore and altar whereof, it never raineth. Likewise in *Nea*, a towne of *Troas*, a man shall never see it raine about the image of *Minerva*. In the same also the beasts killed for sacrifice, if they be left there, never putrefie. Neere to *Harpasa*, a towne in *Asia*, there stands a rocke of stone of a strange and wonderous nature: lay one finger to it, and it will stirre, but thrust at it with your whole bodie, it will not move, but stiffely resist. Within the demie Island of the *Tauri*, and cittie *Parasinum*, there is a kind of earth that healeth all wounds. But about *Affos* in *Troas*, there growes a stone, wherewith all bodies are consumed, and thereupon *Sarcophagus* it is called. Two hills there be neere the river *Indus*: the nature of the one is to hold fast all manner of yron, and of the other, not to abide it: and therefore if a mans shoe soll be clouted with hob nailes, in the one of them a man cannot pluck away his foot, and in the other hee can take no footing at all. Noted it is, that in *Locri* and *Croton* there was never pestilence knowne, nor any trouble or daunger by earthquake. And in *Lycia* ever after an earthquake, it hath been faire weather for fortie daies. In the territorie of *Arda*, if come be sowed, it never commeth up. At the altars *Murtiæ* in the *Veientian* field, likewise in *Tusculum* and the wood *Cyminia*, there be certaine places, wherein whatsoever is pitched into the ground, can never be plucked up againe. In the *Crustumine* countrey all the hey there growing, is hurtfull in the same place: but be it once without it, good and holsome it is.

CHAP. XCVII.

¶ *What is the reason of the recipocall ebbe and flow of the seas: and where it is that they keepe no order, and are without reason.*

OF the nature of waters much hath beene said: but the sea-tide that it should flow and ebbe againe, is most mervellous of all other. The manner thereof verily is divers, but the cause is in the Sunne and Moone. Betweene two risings of the Moon, they flow twice, and twice goe backe, and alwaies in the space of foure and twentie houres. And first as hee riseth aloft together with the world, the tides swell, and anone againe, as it goeth from the height of the Meridian line, and enclineth Westward, they slake: againe, as the moveth from the West, under our horizon, and approacheth to the point contrarie to the Meridian, they flow, and then they are received backe into the sea untill she rise againe: and never keepeth the tide the same houre that it did the day before: for it waiteth and giveth attendance upon the Planet, which greedily draweth with it the seas, and evermore riseth to day in some other place than it did yesterday. Howbeit the tides keepe just the same times betweene, and hold alwaies fixe houres apeece: I meane not of every day and night or place indifferently, but onely the equinoctiall. For in regard of houres, the tides of the sea are unequal: for as much as by day and night the tides are more or lesse one time than another: in the equinoctiall onely they are even and alike in all places. A very great argument this is, full of light, to convince that grosse and blockish conceit of them who are of opinion, that the planets being under the earth, loose their power: and that their vertue beginneth when they are above onely. For they shew their effects as well under as above the earth, as well as the earth which worketh in all parts. And plaine it is, that the Moone performeth her operations as wel under the earth, as when we see her visibly aloft: neither is her course any other beneath, than above our horizon. But yet the difference and alteration of the Moone is manifold, and first every seven daies: for whiles she is new, the tides be but small untill the first quarter: for

A for as the groweth bigger, they flow more, but in the full they swell and boile most of all. From that time they begin againe to be more mild: and in the first daies of the wain unto the seventh, the tides are equall: and againe when she is devided on the other side, and but halfe Moon, they encrease greater. And in the Conjunction or the change, they are equall to the tides of the full. And evidently it appeareth, that when she is Northerly, and retired higher and farther from the earth, the tides are more gentle, than when shee is gone Southerly: for then shee worketh neerer hand, and putteth forth her full power. Every eight yeere also, and after the hundreth revolution of the Moone, the seas returne to the beginning of their motions, and to the like encrease and growth: by reason that she augmenteth all things by the yeerly course of the Sunne: for as much as in the two equinoctials they ever swel most, yet more in that of the Autumne, than the Spring: but nothing to speak of in Mid-winter, and lesse at Mid-summer. And yet these things fall not out just in these very points and instants of the times which I have named, but some few daies after: like as neither in the full nor in the change, but afterward: ne yet presently so soone as the heaven either sheweth us the Moone in her rising, or hideth her from us at her setting, or as shee declineth from us in the middle climate, but later almost by two equinoctiall houres. For as much as the effect of all influences and operations in the heaven reach not so soone unto the earth, as the eiesight pierceth up to the heaven: as it appeareth by lightnings, thunders, and thunderbolts. Moreover, all tides in the maine Ocean, overspread, cover and overflow much more within the land, than in other seas besides: either because the whole and universall element is more courageous than in a part: or for that the open greatnesse and largenesse thereof, feeleth more effectually the power of the planet, working forcibly as it doth farre and neere at libertie, than when the same is pent and restrained within those streights. Which is the cause that neither lakes nor little rivers ebbe and flow in like manner. *Pythias* of Massiles, writeth, That above Brittain the tide floweth in height eightie cubites. But the more inward and Mediteranean narrow seas are shut up within the lands, as in an haven. Howbeit, in some places a more spacious libertie there is that yeeldeth to the power and commaund of the Moone: for wee have many examples and experiments of them that in a calme sea without wind and faile, by a straunge water onely, have tided from Italie to Utica in three daies. But these tides and quicke motions of the sea, are found to be about the shores, more than in the deepe maine sea. For even so in our bodies the extreame and utmost parts have a greater feeling of the beating of arteries, that is to say, the vitall spirits. Yet notwithstanding in many firthes and armes of the sea, by reason of the unlikelings of the planets in every coast, the tides are diverse, and disagreeing in time, but not in reason and cause, as namely in the Syrtis. And yet some there bee that have a peculiar nature by themselves, as the Firth Taurominitanum, which ebbeth and floweth oftener than twice: and that other in Euboea, called likewise Euripus, which hath seven tides to and fro in a day and a night. And the same tyde three dayes in a moneth standeth still, namely in the 7, 8, and 9 daies of the moones age. At Gades, the fountaine next unto the chappell of *Hercules*, is enclosed about like a well; the which at sometimes riseth and falleth as the Ocean doth: at others againe, it doth both, at contrarie seasons. In the same place there is another spring that keepeth order and time with the motions of the Ocean. On the banke of Betis there is a towne, the wells whereof as the tyde floweth, doe ebbe; and as it ebbeth, doe flow: in the mid times betweene, they stirre not. Of the same qualitie, there is one pit in the towne Hispalis; all the rest be as others are. And the sea Pontus evermore floweth and runneth out into Propontis, but the sea neuer retireth backe againe within Pontus.

CHAP. XCVIII.

¶ *Marvailles of the Sea.*

ALI seas are purged and scoured in the full Moone; and some besides at certaine times. About Messala and Nylæ, there is voided upon the shoare, certaine dregges and filthinesse like to beasts dung: whereupon arose the fable, That the Sunnes oxen were there kept in stall. Hereunto addeth *Aristotle* (for I would not omit willingly any thing that I know) that no living creature dieth but in the refluxe and ebbe of the sea. This is observed much in the Ocean of Fraunce, but found onely in man by experience, true.

CHAP. XCIX.

¶ *What power the Moone hath over things on Earth and in the Sea.*

BY which it is truly guessed and collected, that not in vaine the planet of the moone is supposed to be a Spirit: for this is it that satisfieth the earth to her content: shee it is that in her approach and comming toward, filleth bodies full; and in her retire and going away, emptieth them againe. And hereupon it is, that with her growth, all shell-fish waxe and encrease: and those creatures which have no blood, them most of all doe feele her spirit. Also, the blood in men doth encrease or diminish with her light more or lesse: yea the leaves of trees and the grasse for fodder (as shall be said in convenient place) doe feele the influence of her, which evermore the same, pierceth and entreth effectually into all things. H

CHAP. C.

¶ *The power of the Sunne, and why the sea is salt.*

THUS by the fervent heat of the Sunne, all moisture is dried up: for we have been taught, that this Planet is Masculine, frying and sucking up the humiditie of all things. Thus the broad and spacious sea hath the taste of salt sodden into it: or els it is, because when the sweet and thin substance thereof is sucked out from it, which the fiery power of the sunne most easily draweth up, all the tarter and more grosse parts thereof remaineth behind: and hereupon it is, that the deepe water toward the botome, is sweeter and lesse brackish than that above in the top. And surely, this is a better and truer reason of that unpleasantsmacke and tast that it hath, than that the sea should be a sweat issuing out of the earth continually: or, because over-much of the drie terrene element is mingled in it without any vapour: or else because the nature of the earth infecteth the waters, as it were, with some strong medicine. We find among rare examples and experiments, that there happened a prodigious token to *Denis* tyrant of Sicilie, when hee was expelled and deposed from that mightie state of his, and this it was; The sea water within one day in the haven grew to be fresh and sweet. I

CHAP. CI.

¶ *In like manner of the Moones nature.*

ON the contrary, they say that the Moone is a planet Fœminine, tender and nightly, dissolveth humors, draweth the same, but carrieth them not away. And this appeareth evidently by this prooffe, that the carcaffes of wild beasts slaine, shee putrifieth by her influence, if she shine upon them. When men also are found asleepe, the dull nummednes thereby gathered, she draweth up into the head: shee thaweth yce, and with a moistening breath proceeding from her, enlargeth and openeth all things. Thus you see how Natures turne is served and supplied, and is alwaies sufficient; whiles some starres thicken and knit the elements, others againe resolve the same. But as the Sunne is fed by the salt seas, so the Moone is nourished by the fresh river waters. L

CHAP. CII.

¶ *Where the Sea is deepest.*

FAbianus saith, that the Sea where it is deepest, exceedeth not fiftene furlongs. Others againe doe report, that in Pontus the sea is of an unmeasurable deapth, over-against the nation of the Coraxians, the place they call *Bathæa Ponti*, whereof the botome could never be founded.

CHAP. CIII.

¶ *The wonders of waters, Fountains, and Rivers.*

OF all wonders this passeth, that certaine fresh waters hard by the sea, issue and spring forth as out of pipes: for the nature of the waters also ceaseth not from straunge and miraculous properties. Fresh waters run aloft the sea, as being no doubt the lighter: and therefore M

Afore the sea water (which naturally is heavier) upholdeth and beareth up whatsoever is brought in. Yea and amongst fresh waters, some there be that stote and glide over others. As for example, in the lake Fucinus, the river that runneth into it: in Larius, Addua; in Verbanus, Ticinus; in Benacus, Mincius; in Sevinus, Ollius; in Lemanus lake, the river Rhodanus. As for this river beyond the Alpes, and the former in Italie; for many a mile as they passe, carrie forth their owne waters from thence where they abode as strangers, and none other; and the same no larger than they brought in with them. This is reported likewise of Orontes, a river in Syria, and of many others. Some rivers againe there be, which upon an hatred to the sea, run even under the botom thereof; as Arethusa, a fountaine in Syracuse: wherein this is observed, that whatsoever is cast into it, commeth up againe at the river Alpheus, which running through Olynpia, falleth into the sea shore of Peloponnesus. There go under the ground, and shew above the ground againe, Lycus in Asia, Erafinus in Argolica, Tygris in Mesopotamia. And at Athens, what things soever are drowned in the fountaine of Æsculapius, be cast up againe in Phalericus. Also in the Attinate plaines, the river that is buried under the earth, twentie miles off appeareth againe. So doth Timavus in the territorie of Aquileia. In Asphaltites (a lake in Iurie which engendreth *Biturumen*) nothing will sinke nor can be drowned, no more than in Arethusa in the greater Armenia: and the same verily, notwithstanding it be full of Nitre, breedeth and feedeth fish. In the Salentines countrey, neere the towne Manduria, there is a lake brim full: lade out of it as much water as you will, it decreaseth not; ne yet augmenteth, poure in never so much to it. In a river of the Ciconians, and in the lake Velinus in the Picene territorie, if wood be throwne in, it is covered over with a stonie barke. Also in Surlus, a river of Colchis, the like is to be seene: in somuch, as ye shall have very often the barke that overgroweth it, as hard as any stone. Likewise in the river Silarus beyond Surrentum, not twigs onely that are dipped therein, but leaves also grow to be stones; and yet the water thereof otherwise is good and holesome to be drunke. In the verie passage and issue of Reatine meere, there groweth a rocke of stone bigger and bigger by the dashing of the water. Moreover, in the red sea there be olive trees and other shrubs, that grow up greene. There be also very many springs, which have a wonderfull nature, for their boiling heat: yea, and that upon the very mountaines of the Alpes; and in the sea betweene Italie and Ænaria: as in the Firth Baianus, and the river Liris; and many others. For in divers and sundrie places yee may drawsteth water out of the sea, namely about the ylands Chelidoniae and Aradus; yea and in the Ocean about Gades. In the hot waters of the Padovans, there grow green herbs: in those of the Pisanes, there breed frogs: and at Veuolonij in Hetruria, not farre from the sea, fishes also are bred. In the territorie Casinas, there is a river called Scatebra, which is cold, and in Summer time more abounding and fuller of water than in winter: in it, as also in Stymphalis of Arcadia, there breed and come foorth of it little water-myce, or small Limpins. In Dodone, the fountaine of *Jupiter* being exceeding chill and cold, so as it quencheth and putteth out light torches dipped therein, yet if you hold the same neere unto it when they are extinct and put out, it setteth them on fire againe. The same spring at noontide, evermore giveth over to boile and wanteth water, for which cause they call it *Anapavomenos*: anon it beginneth to rise untill it be midnight, and then it hath great abundance: and from that time againe it fainteth by little and little. In Illyricum there is a cold Spring, over which, if yee spread any clothes, they catch a fire and burne. The fountaine of *Jupiter Hammon* in the day time is cold, all night it is seething hote. In the Troglodites countrey there is a fountaine of the Sunne, called the Sweet Spring, about noone it is exceeding cold, anon by little and little it groweth to be warm, but at midnight it passeth and is offensive for heat and bitternesse. The head of the Po, at noene in Summer, giveth over, as it were, and intermitteth to boile, and is then ever drie. In the Island Tenedus there is a spring, which after the Summer Sunne steed, evermore from the third houre of the night unto the sixt, doth overflow. And in the isle Delos, the fountaine Inopus, falleth and riseth after the same sort that Nilus doth, and together with it. Over against the river Timavus, there is a little Island within the sea, having hotewels, which ebbe and flow as the tide of the sea doth, and just therewith. In the territorie of the Pitinates beyond Apenninus, the river Novanus at every midsummer time swelleth and runneth over the bankes, but in mid-winter is cleane drie. In the Faliscane countrey, the water of the river Clitumnus maketh the oxen and kine white that drinke of it. And in Bæotia, the river Melas maketh sheepe blacke: Cephyffus running out of the same lake, causeth them to be white: and Penius againe giveth them a black colour: but Xanthus neer

unto Ilium, coloureth them reddish; and hereupon the river tooke that name. In the land of Pontus there is a river that watereth the plaines of Astace, upon which, those Mares that feed, give blacke milke for the food and sustenance of that nation. In the Reatine territorie there is a fountaine called Nemina: which, according to the springing and issuing forth out of this or that place, signifieth the change in the price of corne and victuals. In the haven of Brindis there is a Well, that yeeldeth unto sailers and sea-faring men, water, which will never corrupt. The water of Lincestis, called Acidula [*i. Soure*] maketh men drunken no lesse than wine. Semblably, in Paphlagonia, and in the territorie of Cales. Also in the Isle Andros there is a fountaine neere the temple of father *Bacchus*, which upon the Nones of Januarie, alwaies runneth with water that tasteth like wine, as *Mulianus* verily beleeveth, who was a man that had bene thrice Confull: The name of the Spring is Dios Tecnosia, Neere unto Nonacris in Arcadia, there is the river Styx; differing from the other Styx, neither in smell nor colour: drinke of it once, and it is present death. Also in Berofus (an hill of the Tauri) there bee three fountains, the water whereof whosoever drinketh, is sure to die of it, remedlesse, and yet without paine. In a countrey of Spaine called Carrinensis, two Springs there bee that runne neere together, the one rejecteth, the other swalloweth up all things. In the same countrey there is another water, which sheweth all fishes within it of a golden colour, but if they be once out of that water, they bee like to other fishes. In the Cannensian territorie, neere to the lake Larius, there is a large and broad well, which every houre continually, swelleth and falleth downe againe. In the Island Sydonia before Lesbos, an hote fountaine there is that runneth onely in the Spring. The Lake Sinnaus in Asia, is infected with the wormewood growing about it, and thereof it tasteth. At Colophon in the vault or cave of *Apollo Clarius*, there is a gutter or trench standing full of water: they that drinke of it, shall prophesie and foretel strange things like Oracles, but they live the shorter time for it. Rivers running backward, even our age hath scene, in the latter yeeres of Prince *Nero*, as we have related in the acts of his life. Now, that all Springs are colder in Summer than Winter, who knoweth not? as also these wonderous workes of Nature, That brasse and lead in the masse or lumpe sinke downe and are drowned, but if they be driven out into thin plates, they floe and swim aloft: and let the weight be all one, yet some things settle to the bottome, others againe glide above. Moreover, that heauey burdens and lodes be stirred and removed with more ease in water. Likewise, that the stone Thyreus, bee it never so big, doth swim whole and entire: breake it once into peeces, and it sinketh. As also, that bodies newly dead, fall downe to the bottome of the water, but if they bee swollen once, they rise up againe. Over and besides, that emptie vessels are not so easily drawne forth of the water, as those that bee full: that raine water for salt pits is better and more profitable than all other: and that salt cannot be made, unlesse fresh water be mingled withall: that sea-water is longer before it congeale, but sooner made hote and set a seething. That in Winter the sea is hote, and in Autumne more brackish and salt. And that all seas are made calme and still with oyle: and therefore the divers under the water, doe spurt & sprinkle it abroad with their mouths because it dulceth and allaieth the unpleasent nature thereof, and carrieth a light with it. That no Snowes fall where the sea is deepe. And, whereas all water runneth downward by nature, yet Springs leape up; even at the very foot of *Ætna*, which burneth of a light fire so farre forth, as that for fiftie, yea, and an hundred miles, the waulming round bals and flakes of fire cast out sand and ashes.

CHAP. CIIII.

¶ *The marvailles of fre and water iointly together, and of Maltha.*

Now let us relate some strange-wonders of fire also, which is the fourth element of Nature. But first, out of waters. In a citie of Comagene, named Samosatis, there is a pond, yeelding forth a kind of slimie mud (called Maltha) which will burne cleare. When it meeteth with any thing solide and hard, it sticketh to it like glew: also, if it bee touched, it followeth them that flee from it. By this meanes the townesmen defended their walls, when *Lucullus* gave the assault, and his souldiours fried and burned in their owne armours. Cast water upon it, and yet it will burne. Experience hath taught, That earth onely will quench it.

A

CHAP. CV.

Of Naphtha.

OF the like nature is Naphtha: for so is it called about Babylonia, and in the Auffacenes country in Parthia, and it runneth in manner of liquid Bitumen. Great affinitie there is betweene the fire and it; for fire is readie to leape unto it immediately, if it bee any thing neere it. Thus (they say) *Medea* burnt her husbands concubine, by reason that her girtland anointed therewith, was caught by the fire, after shee approached neere to the altars, with purpose to sacrifice.

B

CHAP. CVI.

Of places continually burning.

BVt amongst the wonderfull mountaines, the hill *Ætna* burneth alwaies in the nights: and for so long continuance of time yeeldeth sufficient matter to maintaine those fires: in winter it is full of Snow, & covereth the ashes cast up, with frosts. Neither in it alone doth Nature tyrannize and shew her crueltie, threatning as shee doth a generall consuming of the whole earth by fire. For in Phoselis the hill *Chimæra* likewise burneth, and that with a continuall fire both night and day: *Ctesias* of *Gnidos* writeth, That the fire therof is enflamed and set a burning with water, but quenched with earth. In the same *Lycia* the mountaines *Hephæstij*, being once touched and kindled with a flaming torch, do so burne out, that the very stones of the rivers, yea and the sand in waters, are on fire withall; and the same fire is maintained with raine. They report also, that if a man make a furrow with a staffe that is set on fire by them, there follow gutters as it were of fire. In the *Bactrians* country, the top of the hill *Cophantus* burneth every night. Amongst the *Medians* also, and the *Cæstian* nation, the same mountains burneth: but principally in the very confines of *Persis*. At *Susis* verily, in a place called the *White Tower*, out of fifteene chinijes or tunnels the fire issueth, and the greatest of them, even in the day time carrieth fire. There is a plaine about *Babylonia*, in manner of a fish-poole, which for the quantitie of an acre of ground, burneth likewise. In like sort neere the mountaine *Hesperius* in *Æthyopia*, the fields in the night time doe glitter and shine like starres. The like is to bee scene in the territorie of the *Megapolitanes*, although the field there within-forth bee pleasant, and not burning the boughes and leaves of the thicke grove above it. And neere unto a warme Spring, the hollow burning furnace called *Crater Nymphæi*, alwaies portendeth some fearful misfortunes to the *Apolloniates*, the neighbours thereby, as *Theopompus* hath reported. It increaseth with showers of raine, and casteth out Bitumen to be compared with that fountain or water of *Styx* that is not to be tasted, otherwise weaker than all Bitumen besides. But who would mervell at these things? in the mids of the sea, *Hiera* one of the *Ætolian* Islands neere to *Italie*, burned together with the sea for certaine daies together, during the time of the allies warre, until a solemne embassage of the Senat made expiation therefore. But that which burneth with the greatest fire of all other, is a certaine hill of the *Æthyopians* *Theœr Ochema*, and sendeth out most parching flames, in the hottest sunne shine daies. Lo in how many places with fundrie fires Nature burneth the earth.

E

CHAP. CVII.

Wonders of fires by themselves.

Moreover, since the nature of this onely element of fire is to be so fruitfull, to breed it selfe, and to grow infinitely of the left sparkes; what may be thought will be the end of so many funeral fires of the earth? What a Nature is that which feedeth the most greedie voracitie in the whole world without losse of it selfe? Put thereto the infinite number of stars, the mightie great Sunne; moreover the fires in mens bodies, and those that are inbred in some stones; the attrition also of certaine woods one against another; yea, and those within clouds, the very originall of lightnings. Surely, it exceedeth all miracles, that any one day should passe, and not all the world bee set on a light consuming fire, since that the hollow fierie glasses also set opposite against the Sunne beames, sooner set things a burning than any other fire. What should I speake of innumerable

F

merable others, which be indeed little, but yet naturally issuing out in great abundance? In the Promontorie Nymphæum, there commeth forth a flaming fire out of a rock, which is set a burning with raine. The like is to be seene also at the waters called Scantiz. But this verily is but feeble when it passeth and removeth, neither endureth it long in any other matter. An ash there is growing over this fierie fountaine and covering it, which notwithstanding is alwaies greene. In the territorie of Mutina, there riseth up fire also, upon certaine set holidays unto *Vulcane*. It is found written, That if a cole of fire fall downe upon the arable fields under Aricia, the very soile presently is on fire. In the Sabines territorie, as also in the Sidicines, stones if they be annointed or greased, will be set on a light fire. In a towne of the Salentines called Egnaria, if fire be laid upon a certaine hallowed stone there, it will immediately flame out. Vpon the alter of *Iuno Laciua* standing as it doth in the open aire, the ashes lie unmoveable and stirre not, blow what stormie winds that will on every side. Over and besides, there be fires seene suddainely to arise, both in waters and also about the bodies of men. *Valerius Antias* reporterth, That the lake Thrasymenus once burned ail over: also that *Servius Tullius* in his childhood, as hee lay asleepe, had a light fire shone out of his head: likewise, as *L. Martius* made an Oration in open audience to the armie, after the two *Scipios* were slaine in Spain, and exhorted his souldiors to revenge their death, his head was on a flaming fire in the same sort. More of this argument, and in better order, will we write soone hereafter. For now we exhibite and shew the mervails of all things huddled and intermingled together. But in the meane while, my mind being passed beyond the interpretation of Nature, hasteneth to lead as it were by the hand the minds also of the readers, through-out the whole world.

CHAP. CVIII.

☞ *The measure of the whole earth in length and breadth.*

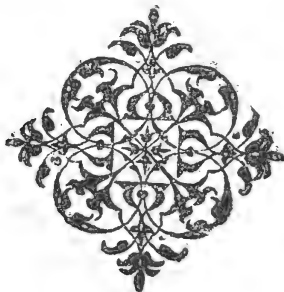
THis our part of the earth whereof I speake, siting as it were within the Ocean (as hath been said) lieth out in length most from the East to the West, that is to say, from India to *Hercules* pillars consecrated at Gades: and as mine authour *Artemidorus* thinketh, it containeth 85 hundred, and 78 miles. But according to *Isidorus* 98 hundred, and 18. *M. Artemidorus* addeth moreover, from Gades within the circuit of the sacred Promontorie, to the cape Artabrum, where the front and head of Spaine beareth out farthest in length 89 miles. This measure runneth two waies. From the river Ganges and the mouth thereof, whereas he discharged himselfe into the East Ocean, through India and Parthyene unto Myriandrum a citie of Syria, situate upon the gulfe or Firth of Issa, 52 hundred and 15 miles. From thence taking the next voiage to the Island Cyprus, to Patara in Lycia, Rhodes and Astypatæa (Islands lying in the Carpathian sea) to Tænarus in Laconia, Lilybæum in Sicilie, Calaris in Sardinia, 34 hundred and 50 miles. Then to Gades 14 hundred and 50 miles. Which measures being put all together, make in the whole from the said sea, 85 hundred 78 miles. The other way, which is more certaine, lieth most open and plaine by land, to wit, from Ganges to the river Euphrates 50 hundred miles and 21. From thence to Mazaca in Cappadocia 244 miles, and so forward through Phrygia and Caria to Ephesus 400 miles, 98. From Ephesus through the Ægean sea to Delos 200 miles. Then to Isthmus 212 miles. From thence partly by land, and partly by the Laconian sea and the gulfe of Corinth, to Patrae in Peloponnesus 202 miles and an halfe: so, to Leucas 86 miles and a halfe, and as much to Corcyra. Then to Acroceraunia 132 miles and an halfe: to Brundisium 86 miles and an halfe: so to Rome 3 hundred miles and 60. Then to the Alpes as far as the village Cincomagus 518 miles. Through Fraunce to the Pyrenæan hills, unto Illiberis 556 miles, to the Ocean and the sea coast of Spaine 332 miles. Then the cut over to Gades seven miles and a halfe. Which measure by *Artemidorus* his account, maketh in all 86 hundred 85 miles. Now the breadth of the earth, from the Meridian or South point, unto the North, is collected to bee lesse almost by the one halfe, namely, 54 hundred and 62 miles. Whereby it appeareth plainly, how much of the one side heat of fire, and on the other side frozen water hath stollen away. For I am not of mind that the earth goeth no farther than so, for then it should not have the forme of a globe; but that the places on either side bee uninhabitable, and therefore not found out and discovered. This measure runneth from the shore of the Æthiopian Ocean, which now is habited, unto Meroë, 550 miles. From thence to Alexandria 1200 and 40 miles. So, to Rhodes 583 miles,

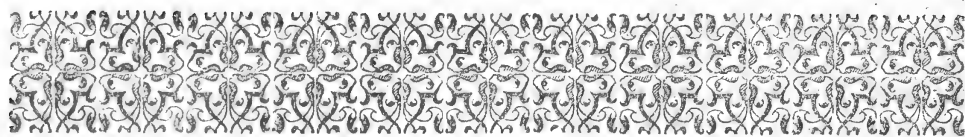
A miles; to Gnidus, 84 miles and a halfe; to Cos, 25 miles; to Samus, 100 miles; to Chiüs, 84 miles; to Mitylene, 65 miles; to Tenedos, 28 miles; to the cape Sigæum, 12 miles and a halfe; to the mouth of Pontus, 312 miles and a halfe; to Carambis the promontorie, 350 miles; to the mouth of Mæotis, 312 miles and an halfe; to the mouth of Tanais, 265 miles: which voyage may be cut shorter (with the vantage of sailing directly) by 89 miles. From the mouth of Tanais, the most curious Authors have set downe no measure. *Artemidorus* was of opinion, that all beyond was unfound and not discovered, confessing that about Tanais the Sarmatian nations doe inhabit, who lie to the North pole. *Isidorus* hath added hereto twelve hundred miles, as farre as to Thule: which is a judgement of his grounded upon bare guesse and conjecture. I take it, that the borders of the Sarmatians are knowne to have no lesse space of ground, than this last mentioned commeth unto. And otherwise, how much must it be, that would containe such an innumerable companie of people shifting their seats ever and anon, as they do. Whereby I guesse, that the over-measure of the clime inhabitable, is much greater. For I know certainly, that Germanie hath discovered mightie great Ilands not long since. And thus much of the length and breadth of the earth, which I thought worth the writing. Now the universall compasse and circuit thereof, *Eratoſthenes* (a great Clerke verily for all kind of literature, and in this knowledge above all others doubtlesse most cunning, and whome I see of all men approved and allowed) hath set downe to be 252000 stadia. Which measure, by the Romanes account and reckoning, amounteth to 300 hundred and 15 hundred miles. A wonderous bold attempt of his! but yet so exquisitely calculated and contrived by him, that a shame it were not to beleevve him. *Hipparchus*, a wonderfull man both for convincing him, and all his other diligence besides, addeth moreover little lesse than 25000 stadia.

CHAP. CIX.

§ The Harmonicall measure, and Circumference of the world.

D *Dionysodorus* in another kind would be beleevved: (for I will not beguile you of the greatest example of Grecian vanitie.) This man was a Melian, famous for his skill in Geometrie: hee dyed very aged in his owne countrey: his neere kinswomen (who by right were his heirs in remainder) solemnized his funerals, and accompanied him to his grave. These women (as they came some fewe dayes after to his sepulchre for to perfourme some solemne obsequies thereto belonging) by report, found in his monument an Epistle of this *Dionysodorus*, written in his own name To them above, that is to say, To the Living: and to this effect, namely, That hee had made a step from his sepulchre to the bottome and centre of the earth, and that it was thither 42000 stadia. Neither wanted there Geometricians, who made this interpretation, That he signified that this Epistle was sent from the middle centre of the earth, to which place downward from the uppermost aloft, the way was longest; and the same was just halfe the diametre of the round globe: whereupon followed this computation, That they pronounced the circuit to be 255000 stadia. Now the Harmonicall proportion, which forceth this universalitie and nature of the world to agree unto it selfe, addeth unto this measure 7000 stadia, and so maketh the earth to be the 96000 part of the whole world.





THE THIRD BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECVNDVS.

¶ The Proëme, or Preface.



hitherto have wee written of the position and wonders of the Earth, Waters, and Starres: also we have treated in generall tearmes, of the proportion and measure of the whole world. Now it followeth, to discourse of the parts thereof: albeit this also be iudged an infinite peece of worke, nor lightly can be handled without some reprehension: and yet in no kind of enterprise pardon is more due; since it is no marvaile at all, if he who is borne a mortall man, knoweth not all things belonging to man. And therefore, I will not follow one Author more than another, but every one as I shall thinke him most true in the description of each part. For as much as this hath been a thing common in manner to them all, namely, to learne or describe the situations of those places most exactly, where themselves were either borne, or which they had discovered and seene: and therefore, neither will I blame nor reprove any man. The bare names of places shall be simply set downe in this my Geographic; and that with as great brevitie as I can: the excellencie, as also the causes and occasions thereof, shall be deferred to their severall and particular treatises: for now the question is as touching the whole earth in generalitie, which mine intent is to represent unto your eyes: and therefore I would have things thus to be taken, as if the names of countries were put downe naked, and void of renowne and fame, and such onely as they were in the beginning, before any actes there done; and as if they had indeed an endiment of names, but respectiue onely to the world and universall nature of all.

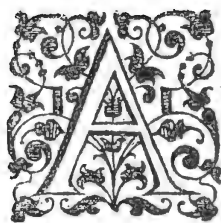
Now the whole globe of the earth is divided into three parts, Europe, Asia, and Africa. The beginning we take from the West and the Firth of Gades, even whereas the Atlanticke Ocean breaking in, is spred into the Inland and Mediteranean seas. Make your entrance there, I meane at the Streights of Gibraltar, and then Africke is on the right hand, Europe on the left, and Asia before you iust betwene. The bounds confining these, are the rivers Tanais and Nilus. The mouth of the Ocean at Gades (whereof I spake before) lyeth out in length 15 miles, and stretcheth forth in breadth but five, from a willage in Spaine called Mellaria, to the promontorie of Africke, called the White, as Turanius Graccula borne thereby, doth write. T. Livius and Nepos Cornelius have reported, that the breadth thereof where it is narrowest, is seven miles over, but ten miles where it is broadest. From so small a mouth (a wonder to consider) spreadeth the sea so huge and so vast as wee see; and withall, so exceeding deepe, as the marvaile is no lesse in that regard. For why? in the very mouth thereof, are to be seene many barres and shallow shelves of white sands (so ebbe is the water) to the great terrour of shippes and Saïlers passing that way. And therefore many have called those Streights of Gibraltar, The entrie of the Mediteranean sea. Of both sides of this gullet, neere unto it, are two mountaines set as frontiers and rampiers to keepe all in: namely, Abila for Africke, Calpe for Europe, the utmost end of Hercules Labours. For which cause, the inhabitants of those parts call them, The two pillars of that God; and doe verily beleve, that by certaine draines and ditches digged within the Continent, the maine Ocean, before excluded, made way and was let in, to make the Mediteranean seas, where before was firme land: and so by that meannes the very face of the whole earth is cleane altered.

A

CHAP. I.

Of Europe.

B



And first, as touching Europe, the nource of that people which is the conquerour of all nations; and besides, of all lands by many degrees most beautifull: which may for right good cause, have made not the third portion of the earth, but the one halfe (dividing the whole globe of the earth into two parts:) to wit, from the river Tanais unto the Streights of Gades. The Ocean then, at this space above-said, entreth into the Atlanticke sea, and with a greedie current drowneth those lands which

dread his comming like a tyrant; but where he meeteth with any that are like to resist, those he passeth just by, and with his winding turnes and reaches, he eateth and holoweth the shore continually to gaine ground, making many noukes and creekes every where: but in Europe most of all, wherein foure especiall great gulfes are to be seene.

Of which, the first, from Calpe the utmost promontorie (as is above-said) of Spaine, windeth and turneth with an exceeding great compasse, to Locri, and as farre as the promontorie Brutium. Within it lieth the first land of all others, Spaine; that part I meane, which in regard of us at Rome, is the farther off, and is named also Boetia. And anon from the Firth Virgitanus, the hither part, otherwise called Tarraconensis, as farre as to the hills Pyrenæi. That farther part of larger Spaine, is divided into two provinces in the length thereof: for on the North side of Boetia, lyeth Lusitania afront, divided from it by the river Ana.

This river beëinneth in the territorie Laminitanus of the hither Spaine, one while spreading out it selfe into broad pooles or meeres, other whiles gathering into narrow brookes: or altogether hidden under the ground, and taking pleasure to rise up oftentimes in many places, falleth into the Spanish Atlantick Ocean. But the part named Tarraconensis, lying fast upon Pyrenæus, and shooting along all the side thereof, and withall, stretching out it selfe overthwart and crossie from the Iberian sea to the Gauls Ocean, is separated from Boetia and Lusitania, by the mountaine Salarius, and the cliffes of the Oretanes, Carpetanes, and Asturians.

Boetia, so called of the river Boetis, that curteth in the mids, out-goeth all the other provinces for rich furniture, and a certaine plentifull trimnesse and peculiar beautie by it selfe. Therein are held foure soleimne Iudiciall great Assizes and Parliaments, according to foure Counties or Shires; to wit, the Gaditane, Cordubian, Astigitane, and Hispalensis. Townes in it are all in number 175; whereof there are Colonies, eight; free Borowghes, eight; townes endued with the auncient franchises of Latium 29: with Freedome, fixe; Confederate, foure; Tributarie paying custome, 120. Of which, those that be worth the naming, and are more currant in the Latine tongue, be these under-written: to wit, On the river Ana side and the Ocean coast, the citie Ossonoba, surnamed also Lusturia. There runne betweene, Luxia and Vrium, two rivers. The hills Ariani: the river Boetis: the shore Corense, with a winding creeke. Over-against which, lyeth Gades, to be spoken of among the Islands. The Cape or Head of *Iuno*: the haven Besippo.

Townes, Belon, and Mellaria. The Streights or Firth out of the Atlanticke sea. Carteia, called Tertessos by the Greekes; and the mountaine Calpe. Then, within the firme land, the towne Barbesula, with the river. *Nem*, the towne Salbula, Suel-Malacha upon the river of our Confederates. Next to these, Menoba with a river: Sexi-firmum, surnamed Iulium: Selaubina, Abdera, and Murgis the frontier towne of Boetia. All that whole coast, *M. Agrippa* thought to have had their beginning and discent from the Carthaginians. From Ana, there lyeth against the Atlanticke Ocean, the region of the Bastuli and the Turduli.

M. Varro saith, that there entred into all parts of Spaine, the Herians, Persians, Phænicians, Celtes, and Carthaginians or Africanes: for *Lusus*, the companion of Father *Liber* or *Liba*, (which signifieth the franticke furie of those that raged with him) gave the name to Lusitania; and *Pan* was the governour of it all. But those things which are reported of *Hercules* and *Pyrene*, or of *Saturne*, I thinke to be as vaine and fabulous tales as any other. As for Boetis, in the Tarraconensian province, rising, not as some have said, at the towne Mentefa, but in the chafe or Forrest Tugrensis, which the river Tader watereth, as it doth the Carthaginian pale also at Ilorcum, shunneth the funerall site and sepulchre of *Scipio*: and turning into the West, maketh toward

the Atlantick Ocean, adopting the province and giving it his own name, is at first but small, howbeit receiveth many other rivers into it, from which it taketh away both their name & their waters. And first being entred from Offigitania into Boetia, running gently with a pleasant channel, hath many townes both on the left hand and the right, seated upon it. The most famous and populous betwene it and the sea coast in the Mediterranean part thereof, are Segeda surnamed Augurina: Iulia, which is also called Fidentia: Virgao, otherwise Alba: Ebury, otherwise Cereolis: Illiberi, which is also Liberini: Ilipua named likewise Laus. Artigi or Iulenses: Vesce the same that Faventia: Singilia, Hegua, Arialdunum, Agla the lesse, Babro, Castra Vinaria, Epifibrium, Hipponova, Illurco, Osca, Escua, Succubo, Nuditatum, Tucci the old, all which belong to Bastitania, lying toward the sea. But within the Countie or jurisdiction of Corduba, about the very river standeth the towne Offigi, which is surnamed Laconicum: Illiturgi, called also Forum Iulium: Ipasturgi the same that Triumphale, Siria: and foureteene miles within the countrey, Obulco, which is named Pontificense. And anon (you shall see) Ripepora, a towne of the confederates, Sacili, Martialum, Onoba. And on the right hand Corduba, surnamed Colonia Patricia: and then beginneth Boetis to be navigable, and not before. As you go lower, you shall find townes Carbulo, Decuma, the river Singulis, falling into the same side of Boetis. The townes of the countie Hispalensis be these, Celtica, Axariara, Arruci, Menoba, Ilipa surnamed Italica. And on the left hand, Hispalia a Colonie, surnamed likewise Romulensis. But right forward opposite unto it, the town Offet, which hath a name besides, Iulia Constantia: Vergentum, which also is the same that Iulij Genitor, Hippo Caurasiarum, the river Menoba, which also entred into Boetis on the right side. But within the washes and downes of Boetis, there is the town Nebrissa surnamed Veneria and Colobona: also Colonies, namely, Asta, which is called Regia. And in the mid-land part, Asido, which is the same that Casariana. The river Singulus breaking into Boetis in that order as I have said, runneth hard by the Colonie Astigitania, surnamed also Augusta Firma, and so forward it is navigable. The rest of the Colonies belonging to this Countie, are free and enjoy immunitie of Tribute: namely, Tucci, which is surnamed Augusta Gemella: Itucci, the same that Virtus Iulia, Atubi all one with Claretas Iulia [i. excellencie of Iulius.] Vrso, which is Genua Urbanorum: and among these, Munda, which together with Pompeies son, was taken. Free townes, Astigi the old, and Ostippo. Tributarie, Caller, Calucula, Castra Gemina, Ilipula the lesse, Merucra, Sacrana, Obulcula, Oningis. As a man commeth from the coast, neere to the river Menoba, which also will beare a ship, there dwell not farre off the Alontigili, and Aloftigi. But all that region which without the forenamed, reacheth from Boetis to the river Ana, is called Beruria: divided into two parts, and as many sorts of people: to wit, the Celtici, who meet with Lusitania, and are within the division or countie Hispalensis: and the Turduli, who inhabite fast upon Lusitania and Tarraconensis: and they owe service to the Countie-Court of Corduba. As for the Celtici, manifest it is, That they came from the Celtiberians out of Lusitania, as appeareth by their religion, tongue, and names of townes, which in Boetia are distinguished by their additions or surnames, to wit, Seria which is called Fama Iulia: Vcultuniacum, which now is Curiga: Laconimurgi, Constantia Iulia, Terresibus is now Fortunales, and Callensibus, Emanici. Besides all these, in Celtica Acinippo, Arunda, Arunci, Turobrica, Lastigi, Alpefa, Saponia, Serippo. The other Beruria, which we said contained the Turduli, and belonged to the Countie of Corduba, hath townes of no base account, Arsa, Mellaria and Mitobrica: and regions or quarters, Ostrugi, and Sisapone. Within the Countie of Gades, there is of Romane cittizens a towne called Regina: of Latines there are I septia, Vlia, Carifa surnamed Aurelia, Virgia which is likewise named Castrum Iulium: also, Caesaris Salurariensis. But Tributaries there be these, Besaro, Besippo, Berbesula, Lacippo, Besippo, Caller, Cappagum, Oleastro, Itucci, Brana, Lacibi, Saguntia, Andorissippo. The whole length of it, *M. Agrippa* hath set downe 463 miles, and the breadth 257. But for that the bounds reached forward as farre as to Carthage, which cause breedeth oftentimes errors in the taking of the measures, whiles in one place the limits of the provinces were changed, and in another the pases in journeyng were either more or lesse; also, considering the seas in so long continuance of time have encroched here upon the land, and the bankes againe gotten there of the sea, and beare farther in; also, for that the reaches of the rivers have either turned crooked or gone streight & direct; over and besides, for that some have begun to take their measure from this place, others from that, and gone divers waies: it is by these means come to passe, that no twain accord together in one song; as touching their measure and Geographie.

A

CHAP. II.

& The length and breadth of Bœtica.

THe length of Bœtica at this day from the bound of the towne Castulo unto Gades, is 475 miles: and from Murgi the maritime coast or lands end, more by 22 miles. The bredth from the edge or border of Carteia, is 224 miles. And verily, who would beleve, that *Agrippa* (a man so diligent, and in this worke principally, so curious) did erre, when he purposed to set out a map of the whole world openly to be seene of the whole citie, and namely, when *Augustus Casar* of happie memorie, joined with him? For hee it was that finished the porch or gallerie begun by *Agrippas* sister, according to his will appointment and direction, which contained the said pourtraict.

B

CHAP. III.

& The hither or higher Spaine.

THe old forme of the hither Spaine is somewhat changed, like as of many other provinces: considering that *Pompey* the great in his triumphant trophees which hee erected in Pyrenæus, testifieth, That 846 townes betweene the Alpes and the marches of the farther or lower Spain, were subdued by him & brought to obedience. Now, is the whole province devided into seven Counties, the Carthaginian, the Tarraconian, Cæsar Augustani, Cluniensis, Asturia, Lucensis, & Bracarum. There are besides Islands, setting aside which, without once naming them, and excepting the cities that are annexed to others, the bare province containeth 294 townes. In which, Colonies there be twelve, townes of Romane citizens thirteene, of old Latines seventeene, of allies within the league, one; tributarie, a hundred thirtie fixe. The first in the very frontiers thereof, be the Bastulians: behind them in such order as shall bee said: namely, those inlanders that inhabite within-forth, the Mentefanes, Oretanes, and the Carpetanes upon the river Tagus. Neere to them, the Vaccæans, Vectones, Celtiberians, and Arrebaci. The towns next to the marches, Vrci, and Barea laid to Bœtica: the countrey Mauritania, then Deitania: after that, Contestania, and new Carthage, a Colonie. From the Promontorie whereof called *Saturnes* cape, the cut over the sea to Cæsaria a citie in Mauritania, is of 187 miles. In the residue of that coast is the river Tader: the free Colonie Illici, of which, a firth or arme of the sea tooke the name Illicitanus. To it owe service and are annexed the Icositanes. Soone after, Lucentum a town of the Latines. Dranium a tributarie, the river Suero, which was sometime the frontier towne of Contestania. The region Edetania, which retireth inward to the Celtiberians, having a goodly pleasant poole bordering along the front of it. Valentia, a Colonie lying three miles from the sea. The river Turium: and just as farre from the sea, Saguntum, a towne of Romane citizens, renowned for their fidelitie. The river Idubeda, and the region of the Illegaones. The river Hebre, yeelding such riches of trafficke and commerce, by reason that it is navigable: which beginneth in the Cantabrians countrey, not farre from the towne Inliobrica, and holdeth on his course 430 miles: and for 260 of them, even from the towne Varia, carrieth vessels of merchandise, in regard of which river, the Greekes named all Spaine Iberia. The region Cofsetania, the river Subi, the Colonie Tarraco, built by the *Scipioes*, like as Carthage by the Africans. The countrey of the Illegetes, the towne Subur, the river Rubricatum, and from thence the Lacetanes and Indigetes. After them in this order following: within-forth at the foot of Pyrenæus, the Ausetanes, Itanes, and Lacetanes: and along Pyrenæus the Cerretanes, and then the Vascones. In the edge or marches thereof, the Colonie Barcino, surnamed Faventia. Townes of Romane citizens, Bætulo, Illuro, the river Lamum, Blandæ: the river Alba, Emporiæ: two there be of these, to wit, of the old inhabitants, and of the Greekes, who were the off-spring descended from the Phocæans. The river Tichus. From whence to Pyrenæa Venus, on the other side of the Promontorie, are fortie miles. Now besides the forenamed, shall bee related the principall places of marke as they lie in every Countie. At Tarracon there plead in court foure and fortie States. The most famous and of greatest name among them, be of Romane citizens the Dertufanes, and Bisgargitanes: of Latines, the Ausetanes and Cerretanes surnamed Iulianes: they also who are named Augustanes, the Sedetanes, Gerundenfes, Gessarians, Tearians, the same that Iulienfes. Of Tributaries,

E

F

taries, the Aquicaldenses, Onenses, and Batulonenses. Caesar Augusta, a free Colonie, upon which the river Iberus floweth: where the towne before was called Salduba: these are of the region Sedetania, and receiveth 52 States: and among these, of Romane citizens the Bellitanes and Celsenses. And out of the Colonie, the Calaguritanes surnamed also Nascici. The Herdians of the Surdaons nation, neer unto whom runneth the river Sicoris. The Ofcians of the region Vescetania, and the Turiasonenses. Of old Latins, the Cascantenses, Euganicenses, Gracchuritanes, Leonicenses, Offigerdenses. Of confederates within the league, the Taragenes, Tributaries besides, the Arcobricenses, Andologenses, Arocelitanes, Burfaonenses, Calaguritanes surnamed Fibularenenses, Complutenenses, Carenses, Cincenses, Cortonenses, Dammanitanes, Larrenses, Iturisenenses, Ispalenses, Ilumberitanes, Lacetanes, Vibienenses, Pompelonenses and Segienenses. There resort to Carthage for law 62 severall States, besides the Islanders. Out of the Colonie Accitana, the Gemellenenses, also Libisofona surnamed Foroangustana: which two are endued with the franchises of Italie: out of the Colonie Salariensis, the Oppidanenses of old Latium, Castellonenses, whom *Caesar* calleth *Venales*. The Setabitanes, who are also Augustanes, and the Valerrienenses. But of the Tributaries, of greatest name bee the Babanenses, the Bascianes, the Consaburenenses, Dianenses, Egelestanes, Ilorcitani, Laminitani, Mentefani, the same that Oritani; and Mentefani who otherwise are Bastuli: Oretanes who also are called Germani, the cheefe of the Celtiberians, the Segobrigenenses, and the Toletanes of Carpetania, dwelling upon the river Tagus. Next to them the Viacienenses and Virgilienses. To the assises or law court Clunienensis, the Varduli bring foureteeen nations; of which I list to name none but the Albanenses: but the Turmodigi foure, among whom are the Segisamonenses, Sagisamejulienenses. To the same assises, the Carictes and the Vennenses doe goe out of five cities, of which the Velienenses are. Thither repaire the Pelendones, with four States of the Celtiberians, of whom the Numantines were famous: like as in the eighteeen citties of the Vaccæans, the Intercatienenses, Pallantini, Lacobricenses, and Caucesenses: for in the foure States of the Cantabrics, onely Luliobrica is named. In the tenne States of the Autrigones, Tritium and Vironesca. To the Arevaci the river Arevaga gave name. Of them there be seven townes, to wit, Saguntia and Vxama, which names be often used in other places: besides Segovia and Nova Augusta, Termes, and Clunia it selfe the very utmost bound of Celtiberia. All the rest lie toward the Ocean, & of the abovenamed the Verduli together with the Cantabri. To these there are joined twelve nations of the Astures, divided into the Augustanes & Transimontanenses, having a stately cittie Asturica. Among these are reckoned, Giguri, Pefici, Lancienenses, and Zoclae. The number of the whole multitude ariseth to 240000 pols of free men, besides slaves. The Countie or jurisdiction Lucensis, compriseth sixteeen townes (besides the Celukes and Lebunians) of base condition, and having barbarous names; howbeit, of freemen to the number well neere of 166000. In like manner 24 citties, which affoord 275000 pols, ow service to the court of Bracarum: of whom besides the Bracarians themselves, the Vibali, Celerini, Gallæci, Aquesilici and Quinquerni, may be named without disdain and contempt. The length of the hither Spain, from Pyrenæus to the bound of Castulo is 607 miles, and the coast therof somewhat more. The breadth from Tarracon to the shore of Alarson, 307 miles. And from the foot of Pyrenæus, where, betweene two seas it is pointed with the streights, and so opening it selfe by little and little from thence, untill it come to touch the farther Spain, it is as much, and addeth somewhat more to the breadth. All Spaine throughout in manner is full of mettall mines, as lead, yron, brasse, silver, and gold: the hither part thereof aboundeth besides with stone glassees, or glasse stones: and Bætica particularly with vermilion. There bee also there quarries of marble. Vnto all Spaine throughout, *Vespasianus Augustus* the Emperour, tossed with the tempests and troubles of the Commonweale, graunted the franchises of Latium. The mountaines Pyrenæi do confine Spaine and Fraunce one from the other, lying out with their promontories into two contrarie seas.

CHAP. IIII.

 The province Narbonensis.

THAT part of Gallia which is washed and beaten upon with the Mediteranean sea, is called the province Narbonensis, named afore-time Braccata, divided from Italie by the river Varus and the Alpes; most friendly mountaines to the Romane Empire: and from the other parts of Gaule, on the north side, by the hills Gebenna and Iura. For tillage of the ground, for

A for reputation of men, regard of civilitie and manners, and for wealth, worthy to be set behind no other provinces whatsoever: and in one word, to be counted Italie more truly than a province. In the edge or marches thereof, lyeth the countrey of the Sardaons; and within, the region of the Conſuarones. The rivers be Tectum and Vernodubrium: the townes, Illiberis (a poore relique and simple ſhew of a citie to that it was in old time) and Ruſcio, inhabited by the Latines. The river Atax ſpringing out of Pyrenæus, runneth through the lake Rubrenſis and ſtretcheth over it. *Narbo Martius* a Colonie inhabited by the Legionaries of the tenth legion, twelve miles diſtant from the ſea. Rivers, Araris and Liſia. Townes in the other parts, ſcattered here and there by reaſon of pooles and meeres lying before them: namely, Agatha, in times paſt belonging to the Maſſilians, and the region of Volſcæ Teſtoſages. Also, where Rhoda of the Rhodians was, whereof Rhodanus tooke name, the moſt fruitfull river by farre of all Gallia, running ſwiftly out of the Alpes through the lake Lemanus, and carrying with it the dead and ſlow river Araris; and Iſara running as faſt as it ſelfe, together with Druentia. The two ſmall mouthes or paſſages thereof are called Lybica: of which, the one is Hispanienſum, the other Metapinum: a third there is beſides, and the ſame moſt wide and large, named Maſſalioticum. There be ſome that write, how the towne Heraclea likewiſe ſtood upon the mouth of Rhodanus. Beyond the ditch out of Rhodanus, which was the work of *C. Marius* and bearing his name, there was a notable poole or meere. Moreover, the towne Aſtomela, and the maritime tract of the Avætica: and above it, the ſtonie plaines, carrying the memoriall of *Hercules* his battailes. The region of the Anatilians, and within forth, of the Deſuviates and Cavians. Againe, from the ſea; Tricorum, and inward, the region of the Tricollivocantians, Segovellaunes, and anon of the Allobroges: but in the marches, Maſſilia of Greeke Phocæans: within the league. The promontorie Cithariſta, Zaopartus, and the region of the Camatullici. After them, the Suelteri; and above them, Verucines. But in the coaſt along ſtill, Athenopolis under the Maſſilians, Forum Iulij a Colonie of the ninth legion ſouldiers, which alſo is called Parenſis and Claſſica: in it is the river Argenteus: the region of the Oxubij and Ligaunians; above whome, are the Suetri, Quariates, and Adunicates: but in the borders, a Latine towne Antipolis. The region of the Deciates, the river Varus guſhing out of an hill of the Alpes, called Acema. In the middle part thereof the Colonies, Arelate of the ſixth legion ſouldiers, Bliteræ of the ſeventh, and Arauſia of thoſe belonging to the ſecond. In the territorie of the Cavians, Valentia and Vienna, of the Allobroges. Latine townes, Aquæ Sextiæ of the Salyans, and Avenio of the Cavians, Apta Iulia of the Vulgientians, Albeſcerriorum of the Apollinæres, Alba of the Heluans, Anguſta of the Tricoſtines; Anatilia; Acria, Bormanni, Comacina, Cabellio, Carcaſum, of the Volſcane Teſtoſages: Ceſtero, Carpentoraſte, of the Menines: the Ceniceſes, Cambolæcti, who are named beſides Atlantici, Forum Voconij, Glanum, Livij, Lutevani, who are the ſame that Foro-neronienſes. Nemaufum of the Arecomici, Piſcenæ, Ruteni, Sanugeneſes, and Toſofani, of the Teſtoſages. The neighbour borderers upon Aquitane, Taſco-dumerari, Canonieneſes, Vmbranici. Two capitall townes of the confederate State of the Vocontians, Vaſco and Lucus Auguſti. But baſe townes of no importance nineteene, as 24 more annexed to the Nemaufiens, and under their Seignorie. To this charter or Inſtrument enrolled, *Galba* the Emperour added of the Alpine inhabitants, the Avantici and Eproduntij; whoſe towne is named Dima. *Agrippa* ſaith, that the length of this province Narbonenſis, is 270 miles, and the breadth 248.

CHAP. V.

¶ *Italie, Tiberis, Rome, Campania.*

NEXT to them is Italie, and the firſt of all, the Ligurians: then Hetruſia, Vmbria, Latium, where be the mouthes of Tiberis and Rome the head city of the whole earth 16 myles diſtant from the ſea. After it, is the maritime countrey of the Volſcians, and Campania: then Picentium, Lucanum, and Brutium, the furtheſt point in the South, unto which from the crooked mountaines of the Alpes, like in manner to the moone croiſſant, with ſome parts higher, other lower, Italie ſhooteth out in length to the ſea: from it, is the ſea coaſt of Græcia, and ſoone after, the Salentines, Pediculi, Apuli, Peligni, Ferentani, Marrucini, Veſtines, Sabinæ, Picentes, Gaules, Vmbrians, Thuſcans, Venetians, Carnians, Iapides, Iſtrians, and Li- burnians.

Neither

Neither am I ignorant, that it might be thought and that justly, a point of an unthankfull G mind and idle withall, if briefly in this sort, and as it were by the way, that land should be spoken of which is the nource of all lands. Shee also is the mother, chosen by the powerfull grace of the gods, to make even heaven it selfe more glorious; to gather into one the scattered' empires; to soften and make civile the rude fashions of other countries; and whereas the languages of so many nations were repugnant, wild, and savage, to draw them together by commerce of speech, conference, and parley; to endue man with humanitie; and briefly, that of all nations in the world, there should be one onely countrey. But here, what should I doe? So noble are all the places that a man shall come unto, so excellent is every thing, and each State so famous and renowned, that I am fully possessed with them all, and to seeke what to say. Rome citie, the onely H faire face therein, worthy to stand upon so stately a necke and paire of shoulders, what worke would it aske thinke you, to be set out as it ought? The very tract of Campaine by it selfe, so pleasant and goodly, so rich and happy, in what sort should it be described? So as it is plaine and evident, that in this one place there is the workmanship of Nature wherein she joyeth and taketh delight. Now besides all this, the whole temperature of the aire, is evermore so vitall, healthie, and wholesome, the fields so fertile, the hills so open to the sunne, the Forrests so harmelesse, the groves so coole and shadie, the woods of all sorts so bounteous and fruitfull, the mountaines yeelding so many breathing blasts of wind; the corn, the vines, the olives so plentifull; the sheep so enriched with fleeces of the best wooll, the bulls and oxen so fat and well fed in the necke; so many lakes and pooles, such store of rivers and springs watering it throughout; so many seas and havens, that it is the very bosome lying open and ready to receive the commerce of all lands I from all parts: and yet it selfe full willingly desireth to lye farre into the sea to helpe all mankind. Neither doe I speake now of the natures, wits, and fashions of the men; ne yet of the nations abroad subdued with their eloquent tongue, and strong hand. Even the Greekes (a nation of all other most given to praise themselves beyond all measure) have given their judgement of her, in that they called some small part thereof, Great Greece. But in good faith, that which wee did in the mention of the heaven, namely, to touch some knowne Planets and a few starres, the same must we likewise doe in this one part: only I would pray the readers to remember and carry this away, That I hasten to rehearse every particular thing through the whole round globe of the earth.

Well then, to begin, Italy is fashioned like for all the world to an Oke leafe, and much larger K in length than breadth: to the left side bending with the top, and ending in the figure and fashion of an Amazonian shield: and where that tract of Calabria lyeth which is called Cocinthos, it putteth forth into those two promontories or capes like the moones two hornes; the one, Leucopetra on the right hand; the other, Lacinium on the left. In length it reacheth from the foot of the Alpes, through Ostia or Prætoria Augusta, directly to the citie of Rome, and so forward to Capua, with a direct course leading to Rhegium a towne situate upon the shoulder thereof: from which beginneth the bending as it were of the necke, and beareth 1000 and 20 myles. And this measure would growe to be farre more, if it went as farre as Lacinium, but that such an obliquitie and winding might seeme to decline and beare out too much unto one side. L The breadth thereof is diversly taken, namely, 410 miles betweene the two seas, the higher and the lower, and the rivers Varus and Arfia. The middes of which breadth, (and that is much about the citie of Rome) from the mouth of the river Aternus running into the Adriaticke sea, unto the mouthes of Tiberis, 136 miles, and somewhat lesse: from Novum Castrum by the Adriaticke sea, to Alsum and so to the Tuscan sea: and in no place exceedeth it in breadth 300 miles. But the full compasse of the whole from Varus to Arfia, is 20049 miles. Distant it is by sea from the lands round about, to wit, from Istria and Liburnia in some places 100 miles; from Epirus and Illyricum 50 miles; from Africke lesse than 200, as Varro affirmeth; from Sardinia, an hundred and 20 miles; from Sicilie, a mile and a halfe: from Corcyra lesse than 70; from Iffa, fiftie. It goeth along the seas, to the Meridionall line verily of the heaven; but if a man examine it exactly indeed, it lyeth betweene the Sunne rising in mid-winter, and the point of the M Noone-sted.

Now will we describe the compasse and circuit thereof, and reckon the cities: wherein, I must needs protest by way of Preface, that I will follow for mine Authour *Augustus* the Emperour of famous memorie, and the description by him made of all Italie, which be divided into 11

A Regions or Cantons. As for the maritime townes, I will set them downe in that order as they stand, according to their vicinitie one to another. But for as much as in so running a speech and hastie pen, the rest cannot possibly be so orderly described: therefore in the inland part therof, I will follow him as he hath digested them by the letters of the Alphabet: but mentioning withall, the colonies or chiefe cities by name, which he hath delivered in that number. Neither is it an easie matter to know throughly their positions and foundations, considering the Ingaune Ligurians (to say nothing of all the rest) were endowed with lands thirtie times, and changed their seates. To begin with the river Varus therefore, there offereth to our eye, first the towne Nicæa, built by the Massilians: the river Po; the Alpes; the people within the Alpes of many names, but of most marke Capillati, with long haire: the towne Vediantiorum, the citie Cemelion, or, a towne belonging to the State of the Vediantians, called Cemelion: the port of *Hercules* and *Monæcus*, and so the Ligurian coast. Of the Ligurians, the most renowned beyond the Alpes, are the Sallij, Deceates, and Oxubij: on this side, the Veneni, and descended from the Caturiges, the Vagienni, Statyelli, Vibelli, Magelli, Euburiates, Casmonates, Veliates, and those, whose townes wee will declare in the next coast. The river Rrutuba, the towne Albium Intemelium, the river Merula, the towne Albium Ingaunum, the port or haven towne Vadum Sabatium, the river Porcifera, the towne Genua, the river Feritor, the Port Delphini, Tigulia: within, Segesta Tiguliorum: the river Macra which limiteth Liguria. Now on the backe side behind all these townes abovenamed, is Apennine, the highest mountain of all Italie, reaching from the Alpes with a continuall ridge of hills, to the streights of Sicilie.

C From the other side thereof to Padus, the richest river of all Italie, all the countrey shineth with goodly faire townes, to wit, Liberna, Dertona a Colonie, Iria, Barderates, Industria, Pollentia, Carrea, which also is named Polentia, Foro Fulvij the same that Valentinum, Augusta of the Vagienni: Alba Pompeia, Asta, and Aquæ Statyellorum. And this is the ninth Canton, after the Geographie of *Augustus*. This coast or tract of Liguria containeth betweene the rivers Varus and Macra 211 miles. To it is adjoined the seventh, wherein is Hetruria from the river Macra: and it oftentimes changed the name. In old time the Pelasgians chased the Vmbrians from thence: and by them the Lydians did the like, of whose king, named they were Tyrrheni: but soone after, of their ceremonies in sacrificing, in the Greeke language *Thursci*. The first towne of Hetruria, is Luna, famous for the haven; then the Colonie Luca, lying from the sea: and neerer unto it, is Pisa, betweene the river Aufer and Arnus, which tooke the beginning from *Pelops* and the Pisians, or Atintanians a Greeke nation. Vada Volaterranea, the river Cecinna, Populonium of the Tuscanes in times past, situate onely upon this coast. After these, the rivers Prille, and anone after Vmbro, navigable, and of it tooke name: so forward the tract of Vmbria, and the port towne Talamon: Costa Volscentium, a Colonie planted there by the people of Rome, Graviscæ, Castrum Novum, Pyrgi, the river Cæretanus, and Care it selfe, standing foure miles within, called Agylla by the Pelasgians who built it: Alsum and Frugenæ. The river Tiberis, distant from Macra 284 miles. Within-forth are these Colonies, Falisca descended from Argi (as *Cato* saith) and for distinction is called Herufcorum, Lucus Feroniæ, Ruffellana, Senensis and Sutriua. As for the rest, these they be, Aretini the old, Aretini Fidentes, Aretini Iulieneses, Amitinenses, Aqueses surnamed Taurini: Vlerani, Cortonenses, Capenates, Clusines the old, Clusines the new, Fluentini, fast upon the river Arnus that runneth before them, Fesulæ, Ferentinum, Fescennia, Hortanum, Herbanum, Nepet, Novempag[is, the nine villages] the Shire-wiek called Prefecture Claudia, or Foro Clodij: Pistorucin, Perugia, Suanenses, Saturnini, who beforetime were called Aurinini, Sudertani, Seatonnes, Tarquinieneses, Tuscanieneses, Vetulonieneses, Veientani, Vesentini, Volaterrani surnamed Herufsci and Volsinieneses. In the same part lie the territories Crustuminus and Cæletranus, bearing the names of the old townes. Tiberis, beforenamed Tybris, and before that Albula, from the middest well neere of Apennine, as it lieth in length, runneth along the marches of the Aretines: small and shallow at the first, and not able to beare a vessell without being gathered together, as it were, by fishpooles into an head, and so let goe at fluces: as Tina and Glanis which run into him, the which are at the same passe, and require nine daies for collection of waters, and so are kept in for running out: in case they have no helpe of raine at all. But Tiberis by reason of the rough, stonie, and rugged channell, for all that devise, holdeth on no long course together, but onely for troughes, to speake more truly, than boats: and thus it doth for a hundred and fittie miles, nor farre from Tifernum, Perugia and Otriculum: dividing as it passeth

Hetruria from the Umbrians and Sabines: and so forth untill anon, within thirteene miles of the G
 cittie [Rome] it parteth the Veientian countrey from the Crustumine: and soone after the Fide-
 nate and Latine territories from the Labicane. But besides Tinia and Glanis, hee is augmented
 with two and fortie rivers, and especially with Nar and Anio: which river being also it selfe navi-
 gable, encloseth Latium behind: and neverthelesse so many waters and fountaines are brought
 thereby into the cittie, whereby it is able to receive any ships, bee they never so great, from the
 Italian sea; and is the kindest marchant to conveigh all commodities growing and arising in any
 place of the whole world: it is the onely river of all others, to speake of, and more villages stand
 upon it and see it, than all other rivers in what lands soever. No river hath lesse libertie than it, as
 having the sides thereof enclosed on both hands, and yet hee is no quarreller, nor much hatme H
 doth he, albeit he hath many and those suddaine swellings, and in no place more than in the ve-
 ry cittie of Rome doe his waters overflow: yet is he taken to be a prophet rather, and a Counsellor
 to give warning, yea, and in swelling, more religious and breeding scruple to speake a truth,
 than otherwise cruell and doing any great harme. Old Latium from Tiberis to Circeios was ob-
 served to be in length fiftie miles. So small roots at the first tooke this Empire. The inhabitants
 thereof changed often, and held it, some one time, some another; to wit, the Aborigenes, Pelas-
 gi, Arcadians, Sicilians, Auruncanes, and Rutilians. And beyond Circeios, the Volscians, Offi-
 ans, Aufonians, from whence the name of Latium did reach soone after, as farre as to the river
 Liris. In the beginning of it standeth Ostia, a Colonie, brought thither and planted by a Roman
 king: the towne Laurentum, the grove of *Iupiter Indiges*, the river Numicius, and Ardea, built
 by *Danaë* the mother of *Persëus*. Then the Colonie Antium, sometimes Aphrodisium: Astura, I
 the river and the Island. The river Nymphæus, Clatra Romana Circeij, in times past an Island,
 yea, and that verily environned with a mightie sea (if we beleewe *Homer*) but now with a plaine. A
 wonder it is what we are able to deliver, concerning this thing, to the knowledge of men. *Theo-*
phrastus, who of strangers was the first that writ (any thing diligently) somewhat of the Romans
 (for *Theopompus*, before whom no man made mention at all, said onely, That the cittie was woon
 by the Gauls: and *Clitarchus* next after him, spake of nothing els but an embassage sent unto
Alexander) this *Theophrastus*, I say, upon a better ground and more certaintie now than bare
 hearefay, hath set downe the measure of the Island Circeij to bee eightie Stadia; in that booke
 which he wrote to *Nicodorus* the cheefe Magistrate of the Athenians, who lived in the 460 year
 after the foundation of Rome cittie. Whatsoever land therefore above tenne miles compasse li- K
 eth neere about it, hath bene annexed to the Island. But after that, a yeere, another strange and
 wonderfull thing fell out in Italie: for not farre from Circeij, there is a meere called Pomptina,
 which *Mutianus*, a man who had bene thrice Consull, reporteth to have bene a place wher-
 in stood 23 citties. Then there is the river Vfsens, upon which standeth the towne Tarracina, called
 in the Volscian tongue Anxur, and where sometime was the cittie Amycle, destroyed by serpents.
 After it is there the place of a cave or peake, the lake Fundanus, and the haven Cajeta. The town
 Formiæ named also Hormiæ, the auncient seat (as men thought) of the Læstrigones. Beyond it
 was the towne Pyræ, the Colonie Minturnæ, divided afunder by the river Liris, called Cla-
 nius. The utmost frontier towne in this part of Latium laid to the other, is Sinuessæ, which as L
 some have said, was wont to be called Sinope. Thence commeth to shewit selfe that pleasant and
 plentifull countrey Campania. From this vale begin the hills full of vineyards, and famous for
 drunkenesse, proceeding of strong wine and the liquor of the grape, commended so highly in
 all countries: and (as they were wont to say in old time) there was the exceeding strife betweene
 father *Liber* and dame *Ceres*. From hence the Setine and Cecubine countries spread forth: and
 to them joine the Falerne and Calene. Then arise the mountaines, Massici, Gaurani and Surren-
 tine. There the Laborium Champain fields lie along under their feet, and the good Wheat har-
 vest to make fine surmentie for dainties at the table. The sea-coasts here are watered with hote
 fountaines, and among other commodities throughout all the sea, they beare the name for the
 rich purple shell fish, and other excellent fishes. In no place is there better or more kind oyle
 pressed out of the Olive. And in this delightful pleasure of mankind, the Ofcians, Grecians, M
 Umbrians, Tuscanes, and Campanes have striven who could yeeld best. In the skirt and edge
 thereof, is the river Savo, Vulturum the towne and river both, Linternum, and Cumo inhabited
 by Chalcidians, Misenum, the haven Bajæ, Baüli, the pooles Lucrinus and Avernus, neere unto
 which was sometime the towne Cimmerium. Then Puteoli, called also the Colonie Dicæarchia:
 After

- A** After that, the plaines Phlegræi, and the meere or fenne Acherusia neere to Cumes. And upon the very stord by the sea side Naples, a citie also of the Chalcidians, the same that Parthenope, so called of the tombe of a Sirene or Meeremaide: Herculanium, Pompeij: and where not farre off the mountaine Vesuvius overlooketh, and the river Sernus runneth under the territorie of Nuceria, and within nine miles of the sea, Nuceria it selfe. Surrentum with the promontorie of *Minerva*, the seat somtime of the Meeremaides. From the cape Circeij lieth the sea open for saile 78 mile. This is counted the first region of Italie, next to Tibris, according to the description of *Augustus*. Within it are these Colonies, Capua, so called of the Champane country, Aquinum; Sueffa, Venafrum, Sora, Teanum, named withall Sidicinum and Nola: the Townes bee, Abellinum, Aricia, Alba Longa, Acerrani, Allifani, Atinates, Aletrinales, Anagnini, Atellani, Asulanij, Arpinates, Auximates, Avellani, Alfaterni; and they who of the Latine, Hernick, and Labicane territories, are surnamed accordingly: Bovillæ, Calatiæ, Casinum, Calenum, Capitolum, Cernētum, Cernetani, who be called also Mariani. Corani descended from Dardanus the Trojan. Cubulterini, Castrimonienfes, Cingulani. Fabienfes, and in the mount Albane, Foro-populienfes. Out of the Falerne territorie, Frusinales, Ferentinales, Freginales, Fabraterni the old, Fabraterni the new, Ficolenfes, Fricolenfes, Foro-Appi, Forentani, Gabini, Interramnates, Succasani called also Lirinates, Ilionenfes, Lavinij, Norbani, Nementani. Prenestini, whose citie was in times past named Stephanus, Privernates, Setini, Signini, Sueffulani, Telini, Trebutini surnamed Balinienfes, Trebani, Tusculani. Verulani, Veliterni, Vlubrenfes, Vlvernates: and above also Rome her selfe: the *other name wherof to utter, is counted in the secret mysteries of ceremonies an impi-
- B**
- C** ous & unlawfull thing: which after that it was abolished, and so faithfully observed to right good purpose and for the safetie therof, *Valerius Soranus* blurted out, & soon after abid the smart for it. I thinke it not amisse nor impertinent, to insert here in this very place, an example of the auncient religion instituted especially for this Silence: for the goddesse *Angerona*, whose holiday is solemnly kept with sacrifices the 12 day before the Kalends of Ianuarie, is represented by an Image having her mouth fast tyed and sealed up. This citie of Rome had 3 gates when *Romulus* left it, or rather foure (if we beleve the most men that write thereof.) The walls thereof, when the two *Vespasians*, Emperors and Censors both, to wit, the father and *Titus* his son, tooke the measure, which was in the yeere after the foundation of it 828, were in circuit * 13 miles and almost a quarter. It containeth within it, seven mountaines, and is divided in 14 regions, and 265 crosse
- D** streets or carrefours, called Compita Larium. The measure of the same equall space of ground, running from the gilden pillar Milliarium, erected at the head or top of the Rom. Forum, to everie gate, which are at this day 37 in number, so yee reckon once the 12 gates alwayes open, and over-passe 7 of the old, which are no more extant, maketh 30 miles 3 quarters and better by a straight line: but if the measure be taken from the same Milliarium before-said, through the suburbs to the utmost ends of the houses, and take withall the Castra Prætoria, and the pourprise of all the streets, it commeth to somewhat above 70 miles: whereunto if a man put the heighth of the houses, hee may conceive verily by it, a worthy estimate of the excellencie thereof, and confesse that the statelinesie of no citie in the world, could be comparable unto it. Enclosed it is and fenced on the East side, with the banke or rampier of *Tarquinius* the Proud; a wonderfull peece of worke as any other, and as excellent as the best: for he raised it full as high as the walles, in that side where the advenue to it was most open and plaine. In other parts, defended it was and fortified with exceeding high walles, or else steepe and craggie hills, but only whereas there are buildings lye out abroad, and make as it were many petie cities. In that first region of Italie there were besides, first for Latium these faire townes of marke, Satricum, Pometia, Scaptia, Pitulum, Politorium, Tellene, Tifata, Cæmina, Ficana, Crustumerium, Ameriola, Medullia, Corniculum, Saturnia, where now Rome standeth. Antipolis, which now is Ianiculum, in one part of Rome: Antemnæ, Camerium, Collatiæ: Amiternum, Norbe, Sulmo: and with these, the States that were wont to receive a dole of flesh in mount Albane, to wit, Albenses, Albani, Aefolani, Acienfes, Abolani, Buberani, Bolani, Casuetani, Coriolani, Fidenates, Forcij, Hortenses, Latinenfes, Longulani, Manates, Marales, Mutucumenfes, Munienfes, Numinienfes, Olliculani, Oëtulani, Pedani, Pollustini, Querquetulani, Sicani, Sifolenses, Tolerienfes, Tutienfes, Vimitellarij, Velienfes, Venetulani, Vicellenfes. Thus yee see, how of the old Latium, there be 53 States perished and cleane gone, without any token left behind. Moreover, in the Campaine country, the towne *Srabia* continued unto the time that *Cn. Pompeius* and *L. Carbo*
- E**
- F**

* Valentia.

* Some read 30.

WERE

were Consuls, even untill the last day of Aprill; upon which day, *L. Sylla* a lieutenant in the Allies warre, destroyed it utterly: which now at this day is turned into graunges and ferme-houses. There is decayed also there and come to finall ruine, Taurania. There be also some little-relikes left of Casilinum, lying at the point of the last gaspe. Moreover *Antias* writeth, that *Apollæ* a towne of the Latines, was woon by *L. Tarquinius* the king, with the pillage whereof he began to found the Capitoll. From Surrentum, to the river Silarus, the Picentine countrey lay for the space of 30 miles, renowned for the Tuscanes goodly temple built by *Iason* in the honor of *Juno Argiva*. Within it, stood the townes Salernum, and Picentia. At Silarus, the third region of Italy, beginneth together with the Lucane and Brutian countries: and there also the inhabitants changed not a few times. For held and possessed it was by the Pelasgi, Oenotri, Italy, Morgetes, Sicilians, people all for the most part of great Greece: and last of all by the Lucanes descended from the Samnites, who had to their leader and governour, *Lucius*. In which, standeth the towne Pæstum, called by the Greekes Posidonia: the Firth or creeke Pæstanus, the towne Helia, now Velia. The promontorie Palinurum, from which creeke retired within-forth, there is a direct cut by water to the columne Rhegia, 100 miles over. Next unto this, the river Melpes runneth: also there, standeth the towne Buxentum, in Greeke Pyxus, and hard by is the river Laus: a towne there was likewise of the same name. And from thence beginneth the sea-coast of Brutium, where is to be seene the towne Blanda, the river Batum, the haven Parthenius belonging to the Phocæans: the Firth Vibonensis, the grove Clamperia, the towne Temsa, called of the Greeks Temese: and Terina held by the Crotonians, and the mightie arme of the sea, called the gulfe Terinæus: the towne Consentia. Within-forth in a demie yland, the river Acheron, whereof the townes-men are called Acherontium. Hippo, which now we call Vibovalentia; the Port of *Hercules*, the river Metaurus, the towne Taurentum, the haven of Orestes, and Medua: the towne Scylleum, the river Cratais, mother (as they say) to Scylla. Then after it, the columne Rhegia: the Sicilian streights or narrow seas, and two capes one over-against the other; namely, Cænis from Italie side, and Pelorum from Sicilie, having a mile and a halfe betweene them: from whence to Rhegium is 12 miles and a halfe: and so forward to a wood in the Apennine, called Sila; and the promontorie orcliffe called Leucopetra, 12 myles off. From which, Locri (carrying the name also of the promontorie Zephyrium) is from Silarus distant 303 miles. Here is determined the first gulfe of Europe, wherein be named these seas. First, Atlanticum (from which the Ocean sea breaketh in) called of some Magnum: the passage whereas it entreth, is of the Greekes called Porthmos; of us, Fretum Gaditanum, i. [The streights of Gibraltar] when it is once entred the Spanish sea, so farre as it beateth upon the coasts of Spaine: Of others, Ibericum, or Balearicum: and anon it taketh the name of Gallicum, or the French sea, right before the province Narbonensis: and after that, Ligusticum: from whence all the way to the Island Sicilie, it is called Tuscum; which some of the Græcians tearme Norium, others Tyrrenum, but most of our countrymen Inferum, i. [The nether sea.] Beyond Sicilie as farre as to the Saleitines, *Polybius* calleth it Ausonium: but *Eratosthenes* nameth all the sea Sardonum, that is betweene the mouth of the Ocean and Sardinia: and from thence to Sicilie, Tyrrenum: and from it as farre as to Creta, Siculum: from which it is hight Creticum. The Islands discovered along these seas, were these: The first of all, those which the Greekes named Pityusæ, of the Pine shrub or plant; but now, Ebusus: they are both a State confederate, and a narrow arme of the sea runneth betweene them: they are 42 miles over. From Dianicum, they lye 70 stadia: and so many are there, betweene Dianicum and Carthage, by the maine land: and as much distance from Pityusæ into the maine Ocean, lye the two Balear Islands; and toward Suco, Colubraria. These Balears in their warre-service use much the Sling; and the Greekes name them Gymnesæ. The bigger of them is an hundred miles in length, and in circuit 380. Townes it hath of Romane citizens, Palma and Pollentia: of Latines, Cinium and Cunicu: as for Bochri, it was a towne confederate. From it, the lesser is thirtie miles off, taking in length 60 miles, and in compasse 150. Cities in it, be Iamno, Sanifera, and Mago. From the bigger 12 miles into the sea, lieth the Ile Capraria, which lieth in wait for all shipwrack: and over-against the citie Palma, Menariæ, and Tiquadra, and little Annibalis. The soile of Ebusus chaseth serpents away, but that of Colubraria, breedeth them: and therefore dangerous it is for all that come into it, unlesse they bring with them some of the Ebusian earth. The Greekes call this Island, Ophiusa. Neither doth Ebusus breed any Conies; which are so common in the Balears, that they eate up their corne.

There

A There be as it were 20 more little ones among the shelves of the sea. Now in the maritime coast of Gallia in the very mouth of Rhodanus, there is Metina; and soone after, that which is called Blafcon; and the three Stœchades, called so of their neighbours the Massilians, for the order and ranke wherein they stand; and they give them every one a severall name, to wit, Prote, Mese, (which also is called Pomponiana) and the third, Hypea. After them, are Sturium, Phœnice; Phila, Lero, & Lerina over-against Antipolis; wherein also is a token or memoriall of the town Vergaonum.

CHAP. VI.

Of Corsica.

B IN the Ligurian sea, is Corsica the yland, which the Greekes called Cyrios, but nearer it is to the Tuscan sea: it lyeth out from the North into the South, and containeth in length an hundred and fiftie miles: in breadth for the more part it beareth fiftie: in circuit 322: distant it is from the Washes or Downes of Volaterra 62 miles. Cities it hath 35: and these colonies, to wit, Mariana, planted there by *C. Marius*: Aleria, by Dictatour *Sylla*. On this side of it, is Oglasa; but within 60 miles of Corsica, there is Planaria, so called of the forme thereof, so flat it is and levell with the sea; and therefore deceiveth many a ship that runneth aground upon it. Bigger than it are Vrgo and Capraria, which the Greekes called Ægilos. In like manner Ægillum and Dianium, the same that Artemisia, both lying over-against the coast Cosanum. Other

C small ones also, as Mænaria, Columbrarie, Venaria, Ilua, with the yron mines, in circuit a hundred miles (ten miles from Populonia) called of the Greekes, Æthalia: from it is Planasia 39 miles off. After them, beyond the mouthes of Tybre in the Anian creeke, is Astura, and anon Palmaria, Sinonia, and just against Formiæ, Pontia. But in the Puteolane gulfe, Pantadaria and Prochyta, so called, not of *Aeneas* his nource, but because it was broken off by the gushing betweene of the sea from Ænaria. Ænaria it selfe tooke that name of *Aeneas* his ships that lay in rode there, called by *Homer* Inarime, of the Greekes Pithecusa, not for the number of Alps there, as some have thought, but of the worke houses and furnaces of potters that made earthen vessels, as tunnes and such like, to furnish Italie with. Betweene Paufilypus and Naples, Me-

D garis; and soone after, eight miles from Surrentum, Caprea, renowned for the castle there of prince *Tiberius*; and it beareth in compasse foure hundred miles. Anon you shall see Leucothea: but without your kenning, lyeth Sardinia fast upon the Africke sea, but lesse than nine miles from the coast of Corsica: and still those streights are made more narrow by reason of small ylands, named Cuniculariæ. Likewise Phintonis and Fossæ, whereof the very sea it selfe is named Taphros.

CHAP. VII.

Of Sardinia.

E SARDINIA on the East side beareth 188 miles, on the West 170, Southward 74, and Northward 122: so that in all, it taketh up the compasse of 560 miles. It is from the Cape of Caraleis to Africke 200 miles: from Gades it is distant 14 hundred miles. It hath two ylands on that side where the promontorie Gorditanum standeth, which be called *Hercules* ylands: of Sulfenses cape side, Enosis; of Caralitanum, Ficaria. Some set not farre from it the ylands Bellerides, and Collodes: and another which they call Heras Lutra, *i. Junoes* laver, or Hieraca. The States of greatest name therein, be the Ilienfes, Balari, and Corfi: and of the foure townes, the chiefe are inhabited by the Sulcitanes, Valentines, Neapolitanes, Bosenses, and Caralitani who are Romane enfranchised citizens, and Norentes. One colonie there is in it and no more, which is called, Ad Turrim Libyfonis. This yland Sardinia, *Timæus* called (of the fashion of a shoe or slipper) Sandaliotis: but *My: sylus*, for the resemblance of a footes step, Ichnusa. Over-against

F the creeke Pæstanum, there is Leucasta, called so of a Mermaid or Sirene there buried. Against Vestia, there lye Pontia and Issia, both joyntly called by one name Oenotides; a good presumption and argument that Italie was possessed by the Oenotrians. And against Vibo, other little ones, called Ithacsiæ, the watch townes of *Ulysses*.

CHAP. VIII.

Of Sicilie.

BVt Sicilie excelleth all other of these Ilands, named by *Thucydides* Sicania; by many, Trinacria, or Triquetra of the triangle forme. It is in circuit (as *Agrippa* saith) 198 miles. In time past it grewe to the Brutians countrey, but soone after by the gushing of the sea between, it was plucked from it, and left a Firth of 12 miles in length, and one and a halfe in bredth, nere unto the columnne Rhegium. Vpon this occasion of opening and cleaving in twaine, the Greekes gave name to the towne Rhegium, situate in the edge of Italie. In this narrow sea there is a rocke called Scylla, and likewise another named Charybdis: the sea is full of whirle-pits, and both those rockes are notorious for their rage and mischiefe. The utimost Cape or fore-land of this Iland Triquetra (as we have said) is called Pelorus, bending against Scylla toward Italie. As for Pachynum, it lyeth toward Græcia, and from it is Peloponnesus distant 144 miles. Lilybæum butteth upon Africke, and between it and the cape of *Mercurie* there be 180 miles: and from the said Lilybæum to the Cape of Caraleis in Sardinia 120. Now these points and promontories lye asunder one from the other in this distance. By land from Pelorus to Pachynum, 166 miles: from thence to Lilybæum 200 miles: so forward to Pelorum 170. In it, of colonies, townes, and cities, there be 72. From Pelorum side, which looketh toward the Ionian sea, yehave the towne Messana, inhabited by enfranchised Romane citizens, and they be called Mamertini. Also the cape Drepanum, the colonie Taurominium, called before-time Naxos; the river Asines, the mountaine Ætna, miraculous for the fires there in the night season; the hole or open chinke in the top of it is in compasse two miles and a halfe; the imbers and sparkling ashes therof, flie hot as farre as to Taurominium and Catania: but the cracking noife thereof may be heard as farre as to Maron, and the hilles Gemellis. In this Iland there be also the three rockes of the Cyclopes, the port of *Vlysses*, the colonie Catanæ, the rivers Symethum and Terias: within the Ile by the plaines and champian fields, Læstigonij. The towns are these, Leontini, and Megaris: and in it is the river Pantagies: also the colonie Syracusæ, together with the fountaine Arethusa. Albeit there be other springes also in the territorie of Syracusa, that yeeld water for drinke, to wit, Tementis, Archidemia, Magæa, Cyane, and Milichre. Moreover, the haven Naustathmos, the river Elorum, the promontorie Pachynum: and on this front of Sicilie, the river Hirminium, the towne Camarina, the river Helas, and towne Acragas, which our countrey men have named Agrigentum. The colonie Therna: rivers, Atys and Hypsa: the towne Selinus: and next to it the cape Lilybæum, Drepana, the hill Eryx. Townes there be, Panhormium, Solus, Hymetta with the river, Cephalædis, Aluntium, Agathirium, Tyndaris a colonie, the towne Mylæ, and whence we began Pelorus. Within-forth, of Latine condition and burgeoise, the Centuripines, Netines, and Segestines. Tributaries, Aslarines, Ætnenses, Agyrines, Acestæi, and Acrenses: Bidini, Citarij, Caciritani, Drepanitani, Ergetini, Ecestienses, Erycini, Eutellini, Euni, Euguini, Gelani, Galatani, Halefines, Ennenses, Hyblenses, Herbitenses, Herbestenses, Herbulonenses, Halicyenses, Hadranitani, Imacarenenses, Ichanenses, Ierenenses, Mutultratini, Magellini, Murgentini, Mutyenses, Menanini, Naxij, Noceni, Peline, Paropini, Phinthienses, Semellitani, Stherrini, Selinuntij, Symætij, Talarenenses, Tiffinenses, Triocalini, Tiracienses, Zanchæi belonging to the Messenians in the streights of Sicilie. Ilands there be bending to Africke, Gaulos, Melita, from Camarina 84 miles, and from Lilybæum 113: Cosyra, Hieronessus, Cæne, Galata, Lopadusa, Æthusa, which others have written Ægusa, Bucina, and 75 myles from Solus, Osteodes: and against the Paropini, Vstica. But on this side Sicilie over-against the river Metaurus, 12 miles well-nere from Italie, 7 others called Æolia. These very same Ilands belonged sometimes to the Liparæans, and of the Greeks were called Hephæstiades, and of our men Vulcaniæ, likewise Æolia, because *Aeolus* reigned there in the time that Ilium flourished, and about the Trojan war.

CHAP. IX.

Of Lipara.

Lipara with a towne of Romane citizens, called so of king *Liparus*, who succeeded *Aeolus*, but before-time Melogonis or Meligunis, is 12 myles from Italie, and is it selfe somewhat lesse in circuit. Betweene this and Sicilie there is another, sometime named Therasia, now Hiera,

A Hiera, because it is consecrated to *Vulcan*, wherein there is a little hill that belcheth and casteth up flames of fire in the night. A third there is also, named Strongyle, a mile from Lipara, lying toward the sunne-rising (wherein *Aeolus* reigned) and differeth from Lipara onely in this, that it sendeth forth more cleere flames of fire: by the smoke thereof, the people of that countrey will tell (by report) three dayes before-hand what winds will blow: whereupon it is commonly thought, that the winds were obedient to *Aeolus*. A fourth there is besides, named Didyme, lesse than Lipara: and a fift, Etricusa: a sixt, Phoenicusa, left to feed the rest that are next to it: the last and least is Euonymus. And thus much concerning the first gulfe that divideth Europe.

CHAP. X.

B *Of Locri, the frontier towne of Italie.*

A T Locres beginneth the front or forepart of Italie, called Magna Græcia, retiring it selfe into three creekes of the Ausonian sea, because the Ausones first inhabited thereby. It extendeth 82 miles, as *Varro* testifieth. But the greater number of writers have made but 72. In that coast there bee rivers without number. But those things which are worth the writing off neere unto Locres, be these, Sagra the river, and the reliques of the towne Caulon: Mystia, the castle Consilium, Cerinthus, which some thinke to be the utmost promontorie of Italie, bearing farthest into the sea. Then followeth the creeke or gulfe Scylacensu, and that which was called by the Athenians when they built it, Scylletium. Which place, another creeke Ferinaeus, meeting with, maketh a demie Island: in which, there is a port towne called Castra Annibilib: and in no place is Italie narrower, being but twentie mile broad. And therefore *Dionysius* the elder would have there cut it off quite from the rest, and laid it to Sicilie. Rivers navigable there be these, Caccinos, Crotalus, Semirus, Arocha, Targines. Within forth is the towne Petulia, the mountaine Alibanus, and promontorie Lacinium: before the coast whereof there is an Island tenne miles from the land, called Dioscoron, and another Calypsus, which *Homer* is supposed to have called Ogygia. Moreover, Tyris, Eranusa, Meloesia. And this is seventie miles from Caulon, as *Agrippa* hath recorded.

CHAP. XI.

D *The second Sea of Europe.*

F ROM the promontorie Lacinium beginneth the second sea of Europe: it taketh a great winding and compassse with it, and endeth at Acroceraunium, a promontorie of Epirus, from which it is seventie miles distant. In which, there sheweth it selfe the towne Croto, and the river Neathus. The towne Thurium betweene the two rivers, Arathis and Sybaris, where there was a towne of the same name. Likewise, between Siris and Aciris there standeth Heraclea, sometime called Siris. Rivers, Acalandrum, Masuentum: the towne Metapontum, in which the third region of Italie taketh an end. The Inlanders be of the Brutians, the Aprustanes only: but of Lucanes, Thoatinates, Bantines, Eburines, Grumentines, Potentines, Sontines, Sirines, Sergilanes, Vrsentines, Volcentanes, unto whom the Numestranes are joined. Besides all these, *Cato* writeth, That Thebes of the Lucanes, is cleane destroyed and gone. And *Theopompus* saith, That Pandosia was a cittie of the Lucanes, wherein *Alexander* king of the Epirotes, was slaine. Knit hereunto is the second region or tract of Italie, containing within it the Hirpines, Calabria, Apulia, and the Salentines within an arme of the sea, in compassse 250 miles, which is called Tarentinus of a towne of the Laconians, situate in the inmost nouke or creeke hereof: and to it was annexed and lay the maritime colonie which there was. And distant it is from the promontorie Lacinium 136 miles, putting forth Calabria like a demie Island against it. The Greekes called it Messapia of their captaines name, and beforetime, Peucetia, of *Peucetius*, the brother of *Oenotrus*. In the Salentine countrey betweene the two promontories, there is a hundred miles distance. The bredth of this demie Island, to wit, from Tarentum to Brindis (if you goe by land) is two and thirtie miles, but farre shorter if you saile from the Haven or Bay Safina. The townes in the Continent from Tarentum, bee Varia, surnamed Apula, Cessapia and Aletium. But in the coast of the Senones, Gallipolis, now Auxa, 62 miles from Tarentum. Two and thirtie miles off is the promontorie which they call Acra Iapygia, and here Italie runneth farthest into the sea. Then

is there the towne *Basta*, and *Hydruntum* in the space of nineteene miles, to make a partition betweene the Ionian and the Adriaticke seas, through which is the shortest cut into Greece over against the towne *Apollonia*, where the narrow sea running betweene, is not above fiftie miles over. This space betweene, *Pyrrhus* king of Epirus, was the first, that intending to have a passage over on foot, thought to make bridges there: after him *M. Varro*, at what time as in the Pyrates warre he was Admirall of *Pompeies* fleet. But both of them were let and stopped with one care or other besides. Next to *Hydrus*, there is *Soletum*, a cittie not inhabited: then, *Fratuertium*: the haven *Tarentinus*, the garrison towne *Lupia*, *Balesium*, *Cælium*, *Brundisium* fiftene miles from *Hydrus*, as much renowned as any towne of *Italie* for the haven, for the surer sailing, although it bee the longer, and the cittie of *Illyricum* *Dyrrhagium* is readie to receive the ships: the passage over is 220 miles. Vpon *Brundisium* bordereth the territorie of the *Pædiculi*. Nine young men there were of them, and as many maids, descended from the *Illyrians*, who began betweene them thirteene nations. The townes of these *Pædiculi*, be *Rhudia*, *Egnatia*, *Barion*, beforetime *Iapyx* of *Dedalus* his sonne, who also gave the name to *Iapygia*. Rivers, *Paëtius* and *Aufidus* issuing out of the *Hirpine* mountaines, and running by *Canusium*. Then followeth *Apulia* of the *Daunians*, surnamed so of their leader, father in law to *Diomedes*. In which is the towne *Salapia*, famous for the love of an harlot that *Anniball* cast a fancie unto; then, *Sipontum* and *Vria*: also the river *Cerbalus*, where the *Daunians* take their end: the port *Agasus*, the cape of the mountaine *Garganus*, from *Salentine* or *Iapygium* 234 miles, fetching a compasse about *Garganus*: the haven *Garnæ*, the lake *Pantanus*. The river *Frento*, full of Baies and Havens, and *Teanum* of the *Apulians*. In like manner also, *Larinum*, *Aliternia*, and the river *Tiferus*. Then commeth in the region *Frentana*. So there be three kinds of nations, *Teani*, of their leader, from the Greekes: the *Lucanes* subdued by *Calchas*, which quarters now the *Atinates* hold and occupie. Colonies of the *Daunians* besides the abovenamed, *Luceria* and *Venusia*: townes, *Canusium*, *Arpi*, sometime *Argos* *Hippium*, builded by *Diomedes*, but soon after called *Argyrippa*. There *Diomedes* vanquished and destroyed the whole generation of the *Monadians* and *Dardians*, together with two citties, which grew to a merry jeast by way of a by-word, *Apina* and *Trica*. The rest be more inward in the second region, to wit, one Colonie of the *Hirpines* called *Beneventum*, changed into a more luckie name, whereas in times past it was cleaped *Maleventum*: the *Æculanes*, *Aquilonians*, and *Abellinates*, surnamed *Protopri*: the *Camplanes*, *Caudines*, and *Ligurians* surnamed *Cornelians*: as also *Bebianes*, *Vescellanes*, *Deculanes*, and *Aletrines*: *Abellinates* surnamed *Marfi*, the *Atranæ*, *Æcanes*, *Afellanes*, *Attinates*, & *Arpanes*: the *Borcane*, the *Collatines*, *Corinenses*: and famous for the overthrow of the *Romanes* there, the *Cannians*: the *Dirines*, the *Forentanes*, the *Genusines*, the *Hardonians* and *Hyrines*: the *Larinates* surnamed *Frentanes*, the *Metinates*, and out of *Garganus* the *Mateolanes*, the *Neritines*, and *Natines*, the *Rubustines*, the *Sylvines* & *Strapellines*, the *Turmentines*, the *Vibiaates*, *Venusines*, and *Vlurtines*. Now the In-landers of the *Calabrians*, the *Ægirines*, *Apaneslines* and *Argentines*: The *Butuntines* and *Brumbestines*, the *Decians*, the *Norbanses*, the *Palions*, *Surnines*, and *Tutines*. Also of *Salentine* midlanders, the *Aletines*, *Bastobines*, *Neretines*, *Valentines*, and *Veretines*.

CHAP. XII.

§ The fourth Canton or region of Italie.

Now followeth the fourth region, even of the most hardie and valiant nations of all *Italie*. In the coast of the *Frentanes*, next to *Tiferus*, is the river *Tirinium*, full of good havens and harbours. The towns there, be *Histonium*, *Buca*, and *Ortona*, with the river *Aternus*. More within the countrey, are the *Anxanes* surnamed *Frentanes*: the *Carentines*, both higher and lower, the *Lanuenses*: of *Marrucines*, the *Teatines*: of *Pelignians*, the *Corsinienses*, *Super-Æquani* and *Sulmonenses*: of *Marfians*, the *Anxantines* and *Atinates*, the *Fucentes*, *Lucentes*, and *Maruvij*: of *Albenses*, *Alba* upon the lake *Fucinus*: of *Æquiculanes*, the *Cliternines* and *Carfeolanes*: of *Vestines*, the *Augulanes*, *Pinnenses*, *Pelevinates*, unto whom are joined the *Aufinates* on this side the mountaines: of *Samnites*, whom the Greekes called *Sabellians* and *Saunites*, the Colonie *Bovianum*, the old; and another surnamed *Vndecumanorum*, namely, inhabited by those of the eleventh legion: the *Aufidenates*, *Esernines*, *Fagifulani*, *Ficolenses*, *Sepinates*,

Anates, Treventinates: of Sabines, the Amiternines, Curenses, Forum Decij, Forum-Novum, the Fidenates, Interamnates, Nursines, Nomentanes, Reatines, Trebulanes, who are surnamed Mutuscæi, as also Suffenates, the Tiburtes, and Tarinates. In this quarter of the *Æquiculæ*; there be perished and gone the Comines, Tadianes, Accedikes, and Alfaterni. *Gellianus* writeth, That Acippe, a towne of the Marfians; built by *Marfyas* a captaine of the Lydians, was drowned and swallowed up by the Lake Fucinus. Also *Valerianus* reporteth, that a towne of the Vidicines in Picenum, was utterly destroyed by the Romanes. The Sabines, as some have thought, were for their religion and devout worshipping of the gods called Sevini: they dwell hard by the Veline Lakes upon moist and dewie hills. The river Nar draineth them drie with his hote waters of brimstone. Which river running from thence toward Tiberis, filleth it: and gliding from the hill Pifcellus, neer unto the groves of Vacuna and Reate, is hidden in the same. But from another side, the river Anio, beginning in the mountaine of the Trebanes, bringeth with it into Tiberis three Lakes of great name, for their delectable pleasantnesse, which gave the name to Sublaquenfu. In the Reatine territorie there is the Lake Cutiliæ, wherein there floteth an Island: and this Lake *M. Varro* saith, is the very middest and centre of Italie. Beneath the Sabines, lieth Latium; on the side, Picenum; behind, Vmbria; and the hills of the Apennine on either hand, doe enclose as with a rampier, the Sabines.

CHAP. XIII.

§ The fifti region.

CTHE fifti region is Picene, a nation in times past most populous, 360000 of the Picentes were reduced under the protection of the people of Rome. They are descended from the Sabines, upon a vow that they made to hold and solemnise a sacred Spring. They dwelt by the river Aternus, where now is the territorie Adrianus, and the Colonie Adria, seven miles from the sea. There runneth the river Vomanum and there lieth the Prætutiane and Palmensis: territories. *Item*, Castrum Novum, the river Batium, Truentum with the river, which is the onely relique of the Liburnians remaining in Italie. More rivers there bee, to wit, Apulates, Suinum, and Helvinum, at which the Prætutian countrey endeth, and the Picentian beginneth. The town Cupra, a castle of the Firmanes, and above it the Colonie Ascuum, of all Picenum the most renowned. Within standeth Novana. In the edge or marches without, are Cluana, Potentia, and Numana, built by the Sicilians. Next to those is the Colonie Ancona, with the Promontorie Cumerum lying hard unto it, in the very elbow of the edge thereof as it bendeth, and it is from Garganus 183 miles. Within-forth there do inhabit the Auximates, Beregranes, Cingulanes, Cuprenses surnamed the Mountainers, Falariens, Paululanes, Pleninenfes, Kicinensfes, Septem pedani, Tollentines, Triacensfes, the cittie Salvia, and the Tollentines.

CHAP. XIII.

§ The sixt region.

ETO these adjoineth the sixt region, comprehending Vmbria, and the French pale about Ariminum. At Ancona begin the French marches, by the name of Togata Gallia. The Sicilians and Liburnians possessed most parts of that tract, and principally the territories, Palmensis, Prætutianus, and Adrianus. Them, the Vmbrians expelled: these againe Hetruria drave out: and last of all, the Gaules disseid it. The people of Vmbria are supposed, of all Italie to bee of greatest antiquitie, as whom men thinke to have bene of the Greekes named Ombri, for that in the generall deluge of the countrey by raine, they onely remained alive. The Tuscans are knowne to have by warre forced and woon three hundred townes of theirs. At this day in the frontier of it, there are the river *Æsus*, and Senogallia: the river Metaurus, and the Colonie Fanum Fortunæ. Pisaurum also with the river. In the parts within, Hispellum and Tuder. In the rest, the Amerines, Attidates, Asirinates, Arnates, and *Æsinates*. Camertes, Casventillanes, and Carsulanes, Dolates, surnamed Salentines, Fulginates, Foro-flaminienfes, Foro-Julienfes, named also Concubienfes, Foro-bremitiani, Foro-Sempronienfes, Iguini, Interamnates, surnamed Nartes, Mevanates, Mevaniensfes, and Matilicates, Narnienfes, whose towne beforetime was called Nequinum. Nucernes, surnamed Favonienfes and Camelani. The Otriculanes, and Ostranes.

The Pitulanes with the addition of Pisuerres, as also others surnamed Mergentines, and the Pelletines, Sentinates, Sarfinates, Spoletines, Suarranes, Sestimates, and Suillates, Sadinates, Trebiates, Tuficanes, Tifernates, named with all Tribertines, as also other of them distinguished by the name of Metaurenfes. The Vefionicates, the Vrbinates, as well they that bee surnamed Metaurenfes, as others Hortenfes, the Vettionenfes, Vindenates and Viventanes. In this tract there are extinct the Felignates, and they who possessed Clusiolum above Interamna: also the Sarra- nates, with the townes Acerræ, called besides Vafriæ, and Turceolum, the same that Vetrilium. Semblably the Solinates, Suriates, Fallienates, Apiennates. There are gone likewise and cleane lost the Arienates with Crinovolum, also the Vfidicanes and Plangenfes, the Pifinates and Cæ- lestines. As for Amera above written, *Cato* hath left in record, That it was built 964 yeeres before the warre against *Perjess*.

CHAP. XV.

§ The eight region.

THe eight region is bounded with Ariminum, Padus, and Apennine. In the borders thereof is the river Crustuminum, the colonic Ariminum, with the rivers Ariminum and Aprusa. Then the river Rubico, the utmost limit sometime of Italie. After it, Sapis the river, Vitis and Anemo, Ravenna a towne of the Sabines with the river Bedefes, 102 miles from Ancona. And not farre from the Vmbrians sea, Butrium. Within-forth are these Colonies, Bononie usually called Felsina, when it was the head cittie of Hetruria, Brixillum, Mutina, Parma, Placentia. Townes, Casena, Claterna, Forum-Clodij, Livij, and Popilij, pertaining to the Truentines: also [Forum] the Cornelij, Laccini, Faventini, Fidentini, Otesini, Padinates, Regienses a Lepido, Solonates: also the Forrests Galliani surnamed Aquinates, Tanetani, Veliates surnamed Veteri, Regiates and Vmbranates. In this tract the Boij are consumed, who had 112 tribes or kindreds, as *Cato* maketh report. Likewise the Senones, they that tooke Rome.

CHAP. XVI.

§ Of the river Padus.

PAdus issuing out of the bosome of the mountaine Vesulus, bearing up his head aloft into a mightie heighth, runneth from a marvailous spring worth the seeing, in the marches of the Ligurian Vagienni; and hiding it selfe within a narrow trench, as it were, under the ground, and rising up againe in the territorie of the Forovibians, is inferiour to no other rivers for excellencie. Of the Greekes, called it was Eridanus, and is much spoken of and well knowne, for the punishment of *Phæron*. It swelleth about the rising of the Dog starre, by reason that the snow is then thawed: more unruly and rough unto the fields thereby, than to the vessels upon it: howbeit, nothing stealeth it and carryeth away as his owne, but when hee hath left the fields, his bountie is more seene by their plenty and fruitfulness: from his head, hee holdeth on his course 90 miles wanting twaine, above three hundred. In which passage of his, he taketh in unto him, not onely the navigable rivers of the Apennine and the Alpes, but huge maine lakes also that discharge themselves into him: so as in all he carryeth with him into the Adriaticke sea, to the number of 30 rivers. The chiefe and most notorious of all them, are these, sent out of the side of Apennine; Tanarus, Trebia, Placentine, Tarus, Nicia, Gabellus, Scultenna, Rhenus. But running out of the Alpes, Stura, Morgus, Duria twaine, Sessites, Ticinus, Lambrus, Addua, Olius, and Mincius. And there is not a river againe, that in so little a way, groweth to a greater streame: for over-charged it is and troubled with the quantitie of water, and therefore worketh it selfe a deepe channell, heave and hurtfull to the earth under it, although it be derived and drawne into other rivers and goles, betweene Ravenna and Ativum, for 120 miles: yet because he belchereth and casteth them out from him in so great abundance, he is said to make seven seas. Drawne he is to Ravenna by a narrow channell, where he is called Badusa, and in times past Messanicus. But the next mouth that he maketh, carryeth the bignesse of an haven, which is named Vatrei: at which *Claudius Cesar* as hee came triumphant out of Britaine, entred into Adria, with that huge vessell, more like a mighty great house than a ship. This mouth of it was beforetime called Eridanum: of others, Spincticum of the citie Spinæ neere-by, built by *Diomedes* (as

- A. (as some thinke) with the treasures of Delphi. There the river Varenus from out of the territory of Forum Cornelij, encreaseth Padus. The next mouth that it hath, is Caprasia, then Sagis, and so forth Volane, which before-time was named Olane. All those rivers and trenches afore-said, the Tuscans began to make first out of Sagis, carrying the forcible streame of the river a crosse into the Atrian meeres, which are called the seven seas, and made the famous haven of Atria a towne of the Tuscans; of which the Adriaticke sea tooke the name afore-time, which now is called Adriaticum. From thence are the full mouthes there of Carbonaria and the Fosse Phylistina, which others call Tartarus, but all spring out of the overflowing of the Fosse Phylistina, holpen with Athesis comming out of the Tridentine Alpes, and Togisonus out of the territorie of the Padovans. Part of them made also the next port Brundulum: like as the two Medoaci and the Fosse Clodia, make Edron. With these Padus mingleth it selfe, and by these he runneth over, and as it is said by most Writers, like as in Ægypt Nilus maketh that which they call Delta, so it shapeth a triangle figure between the Alpes and the sea coast, two miles in compass. A shame it is to runne to the Greekes for to borrow of them the Etymologie and reason of any things in Italy: howbeit *Mesrodorus Scepsius* saith, That forasmuch as about the spring and head of this river there grow many pitch trees, called in French Pades, therefore it tooke the name Padus. Also, that in the Ligurian language, the river it selfe is called Bodincus, which is as much to say, as bottomlesse. And to approve this reason and argument, there is a towne thereby called Industria, but by an old name Bodincomagum, where in very deed, beginneth the greatest deapth thereof.

CHAP. XVII.

¶ *Italie beyond Padus, the eleventh Region.*

NEXT to it, is the Region called Transpadana, and the eleventh in number: all whole in the mid-land part of Italy, into which the seas bring in all things with fruitfull channell. The townes therein, be Vibi-Forum, and Segusta. The colonies at the foot of the Alpes, Augusta of the Taurines, an ancient descent from the Ligurians: from whence Padus is navigable. Then, Augusta Pratoria, of the Salassi, neere unto the two-fold gullet or passages of the Alpes, to wit, Graijæ and Peninæ: for men say, that the Carthaginians came through the one, and *Hercules* in at the other, named Graijæ. There standeth the towne Eporedia, built by the people of Rome, by direction and commaundement out of the bookes of *Sibylla*. Now the Gauls in their tongue call good horse-breakers Eporedicæ. Also, Vercella of the Lybici, descended from the Sallij: Novaria, from the Vertacomacores: which even at this very day is a village of the Vocontij, and not as *Cato* thinketh, of the Ligurians: of whom, the Levi and Marici built Ticinum, not farre from Padus: like as the Boij comming over the Alpes, founded Laus Pompeia; and the Insubrians, Millaine. That Comus and Bergomus, yea and Licini-Forum, with other nations thereabout, were of the Orobian race, *Cato* hath reported: but the first beginning and originall of that nation of Orobians, he confelleth, that he knoweth not. Which notwithstanding *Cornelius Alexander* sheweth to have descended from the Greekes; and this he guesseth by the interpretation of their name, which signifieth, Men living in mountaines. In this tract, Barra a towne of the Orobians is cleane destroyed; from whence, *Cato* saith, the Bergomates tooke their beginning; bewraying even by their name, that they were seated more highly than happily. There are cleane gone and consumed also the Caturiges, banished persons of the Insubrians: likewise Spina, before-named. In like sort, Melpum, a towne of speciall importance for wealth; which (as *Nepos Cornelius* hath written) was by the Insubrians, Doians, and Senones, rased on that very day, on which *Camillus* forced Veij.

CHAP. XVIII.

¶ *Venice, the tenth Region.*

NOW followeth the tenth region of Italy, Venice, lying fast upon the Adriaticke sea: the river whereof Silis, commeth foorth of the mountaines Taurisani: wherein also, is the towne Altinum, the river Liquetaia issuing from the mountaines Opitergeni; a haven of the same name: the colonic Concordia. Rivers and havens, to wit, Romatinum, Tilaventum,

the

the greater and the lesse: Anassum, wherunto Varranus runneth downe: Alsa, Natifo, with Tur- **G**
 rus, running fast by Aquileia, a colonie situate 12 miles from the sea. This is the region of the
 Carni, joyning unto that of the Iapides: the river Timavus, and the castle Pucinum, so famous
 for good wine. The vale and Firth Tergestinus, taking name of the Colonie Tergeste, 23 myles
 from Aquileia: beyond which sixe miles, is the river Formio, 189 miles from Ravenna: the an-
 cient bound or limit of Italy enlarged: but at this day of Istria, which was so named of the river
 Ister, flowing out of the river Danubius into Adria: and over-against the same Ister, the gullet
 or mouth of Padus also entreth thither: by the contrary rushing streames of which two rivers,
 the sea between both, beginneth to be more mild; as many Authors have reported, but untruly:
 and *Cornelius Nepos* also, although hee dwelt just by Padus: for there is no river that runneth
 out of Danubius into the Adriaticke sea. Deceived (I suppose) they were, because the ship **H**
Argos went downe a river into the Adriaticke sea, not farre from Tergeste; but what river it was, is
 yet unknowne. They that will seeme to be more curious than their fellowes, say, That it was car-
 ried upon mens shoulders over the Alpes: and that it was set into Ister, and so into Saus, and
 then Nauportus (which upon that occasion tooke his name) which ariseth betweene *Æmona*
 and the Alpes.

CHAP. XIX.

Istria.

Istria runneth out like a demie Iland. Some have delivered in writing, that it is 40 miles broad, **I**
 and 122 myles about. The like they say of Liburnia adjoyning unto it, and of the hollow
 gulfe Flanaticus. But others say, that the compasse of Liburnia is 180 miles. And some there
 be againe, who have set out Iapidia, as farre as to the said creeke Flanaticus, behind Istria 130
 myles: and so haue made Liburnia in circuit 150 miles. *Tuditanus*, who subdued the Istrians,
 upon his owne statue there set this Inscription; That from Aquileia to the river Titius, were 200
 stadia. The townes in Istria of Romane citizens, be *Ægida* and *Parentium*. A Colonie there is
 besides, *Pola*, now called *Pietas Iulia*; built in old time by the Colchians. It is from Tergeste
 100 miles. Soone after, ye see the towne *Nesactium*, and the river *Arfia*, the utmost bound now
 of Italy. From *Ancona* to *Pola*, there is a cut over the sea of 120 myles. In the mid-land part of
 this tenth region, are these Colonies; *Cremona*, and *Brixia*, in the *Cenomanes* countrey: but **K**
 in the *Venetians* countrey, *Ateste*. Also the townes, *Acelum*, *Patavium*, *Opitergium*, *Belunum*,
Vicetia; *Mantua* of the *Tuscans* is onely left beyond *Padus*. That the *Venetians* were the off-
 spring of the *Trojans*, *Cato* hath set downe in writing: also, that the *Cenomanes* neere unto
Massiles, dwell in the *Volscians* countrey. *Fertines*, *Tridentines*, and *Bernenses*, are townes of
Rhetia. As for *Verona*, it is of *Rhetians* and *Euganeans*; but *Iulenses* be of the *Carnians*. Then
 follow theie, whome we need to use no curiositie in naming; *Alutruenses*, *Asseriaties*, *Flamoni-*
enses, *Vannienfes*, and others surnamed *Gulici*: *Foro Iulienfes* surnamed *Transpadani*: *Forelani*,
Venidates, *Querqueni*, *Taurisani*, *Togienfes*, *Varvani*. In this tract there be perished in
 the borders, *Itaminum*, *Pellaon*, *Palscium*. Of the *Venetians*, *Atina* and *Cælina*: of the **L**
Carnians, *Segete* and *Ocra*: and of the *Taurissi*, *Norecia*. Also from *Aquileia* 12 myles, there was a
 towne quite destroyed by *M. Claudius Marcellus*, even maugre the Senate, as *L. Piso* hath recor-
 ded. In this region there be also ten notable lakes and rivers, either issuing forth of them as their
 children, or else fed and maintained by them, if so be they send them out againe, when they have
 once received them: as *Larius* doth *Æna*, *Verbanus* *Ticinus*, *Benacus* *Mincius*, *Sebinus* *Ossius*,
Eupilius *Lamber*, all inhabiting and seated in *Padus*. The Alpes reach in length ten miles from
 the upper sea to the lower, as *Cælius* saith: *Timogenes*, two and twentie: but *Cornelius Nepos*
 draweth them out in breadth an hundred myles: *T. Livius* saith, three thousand stadia: both of
 them take measure in divers places: for sometime they exceed an hundred miles, where they
 disjoyne *Germanie* from *Italie*: and in other parts they are so thin, that they make not full out
 threescore and ten myles; and that by the providence as it were of Nature. The breadth of **M**
Italie from *Varus* under the foot of them, through the shallowes or plashes of *Sabatia*, the *Tauri-*
rines, *Comus*, *Brixia*, *Verona*, *Vicetia*, *Opitergium*, *Aquilicia*, *Tergeste*, *Pola*, and *Aristia*,
 maketh seven hundred and two miles.

CHAP. XX.

¶ Of the Alpes and Alpine nations.

MAny nations inhabit the Alpes, but those of speciall name from Pola to the tract of Tetra-
 gestis, are these, the Secussæ, Subocrines, Catili, Menocaleni: and neere to the Carnians
 those who in times past were called Taurisci, but now Norici. Vpon these there doe con-
 fine the Rhetians and Vindelici, all devided into many States. Men thinke that the Rheti are the
 Tuscanes progenie, driven out by the Gaules, with their leader *Rheius*. But leaving these Rhoeti-
 ans, turning our breast and visage to Italie, wee meet with the Euganean nations of the Alpes,
 who enioied the libertie and franchises of the Latines, and whose townes *Cato* reckoneth to the
 number of foure and thirtie. Of them, the Triumpilines, both people and lands were sold. After
 them the Camuni and many such were annexed to the next towneships, and did service as ho-
 magers to them. The Lepontions and the Salassians, the same *Cato* thinketh to be of the Tau-
 ricke race. But all others in manner suppose verily that the Lepontians were a residue left be-
 hind of *Hercules* his train and companie; grounding upon the interpretation of the Greek name,
 as having their bodies seaged with the Alpine snowes as they passed through: that the Grai-like-
 wise were of the same retinue, planted in the very passage, and inhabiting the Alpes Graiæ: also
 that the Euganei were noblest of birth, wherupon they took their name. The head cittie of them
 is Stonos. Of those Rhoetians the Vennonetes and Sarunetes, inhabite neere the heads of the ri-
 ver Rhenus. And of the Lepontians, those who are called Viberi, dwell by the spring of Rhoda-
 nus, in the same quarter of the Alpes. There be also inhabitants within the Alpes, endowed with
 the libertie of Latium, namely, the Ostodurense, and their neighbor borderers the Centrones,
 as also the Cottian States. The Caturiges, and those from them descended, to wit, the Vagienni,
 Ligures, and such as be called the Mountainers: and many kinds of the Capillati, confining up-
 on the Ligurian sea. It seemeth not amisse in this place to set downe an inscription out of a tri-
 umphanti Trophee erected in the Alpes, which runneth in this forme: *Vnio the Emperour Cæ-*
sar sonne of Augustus of famous memorie, Arch-bishop, Generall foure times, and invested in the sa-
cred authoritie of the Tribunes: the Senate and people of Rome. For that by his conduct and happie
fortune, all the Alpine nations which reached from the upper sea to the nether, were reduced and
brought under the Empire of the people of Rome. The Alpine nations subdued, are these, Triumpilini,
Camuni, Vennonetes, Isarci, Breuni, Naunes, and Focunales. Of the Vindelici foure nations, to wit, the
Consuantes, Virucimates, Licates, and Catenates. The Abisontes, Suanetes, Calucones, Brixentes, and
Lepontij. Viberi, Nantuates, Seduni, Veragri, Salaci, Acilavones, Medulli, Vocni, Caturiges, Brigiani,
Sogiontij, Ebroduntij, Nemaloni, Edenates, Esubiani, Veaminij, Gallite, Triulatti, Ectini, Vergunium,
Eguituri, Nementuri, Oratelli, Neruswelauni, Suetri. Now there were not reckoned among these the
twelve Cottian States which were not up in any hostilitie, ne yet those which were assigned to the free-
townes to enioy the burgeoisie of Rome, by vertue of the law Pompeia. Behold this is that Italie conse-
 crated to the gods, these are her nations, and these be the towns of her severall States. And more
 than al this, that Italie, which when *L. Æmylius Paulus* and *Caius Attilius Regulus* were Consuls,
 upon newes brought of a suddaine rising and tumult of the Gaules, alone by it selfe, without
 any forrain aids, and even them, without any nations beyond Padus, armed 80000 horsemen and
 700000 foot. In plentie of all mettall mines, it giveth place to no land whatsoever. But forbid-
 den it is to dig any by an old act of the Senate, giving expresse order to make spare of Italie.

CHAP. XXI.

¶ Illyricum.

THe nation of the Liburnians joineth unto Afsia, even as farre as the river Titius. A part
 thereof were the Mentores, Hymani, Encheleæ, Dudini, and those whome *Callimachus*
 nameth Pucetiæ. Now, the whole in generall is called by one name, Illyricum. The
 names of the nations are few of them either worthie or easie to bee spoken. As for the judiciall
 court of Afsises at Scordona, the Iapides and foureteene States besides of the Liburians resort
 unto. Of which it greeveth me not to name the Lacinians, Stulpinians, Burnistes and Albonen-
 ses. And in that Court these nations following have the libertie of Italians, to wit, the Alutæ and
 Flanates,

Flanates, of whom the sea or gulfe beareth the name: Lopfi, Varubarini, and the Affesiates that are exempt from all tributes: also of Islands, the Fulfinates and Curiolæ. Moreover, along the borders and maritime coasts, beyond Nefactum, these townes; Alvona, Flavona, Tarsatica, Senia, Lopfica, Ortopula, Vegium, Argyruntum, Corinium, the cittie Anona, the river Pausinus, and Tedanium, at which lapida doth end. The Islands lying in that gulfe, together with the townes, besides those townes above noted, Absirtium, Arba, Tragurium, Iffa, Pharos beforetime Paros, Crexa, Giffa, Portunata. Againe, within the Continent, the Colonie Iadron, which is from Pola 160 miles, From thence 30 miles off, the Island Colentum; and 18, the mouth of the river Titius.

CHAP. XXII.

☞ *Liburnia.*

THe end of Liburnia and beginning of Dalmatia is Scordona, which frontier towne is twelve miles from the sea, situate upon the said river Titius. Then followeth the auncient cuntry of the Tariotes, and the castle Tariota, the Promontorie Diomedis, or, as some would have it, the demie Island Hyllis, taking in circuit a hundred miles. Also Tragurium, inhabited by Romane citizens, well knowne for the marble there: Sicum, into which place, *Claudius* late *Cæsar*, sent the old fouldiors: the Colonie Salona, 222 miles from Iadera. There repaire to it for law those that are described into Decuries or tithings 382: to wit, Dalmatians 22, Decunium 239, Ditiones 69, and Mezæi 52, Sardiates. In this tract are Burnum, Mandetrium, and Tribulium, Castles of name for the battailes of the Romanes. There came also forth of the Islands the Iffæans, Collentines, Separians, and Epetines. Besides them, certaine Castles, Piguntia and Ratanicum, and Naron a Colonie, pertaining to the third Countie-Court, 72 miles from Salona, lying hard to a river of the same name, and 20 miles from the sea. *M. Varro* writeth, That 89 States used to repaire thither for justice. Now, these only in a manner be knowne, to wit, Cerauni in 33 Tithings, Daorizi in 17, Desititates in 103, Docleates in 34, Dereines in 14, Deremisses in 30, Dindari in 33, Glinditiones in 44, Melcomani in 24, Naresij in 102, Scirari in 72, Siculote in 24. And the Vardæi, who sometime wasted and forraied Italie, in twentie decuries & no more. Besides these, there held and possessed this tract Oenei, Partheni, Hemafini, Arthitæ, and Armistæ. From the river Naron a hundred miles, is the Colonie Epidaurum. Townes of Romane citizens be these, Rhizinium, Ascrinium, Butua, Olchinium, which beforetime was called Colchinium, built by the Colchi. The river Drilo, and the towne upon it, Scodra, inhabited by Romane citizens, eightene miles from the sea. Over and besides, many other townes of Greece, yea and strong citties, out of all remembrance. For in that tract were the Labeates, Enderudines, Saffæi, Grabæi, and those who properly were called Illyrij, the Taulantij and Pyræi. The Promontorie Nymphæum in the coast thereof, keepeth still the name: also Lissum a towne of Romane citizens, a hundred miles from Epidaurum.

CHAP. XXIII.

☞ *Macedonie.*

From Lissum is the province of Macedonie: the nations there, bee the Partheni, and on their backe side the Dassaretes. Two mountaines of Candavia threescore and nineteene miles from Dyrhachium. But in the borders thereof, Denda, a towne of Romane citizens: also the Colonie Epidamnum, which for that unluckie names sake was by the Romanes called Dyrhachium. The river Aous, named of some *Æas*. Apollonia, sometime a Colonie of the Corinthians, situate within the countrey, seven miles from the sea, in the marches whereof is the famous Nymphæum. The borderers inhabiting thereby, are the Amantes and Buliones. But in the verie edge thereof, the towne Oricum built by the Colchi. Then beginneth Epirus, the mountaines Acroceraunia, at which wee have bounded this Sea of Europe. As for Oricum, it is from Salentinum (a Promontorie of Italie) fourescore and five miles.

CHAP. XXIIII.

☞ *Noricum.*

Behind the Carni and Iapides, whereas the great river Ister runneth, the Norici joine unto the Rhæti. Their townes be, Virunum, Celeia, Teurnia, Aguntum, Viana, Emona, Claudia, Flavium,

A vium, Tolvenſe. Vpon the Norici there lie ſaſt the Lake Peiſo, the deſerts of the Boij. Howbeit, now by the Colonie of the late Emperour *Claudius* of famous memorie; Salaria and the towne Scarabantia Iulia, they be inhabited and peopled.

CHAP. XXV.

§ Pannonia.

T Hence beginneth Pannonia ſo fruitfull in Maſt: whereas the hills of the Alpes, waxing more mild and civile, turning through the middeſt of Illyricum from the North to the South; ſettle lower by an eaſie deſcent both on the right hand and the left. That part which regardeth the Adriaticke ſea, is called Dalmatia, and Illyricum abovenamed. Pannonia bendeth toward the North, and is boinded with the river Danubius. In it are theſe Colonies, *Æmonia*, *Sifcia*. And theſe rivers of ſpeciall name, and navigable, run into Danubius, *Draus* with more violence out of the Noricke Alpes; and *Saus* out of the Carnicke Alpes more gently, 115 miles between. As for *Draus*, it paſſeth through the *Sciretes*, *Serrapilles*, *Iafians*, and *Sandrozetes*: but *Saus* through the *Colapians* and *Breuci*. And theſe be the cheefe States of that countrie. Moreover, the *Arivates*, *Azali*, *Amantes*, *Belgites*, *Catari*, *Corneates*, *Araviſci*, *Hercuniates*, *Latovici*, *Oferiates*, and *Varciani*. The mount *Claudius*, in the front whereof are the *Scordifci*, and upon the backe, the *Tauriſci*. The Iſland in *Saus*, *Metubarris*, the biggeſt of all the river Iſlands. Beſides, notable goodly rivers, *Calapiſ* running into *Saus* neere *Sifcia*; where, with a double channel it maketh the Iſland called *Segeſtica*. Another river *Bacuntius*, running likewiſe into *Saus*, at the towne *Sirmium*: where is the State of the *Sirmiſians* and *Amantines*. Five and fortie miles from thence *Taurunum*, where *Saus* is intermingled with *Danubius*. Higher above there run into it *Valdanus* and *Vrpanus*, and they ywis be no baſe and obſcure rivers.

CHAP. XXVI.

§ Maſſia.

V Nto Pannonia, joyneth the province called *Mœſia*, which extendeth along *Danubius* unto *Pontus*. It beginneth at the confluent above-named. In it, are the *Dardaniſians*, *Celegeri*, *Triballi*, *Trimachi*, *Mœſi*, *Thranes*, and the *Scythians* bordering upon *Pontus*. Faire rivers, out of the *Dardaniſians* countrey, *Margis*, *Pingus*, and *Timachis*. Out of *Rhodope*, *Oeſſus*: out of *Hæmus*, *Vtus*, *Eſſamus*, and *Ieterus*. Illyricum where it is broadest, taketh up 325 myles: it lyeth out in length from the river *Arſia* to the river *Drinius*, 800 myles. From *Drinium* to the cape *Acroceraunium*, 182 miles. *M. Agrippa* hath ſet downe all the whole ſea comprehending Italy and Illyricum, in the compaſſe of 1300 miles. In it are two ſmaller ſeas or gulſes bounded as I have ſaid: namely, The lower, otherwiſe called the *Ionian*, in the fore-part: The inner, called *Adriaticum*, which alſo they name The upper. In the *Auſonian* ſea, there be no Ilands worth the ſpeaking, but thoſe above-named. In the *Ionian* ſea there are but few, to wit, upon the *Calabrian* coaſt before *Brundifium*; by the object ſite whereof, the haven is made: and againſt the *Apulian* coaſt *Diomede*, famous for the tombe and monument of *Diomedes*. Another alſo of that name, called by ſome, *Tentria*. As for the coaſt of Illyricum, it is peſtred with more than a thouſand; ſuch is the nature of the ſea, full of ſhelves and waſhes, with narrow chanelſ running betweene. But before the mouthes of *Timavus*, there be Ilands famous for hot waters, which ebbe and flowe with the ſea. And neere unto the territorie of the *Iſtrians*, *Ciſſa*, *Pullariae*, and thoſe which the *Greeks* name *Abyſyrtides*, of *Medeus* brother *Abyſyrtis* there ſlaine. Neere unto them, they called the Ilands *Electrides*, wherein is ingendred *Ambre*, which they call *Electrum*: a moſt aſſured argument to prove the vanitie of the *Greeks*; for that which of them they meant, was never knowne. Againſt *Iader*, there is *Liſſa*; and certaine other over-againſt the *Liburnians*, called *Creteæ*: and as many of the *Liburnians*, *Celaduſæ*. Againſt *Sutium*, there is *Brattia*, commended for neat and goats. *Iſſa*, inhabited by *Romane* citizens, and *Pharia* with the towne. Next to theſe, *Coreyra*, ſurnamed *Melæna*, with the towne of the *Gnidians*, diſtant 22 miles aſunder: betweene which and Illyricum, is *Melita*; whereof (as *Callimachus* teſtiſieth) the little dogs *Melitæi* tooke their name: and twelve miles from thence, the three *Elaphites*. In the *Ionian* ſea from *Oricum* 1000 miles, is *Safonis*, well knowne for the *Pirats* harbour there.

THE FOURTH BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECVNDVS.

From whence first arose all the fabulous lyes, and the excellent Learning of the Greekes.



The third Sea of Europe, beginneth at the mountaines Acrocerania, and endeth in Hellespont: it containeth besides 19 smaller gulfes or creekes, 25 thousand myles. Within it, are Epirus, Acarnania, Aetolia, Phocis, Locris, Achaia, Meſſania, Laconia, Argolis, Megaris, Attica, Boetia. And againe from another sea the same Phocis and Locris, Doris, Phibiotis, Theſſalia, Magnesia, Macedonia, Thracia. All the fabulous veine, and learning of Greece, proceeded out of this quarter. And therefore we will therein ſay ſomewhat the longer. The countrey Epirus, generally ſo called, beginneth at the mountaines Acrocerania. In it, are firſt the Chaones, of whome Chaonia taketh the name: then the Theſprotians, and Antigoneſes: the place Normus, and the aire ariſing out of it ſo noyſome and peſtiferous for birds, The Cefſines, and Perrhabians with their mountaine Pindus; the Caſtorei, the Dryopes, Selli, Heliopeſ, and Molofſi, among whome is the temple of Iupiter Dodonaus, ſo famous for the Oracle there: the mountaine Tomarus, renowned by Theopompus for the hundred fountains about the foot thereof.

CHAP. I.

Epirus.



Epirus it ſelfe reaching to Magnesia and Macedonia, hath behind it the Daſſaretians above named, a free nation; but anon the ſavage people of the Dardanians. On the left ſide of the Dardanians, the Trebellians and nations of Moesia lye raunged: afront there joine vnto them, the Medi and Denthelates; upon whome the Thracians border, who reach as farre as to Pontus. Thus environed it is and defenced round, partly with the high hill Rhodope, and anon alſo with Hamus. In the utmoſt coaſt of Epirus among the Acrocerania, is the caſtle Chimæra, under which is the ſpring of the kings water. The townes are, Mæandria and Celtria: the river of Theſprotia, Thyamis: the colonie Buthrotium: and the gulfes of Ambracia, above all others moſt famous, receiving at his mouth the wide ſea; 39 miles in length, and 15 in breadth. Into it ruanneth the river Acheron, flowing out of Acheruſia, a lake of Theſprotia 36 myles from thence: and for the bridge over it 1000 foot long, admirable to thoſe that admire & wonder at all things of their owne. In the very gulfes is the towne Ambracia. The rivers of the Molofſians, Aphas and Aractus. The cittie Anaetoria, and the lake Pandofia. The townes of Acarnania, called beforetime Curetus, bee Heraclea and Echinus: and in the very entrance and mouth thereof, Artium a Colonie of *Augustus*, with the goodly temple of *Apollo*, and the free citie Nicopolis. When yce are gone out of the Ambracian gulfes into the Ionian ſea, yee meet with the Leucadian ſea coaſt, and the Promontorie of Leucate. Then the creeke, and Leucadia it ſelfe, a demie Iſland, ſometime called Neritis, but by the labour of the inhabitants thereby, cut quite from the Continent, but annexed to it againe by meanes of the winds blowing together heapes

A of sand, which place is called Dioryctus, and is in length almost halfe a myle. A towne in it there is called Leucas, sometime Neritum. Then the citties of the Acarnanians, Halyzea, Stratos, Argos surnamed Amphilochicum. The river Achelous running out of Pindus, and dividing Acarnania from Ætolia, and by continuall bringing in of earth, annexing the Island Artemita to the firme and maine land.

CHAP. II.

Ætolia.

B **T**He Ætolian nations, be the Athamanes, Tympei, Ephiri, Ænienses, Perrhœbi, Dolopes, Maraces and Atraces, from whom the river Árax falleth into the Ionian sea. The towne Calydon in Ætolia is seven miles and an halfe from the sea, neer to the river Euenus. Then followeth Macynia and Molychria, behind which Chalcis standeth, and the mountaine Taphiassus. But in the very edge & borders thereof, the Promontorie Antirrhium, where is the mouth of the Corinthian gulfe, not a mile broad where it runneth in, and devideth the Ætolians from Peloponnesus. The Promontorie that shooteth out against it, is named Rhion: but upon that Corinthian gulfe are the townes of Ætolia, Naupactum and Pylene: but in the midland parts, Pleucon, Halyfarna. The Mountaines of name: in Dodone, Tomarus: in Ambracia, Grania: in Acarnania, Aracynthus: in Ætolia, Acanthon, Panætolum and Macinium.

CHAP. III.

Locri.

C **N**Ext to the Ætolians are the Locri, surnamed Ozolæ, free States and exempt: the towne Oeanthe: the haven of *Apollo Phæstus*: the creeke Crissæus. Within-forth are these townes Argyna, Eupalia, Phæstum, and Calamissus. Beyond them are Cirrhæi, the plaines of Phocis, the towne Cirrha, the haven Chalæon: from which, seven miles within the land, is the free cittie Delphi, under the hill Pernassus, the most famous place upon earth for the Oracle of *Apollo*. The fountaine Castalius, the river Cephissus, running before Delphos, which ariseth in a cittie, sometime called Lilœa. Moreover, the towne Crissa, and together with the Buleses, Anticyra, Naulochum, Pyrrha, Amphissa an exempt State, Trichone, Fritea, Ambrysius, the region Drymæa, named Daulis. Then in the inmost nouke of the creeke, the very canton and angle of Bœotia is washed by the sea, with these townes Siphæ and Thebæ, which are surnamed Corticæ, neere to Helicon. The third towne of Bœotia from this sea is Pagæ, from whence procedeth and beareth forth the necke or cape of Peloponnesus.

CHAP. IIII.

Peloponnesus.

E **P**eloponnesus, called beforetime Apia and Pelasgia, is a demie Island, worthis to come behind no other land for excellencie and name; lying betweene two seas, Ægeum and Ionium: like unto the leafe of a plaine tree, in regard of the indented creekes and cornered noukes thereof: it beareth a circuit of 563 myles, according to *Isidorus*. The same, if you comprise the creekes and gulfes, addeth almost as much more. The streight where it beginneth to passe on and goe forward, is called Isthmos. In which place the seas abovenamed guthing and breaking from diverse waies, to wit, from the North and the East, doe devour all the bredth of it there: untill by the contrarie running in of so great seas, the sides on both hands being eaten away, and leaving a space of land betweene, five miles over, Hellas with a narrow neck doth meer with Peloponnesus. The one side thereof is called the Corinthian gulfe, the other, the Saronian. Lecheum of the one hand, and Cenchrææ of the other, do bound out and limit the said streight: where the ships are to fetch a great compasse about with some daunger, such vessels I meane as for their bignesse cannot be conveighed over upon wains. For which cause, *Demetrius* the king, *Cæsar* the Dictator, prince *Caius*, and *Domitius Nero*, assaid to cut through the narrow foreland, and make a channell navigable with ease: but the attempt and enterprife was unhappie, as appeared by the issue and end of them all. In the midst of this narrow streight which wee

have called Isthmos, the Colonie Corinthus, before time called Ephyra, situate hard unto a little hill, is inhabited, some threescore stadia from both sea sides: which from the top of the high hill and castle there, which is named Acrocorinthus, wherein is the fountain Pirene, hath a prospect into both those contrarie seas. At this Corinthian gulfe there is a passage or cut by sea from Leucas to Patræ of 87 miles. Patræ a Colonie, built upon the promontorie of Peloponnesus, that shooteth farthest into the sea, over against Ætolia and the river Evenus, of lesse distance as hath been said, than five myles, in the very gullet and entrance, do send out the Corinthian gulfe 85 myles in length, even as farre as Isthmos.

CHAP. V.

¶ *Achaia.*

AChaia, the name of a province, beginneth at Isthmus: aforetime called it was Ægialos, because of the citties, situate so orderly upon the strand. The principall and first there is Lecheæ abovenamed, a port town of the Corinthians. Next to it Oluros, a castle of the Pelenaens. The towns, Helice, Bura, and (into which the inhabitants retired themselves, when these before named were drowned in the sea) Sicyon, Ægira, Ægion and Erineos. Within the countrey was Cleone and Hysia. Also the haven Panhormus, & Rhium described before: from which promontorie five myles off standeth Patræ abovementioned, and the place called Pheræ. Of nine hills in Achaia, Scioessa is most knowne, also the Spring Cymothoe. Beyond Patræ is the towne Olenum, the Colonie Dymæ. Certaine faire places called Buprasium and Hirmene: and the promontorie Araxum. The creeke of Cyllene, the cape Chelonates: from whence to Cyllene is two myles. The castle Phlius. The tract also by *Homer* named Arethyrea, and afterwards Asophis. Then the countrey of the Elians, who before were called Epei. As for Elis the cittie it selfe, it is up higher in the midland parts, twelve myles from Pylos. Within it standeth the chappell of *Jupiter Olympius*, which for the fame of the games there, containeth the Greekes and Chaldeans account of yeares. Moreover, the towne sometime of the Pisceans, before which the river Alpheus runneth. But in the borders and coast thereof the promontorie Icthus Vpon the river Alpheus, there is passage by water in barges to the townes Aulos and Lepriion. The promontorie Plataneus. All these lie Westward. But toward the South, the arme of the sea called Cyparissus and the cittie Cyparissa, 72 miles in circuit. The townes upon it, Pylos, Methone, a place and Forrest called Delos: the promontorie Acritas: the creeke Asinaeus of the towne Asinum, and Coronæus of Corone. And these are limited with Tænarus the promontorie. There also is the region Messenia with 22 mountaines. The river Paomifus. But within, Messene it selfe, Ithome, Oechalia, Arene, Pteieon, Thyron, Dorion, Zanclum, famous townes all for many occurrents at sundrie times. The compasse of this arme of the sea is 80 myles, the cut overcrosse 30 myles. Then from Tænarus, the Laconian land pertaining to a free people, and an arme of the sea there in circuit about 206 miles, but 39 miles over. The townes Tanatum, Amiclae. Pheræ, Leuctra, and within forth Sparta, Theranicum: and where stood Cardamyle, Pitane, and Anthane. The place Thyrea, and Gerania. The hill Taygetus: the river Eurotas, the creeke Ægyloides, and the towne Pfammathus. The gulfe Gytheates, of a towne thereby (Gythæum) from whence to the Island Creet, there is a most direct and sure cut. All these are enclosed within the promontorie Maleum. The arme of the sea next following is called Argolicus, and is 50 miles over, and 172 miles about. The townes upon it, Boea, Epidaurus, Limeria, named also Zarax. Cyphanta the haven. Rivers, Inachus, Erafinus: betweene which, standeth Argos surnamed Hippium upon the Lake Lerne, from the sea two miles, and nine miles farther Mycenæ. Also, where they say Tiryntha stood, and the place Mantinea. Hills, Artemius, Apesantus, Asterion, Parparus, and eleven others besides. Fountaines, Niobe, Anymone, Pfammothe. From Scyllæum to Isthmus 177 myles. Townes, Hermione, Troezen, Coryphasium and Argos, called of some Inachium, of others Dipsum. The haven Canites, the creeke Saronicus, beset round about in old time with woods of oake, wherupon it had the name, for so old Greece called an oake. Within it stood the towne Epidaurum, much resorted unto for the temple of *Asculapius*, the promontorie Spiræum, the havens Anthedon, and Bucephalus: and likewise Cencheæ which we spake of before, being the other limit of Isthmus, together with the chappell of *Neptune*, famous for the Games there represented every five yeeres. Thus many creekes do scorch and cut Peloponnesus: thus many

A many seas I say doe rōre and dash against it. For on the North side the Ionian sea breaketh in : on the West it is beaten upon with the Sicilian. From the South the Cretian sea driveth against it : Ægeum from the Southeast, and Myrtoum on the Northeast, which beginning at the Megarian gulfe, washeth all Attica.

CHAP. VI.

Of Arcadia.

THe midland parts thereof, Arcadia most of all taketh up, being every way far remote from the sea : at the beginning it was named Drymodis, but soone after Pelasgis. The townes in it be Psophis, Mantinea, Stryphalum, Tegea, Antegonea, Orchomenum, Pheneum, Palatium, from whence the mount Palatium at Rome took the name. Megalepolis, Catina, Boca-
B lium, Carmon, Parrhasiæ, Thelphusa, Melanæa, Heræa, Pile, Pellana, Agræ, Epium, Cynæthæ, Lepreon of Arcadia, Parthenium, Alea, Methydrium, Enespe, Macistum, Lampe, Clitorium, Cleone: betweene which townes is the tract Nemea, usually called Berubinadia. Mountaines in Arcadia, Pholoe with a towne so named. Item, Hyllene, Lyceus, wherein was the chappell of *Jupiter Lyceus*, Mænalus, Artemisus, Parthenians, Lampeus, and Nonacris : and eight besides of base account. Rivers, Ladon, issuing out of the meeres and fennes of Pheneus, Erymanthus out of a mountaine of the same name, running both downe into Alpheus. The rest of the citties to
C bee named in Achæa, Aliphiræi, Abeatæ, Pyrgenses, Pareatæ, Paragenitiæ, Tortuni, Typanæi, Thyrasij, Tritenses. All Achæa generally throughout, *Domitius Nero* endowed with freedome. Peloponnesus from the promontorie of Malea to the towne Lechæum upon the Corinthian gulfe, lieth in breadth 160 miles : but over crosse from Elis to Epidaurum 125 myles : from Olympia to Argos through Arcadia 63 miles. From the same place to Phlius is the said measure. And all throughout, as if Nature made recompence for the irruptions of the seas, it riseth up in threecore and sixteene hills.

CHAP. VII.

Of Greece and Attica.

AT the streights of Isthmus beginneth Hellas, of our countrey men called Græcia. The first tract thereof is Attica, in old time named Ache. It reacheth unto Isthmus on that part thereof which is called Megaris of the colonie Megara, or against Pagæ. These two towns as Peloponnesus lieth out in length, are seated on either hand, as it were, upon the shoulders of Hellas. The Pagæans, and more than so, the Ægostheniensis lie annexed to the Magarensians, and owe service to them. In the coast thereof is the haven Schoenus. Townes, Sidus, Cremyon, Scironia rockes for three myles long, Geranea, Megara, and Eleusin. There were besides Gcnoa and Probalinthus, which now are not to be seene, 52 myles from Isthmus. Pyræus and Phalera, two havens joined to Athens by a wall, within the land five myles. A free citie this is, and needeth no more any mans praise : so noble and famous it is otherwise, beyond all measure. In Attica be these fountaines, Cephissia, Larine, Callirhoc, and Enneacreunos. Mountaines, Brilessus, Megialcus, Icarius, Hymettus, and Lyrabetus : also the river Ilissos. From Pyræum 42 miles off, is the promontorie Sunium, likewise the promontorie Doriscum. Also, Potamos and Brauron, townes in time past. The village Rhamnus, and the place Marathon, the plain Thriasius, the town Melita and Oropus, in the confines or marches of Bœotia. Vnto which belong Anthedon, Onchestos, Thespræ a free towne Lebadea : and Thebes surnamed Bœotia, not interior in fame and renoune to Athens, as being the native cōuntry, and as men would have it, of two gods, *Liber* and *Hercules*. Also, they attribute the birth of the Muses in the wood Helicon. To this Thebes is assigned the Forrest Cithæron, and the river Ismenus. Moreover, Fountaines in Bœotia, Oedipodium, Pfammate, Dirce, Epigræna, Arethusa, Hippocrene, Aganippe, and Gargaphiæ. Mountaines over and besides the forenamed, Mycalestus, Adylisus, Acontius. The rest of the towns betweene Megara and Thebes, Eleuthera, Haliartus, Plateæ, Pheræ, Aspledon, Hyle, Thisbe, Erythra, Gliffas, and Copæ. Neere to the river Cephissus, Lamia and Anichia : Medeon, Phligone, Grephis, Coronæa, Chæronia. But in the outward borders, beneath Thebes, Ocale, Elæon, Scolos, Scœnos, Pæteon, Hyrie, Mycalestus, Hyrescon, Pteleon, Olyros, Tanagia, a free State; and in
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the very mouth of Euripus, which the Island Eubœa maketh by the opposite site thereof, Aulis, G so renowned for the large haven that it hath. The Bœotians in old time were named Hyantes. The Locrians also are named withall Epicnemidij, in times past Letegetes, through whom the river Cephissus runneth into the sea. Townes, Opus (whereof commeth the gulfe Opuntinus) and Cynus. Vpon the sea-coast of Phocis, one and no more, to wit Daphnus. Within-forth among the Locrians, Elatea, and upon the bank of Cephissus (as we have said) Lilæa: and toward Delphos, Cnenius and Hiampolis. Againe, the marches of Locri, wherein stand Larymna and Thronium, neere unto which the river Boagrius falleth into the sea. Townes, Narycion, Alope, Scarphia. After this, the vale called of the people there dwelling, Maliacus Sinus, wherein bee these townes, Halcyone, Econia, and Phalara. Then Doris, wherein are Sperchios, Erineon, Boion, Pindus, Cytinum. On the backe side of Doris is the mountaine Oeta. Then followeth Æmonia H that so often hath changed name: For one and the same hath bene called Pelasgicum, Argos, and Hellas, Thessalia also and Dryopis, and evermore tooke name of the kings. In it was borne a king called *Græcus*, of whom Greece bare the name: there also was *Hellen* borne, from whence came the Hellenes. These being but one people, *Homer* hath given three names unto, that is to say, Myrmidones, Hellenes, and Achæi. Of these, they be called Phthiotæ who inhabit Doris. Their townes bee Echinus, in the very gullet and entrance of the river Sperchius: and the streights of Thermopylæ, so named by reason of the waters: and foure miles from thence Hera- clea, was called Trachin. There is the hill Callidromus: and the famous townes, Hellas, Halos, Lamia, Phthia, and Arne.

CHAP. VIII.

§ Thessalie.

Moreover in Thessalie, Orchomenus, called beforetime Minyeus; and the town Almon, or after some Elmon; Atrax, Pelinna, and the fountaine Hyperia. Townes, Pheræ, behind which Pierius stretcheth forth to Macedonie: Larissa, Gomphi, Thebes of Thessalie, the wood Pteleon, and the creeke Pagasicus. The towne Pagasa, the same named afterwards Demetrias; Tricca, the Pharsalian plaines, with a free citie; Cranon, and Iletia. Mountaines of Phthiotis, Nymphæus, most faire and sightly for the naturall arbors and garden-workes there: Buzigæus, Donacefa, Bermius, Daphissa, Chimæron, Athamas, Stephane. In Thessaly there be 34, whereof the most famous are, Cerceti, Olympus, Pierus, Ossa: just againe st which, is Pindus and Othrys, the seat and habitation of the Lapithæ; and those lie toward the West: but Eastward, Pelios, all of them bending in manner of a theatre: and before them stand raunged wedgewise, 72 cities. Rivers of Thessalie, Apidanus, Phoenix, Enipeus, Onochomus, Pamisus: the fountaine Messieis, the poole Bœbeis: and above all the rest, the most famous river Peneus, which arising neere Gomphi, runneth for 500 stadia in a woodie dale between Ossa and Olympus, and halfe that way is navigable. In this course of his, are the places called Tempe, 5 miles in length, and almost an acre and a halfe broad, where on both hands the hills arise by a gentle ascent above the reach of mans sight. Within-forth glideth Peneus by, in a fresh green grove, clear as crysell glasse over the gravelly stones; pleasant to behold for the grasse upon the bankes, and resounding againe with the melodious consent of the birds. It taketh in the river Eurotas, but entertaineth him not, but as he floweth over the top of him like oyle, as *Homer* saith: within a while after that hee hath carried him a small way, letteth him goe againe and rejecteth him, as refusing to mingle with his owne silver streames, those pœnall and cursed waters engendred for the infernall Furies of hell.

CHAP. IX.

§ Magnesia.

TO Thessaly, Magnesia is annexed: the fountaine there, is Libethra. The townes, Iolchos, Himenium, Pyrrha, Methone, Olizon. The promontorie Sepias. Townes moreover, Castana, Sphalarra, and the promontorie Ænantium. Townes besides, Melibœa, Rhifus, Erymne. The mouth of Peneus. Townes, Homolium, Orthe, Thespiæ, Phalanna, Thaumacie, Gyrtion, Cranon, Acarne, Dotion, Melitæa, Phylace, Potinæ. The length of Epirus, Achaia, Attica, and Thessalie, lying streight out, is by report 480 miles, the breadth 287.

CHAP. X.

§ Macedonie.

Macedonie, so called afterwards (for before-time it was named Emathia) is a kingdome consisting of 150 severall States, renowned for two kings above the rest, and embolded sometime for the Monarchie and Empire of the world. This countrey lying farre in behind Magnesia and Thessalie toward the nations of Epirus Westward, is much troubled and infested with the Dardanians. The North parts thereof, are defended by Pæonia and Pelagonia, against the Triballi. The townes be these, Aege, wherein the manner was to interre their kings: Beroea, and Æginiūm, in that quarter which of the Wood is called Pieria. In the outward borders, Heraclæa, and the river Apilas: more townes, Phina, and Oloros: the river Haliacmon. Within-forth, are the Haloritæ, the Vallei, Phylacei, Cyrtheætæ, Tyriffæi: Pella the Colonie: the town Stobi of Romane citizens. Anon, Antigoniam, Europus upon the river Axius, and another of the same name through which Rhædias runneth: Heordeætæ, Seydra, Mieza, Gordiniæ. Soone after in the borders, Ichnæ, and the river Axius. To this bound the Dardani: Treres, and Pieres border upon Macedonie. From this river, are the nations of Pæonia, Parorei, Heordenes, Almopij, Pelagones, and Mygdones. The mountaines Rhodope, Scopius, and Oibelus. The rest is a plaine countrey, wherein Nature seemeth to set out her riches; in the lap wherof are the Arethusij, Antiochientes, Idomenenses, Doberientes, Trienses, Allantenses, Andarientes, Moryllij, Garesci, Lyncestæ, Othrionei, and the free States of the Amantines and Orestæ. Colonies, Bulledensis and Dienfis. Xilopolitæ, Scoussij free; Heraclæa, Sintica, Timphei and Coronæi. In the coast of the Macedonian sea, the towne Calastra, and within-forth, Phileros, and Lete: and in the middle bending of the coast, Thessalonica, of free estate and condition. To it from Dyrrachium, it is 114 myles, Therma. Vpon the gulfe Thermaicus, be these townes, Dicæa, Pydna, Derrha, Scione: the promontorie Canastræum. Townes, Pallene, Pherga. In which region these mountaines, Hyfizorus, Epitus, Alchione, Leuomme. Townes, Nissos, Brygion, Eleon, Mendæ, and in the Isthmos of Pallene, the colonie sometime called Potidaea, and now Cassandria, Anthemus, Holophyxus the creeke, and Mecybeta. Townes, Phiscella, Ampelos, Torone, and Singos: the Frith (where *Xerxes* king of the Persians cut the hill Athos from the Continent) in length a mile and a halfe. The mountaine it selfe shooteth out from the plaine into the sea, 75 miles. The compass of the foot thereof, taketh 150 miles. A towne there was in the pitch of it, Acroton. Now there be Vranopolis, Palæotrium, Thyssus, Cleone, Apollonia, the inhabitants wherof be named Macrobij. The towne Castera, and a second gullet or creeke of the Isthmus, Acanthus, Stagira, Sitone, Heraclæa, and the region lying under Mygdonia, wherein are seated farre out from the sea, Apollonia and Arethusa. Againe in the coast, Possidium, and a creeke with the towne Cermorus: Amphipolis a free state, and the people Bisaltæ. Then, the river Strymon, which is the bound of Macedonie, which springeth in Hæmus: of which, this is worthe to be remembered, that it runneth into seven lakes before it keepeth a direct course. This is that Macedonie, which sometime conquered the dominion over all the earth: this over-ran Asia, Armenia, Iberia, Albania, Cappadocia, Syria, and Ægypt; yea and passed over Taurus and Caucasus: this ruled over the Bactrians, Medians, and Persians, and possessed all the East: this having the conquest of India, raunged after the tracts of Father *Liber* and *Hercules*. This is the very same Macedonie, of which in one day *Paulus Emilius* our Generall, sacked and sold 72 cities. See the difference of Fortune in two men.

CHAP. XI.

§ Thracia.

Now followeth Thracia, among the most valiant nations of Europe, divided into 52 regiments of souldiers. Of those States in it, the Denseteles and Medi, whome it grieves me not to name, doe inhabite neare to the river Strymon on the right side, as farre as to the Bisaltæ above-named: on the left, the Digeri, and many townes of the Bessi, even to the river Nessus, which environeth the botome of the hill Pangæus, betweene the Eleti, Diobesi, and Carbilesi, and so forward to the Brysæ and Capæi. Odomanta a towne of the Odrysians, sendeth

deth out the river Hebrus to the neighbour-borderers, the Carbilites, Pyrogeris, Drugeris, Cæ-nicks, Hypsals, Beni, Corpilli, Botiæi, and Edons. In the same tract the Selletæ, Priautæ, Dilon-cæ, Thyni, Celetæ, the greater under Hæmus, the lesse under Rhodope: betweene whome, run-neth the river Hebrus. The towne situate beneath Rhodope, was before-time named Poneropolis; soone after by the founder, Philippopolis; but now of the site thereof Trimontium. The ascent of Hæmus up to the top, taketh fixe miles: the backe side and hanging thereof downe to Ister, the Mœsians, Getes, Aoti, Gaudæ, and Clariæ, and under them the Arræi, Sarmata whom they call Areatæ, and Scythians: and about the sea coast of Pontus, the Morisenes and Sitho-nians, from whome the Poët *Orpheus* descended, doe inhabite. Thus Ister boundeth it on the North: in the East, Pontus and Propontus: Southward, the sea Ægæum, in the coast whereof from Strymon, stand Apollonia, Oestima, Neapolis, and Polis. Within-forth, the Colonie of *Philip*, and 325 myles from Dyrhachium, Scotusa, Topiris, and the mouth of the river Nestus. The hill Pangæus, Heraclea, Olynthos Abdera a free citie, the meere and nation of the Bifons. There, stood the towne Tinda, terrible for the horses of *Diomedes* that stabled there. Now at this day, Diceæ, Ismaron, the place Parthenion, Phalefina, Maronea called Ortageura before-time. The mountaine Serrium and Zonæ: then, the plaine Doriscus able to receive * 10000 men: for so *Xerxes* tooke a just account of his armie and numbred it. The mouth of Hebrus: the haven of Stentor: the free towne Ænea, together with the tombe of *Polydorus*, the region sometime of the Cicones. From Doriscus, the coast bendeth crookedly to Macron-Tichos, for 122 myles. About which place the river Melas, whereof the creeke beareth name. Townes, Cypsella, Bifanthe, and that which is called Macron-Tichos, what way as stretching forth the walles along from Propontis to the Creeke Melanes betweene two seas, it excludeth Chersonesus as it run-neth out. For, Thracia of one side beginning at the sea coast of Pontus, where the river Ister is discharged and swallowed up, hath in that quarter passing faire and beautifull cities, to wit, Istropolis of the Milesians, Tomi, and Calatis which before was called Acernetis. It had sometime Heraclea and Bizon, which sunke and was lost in a gaping chinke of the earth; but now instead thereof Dionysopolis, called before Crunos. The river Ziras runneth hard by it. All that tract, the Scythians named besides Aroteres, possessed. Their townes were, Aphrodisius, Libistos, Zigere, Borcobe, Eumenia, Parthenopolis, Gerania, where it is reported that the nation of the Pygmies kept, whome the barbarous people call Catizi, and they are of beliefe that they were chased away and put to flight by cranes. In the edge thereof next to Dionysopolis, there is Odesius of the Milesians, the river Pomiscus, the towne Tetranaulochos: the mountaine Hæmus bearing forth with a huge top into Pontus, had in the pitch thereof the towne Aristæum. Now in the coast is Mesembria and Anchialum, where Meffa was. The region Astice. There was the towne Anthium, now there is Apollonia. The rivers Panissa, Rira, Tearus, Orofines. Townes, Thynnias, Almedeffos, Develton with the poole which now is called Deultum, belonging to the old souldiers. Phinopolis, neare unto which is Bosphorus. From the mouth of Ister to the entrance of Pontus, some have made it 555 miles. *Agrippa* hath set to 40 miles more. And from thence to the wall above-named 150: and so from it to Chersonesus 126. But neere to Bosphorus is the arme of the sea Gathenes. The haven surnamed of old men, and another likewise of women. The promontoric Chrysoceras, wherupon standeth the town Bizantium of free estate, called beforetime Lygos. From Dyrhachium it is 711 miles. Thus much lyeth out the maine in length between the Adriaticke sea and Propontis. Rivers, Bathynias, Pydaras, or Atyras. Towns, Selymbria, Perinthus, annexed to the Continent 200 pases broad. Within-forth, Byzia, the castle of Thracian kings, hated of Swallowes, upon the horrible and cursed fact of *Tereus*. The region Camica: the colonie Flaviopolis, where beforetime the towne was called Zela. And 50 miles from Byria the colonie Apros, which is from Philippi 188 myles. But in the borders, the river Erginus, where was the towne Gonos. And there you leave the citie Lyfimachia, also now in Chersonesus. For another land passage or Isthmus there is of like streightnesse, all one in name and of equall breadth with that of Corinth. Likewise on both sides two cities doe beautifie and set out the stronds, which they take up not unlike to the other, to wit, Pactiæ from Propontis, and Cardia from the gulfe Melane: as for this, it taketh the name of the forme and proportion of the place made like a hart: and both, afterwards, were enclosed within Lyfimachia 3 myles from the * long walls above said. Chersonesus from Propontis side, had Tiristasis and Critthotes, also Ciffa fast upon the river Ægos: now it hath from the colonie Apros 32 miles Resistos, over-against

* Or, 10000.

Macron-Tichos.

- A** against the colonie Pariana. And Hellespontus, dividing Europe from Asia, seven stadia asunder (as we have said) hath foure citties there opposite one against another, to wit, in Europe, Calippolis and Sestos; in Asia, Lampfacum and Abydos. Then, is the promontorie of Chersonesus Maltisia, just contrarie to Sigeum, in the crooked front whereof is Cynossema: for so is *Hecubaes* tombe named, the very rode of the Athenians navie. The towne and chappell of *Proteslaus*: and in the very utmost forefront of Cherronesus, which is called *Æolium*, the towne *Elæus*. After it, as a man goeth to the gulse Melane, the havens *Cælos*, *Panhormus*, and the abovenamed *Cardia*. The third sea of Europe, is in this manner bounded and limited. Mountaines of Thracia over and above those afore rehearsed, *Edonus*, *Gigemorus*, *Meritus*, and *Melamphyllon*. Rivers falling into *Hebrus*, be *Bargus*, and *Suemus*. The length of Macedonie, Thracia, and Hellespontus, is set downe before. Some make it seven hundred and twentie miles. The breadth is three hundred and eightie miles. The sea *Ægeum* tooke that name of a rocke, betweene *Tenedos* and *Chios*, more truely than of an Iland named *Aex*, resembling a goat, and therefore so called of the Greekes; which all at once appeareth to rise out of the mids of the sea. The sea-men that saile from out of *Achaia* to *Andros*, discover it on the right hand, and to them it presageth some dreadfull and mischievous accident. Part of the *Ægean* sea is laid to the *Myrtoum*, and so called it is of a little Island, which sheweth it selfe to them that set saile from *Gereftus* to *Macedonie*, not farre from *Charystos* in *Eubœa*. The Romanes comprehend all these seas in two names: namely, *Macedonicum*, all that which toucheth *Macedonia* and *Thracia*: and *Græciensum* where it beareth upon *Greece*. As for the Greekes, they divide even the *Ionian* sea into *Siculum* and *Creticum*, of the Islands. Also, *Icarius* they call that betweene *Samos* and *Mycione*. All the other names are given by gulses and creeks, whereof we have spoken. And thus much verily as touching the seas and nations contained in this manner within the third section or gulse of Europe.

CHAP. XII.

§ The Islands betweene those lands, among which, *Creta*, *Eubœa*, *Cyclades*, and *Sporades*: also of *Hellespont*, *Pontus*, *Mæotis*, *Dacia*, *Sarmatia* and *Scythia*.

- D** Islands overagainst *Thresprotia*, *Corcyra*: 12 miles from *Buthrotus*, and the same from the cliffes *Acrocerania* 50 myles, with a cittie of the same name, *Corcyra* of free condition, also the towne *Cassiope*, and the temple of *Jupiter Cassiopæus*: it lieth out in length 97 miles. *Hommer* called it *Scheria* and *Phæacia*: *Callimachus* also, *Drepane*. About it are some others: but bending toward *Italie*, *Thoronos*: and toward *Leucadia* the two *Paxæ*, five miles divided from *Corcyra*. And not farre from them before *Corcyra*, *Ericusa*, *Marate*, *Elaphusa*, *Malthace*, *Trachia*, *Pytionia*, *Ptychia*, *Tarachie*. And from *Pholachrum* a promontorie of *Corcyra*, the rocke into which there goeth a tale, that the ship of *Ulysses* was turned, for the resemblance it hath of such a thing. Before *Leucadia*, *Sybota*. But between it and *Achaia* there be very many: of which *Teleboides* the same that *Taphia*: but of the inhabitants before *Leucadia*, they be called *Taphias*, *Ozie*, and *Prinoessa*: and before *Ætolia*, the *Echinades*, *Ægialia*, *Cotonis*, *Thyatira*, *Geoaris*, *Dionysia*, *Cyrnus*, *Chalcis*, *Pinara* and *Myrtus*. Before them in the deepe sea, *Cephalenia* and *Zacynthus*, both free States: *Ithaca*, *Dulichium*, *Same*, *Crocylea*, and *Paxos*, *Cephalenia* sometime called *Melæna*, is 11 myles off, and 44 myles about. As for *Same*, it was destroyed by the Romanes: howbeit, still it hath three townes: betweene it and *Achaia* is *Zacynthus* with a town, a stately Island, and passing fertile. In times past called it was *Hyrice*, and is 22 miles distant from the South coast of *Cephalenia*. The famous hill *Elatus* is there. The Island it selfe is in circuit 25 miles. Twelve miles from it is *Ithaca*, wherein standeth the mountaine *Neritus*. And in the whole it taketh up the compasse of 25 miles. From it twelve miles off is *Araxum* a cape of *Peloponnesus*. Before this Island in the maine sea there appeare *Asteris* and *Prote*. Before *Zacynthus* 35 miles full East, are the two *Strophades*, called by others *Plotæ*: and before *Cephalenia*, *Letoia*. Before *Pylos* three *Sphagia*, and as many before *Messene*, called *Oenussa*. In the gulse *Alinaus* three *Thyrides*: in the *Laconian* gulse, *Teganusa*, *Cathon*, *Cythera* with the towne, named beforetime *Porphyris*. This lieth five miles from the promontorie *Malea*, dangerous for ships to come about it, by reason of the streights there. In the *Argolick* sea are *Pityusa*, *Irine* and *Ephyre*: and

and against the territorie Hermonium, Typareus, Epiropia, Colonis, Aristera: over against **G** Troezenium Calauria, halfe a mile from Plateæ: also, Belbina, Lacia and Baucidias. Against Epidaurus, Cecryphalos, and Pytionesos, fixe miles from the Continent. Next to it is Ægilia a free state, 17 miles off, and for 20 miles they saile by it. The same is distant from Pyræum the port of the Athenians, 12 miles, and before time was usually called Oenone. Against the promontorie Spiraum, there lie opposite Eleusa, Dendros, two Craugia, two Cæcia, Selachusa, Cencheis and Apsis. Also in the Megarian gulfe, there be foure Methurides. As for Ægilia, it is 15 miles from Cythera, and the same is from Phalafarna a towne in Creet 25 miles. And Creet it selfe, lying of one side to the South, and the other to the North, stretcheth forth in length East and West; a famous and noble Island for a hundred cities in it. *Dosiades* saith it tooke that name of the nymph *Creta* daughter of *Hesperis*: but according to *Anaximander*, of a **H** king of the Curetes. *Phylistides*, *Mallotes*, *Crates*, have thought it was called first *Æria*, and afterwards *Curetis*, and some have thought it was named *Macaros* for the blessed temperature of the aire. In breadth it exceedeth in no place 50 miles, and in the middle part broadest it is: but in length it is full 270 miles: in circuit 589 miles: and winding it selfe into the Creticke sea, so called of it, where it stretcheth out farthest Eastward, it putteth forth of it the promontorie Sammonium just against Rhodos, and Westward Criu-Metopon, toward Cyrenæ. The principall townes of marke, be Phalafarnæ, Elæa, Gysamum, Pergamum, Cydon, Minoum, Apterion, Pantomatrium, Amphimalla, Rhythymna, Panhorium, Cyteum, Apollonia, Matium, Heraclea, Mileos, Ampelos, Hiera-pytina, Lebena, Hierapolis. And in the midland parts, Cortyna, Phæstum, Gnosus, Potyrrhenium, Myrina, Lycastus, Rhamnus, Lyctus, Diium, Asum, Pyloros, Rhytion, Clatos, Pharae, Holopyxos, Lasos, Eleuthernæ, Therapne, Marathusa, Mytinos. And other townes about the number of 60, stand yet upon record. The hills bee Cadiscus, Idæus, Dictæus, and Morycus. The Isle it selfe, from the promontorie in it called Criu-Metopon, as *Agrippa* reporteth, is distant from Phycus, a promontorie of the Cyrene 225 miles. Likewise, from Capescum point, it is from Malea in Peloponnesus 80 miles. From the Island Carpathus, which lieth Westward from the cape Sammonia, 60 miles. This Island aforesaid lieth betweene it and Rhodos. The rest about it be these: before Peloponnesus two Coricæ, and as many Mylæ: and on the North side, when a man hath Creet on the right hand, there appeareth Leuce just against Cydonia, together with the two Budora, against Matium, Cira against the Promontorie Itanum Onisa and Leuce: against Hierapytina, Chrysa, and Caudos. In the same coast are Ophiussa, **K** Butoa, and Rhamnus: and when men have fetched about and doubled the point Criu-Metopon, appeare the Isles called Musagores. Before the Promontorie Sammonium, Phocæ, Platia, Sirnides, Naulochos, Armedon and Zephyre. But in Hellas, yet still in Ægeum, Lichades, Scarphia, Marisa, Phocaria, and very many more over against Attica, but townlesse, and therefore obscure and of no reckoning: but against Eleusin, the noble Salamis, and before it Psytalia: and from Sunium, Helene five miles off: and Ceos from thence as many, which our countrey men have named Cæa: but the Greekes *Hydrussa*, cut off and dismembred from Eubœa. In times past it was 500 stadia long: but soone after, foure parts almost, namely, those that butted upon Bœotia, eaten up by the same sea: so as now the townes remaining that it hath, be Iulis and Carthæa. For Corestus and Pacea are perished & gone. From hence as *Varro* saith, came the fine **L** linnen cloth that women use: yea, and Eubœa it selfe hath bene plucked from Bœotia, and divided with so little an arme running betweene, that a bridge joineith the one to the other: evident it is to the eye, and well seene, by reason of two Promontories in the South side, to wit, *Genestum*, bending toward Attica, and *Capharens* to Hellespontus: and one upon the North side, to wit, *Cæneus*. In no part thereof doth it extend broader than 40 miles: and no where doeth it gather in narrower than 20. But in length from Attica as farre as Thessalie, it lieth along Bœotia 150 miles: and containeth in circuit 365. From Hellespont, on Caphareus side, it is 225 miles. In times past renowned it was for these cities, *Pyrha*, *Porthmos*, *Nesos*, *Cerinthus*, *Oreum*, *Diium*, *Ædepsum*, *Ocha*, *Oechalia*, now *Calcis*, over against which standeth *Aulis* in the maine: but now, for *Geresium*, *Eretria*, *Carystus*, *Oritanum*, *Artemisium*, the fountaine *Arthusa*, the river **M** *Lelantum*, the hote waters called *Hellopia*, it is of great name: but yet in more request for the marble of *Carystus*. In former time it was called commonly *Chalcodontis* or *Macris*, as *Dionysius* and *Ephorus* doe say: but *Macra*, according to *Aristides*: and as *Callidemus* would have it, *Chalcis*, for the brasse there first found: and as *Menæmus* saith, *Abantias*: and last of all *Aso-*
pis,

A pis, as the Poets commonly name it. Without in the Myrtoum sea, be many Isles, but of greatest marke be Glauconnesus and Ægilia. And neere to the promontorie Gerestum about Delos certaine lying round together, whereupon they tooke their name Cyclades. The first and principall of them, Andrus with a towne, is from Gerestum tenne miles, and from Ceum 39. *Myrtilus* saith it was called Cauros, and afterwards Antandros. *Callimachus* nameth it Lasia, others Nonagria, Hydrussa and Epagris. It taketh in compasse 93 miles. A mile from the same Andros, and fiteene from Delos, lieth Tenos, with a towne fiteene miles in length: which, for the plentie of water *Aristotle* saith was called Hydrussa, but others name it Ophiussa. The rest bee these;

B Delos it selfe, of all others most excellent by far, as being the middest of all the Cyclades, much frequented for the temple of *Apollo*, and for merchandise and trafficke. Which having a long time floted up and downe (as it is reported) was the onely Island that never felt earthquake unto the time of *M. Varro. Mutianus* hath recorded that it was twice shaken. *Aristotle* giveth a reason of the name in this sort, because it was discovered, and appeared on a suddaine. *Æglosthene* tearmeth it Cynthia: others Ortygia, Asteria, Lagia, Chlamydia, Cynethus, and Pypile, for that in it fire was found out first. It is but five miles about, and riseth up by the ascent of the hill Cinthus. Next to it is Rhene, which *Anticlides* called Celadussa, and *Helladius*, Artemite. Moreover, Syros, which auncient writers have written to be in circuit 20 miles, and *Mutians*, 160. Oliaros, Paros, with a towne, 38 miles from Delos, of great name for the white marble there, which at first men called Pactia, but afterwards Minois. From it seven miles and an halfe is Naxos (eighteen miles from Delos) with a towne, which they called Strongyle, afterwards Dia, within a while *Dionysias* of the plentifull vines, and others, Sicilie the lesse, and Callipolis. It reacheth in circuit 75 miles, and is halfe as long againe as Paros. And thus farre verily they observe and note for the Cyclades: the rest that follow, for the Sporades. And these they be, Helenium, Phocussa, Phæcassia, Schinussa, Phalegandros, and seventeene miles from Naxos, Icaros: which gave name to the sea, lying out as farre in length with two townes, for the third is lost: beforetime it was called Dolichum, Macris and Ichtyoëssa. It is situate Northeast, from Delos 50 miles: and from Samos distant it is 35 miles. Betweene Eubœa and Andros there is a strith 12 miles over. From it to Gerestum is 112 miles and an halfe. And then no order forward can be kept. The rest therefore shall

D be set downe huddle by heapes. Ios from Naxos 24 miles, venerable for the sepulchre of *Homer*: it is in length 25 miles, and in former time called Phænice. Odia, Letandros, Gyaros with a towne, 12 miles about. It is from Aneros 62 miles. From thence to Syrnus 80 miles. Cynethussa, Telos, famous for costly ointment, and called it is by *Callimachus*, Agathussa. Donyfa, Pathmos in circuit 30 miles. Corassæ, Lebinthus, Leros, Cynara, Sycinus, which beforetime was Oence, Heratria, the same that Onus, Casus otherwise Astrabe, Cimolus, *alias*, Echinussa, Delos with a towne; which *Aristides* nameth Byblis, *Aristotle* Zephyria, *Callimachus* Himallis, *Heracides* Syphnus and Acytos. And this of all the Islands, is the roundest. After it Machia, Hypere sometime Patage, or after some Platage, now Amorgos, Potyægos. Phyle, Thera; when it first appeared, Calliste it was called. From it afterwards was Therassia plucked: and betweene those twaine soone after arose Automate, the same that Hieria: and Thia which in our daies appeared new out of the water neere Hieria. Ios is from Thera 25 miles. Then follow Lea, Afcania, Anaphe, Hippuris; Hippurissusa. Aftipalæa of free estate, in compasse 88 miles: it is from Cadiscus, a promontorie of Creta, 125 miles. From it is Platea, distant 60 miles. And from thence Camina, 38 miles. Then Azibnitha, Lanise, Tragia, Pharmacusa, Techedia, Chalcia, Calydna, in which are the townes Coos and Olymna. From which to Carpathus, that gave the name to the Carpathian sea, is five and twentie miles: and so to Rhodes with a Southerne wind. From Carpathus to Casos, seven miles: from Casos to Samonium a promontorie of Crete, thirtie miles. Moreover, in the Euboike Euripe, at the first entrance well neere of it, are the foure Islands Petaliæ, and at the end thereof, Atalante, Cyclades, and Sporades: confined and enclosed on the East with the Icarian sea-coasts of Asia; on the West, with the Myrtoan coasts of Attica; Northward, with the Ægæan sea; and South, with the Creticke and Carthaginian seas: and take up in length two hundred myles. The gulfe Pagasicus hath before it, Eutychia, Cicynethus, and Scyrus abovesaid: but the utmost of all the Cyclades and Sporades, Gerontia, Scadira, Thermeusis, Irrhesia, Solinnia, Eudemia, Nea, which is consecrate to *Minerva*: Athos before it hath foure; Peparethus

thus with a towne sometime called Euronos nine miles off: Scyathus five miles: and Iulios with a towne 88 miles off. The same is from Mastusia in Corinthos 75 miles. And is it selfe in circuit 72 miles. Watered it is with the river Ilissus. From thence to Lemnos 22 miles: and it from Athos 87. In compass it containeth 22 miles and a halfe. Townes it hath, Hephæstia and Myrina, into the market place whereof, the mountaine Athos casteth a shadow in the hottest season of Summer. Thasos a free State, is from it five miles: in times past called it was Æria or Æthria. From thence, Abdera in the Continent is twentie miles: Athos sixtie two: the Ile Samothrace as much, which is a free privileged State, and lieth before Hebrus. From Imbrus two and thirtie myles: from Lemnus two and twentie miles and a halfe: from the coast of Thracia eight and twentie myles: in circuit it is 32 myles: and hath a rising of the hill Saoces for the space of ten myles: and of all the rest is fullest of havens and harbours. *Callimachus* calleth it by the old name Dardania: betweene Cherrhonesus and Samothrace is Halomnesus, about fiftene myles from either of them: beyond lyeth Gethrone, Lamponia, Alopeconnesus not farre from Cœlios, an haven of Cherrhonesus: and some other of no name or regard. In this sea let us rehearse also the desart and dispeopled Islands, such as we can find out names for, to wit, Desticos, Larnos, Cyfficos, Carbrusa, Gelathusa, Scylla, Draconon, Arcones, Diethusa, Scapos, Capheris, Mesate, Æantion, Phaterunefos, Pateria, Calete, Neriphus and Polendus.

The fourth of those great seas in Europe, beginning at Hellepont, endeth in the mouth of Mœotis. But briefly we are to describe the forme of the whole sea, to the end that the parts may be sooner and more easily knowne. The vast and wide Ocean lying before Asia, and driven out from Europe in that long coast of Cherrhonesus, breaketh into the maine with a small and narrow issue, and by a Firth of seven stadia (as hath been said) divideth Europe from Asia. The first streights they call Hellepontus. This way *Xerxes* the king made a bridge upon ships, & so led his armie over. From thence there is extended a small Euripus or arm of the sea for 86 miles space, to Priapus a citie of Asia, whereas *Alexander* the great passed over. From that place the sea groweth wide and broad, and againe gathereth into a streight: the largenesse thereof is called Propontis; the streights, Bosphorus, halfe a mile over: and that way *Darius* the father of *Xerxes* made a bridge over, and transported his forces. The whole length of this from Hellepont is 239 miles. From thence the huge maine sea called Pontus Euxinus, and in times past *Axenus*, taketh up the space betweene lands farre distant and remote asunder, and with a great winding and turning of the shores, bendeth backward into certaine horns, and lyeth out stretched from them on both sides, resembling evidently a Scythian bow. In the very mids of this bending, it joyneth close to the mouth of the lake Mœotis. And that mouth is called Cimmerius Bosphorus, two miles and a halfe broad. But betweene the two Bosphori, Thracius and Cimmerius, there is a direct and streight course betweene, as *Polybius* saith, of 500 myles. Now the whole circuit of all this sea, as *Varro* and all the old writers for the most part doe witness, is 2150 miles. *Nepes Cornelius* addeth thereto 350 miles mores. *Artemidorus* maketh it 2919 miles. *Agrippa* 2360 miles. *Motianus* 2865 miles. In like sort, some have determined & defined the measure on Europe side, to be 4078 miles and a halfe: others 11072 miles. *M. Varro* taketh his measure in this manner: From the mouth of Pontus to Apollonia, 188 miles and a halfe: to Calatis as much. Then to the mouth of Ister 125: to Borysthenes 250: to Cherrhonesus, a towne of the Heracleates, 375 miles. To Panticapæus, which some call Bosphorus, the utmost coast of Europe, 222 miles and a halfe: which being put in a grosse summe together, 1336 miles and a halfe. *Agrippa* measurith thus: from Bizantium to the river Ister 560 miles: then to Panticapæum 630: from thence the very lake Mœotis taking into it the river Tanais, running out of the Rhiphæan hills, is supposed to beare the compass of 1306 miles, being the furthest bound betweene Europe and Asia. Others againe make 11025 miles. But surely from his mouth to the mouth of Tanais, and take a streight course, it is 375 miles without question. The inhabitants of that coast, have been named in the description and mention of Thrace, as farre as to Istropolis: now from thence, the mouthes of Ister. This river arising among the hills of Abnoba, a mountaine of Germanie, over-against Rauricum a towne in Gaule, passing many a mile beyond the Alpes, and through innumerable nations under the name of Danubius, with a mightie encrease of waters, & where he first beginneth to wash Illyricum, taking the name of Ister after he hath received sixtie rivers, and the one halfe of them well neare navigable, rolleth into Pontus with sixe huge streames. The first mouth of it is Peuces: soone after the land it selfe Peuce, of which the next channell

A tooke name, and is swallowed up of a great mere of of 19 miles. Out of the same channell and above Astropolis, a poole is bred of 63 miles compasse, which they call Halmyris. The second mouth is called Naracustoma: the third Calostoma, neare the Iland Sarmatica: the fourth Pseudostoma, and the Iland Conopon Diabasis. After that, Boreostoma, and Spireostoma. Each of these are so great, that by report the sea for 40 miles length within it is over-matched with the same, and the fresh water may so farre be evidently tasted. From it, into the inland parts of the countrey, the people verily be all Scythians: but divers other nations there be that inhabite the coasts next to the sea: in some places the Gete, called of the Romanes Daci: in others Sarmatae, of the Greekes Sauromatae; and among them, the Hamaxobij or Aorsi. Elsewhere; the bastard and degenerate Scythians, who are come from base slaves, or else the Troglodites;

B and anon the Alani and Rhozalani. But the higher parts betweene Danubius and the Forrest Hercynius, as farre as to the Pannonian wintering harbours of Carnuntum, and the confines there of the Germans, the fielden country also & plains of Iazyge, the Sarmatians possesse. But the hills and Forrests, the Dakes who were expelled by them, doe inhabite as farre as to the river Pathyflus from Marus; or peradventure it is Duria, dividing them from the Suevians and kingdom of Vannians. The parts against these, the Bastarnæ doe keepe; and from thence, other Germani. *Agrippa* hath set down that whole tract from Ister to the Ocean, to amount unto 2000 miles, and 400 lesse in breadth, to wit, from the deserts of Sarmatia to the river Vistula. The name of Scythians every where continually runneth into Sarmatians and Germanes. Neither hath that old denomination remained in any others but those, who (as I have said) live farthest off

C and in the edge of these nations, unknowne in manner to all men besides. But the townes next to Ister are Cremniscos, and Æpolium: the mountaines Macrorennij: the noble river Tyra, giving name to the towne, whereas before-time it was called Ophiusa. Within the same there is a spacious Iland, inhabited by the Tyragetæ. And it is from Plendostomum, a mouth of Ister, 130 miles. Soone after be the Axiacæ, bearing the name after the river: beyond whom are the Crobyzi: the river Rhode: the creeke Sagaricus, and the haven Ordefus. And 120 myles from Tyra, is the great river Borylthenes; also a lake and people of that name: yea and a towne 15 miles within from the sea, called by auncient names Olbropolis, and Miletopolis. Again, in the sea side, the haven or harbour of the Achæans: the Iland of *Achilles*, famous for the tombe of that worchie wight. And from it 135 miles, there is a demie Iland lying out acrosse in fashion of a sword, called Dromos Achilleos, upon occasion of his exercise there of running: the length whereof *Agrippa* hath declared to be 80 miles. All that tract throughout, the Taurisci, Scythians, and Sarmatians doe inhabite. Then the wild woodland countrey gave the name unto the sea Hylæum, which beatech hard upon it: the inhabitants are called Enacædloæ. Beyond, is the river Panticapes, which divideth the Nomades and Georgians asunder: and soone after, *Acessinus*. Some writers doe shew, that Panticape together with Borylthenes, runne together in one confluent beneath Olbia, but they that write more exactly, doe name Hypanis. See how much they erred, who have described it in a part of Asia. It entreth into the sea with a mightie great ebbe and returne of the water, until it be within five miles of Mœotis, compassing as it goeth a mightie deale of ground, and many nations. Then there is a gulfe or arme of the sea called Corcinites, and a river Pacyris. Townes, Noubarum and Carcine. Behind, is the lake Buges, let out into the sea by a great ditch. And Buges it selfe from Coretus (an arme or branch of the lake Mœotis) is disjoyned, with a backe part full of crags and rockes. Rivers it receiveth, Buges, Gerrhus, Hypanis, comming all from divers quarters: for Gerrhus parteth the Basilides and Nomades. Hypanis, through the Nomades and the Hyleans, falleth into Buges by a channell made by mans hand, but in his owne naturall channell into Coretus. The region of Scythia is named Sendica. But in Carcinites, Taurica beginneth: which also in times past was environed all about with the sea, wheresoever now there lie plaines and flat fields. But afterwards it mounteth up with huge hills. Thirtie nations there be in it: and of them 24 be Inlanders. Six townes, Orgocyni, Caraseni, Assyrani, Tractari, Archilachitæ, and Caliordi. The very pitch and crest of the hill, the Scytotauri doe hold. Bounded they are Westward, with Cherronefus; Eastward with the Scythian Satarchi. In the coast next to Carcinites are these townes; Taphræ, in the very streights of the demie Iland: then, Heraclea, Cherronefos, endowed with franchises by the Romanes. Aforetime it was called Megarice, and is the most civile and fairest of all the rest of that tract, as retaining still the names and fashions of the Greekes, and is besides compassed with a wall

wall of five miles about. Then, the promontorie Parthenium. A citie of the Tauri, Placia. The G
 haven Symbolon: the promontorie Criu-metopon, over-against Charambes a promontorie
 of Asia, running through the middle of Euxinus, for the space of 170 miles: which is the cause
 especially that maketh the forme above said of a Scythian bow. Nere to it, are many havens and
 lakes of the Tauri. The towne Theodosia, distant from Criu metopon 122 myles, and from
 Cheronesus 165 miles. Beyond, there have been townes, Cyte, Zephyrium, Acre, Nymphæum,
 and Dia. And the strongest of them all by many degrees, standeth yet still in the very entrie of
 Bosphorus, namely, Panticapæum of the Milesians, from Theodosia 1035 miles: but from
 Cimmerum, a towne situate beyond the Firth, a mile and a halfe as we have said. And this is all
 the breadth there that divideth Asia from Europe: which sometime is passible over most-what
 on foot, namely when the Firth is frozen and all an yce. The breadth of Bosphorus Cimmerius, H
 is 12 miles and a halfe. It hath upon it these townes, Hermisium, Myrmecium; and within it, an
 Iland Alopece. But along Mœotis from the farthest narrow land passage, which place is called
 Taphræ, unto the mouth of Bosphorus, it containeth 260 miles. On Taphræ side, the Conti-
 nent within-forth is inhabited by the Anchetæ, among whome Hypanis springeth; and Neuri,
 where Borysthenes hath his head. Moreover, the Geloni, Thuflagetæ, Eudini, Basilidæ, and
 the Agathyrsi, with blew haire on their heads. Above them, the Nomades, and the Anthropo-
 phagi. On Buges side above Mœotis, the Sauromates and Essedones dwell. But along the bor-
 ders even as farre as Tanais, the Mœotæ, of whome the lake was so called, and the utmost on
 their backs the Arimaspi. Within a litle appeare the Rhiphæan hills, and a countrey called Pie-
 rrophoros, for the resemblance of certaine wings or feathers, occasioned by the continuall fall of I
 snow. A part of the world thus is condemned by dame Nature, and drowned in deepe and thick
 darknesse, dwelling within no other houfes but the workes of frozen cold, and the ycie harbours
 of the chilling Northerne wind. Behind those hilles and beyond the North pole, there is a blef-
 sed and happie people (if wee may beleewe it) whom they call Hyperborei, who live exceeding
 long, and many fabulous and strange wonders are reported of them. In this tract are supposed to
 be the two points or poles about which the world turneth about, and the verie ends of the hea-
 vens revolution. For six moneths together they have one entire day; and night as long, when the
 Sunne is cleane turned from them: but their day beginneth not at the spring Æquinoctiall (as
 the leaud and ignorant common people doe imagine) and so continueth to the Autumne: for
 once in the yeere, and namely at our mid-summer when the Sun entreth into Cancer, the Sunne K
 riseth with them: and once likewise it setteth, even in mid-winter with us, when the Sunne
 entreth Capricorne. The countrey is open upon the Sunne, of a blissefull and pleasant tempera-
 ture, void of all noisome wind and hurtfull aire. Their habitations be in woods and groves, where
 they worship the gods both by themselves, and in companies and congregations: no discord
 know they; no sicknesse are they acquainted with. They never die, but when they have lived long
 enough: for when the aged men have made good cheere, and annointed their bodies with sweet
 ointments, they leape from off a certaine rocke into the sea. This kind of sepulture, of all others
 is most happie. Some Writers have seated them in the first part of the sea-coasts in Asia, and
 not in Europe, for that indeed some be there resembling the like manners and customes, and
 even so situate, named Atocori. Some have set them just in the mids betweene both Sunnes, to L
 wit, the setting of it with the Antipodes, and the rising of it with us: which cannot possibly be,
 considering so vast and huge a sea comming betweene. As for those that have placed them no
 where but in the sixe moneths day-light, have written thus much of them, That they sow in the
 morning, reape at noone, at sun-setting gather the fruits from the trees, and in the nights lye
 close shut up within caves. Neither may we make doubt of that nation, since that so many Au-
 thors doe testifie, That they were wont to send the first fruits of their corne, as farre as Delos to
 Apollo, whome above all others they honour. And virgins they were that had the carriage of this
 present; who for certaine yeeres were venerable, and courteously entertained of all nations, un-
 till such time as upon breach of faithfull hospitalitie, they tooke up an order to bestow those sa-
 cred oblations in the next marches of their neighbour borderers: and they againe to conveigh M
 the same to their neighbours that confined upon them, and so forward as farre as to Delos. But
 soone after, this custome was for-let and cleane given over. The length of Sarmatia, Scythia,
 and Taurica, and of all that tract from the river Borysthenes, is 980 myles, the breadth 717, as
 M. Agrippa hath cast it. But I for my part suppose, that the measure of this part of the earth is
 uncertaine.

A uncertaine. But after the order which we have begun; let us go forward with the rest behind of all this Division: as for the petie seas thet eofof, we have verily shewed them alreadie.

CHAP. XIII.

The Islands Pontus.

Hellespont hath no Islands to be spoken of, in Europe. In Pontus are two, a mile and a halfe from Europe, and 14 miles from the mouth of the river, to wit, Cyaneæ, of others called Symplegades; and by report of fables, they ran one into another: the reason was, because they being severed by a small space between, to them that enter the sea full upon them, they seemed twaine: but if they turned their eye a little aside from them, they made a shew as if they met together. On this side Ister there is one, pertaining to the Apolloniates, 80 miles from Bosphorus Thracius; out of which *M. Lucullus* brought *Apollo Capitolinus*. What were within the mouthes of Ister, we have declared alreadie. Before Borysthenes, is the abovenamed Achillea, the same is called Leuce and Macaron. This, our moderne Cosmographers in these dayes doe set 140 myles from Borysthenes: from Tyra 120: from the Iland Peuce 50. It is in compasse about, ten miles. The rest be in the gulfe Carcinites, namely Cephalonnesos, Rhosphodusa, and Macra. I cannot passe by the opinion of many writers, before we depart from Pontus, who have thought that all the inland seas or Mediteranen, arise from that head, and not from the streights of Gades: and they lay for their ground an argument not without some good probabilitie, because out of Pontus the sea alwaies floweth, and never ebbeth againe.

But now wee are to depart from thence, that other parts of Europe may be spoken of: and when we are gone over the Rhiphœan hills, we must passe along close to the North Ocean, and keepe the left hand untill we come to Gades. In which tract, there are reported to be very many Islands without names: of which, by the report of *Timæus*, there is one before Scythia called Bannomanna, distant from Scythia one daies sailing: into which, in the temperate season of the spring, Amber is cast up to the shore by the waves of the sea. All the other coasts are no otherwise marked and knowne, but by uncertaine here-say. The North Ocean from the river Paropamisus, whereas it dasheth upon Scythia, *Hecatæus* nameth Amalchium, which word in the language of that nation, signifieth Frozen. *Philemon* writeth, that the Cimbrians call it *Morima* *ustâ*, *i. Mortuum mare*, [the dead sea:] even as farre as to the promontorie Rubæ: but all beyond forward, *Cronium*. *Xenophon Lampiscenus* saith, That three dayes sailing from the Scythian coast, there is the Iland Baltia, of exceeding greatnes. The same doth *Pythias* name Basilia. There be also named the Iles Oonæ; wherein the inhabitants live of birds egges and otes. Others also, wherein men are borne with horse feet, called thereupon Hippopades. Others againe of the Pannoni, who being otherwise naked, have mightie great eares that cover their whole bodies. And now forward we begin at the nation of the Ingevoni, the first of all the Germanes in those parts, to discover all upon more sure and evident report. There is the exceeding great mountain Sevo, not inferiour to the high hills Riphæi, which maketh a mightie huge gulfe, even as farre as to the Cimbrians promontorie, called Codanus, and full it is of Islands; of which, the goodliest

of all is Scandinavia, the bignesse whereof is not yet discovered. A part onely thereof, as much as is knowne, the nation of Helleviones doth inhabite in 500 villages, and they call it, A second world. And as it is thought, Enigia is not lesse a jote. Some say, that these parts as farre as to the river Vistula, is inhabited by the Sarmatians, Venerians, Scyrians, and Hirrians: also that the gulfe of the sea is called Clyipenus: and that in the mouth or entrance of it is the Iland Laris. Also that not farre from it, there is another arme of the sea bounding upon the Cimbrians. The promontorie of the Cimbrians shooting farre into the seas, maketh a demy Iland, which is called Cartris. From which coast, three and twentie Islands have been discovered and knowne by the Romane armies. The noblest of them be Burchana, called of our countrey-men Fabaria, of the plentie of a pulse (called Beanes) growne there of it selfe unfowne. Likewise Gleffaria, so called by the souldiers, of Amber; but of the barbarous people, Austrania: and besides them Actania. Along this sea-coast, untill you come to the river Scaldis, the Germane nations do inhabite: but the measure of that tract cannot easily be declared, such unmeasurable discord and difference there is among writers. The Greeks and some of our owne country have delivered the coast of Germanie to be 2500 miles about. *Agrippa* again joining with it Rhetia & Noricum, faith,

saith, That it is in length 686 miles, and in breadth 268. And verily of Rhoetia alone, the bredth well-nere is greater, at least wise at the time that it was subdued, and the people departed out of Germanie: for Germanie many years after was discovered, and yet not all of it knowne throughly. But if it be lawfull to guesse, there will not be much wanting in the coasts and compasse, according to the opinion of the Greekes; nor in the length set downe by *Agrippa*.

CHAP. XIII.

¶ *Germanie.*

OF Germanes, there be five kinds. The Vindili, part of whome be the Burgundians, Vairini, Carini, and Gurtones. A second sort, the Ingævones, part of whome be the Cimbri, Teuroni, and people of the Cauchi. The next to them be the Istævones, and part of them be the Cimbri. Then the midlanders, the Hermiones, among whome are the Suevi, Hermunduri, Chatti, and Cherufci. The fift, are the Peucini, and Basternæ, bordering upon the above-named Dacæ. Faire rivers that run into the Ocean, to wit, Guttalus, Vistillus or Vistula, Albis, Visurgis, Amisus, Rhenus, Mosa. And withinforth the Hircynium hill, inferiour to none in estimation, standeth to guard and enclose them.

CHAP. XV.

¶ *Ilands in the Gaules Ocean.*

VPon the very Rhene it selfe, for an hundred myles almost in length, lyeth the most noble Iland of the Batavi, and Cannenufates: as also others of the Frisians, Cauchians, Frisibones, Sturij, and Marfalij, which are spread within Helius and Flevus. For so be the mouthes, into which Rhenus gushing, divideth it selfe: and is discharged from the North into certaine lakes: from the West, into the river Mosa. But in the middle mouth betweene, he beareth a small current and channell, and keepeth his owne name.

CHAP. XVI.

¶ *England, and Ireland.*

OVer against this tract, lyeth Britannia, between the North and the West: an Iland renowned both in Greeke and Romane records. Opposite it is unto Germanie, Gaule, and Spaine, the greatest parts by farre of all Europe, and no small sea betweene. Albion it was sometime named, when all the Ilands were called Britannia, of which anon wee will speake. This Iland is from Gessoriacum, a coast towne of the Morini, fiftie miles, and take the next and shortest cut. In circuit, as *M. Pitheas* and *Isidorus* report, it containeth 3825 miles. And now for these 30 yeares well neare, the Romane captaines grow into farther knowledge thereof, and yet not beyond the Forrest Caledonia, as neere as it is. *Agrippa* supposeth, that it is in length 800 miles, and in breadth 300. Also that Ireland is as broad, but not so long by 200 miles. This Iland is seated above it, and but a very short cut or passage distant from it, to wit, 30 miles from the people Silures. Of other Ilands in this Ocean, there is none by report, in compasse more than 125 myles. Now there be Orcades 40, divided asunder by small spaces betweene: *Acmodæ* 7, and 30 *Hæbudes*. Also betweene Britaine and Hibernia, *Mona*, *Monapia*, *Ricnea*, *Vectis*, *Silimnus*, and *Andros*: but beneath them, *Siambis* and *Axantos*: and on the contrarie side toward the Germane sea, there lye scattering the *Gleffariæ*, which the later Greeke writers have named *Electrides*, for that Amber there, was engendred and bred. The farthest of all, which are known and spoken of, is *Thule*; in which there be no nights at all, as we have declared, about mid-summer, namely when the Sunne passeth through the signe Cancer; and contrariwise no daies in mid-winter: and each of these times they suppose, doe last sixe moneths, all day, or all night. *Timæus* the Historiographer saith, That farther within-forth, and six dayes sailing from Britaine, there lyeth the Iland *Micetis*, in which white lead groweth: and, that the Britaines doe saile thither in winter vessels covered with leather round about and well sowed. There be that make mention of others beside, to wit, *Scandia*, *Dumna*, and *Bergos*, and the biggest of all the rest *Nerigos*, from which men saile to *Thule*. Within one daies sailing from *Thule*, is the frozen sea, named of some *Cronium*.

A

CHAP. XVII.

§ Gallia.

ALl Gallia, by one name called Comata, is divided into three kinds of people, and those severed one from the other by rivers especially: to wit, Belgica, from Scaldis to Sequana: Celtica, from it to Garumna; and this part of Gallia is named Lugdunensis. From thence to the lying out of the mountaine Pyrenæus, Aquitania, called beforetime Arenorica. *Agrippa* hath made this reckoning and computation of all Gaule generally, to wit, lying between Rhene, Pyrenæus, the Ocean, and the hills Gebenna and Iura; wherby he excludeth Narbonensis Gallia, that is in length 420 myles, and in breadth 313. Next to Scaldis, there inhabited the utmost borders, the Toxandri, under many names. Then the Menapij, Morini, and Oromansici, joyning upon that tract or territorie which is called Gessoriacus. the Brinanni, Ambiani, Bellonici, and Hassi. Bur farther within-forth, the Castologi, Atrebatis, and Nervij, free states. The Veromandui, Sueroni, and Sueffiones, likewise free. The Treviri free beforetime: the Lingones confederates: the Remi confederate also: the Mediomotrici, the Sequani, the Raurici, and Helvetij. Colonies twaine, Equestris, and Rauriaca. Moreover, of Germane nations in the same province that dwell neere Rhene, the Nemetes, Trivochi, and Vangiones: then the Vbij, Colonia, Agrippensis, Gugerni, Batavi, and those whome we spake of in the Ilands of Rhene.

B

CHAP. XVIII.

§ Lugdunensis Gallia.

Lvgdunensis Gallia, containeth the Lexovij, Velocasses, Galleti, Veneti, Abricatui, Osismij, and the noble river Ligeris: but a more faire and goodly demy-lland, running forth into the Ocean, from the very marches of the Osismij, having in circuit 625 miles: with the necke therof 125 miles broad. Beyond it, dwell the Nannetes: within-forth the Hœdni confederates, the Carnuti likewise confederates, the Boij, the Senones, the Aulerici, surnamed Ebuovices, and the Cenomannes and Meldi, free states. Parrhisij, Trecaffes, Andegani, Viducaffes, Vadicaffes, Vnelli, Cariosvelites, Drabhudi, Rhedones, Turones, Itelvi, and Secusiani, free states, in whose countrey standeth the Colonie Lugdunum.

D

CHAP. XIX.

§ Aquitania.

TO that province of Gaule which is called Aquitania, belong the Ambilatri, Anagnutes, Pictones, the Santones, Bituriges, named also Vibisci, Aquitani, whercof the province tooke name, and the Sediboniates. Then such as were enrolled into townships from divers parts, to wit, Beggeri, Tãbeli, who came under 4 ensigns, Cocossati, under 6 ensigns, Venami, Onobriates, Belendi, and the Forrest Pyrenæus. Beneath them, Monefi, Osquidiales, Mountainers, Sibyllates, Camponi, Bercorates, Bipedimui, Saffumini, Vellates, Vornates, Conforanni, Ausci, Elufates, Sortiates, Osquidates in the champion and plaine countrey, Succaffes, Latufates, Basabocates, Vassei, Sennates, Cambolœtri, Agesinales joyning to the Pictones. Then the Bituriges free, who are also called Cubi. Next to them, Lemovires, Arverni free, and Gabales. Againe, those that confine and border upon the province Narbonensis, the Ruthenes, Caduni, Autobroges, and the Petrogori divided from the Tolosanes by the river Tarne. Seas about the coasts, upon Rhene the North Ocean: betweene it and Sequana, the Britaine Ocean: between it and Pyrenæus, the Gaule Ocean. Ilands many, to wit, of the Veneti, which be called also Veneticæ: and in the gulfes of Aquitane, Vliarus.

E

CHAP. XX.

§ The hitther province of Spaine.

AT the Promontorie of Pyrenæus beginneth Spaine; narrower not onely than Gaule, but also than it selfe (naturally) so huge a quantitie is wrought into it, whiles the Ocean of the one coast, the Iberian sea on the other, do cling and presse the sides together. The very hills

of Pyrenæus, which from the East spread all the way to the Southwest, make Spaine shorter on the North side than the South. The next marches of this higher province is the same that the tract of Tarracon, namely from Pyrenæus along the Ocean, the Forrest and mountaines of Vascōnes. And first in this part you find these townes: namely in the country of the Varduli, Olarso, Morofgi, Menosca, Vesperies, the port-towne Amanum, where now is Flaviobriga, and a Colonie of nine citties. The region of the Cantabri, the river Sada, the port town of Victoria, inhabited by the Iuliobrigenses. From that place the fountaines of Iberus fortie miles. The haven Biendium, the Origeni entermingled with the Cantabri. Their havens, Vefei and Veca: the country of the Astures, the towne Noega, in the demie Island Peficus. And then the Countie Lucentis, and so from the river Navilubio, the Cibarci, Egovarri surnamed Namarini, Jadoni, Arrotiebæ, the Promontorie Celticum. Rivers, Florius and Nelo. Celtici surnamed Neria: and above them the Tamarici, in whose demie Island are three altars called Sestianæ, dedicated to *Augustus*, Cœpori, and the towne Noela. The Celtici surnamed Præsamarci, and Cileni. Of Islands worth the naming, Corticata and Aunios. From the Cileni, the Countie towne of the Bracæ, Heli, Gravij, the castle Tyde, all descended from the Greekes. The Islands Cicæ, the faire town Abobrica, the river Minius with a broad or wide mouth foure miles over, the Leuni, Seurbi, Augusta a towne of the Bracæ: and above them, Gallæcia, the river Limia. Also the river Durius, one of the greatest in Spaine, springing in the Pelendones country, and running hard by Numantia: and so on, through the Arevaci and Vaccæi, dividing the Vettones from Asturia, and the Gallæcians from Lusitania: and there also it keepeth off the Turduli from the Bracari. All this region above said from Pyrenæus, is full of mettall mines, to wit, gold, silver, yron, lead, as well blacke as white, tinne.

CHAP. XXI.

¶ *Lusitania.*

AT the river Durius beginneth Lusitania, wherein are Turduli the old, Pefuri, the river Vaccæ. The towne Talabrica, the towne and river Minium. Townes, Conimbrica, Olisippo, Eburo, Britium. From whence there runneth out into the sea with a mightie cape the Promontorie, which some have called Artabrum; others, the Great; and many, Olisiponense of the towne, making a division of land, sea, and aire above. In it is the side of Spaine determined and bounded, and from the compasse of it beginneth the forefront thereof.

CHAP. XXII.

¶ *Islands in the Ocean.*

OF the one hand is the North and the Gaules Ocean: on the other, the West and the Atlanticke Ocean. The shooting forth of the Promontorie aforesaid, some have reported to be 60 miles, others 90. From thence to Pyrenæus, there be writers not a few, who say it is 1250 miles, and that there is a nation of the Atabri, which never was, with a manifest error. For they have set in this place by exchanging some letters the Artotrebæ, whome wee named before the promontorie Celticum. They have erred also and missed in certaine famous rivers. From Minius abovenamed (as *Varro* saith) Æminius is 200 miles distant (which some men take to be elsewhere, and call it Limæa) named of men in old time Oblivionis, and whereof goeth many a tale. From Durius to Tagus it is 200 miles, and commeth betweene. This Tagus is a river much renowned for the sand that yeeld gold. 160 miles from it, the promontorie Sacrum runneth out from the middle front in manner of Spaine: and 14 miles *Varro* saith it is from it to the mids of Pyrenæus. But from Ana, by which we have separated Lusitania from Bætica, 226 miles: adding thereto from Gades 102 miles. Nations, Celtici, Varduli, and about Tagus, the Vettones. From Ana to Sacrum, the Lusitanes. The memorable townes, from Tagus in the coast side, Olisippo, of good note for the Mares that conceive there by the West wind. Salacia with the addition of Vibis Imperatoria, and Merobrica: the Promontorie Sacrum, and another called Cæneus. Townes, Offonoba, Balsa, and Myrtius. The whole province is divided into three counties or judiciable courts of Assises, Emeritensis, Pacensis and Scalabitanus. It containeth in all five and fortie States, wherein be five Colonies, one burrough towne of Romane cittizens, three enfranchised

A chised with the libertie of old Latium. Stipendiaries or Tributaries, fixe and thirtie. Moreover, the Colonies bee thus named, Augustia Emerita: and upon the river Ana, Metallinensis; Pacensis, Norbensis, which is named also Cæsariana. To it are laid and enrolled Castra Iulia and Castra Cæcilia. The first is Scalabis, called Præsidium Iulium. The free borough of Romane citizens Olyssippo, named also Felicitas Iulia. Towns of the old Latium libertie, Ebora, which likewise was called Liberalitas Iulia: Myrtis also and Salacia which wee have spoken of. Of Tributaries, such as I am not loth to name, beside the abovesaid in the additions of Bætica, Augustobrigenses, Ammienfes, Aranditani, Axabrigenses, Balfenses, Cæsarobrigenses, Caperenfes, Caurenfes, Colarni, Cibilitani, Concordienfes, the same that Bonori, Interufenfes, Lancienfes, Mirobrigenses surnamed Celtici, Medubrigenses, the same that Plumbarij, Ocelenses who

B also are Lancienfes, Turtuli, named Barduli and Taporij. *M. Agrippa* hath written, that Lusitania, together with Asturia and Gallæcia, is in length 540 miles, and in breadth 526. But all Spain from the two Promontories of Pyrenæus along the seas, taketh up in circuit of the whole coast 2900 miles, and by others, 2700. Over against Celtiberia bee very many Islands, called of the Greekes Cassiterides, for the plentie of lead which they yeeld: and just against the promontorie of the Arrotreæ, fixe named Deorum [i. of the gods] which some have called Fortunatæ. But in the very point or cape of Bætica, from the mouth of the strait, 75 miles, lieth the Island Gades, twelve miles long, as *Polybius* writeth, and three miles broad. It is from the maine, where it is neereft, lesse than *700 paces, in other parts above 7 miles. The whole Island it selfe containeth the space of fiftene miles in circuit. It hath within it a towne of Romane citizens named Augustia, Vrbs Iulia Gaditania. On that side that regardeth Spain, within 100 paces, there lieth another Island, three miles long, and a mile broad, wherein beforetime was the towne of Gades. The name of this Island, after *Ephorus* and *Philistides*, is Erythia: but according to *Tymæus* and *Silennus*, Aprodias: the naturall home bred inhabitants call it Iunonis. The bigger of these two Gades, as *Tymæus* saith, was by them called Cotinusa, our countrey men name it Tareffos, the Carthaginians *Gadir, which in the Punicke language signifieth *the number of seven. Erythia the other was called, because the Tyrians, who were the first inhabitants, were reported to have had their first beginning out of the red sea Erythræum. Some thinke that *Gerion* here dwelt, hee whose droves of cattell *Hercules* had away. There bee againe that thinke how it is another, over against Lusitania, and there sometime so called.

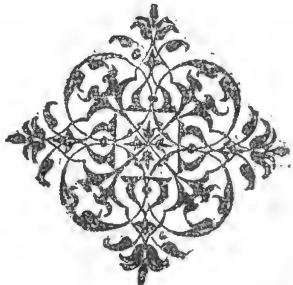
*Lesse than 3 quarters of a mile.

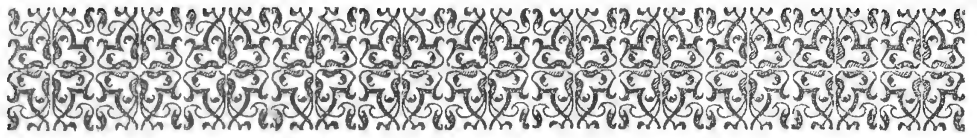
*Or Gadir: *Septem, or, as some read, Septem, i. a park or enclosure.

CHAP. XXIII.

The measure of all Europe.

HAVING finished our circuit about Europe, we must now yeeld the totall summe and complete measure of it in the whole, that such as are desirous of knowledge, bee not to seeke in any one thing. *Artemidorus* and *Isidorus* have set downe the length thereof from Tanaïs to Gades 84014 miles. *Polybius* hath put downe the breadth of Europe, from Italie to the Ocean 1150 miles, for as then the largenesse thereof was not knowne. Now the very breadth of Italie alone by it selfe (as we have shewed) is 1220 miles: from whence by Lions to the Brittain part of the Morini, which way *Polybius* seemeth to take his measure, is 1168 miles: But the more certaine measure and the longer is directed from the said Alpes to the West and the mouth of the Rhene, through the place called Castra Legionum Germaniæ, 1243 miles: Now from hence forward will we describe Affricke and Asia.





THE FIFTH BOOKE OF
THE HISTORIE OF NATVRE,
WRITTEN BY C. PLINIVS
SECVNDVS.

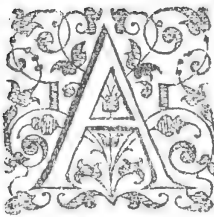
¶ The description of Affrike.



*A*ffrike the Greekes have called Lybia, even all that tract from whence the Lybian sea before it beginneth, and endeth in the Egyptian. No part of the earth receiveth fewer gulfes and armes of the sea, in that long compasse of crooked coasts from the West. The names as well of the nations as townes there, be of all others most hard to be pronounced, unlesse it bee in their owne tongues: and againe, they bee castles and forts for the most part that they dwell in.

CHAP. I.

¶ Mauritania.



*A*t the beginning, the lands of Mauritania, untill the time of *C. Cesar* [*i. Caligula*] sonne of *Germanicus*, were called kingdomes: but by his crueltie divided it was into two provinces. The utmost promontorie of the Ocean is named of the Greekes *Ampelusia*. The townes therein were *Lissa* and *Cotes* beyond *Hercules* pillars. Now in it is *Tingi*, sometime built by *Anteus*: and afterwards by *Claudius Cesar* when he made a Colonie of it, called it was *Tradueta Iulia*. It is from *Belone* a town in *Bætica*, by the next and neereft passage over sea thirtie miles. Five and twentie miles from it in the Ocean coast standeth a Colonie erected by *Augustus*, now *Iulia Constantia*, exempt from the dominion and jurisdiction of the kings of *Zilis*: and commanded to goe for law and justice as farre as to *Bætica*. And two and thirtie miles from it, *Lixos* made a Colonie by *Claudius Cesar*, wherof in old time there went many fabulous and lowd lying tales. For, there stood (they say) the roiall pallace of *Anteus*: there was the combate betweene him and *Hercules*: there also were the gardens and hort-yards of the *Hesperides*. Now there floweth thereinto out of the sea a certain creeke or arme thereof, and that by a winding channell, wherin men now take it that there were Dragons serving in good steed to keepe and guard the same. It encloseth an Island within it selfe, which (notwithstanding the tract thereby be somewhat higher) is only not overflowed by the sea tides. In it there standeth erected an altar of *Hercules*: and setting aside certaine wild Olives, nothing els is to be seene of that goodly grove, reported to beare golden apples. And in good faith lesse may they make a wonder at the strange lies of Greece given out of these, and the river *Lixus*, who would but thinke how of late our countrey men have delivered some fables, as monstrous welneere of the same things: to wit, that this is a most strong and mightie cittie, and bigger than great *Carthage*: moreover, that it is situate over against it, and an infinite way well neere from *Tingi*: and other such like, which *Cornelius Nepos* hath bene most eager to beleve. From *Lixus* fortie miles in the midland parts of the maine, standeth *Babba*, another Colonie of *Augustus*, called by him *Iulia* in the field or *Champain*: also a third 75 miles off, called *Banasa*, but now it hath the addition of *Valentia*. 35 miles from it is the towne *Volubile*, just in the mid way betweene both seas. But in the coast and borders thereof, 50 miles from *Lixus*, there runneth *Subur* a goodly plenteous river, and navigable, neere to the Colonie *Banasa*. As many miles from it is the towne *Sala*, standing upon
a river

A a river of the same name, neere now unto the wildernesse, much infested and annoied with whole herds of Elephants, but much more with the nation of the Autololes, through which lieth the way to Atlas the most fabulous mountaine of all Affricke. For writers have given out, that this hill arising out of the very middest of the sea sands, mounteth up to the skie, all rough, illfavoured, and overgrowne on that side that lieth to the shore of the Ocean, unto which it gave the name: and yet the same is shadowie, full of woods, and watered with veines of spouting Springs that way which looketh to Affricke, with fruitfull trees of all sorts, springing of the owne accord, and bearing one under another, in such sort, that at no time a man can want his pleasure and delight to his full contentment. Moreover, that none of the inhabitants there are seene all day long: all is still and silent, like the fearefull horror in desert wildernesse: and as men come neerer and neerer unto it, a secret devotion ariseth in their harts: and besides this feare and horror, they are lifted up above the clouds, and even close to the circle of the Moone. Over and besides, that the same hill shineth oftentimes with many flashes of fires, and is haunted with the wanton lascivious Ægipanes and Satyres, whereof it is full, that it resoundeth with noise of haut-boies, pipes, and fifes, and ringeth againe with the sound of tabers, timbrels, and cymbals. These bee the reports of great and famous writers, to say nothing of the labours and works both of *Hercules* and *Perses* there: and to conclude, that the way unto it is exceeding great, and not certainly knowne. Bookes there were besides of *Hanno*, a great captaine and commander among the Carthaginians, who in the time of the most flourishing state of Carthage, had a charge and commission to discover and survey the whole compasse of Affricke. Him, most of the Greekes as well as our countrey men following, among some other fabulous stories, have written that he also built many citties there: but neither memoriall upon record, nor any token of them at all is left extant.

C Whiles *Scipio Æmylianus* warred in Affrick, *Polybius* the writer of the Annales, received of him a fleet: who having sailed about of purpose to search into that part of the world, hath put thus much downe in writing, That from the said mountaine West, toward the Forrests full of wild beasts, which Affricke breedeth, unto the river Anatis, are 485 miles. And from thence to Lixus 205. *Agrippa* saith, That Lixus is distant from the streights of Gades 112 miles. Then, that there is an arme of the sea called Saguti. Also a towne upon the Promontorie, Mutelacha. Rivers, Subur and Sala. Moreover, that the haven Rutubis is from Lixus 313 miles. And so forward to the Promontorie of the Sunne. The port or haven Rifardir: the Gætulians, Autololes, the river Cofenus, the nation of the Scelatites and Massalians. The rivers Masaral and Darat, wherein Crocodiles are engendred. Then forward, that there is a gulfe of 516 miles, enclosed within the promontorie or cape of the mountaine Barce, running along into the West, which is called Surrentium. After it, the river Palsus, beyond which are the Æthyopians Perorsi, and at their backe are the Pharusi. Vpon whom joine the midlanders, to wit, the Gætuliandars. But upon the coast are the Æthyopian Daratites, the river Bambotus, full of Crocodiles & Hippopotames, [i. Water-horses.] From which, he saith, That there is nothing but mountains all the way as farre as to that, which we call Theon Ochema [The gods chariot.] Then, in sailing nine daies and nights to the promontorie Hesperium, he hath placed the mountaine Atlas in the midway thereof, which by all other writers is set downe to bee in the utmost marches of Mauritania. The first time that the Romanes warred in Mauritania, was in the time of prince *Claudius* Emperour: at what time as *Ædemon* the freed servant of king *Ptolomeus*, by *C. Cesar* slain, went about to revenge his death. For as the barbarous people retired and fled backe, certaine it is that the Romanes came as far as to the hill Atlas. And not onely such Generals as had beene Consuls, and were of Senatours degree and calling, who at that time managed and conducted the warres, but knights also and gentlemen of Rome, who from that time had government and commaund there, tooke it for an honour and glorie, that they had pierced and entred into Atlas. [*Five Romane Colonies, as wee have said, be in that province] and by that common fame and report, there may seeme to lie a thorow-fare thither. But that is found for the most part by daily experience, most deceivable of all things else: because persons of high place and great worth, when they are loth to search out narrowly into the truth of matters, sticke not for shame of ignorance, to give out untruths: and never are men more credulous and apter to beleve and be deceived, than when some grave personage fathereth a lie. And verily I lesse marvell, that they of gentlemens degree, yea, and those now of Senatours calling, have not come to the certaine knowledge of some things there: seeing they set their whole affection and mind upon nothing but excesse and roior: which how

[* It seemeth that this clause is to be set in the beginning of the next chapter.]

powerfull

powerfull it is and forcible, is seene by this most of all, when forrests are sought out far and neere **G** for Ivorie and Citron trees: when all the rockes in Getulia are searched for Murices and Purpuræ, [shell-fishes that yeeld the purple crimsen colour.] Howbeit the naturall inhabitants of that countrey doe write, That in the sea-coast 150 miles from Sala, there is the river Asana, that receiveth salt water into it, but hath in it a goodly faire haven: and not farre from it another fresh river, which they call Fut: from which to Dyris (for that is the name in their language of Atlas, by a generall consent) are 200 miles, with a river comming betweene, named Vior. And there, the speech so goeth, are to be seene the certaine tokens of a ground sometimes inhabited, to wit, the reliques of vineyards and date tree groves. *Suetonius Paulinus* (a Confull in our time) who was the first Romane leader, that for certaine miles space went over Atlas, also hath reported verily as touching the heighth thereof, that with the rest: and moreover, that the foot thereof toward the botome, stand thicke and full of tall woods, with trees therein of an unknowne kind, but the heighth of them is delectable to see to, smooth and even without knots, the leaves and braunches like Cypresse; and besides the strong smell they yeeld, are covered all over with a thin downe, of which (with some helpe of Art) fine cloth may be made, such as the silk-worme doth yeeld. That the top and crest thereof is covered over with deep snow even in summer time. Moreover, that he reached up to the pitch of it at the tenth daies end, and went beyond it as farre as a river called Niger, through wildernesses full of blacke dust; where other-whiles there stood our certaine cliffes, and craggie rockes, as they were scorchted and burnt: and that those places by reason of parching heat were not habitable, albeit a man made triall thereof in the winter season. Furthermore, that the püssants who dwelt in the next forrests, were pestred with Elephants, wild beasts, and serpents of all sorts; and those people were called Canarij: for that they and dogges feed together one with another, and part among them the bowels of wild beasts. For certaine it is knowne, that a nation of the Æthiopians whom they call Peroesi, joyneth upon them. *Iuba*, the father of *Ptolomæus*, who before-time ruled over both Mauritanes, a man more memorable and renowned for his studie and love of good letters, than for his kingdom and royall port, hath written the like concerning Atlas: and he saith moreover, that there is an herb growing there called Euphorbia, of his Phisitions name that first found it: the milkie juyce whereof he praiseh wondrous much, for to cleare the eyes, and to be a preservative against all serpents and poisons whatsoever: and thereof hath he written a treatise and made a book by it selfe. Thus much may suffice, if it be not too much, as touching Atlas. **K**

CHAP. II.

§ The province Tingitania.

THe length of the province Tingitania, taketh 170 miles. The nations therein be these: The Mauri, which in times past was the principall, and of whome the province tooke name: and those most writers have called Marisij. Being by warre weakned and diminished, they came in the end to a few families only. Next to them were the Massæuli, but in like manner were they consumed. Now is the province inhabited by the Getulians, Bannurri, and the Autoles, the most valiant and püssant of all the rest. A member of these were sometime the Vesuni: but being divided from them, they became a nation by themselves, and bounded upon the Æthiopians. The province naturally full of mountaines Eastward, breedeth Elephants. In the hill also Abila, and in those which for their even and equall heighth they call, The seven brethren: and these butt upon Abila, which looketh over into the sea. From these beginneth the coast of the Inward sea. The river Tamuda navigable, and a towne sometime [of that name.] The river Laud, which also receiveth vessels. The towne Rusardie, and the haven. The river Malvana navigable. The towne Siga just against Malacha situate in Spaine: the royall seat of *Syphax*, and now the other Mauritania. For a long time they kept the names of KK, so as the utmost was called Bogadiana: and likewise Bocchi, which now is Cæsariensis. Next to it is the haven for the largeness thereof called Magnus, with a towne of Romane citizens. The river Muluca, which is the limit of Bocchi and the Massæuli. Quiza Xenitana, a towne of Straungers: **M** Arsenaria, a towne of Latines three miles from the sea: Carcenna, a Colonie of *Augustus*, erected for the second legion: Likewise another Colonie of his planted with the Pretorian band, Gunugi: and the promontorie of *Apollo*. And a most famous towne there Cæsarea, usually before-time called Iol, the royall seat of king *Iuba*: endowed by *Claudius* the Empe-
rou

A four of happie memorie, with the franchises and right of a Colonie, at whose appointment the old souldiers were there bestowed. A new towne, Tipasa, with the graunt of the liberties of Latium. Likewise Icosium, endowed by *Vespasian* the Emperour, with the same donations. The colonie of *Augustus* Rusconia: and Ruscurum, by *Claudius* honoured with the free burgeoisie of the citie. Rusoezus, a colonie of *Augustus*. Salde, a Colonie of the same man. Igelgili also, and Turca, a towne seated upon the sea and the river Ampsaga. Within the land, the Colonie Augusta, the same that Succubar; and likewise Tubrifuptus. Cities, Timici, Tigavæ. Rivers, Sardabala and Nabar. The people Macurebi: the river Vfar, and the nation of the Nabades. The river Ampsaga is from Cæsarea 233 miles. The length of Mauritania both the one and the other together, is 839 miles, the breadth 467.

B

CHAP. III.

¶ Numidia.

NExt to Ampsaga is Numidia, renowned for the name of *Masanissa*: called of the Greeks, the land Metagoniis. The Numidian Nomades, so named of changing their pasture, who carrie their cottages or sheddes (and those are all their dwelling houses) about with them upon waines. Their townes be Cullu and Ruscade, from which 48 miles off within the midland parts, is the colonie Cirta, surnamed of the Cirtanes: another also within and a free borough towne, named Bulla Regia. But in the utmost coast, Tacatua, Hippo Regius, and the river Armua. The towne Trabacha, of Romane Cittizens: the river Tusca, which boundeth Numidia: and besides the Numidian marble, and great breed of wild beasts, nothing is there els worth the noting.

C

CHAP. IIII.

¶ Africa.

FROM Tusca forward, you have the region Zeugitana, and the countrey properly called Africa. Three promontories: first, the White; then anon that of *Apollo* over-against Sardinia: and a third of *Mercurie* opposite to Sicilie; which running into the sea, make two creekes: the one Hipponensis, next to the towne which they call Hippo rased; the Greeks name it Diarrhyton, for the little brookes and rilles that water the grounds: upon this, there bordereth Theudalis, an exempt towne from tribute, but somewhat farther from the sea side; then the promontorie of *Apollo*. And in the other creeke, Vtica, a towne of Romane citizens, ennobled for the death of *Cato*: and the river Bagrada. A place called Castra Cornelia: and the colonie Carthago, among the reliques and ruines of great Carthage: and the colonie Maxulla. Townes, Carpi, Misna, and the free borough Clupea upon the promontorie of *Mercurie*. Item, free townes, Curubis and Neapolis. Soone after yee shall meet with another distinction of *Affricke* indeed. Libyphœnices are they called, who inhabite Byzacium; for so is that region named: containing in circuit 250 myles, exceeding fertile and plenteous, where the ground sowne yeeldeth againe to the husband-man 100 fold encrease. In it are free townes, Leptis, Adrumerum, Ruspina, and Thapsus: then, Thenæ, Macomades, Tacape, Sabrata, reaching to the lesse Syrtis: unto which, the length of Numidia and Africa from Amphaga, is 580 miles: the bredth, of so much thereof as is knowne, 200. Now this part which wee have called *Asticke*, is divided into provinces twaine, the old and the new; separated one from the other by a fosse or ditch brought as farre as to Thenæ, within the Africane gulfes, which towne is 217 myles from Carthage: and that trench *Scipio Africanus* the second, caused to be made, and bare halfe the charges together with the KK. The third gulfes is parted into twaine, cursed and horrible places both, for the ebbing and flowing of the sea, and the shelves betweene the two Syrtis. From Carthage to the nearer of them, which is the lesse, is 300 miles by the account of *Polybius*: who saith also, that the said Syrtis is for 100 miles forward daungerous, and 300 about. By land also thither, the way is passeable by observation of the Starres, at one time of the yeere onely, and that lyeth through desert sands and places full of serpents. And then you meet with Forrests replenished with numbers of wild beasts: and within-forth, wildernesses of Elephants: and soon after, waste deserts even beyond the Garamantes, who from the Augilæ are distant twelve daies journey.

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Above

Above them was the nation of the Pſylli: and above them the Lake of *Diomedes* environned G with defarts. Thoſe Augylæ themſelves are ſeated well neere in the middle way from *Æthiopia*, which bendeth Weſtward, and the countrey lying betwene the two Syrtes, with equall diſtance betwene of both ſides: but the ſhore betwene the two Syrtes of 250 miles. There ſtandeth the citie *Ocenus*, the river *Cinyps* and the countrey. Townes, *Neapolis*, *Taphra*, *Abrotonum*, the other *Leptis*, called alſo the great. Then the greater *Syrtis*, in compaſſe 625 miles, and in direct paſſage 313. Next to it, there inhabit the people *Ciſpades*. In the inmoſt gulfe was the coaſt of the *Lotophagi*, whom ſome have called *Alachroas*, as farre as to the altars of *Philæna*, and of ſand are they. Next to them, not farre from the Continent, the vaſt and wide Meere admitteth into it the river *Triton*, and taketh the name of him: but *Callimachus* calleth it *Pallantias*, and ſaith it is on this ſide the leſſer Syrtes, but many place it betwene both Syrtes. The promontorie that encloſeth the bigger, is named *Borion*. Beyond it is the province *Cyrenaica*. From the river *Ampſaga* to this bound, *Affricke* containeth 26 States, who are ſubject to the *Romane* Empire: among which are fixe Colonies beſides the abovenamed, *Vthina* and *Tuburbis*. Townes endowed with franchiſes of *Romane* citizens 15. Of which thoſe in the midland parts, worthe to bee named, are *Azuritanum*, *Abutucenſe*, *Aborienſe*, *Canopicum*, *Chilmanenſe*, *Simittunenſe*, *Thunufidenſe*, *Tuburnicenſe*, *Tynidrumenſe*, *Tribigenſe*, *Vcitana* twaine, the greater and the leſſe, and *Vagienſe*. One towne enjoying the liberties of *Latium*, *Vſalitanum*. One tributarie or penſionarie towne neere *Caſtra Cornelia*, payeth cuſtome and duties to *Rome*. Free townes 30, of which there are to bee named within-forth, *Arolitanum*, *Acharitanum*, *Avinenſe*, *Abziritanum*, *Canopitanum*, *Melzitanum*, *Madaurenſe*, *Salaphitanum*, *Tuſdritanum*, *Tiricenſe*, *Tiphicenſe*, *Tunicenſe*, *Theudenſe*, *Tageſtenſe*, *Tigenſe*, *Vluſibritanum*, another *Vagenſe*, *Vigenſe* and *Zamenſe*. The reſt may well be called not onely citties, but alſo for the moſt part, nations, namely, the *Natatondeſ*, *Capſitani*, *Miſulani*, *Sabarbares*, *Maſſili*, *Miſives*, *Vamacures*, *Ethini*, *Maſſini*, *Marchubij*: and *Gætulia* all and whole, even to the river *Nigris*, which parteth *Affricke* and *Æthiopia*.

CHAP. V.

§ Cyrene.

The region *Cyrenaica*, called alſo *Pentapolitana*, is famous and renowned for the Oracle of *Hammon*, which is from *Cyrenæ* 400 miles, for the fountaine of the Sunne, and principally for five citties, *Berenice*, *Arſinoe*, *Ptolemais*, *Apollonia*, and *Cyrene* it ſelfe. *Berenice* ſtandeth upon the utmoſt winding and nouke of *Syrtis*, called ſometime the citie of the abovenamed *Hesperides*, according to the wandering tales of *Greece*. And before the towne, not far off, is the river *Lethon*, the ſacred grove where the hort-yards of theſe *Hesperides* are reported to be. From *Leptis* it is 385 miles. From it ſtandeth *Arſinoe*, uſually named *Teuchira* 43 miles: and from thence 22 miles, *Ptolemais*, called in old time *Barce*. And then 250 miles off the Promontorie *Phycus* runneth out along the *Creticke* ſea, diſtant from *Tanarus* a cape of *Laconia*, 350 miles: but from *Creet* it ſelfe 125 miles. And after it *Cyrene*, 11 miles from the ſea. From *Phycus* to *Apollonia* is 24 miles: to *Cherrhoneſus* 88: and ſo forth to *Catabathnus* 216 miles. The inhabitants there bordering, bee the *Marmaridæ*, ſtretching out in length almoſt from *Parætonium* to the greater *Syrtis*. After them the *Ararauccles*: and ſo in the very coaſt and ſide of *Syrtis*, the *Nafamones*, whome beforetime the *Greekes* called *Mefammones* by reaſon of the place, for that they were ſeated in the middeſt betwene the two quicke ſands. The *Cyrenaicke* countrey, for the ſpace of 15 miles from the ſea ſide, is fruitful for trees: and for the ſame compaſſe within the land, but for corne onely: but then for 30 miles in breadth, and 250 in length, for the gum *Laſer* and nothing elſe. After the *Mafamones*, the *Hasbitæ* and *Mafæ* doe live. Beyond them the *Hammanientes*, eleven daies journey from the greater *Syrtes* to the Weſt, and even they alſo every way are compaſſed about with ſands: howbeit they find without much adpits almoſt in cubites deepe, for that the waters there of *Mauritania* doe overflow. Houſes they make themſelves of ſalt, hewed out of their owne hills in manner of ſtone. From theſe to the *Troglogodites*, in the Southweſt coaſt is ſoure daies journey, with whom they chaſſer and trafficke onely for a certaine precious ſtone or gem, which wee call a *Carbuncle*, brought out of *Æthiopia*. There commeth betwene, the countrey *Phazania*, lying toward the wilderneſſe abovesaid of *Affricke*, above the leſſe *Syrtis*: where we ſubdued the nation of the *Phazanij*, together with the cit- ties

A ries Alele and Cillaba. In like manner Dydamum overagainst Sabrata. Next to whom there is a mountaine, reaching a great way from the East into the West, called by our men Ater, naturally as it were burnt, and like as if it were scorched and set on fire with the reflection of the Sunne. Beyond that mountaine are the deserts: also Matelgæ a towne of the Garamants, and likewise Debris, which casteth forth a spring of waters seething up from noone to midnight exceeding hot: and for as many houres againe into midday most chilling cold: also the most goodly towne Garama, the cheefe head of the Garamantes. All which places the Romanes have conquered by force of armes, and over them *Cornelius Balbus* triumphed, the onely man of forrainers that was honoured with the triumphant chariot, and endowed besides with the freedome of Romane citizens. For why, being borne at Gades, he and his uncle both, *Balbus* the elder, were made free denizens of Rome. And this is marvell that our writers have recorded, that besides the townes abovenamed by him conquered, himselfe in his triumph carried the titles and pourtraicts, not of Cydamus and Garama onely, but also of all other nations and cities, which were raunged in a Roll, and went in this order. The towne Tabidium, the nation Niteris, the towne Negligemela, the nation Bubeium, the towne Vel, the nation Enipi, the towne Thuben, the hill named Niger. The townes Nitibrum and Rapfa, the nation Discera, the towne Debris, the river Nathabur, the towne Tapfagum, the nation Nannagi, the towne Boin, the towne Pege, the river Dasibari. And againe forward, these townes lying one to another together, Baracum, Buluba, Alafi, Balsa, Galla, Maxala, and Zizama. The hill Gyri, wherein *Titus* hath reported that precious stones were engendred. Hitherto the way to the Garamants, was intricate and unpassable, by reason of the robbers and theeves of that countrey, who used to dig certaine pits in the way (which to them that know the quarters of the countrey is no hard matter to doe) and then cover them lightly over with sand. But in the last war which the Romanes maintained against the Oenses, under the conduct and fortunate auspices of *Vespasian* the Emperour, there was found a short and neere way of foure daies journey: and this way is called *Præter caput Saxi* [besides the rockes head.] The frontier towne of Cyrenaica is called Catabathmos, which is a towne and a vale all on a suddain falling with a steepe descent. To this bound, from the lesse Syrtis, Cyrenaica Affrica lieth in length 1060 miles, and in breadth, for so much as is knowne, 800.

CHAP. VI.

§ Libyæ Mareotis.

THe countrey following is named Mareotis Libya, and boundeth upon Ægypt, inhabited by the Marmaridæ, Adyrmachidæ, and so forward with the Mareotæ. The measure of it from Catabathmos to Parætonium, is 86 miles. In that tract there lieth in the way between the village Apis, a place renowned for the religious rites of Ægypt. From it to Parætonium are 12 miles. From thence to Alexandria 200 miles: the breadth thereof is 169 miles. *Eratosthenes* hath delivered in writing, That from Cyrenæ to Alexandria by land is 525 miles. *Agrippa* saith, that the length of all Affricke from the Atlanticke sea, together with the inferiour part of Ægypt containeth 3040 miles. *Polybius* and *Eratosthenes* reputed to have been most exact and curious in this kind, set downe, from the Ocean to great Carthage: 600 miles. From thence to Canopicum the neereft mouth of Nilus, they make 1630 miles. *Isidorus* reckoneth from Tingi to Canopus 3599 miles. And *Artemidorus* fortie lesse than *Isidorus*.

CHAP. VII.

§ Islands about Affricke, and overagainst Affricke.

THese seas have not very many Islands within them. The fairest of them all is Meninx, 35 miles long, and 25 broad, called by *Eratosthenes* Lotophagitis. Two townes it hath, Meninx on Affricke side, and Thoar on the other: it selfe is situate from the right hand promontorie of the lesse Syrtis* 200 paces. A hundred miles from it against the left hand is Cercina, with a free towne of the same name, in length it is 25 miles, and halfe as much in breadth where it is most: but toward the end not above five miles over. To it there lieth a prettie little one toward Carthage, called Cercinitis, & joineth by a bridge unto it. From these almost 50 miles, lieth Lopadusa fixe miles long. Then, Gaulos and Galata: the earth whereof killeth the Scorpion, a fell

*Or 1500 paces, i. a mile and a halfe.

creature, and noisome to Affricke. Men say also that they will die in Clupea, over against which lieth Corfyra, with a towne. But against the gulf of Carthage be the two ^{*}Aginori, rockes more like than Islands, lying most betweene Sicilie and Sardinia. There bee that write how these sometime were inhabited, but afterwards funke downe and were covered.

CHAP. VIII.

¶ *The Æthyopians.*

BVt within the inner compasse and hollow of Affricke toward the South, and above the Gæ-tulians, where the desarts come betweene, the first people that inhabite those parts, bee the Libij Ægyptij; and then the Leucæthiopes. Above them are the Æthyopian nations, to wit the Nigritæ, of whom the river tooke name: the Gymetes, Pharusi, and those which now reach to the Ocean, whome wee spake of in the marches of Mauritania, namely, the Perossi. From all these, it is nothing but a wildernesse Eastward, till you come to the Garamantes, Augylæ, and Troglodites, according to the most true opinion of them, who place two Æthiopiæ above the deserts of Affricke: and especially of *Homer*, who saith, that the Æthyopians are divided two waies, namely, East and West. The river Nyger is of the same nature that Nilus. It bringeth forth Reed and Papyr, breedeth the same living creatures, and riseth or swelleth at the same seasons. It springeth betweene the Tarecia Æthyopians, and the Oecalicæ. The towne Mavin belonging to this people, some have set upon the wildernesse: as also, neere unto them, the Atlantes, the Ægipanes, halfe wild beasts, the Blemmyi, the Gamphasants, Satyres, & Himantopodes. Those Atlantes, if we will beleve it, degenerate from the rites and manners of all other men: for neither call they one another by any name: and they looke wifly upon the sunne, rising and setting, with most dreadfull curses, as being pernicious to them and their fields: neither dreame they in their sleepe, as other men. The Troglodites dig hollow caves, and these serve them for dwelling houses: they feed upon the flesh of serpents. They make a gnashing noise, rather than utter any voice, so little use have they of speech one to another. The Garamants live out of wedlocke, and converse with their women in common. The Augylæ do no worship to any but to the devils beneath. The Gamphasantes be all naked, and know no warres, and fort themselves with no forrainger. The Blemmyi, by report, have no heads, but mouth and eies both in their breast. The Satyres besides their shape onely, have no properties nor fashions of men. The Ægipanes are shap'd, as you see them commonly painted. The Himantopodes bee some of them limberlegged and tender, who naturally goe creeping by the ground. The Pharusi, sometime Persæ, are said to have been the companions of *Hercules*, as he went to the Hesperides. More of Affricke worth the noting, I have not to say.

CHAP. IX.

¶ *Of Asia.*

VNto it joineth Asia, which from the mouth of Canopus unto the mouth of Pontus, after *Timosthenes* 2639 miles. From the coast of Pontus to that of Mæotis, *Eratosthenes* saith, is 1545 miles. The whole, together with Ægypt unto Tanais, by *Artemidorus* and *Isidorus*, taketh 8800 miles. Many seas there bee in it, taking their names of the borderers: and therefore they shall be declared together with them. The next country to Affricke inhabited, is Ægypt, lying farre within forth to the South, so farre as the Æthyopians, who border upon their backs. The nether part thereof the river Nilus, divided on the right hand and the left, by his clasping doth bound and limit, with the mouth of Canopus from Affricke, with the Pelusiacke from Asia, and carrieth a space betweene of 170 miles. Whereupon, considering that Nilus doth so part it selfe, some have reckoned Ægypt among the Islands, so as it maketh a triangle figure of the land. And here it is that many have called Ægypt by the name of the Greek letter Delta, Δ. The measure of it from the channell where it is but one, and from whence it beginneth first to part into skirts and sides, unto the mouth of Canopus, is 126 miles: and to the Pelusiacke 256. The upmost part thereof bounding upon Æthyopia, is called Thebais. Divided it is into towneships with severall jurisdictions, which they call Nomos, to wit, Ombites, Phatuites, Apollopolites, Hermonbites, Thinites, Phanturites, Captites, Tentyrites, Diospalites, Antæopolites, Aphroditopolites,

A lites, and Lycopolites. The countrey about Pelusium, these towneships with their severall jurisdictions, Pharboerites, Bubastites, Sethroites, and Tanites. The rest have the following, the Arabicke, the Hammoniacke which extendeth to the Oracle of *Jupiter Hammon*, Oxynechites, Leontopolites, Atarrhabites, Cynopolites, Hermopolites, Xoites, Mendefins, Sebenites, Capastites, Latopolites, Heliopolites, Profopites, Panopolites, Busfrites, Onuphites, Sorites, Ptenethu, Pthemphu, Naucratices, Nitrites, Gynæcopolites, Menelaïtes, in the countrey of Alexandria. In like manner of Libya Mareotis. Heracleopolites is in the Island of Nilus, fiftie miles long, wherein also is that which they call *Hercules* his towne. Two Arsinoites there bee, they and Memphites reach as farre as to the head of Delta. Vpon it there doe bound out of Affrica the two Quasitæ. There be that change some names of these, and set downe for them other jurisdictions, to wit, Heroopolites, and Crocodilopolites. Betwene Arsinoites and Memphites there was a lake 250 miles about, or as *Mutianus* saith, 450, fiftie paces deepe, [i. 450 foot,] & the same made by mans hand, called the Lake Mæridis, of a king who made it. 72 miles from thence is Memphis, the castle in old time of the Ægyptian kings. From which to the Oracle of *Hammon* is twelve daies journey, and so to the devision of Nilus, which is called Delta, fiteene miles. The river Nilus arising from unknowne springs, passeth through desarts and hote burning countries: and going thus a mightie way in length, is knowne by fame onely, without aimes, without warres which have discovered and found out all other lands. It hath his beginning, so farre forth as *Isabæ* was able to search and find out, in a hill of the lower Mauritania, not far from the Ocean, where a lake presently is seene to stand with water, which they call Nilides. In it are found these fishes, called Alabera, Coracini, Siluri, and the Crocodile. Vpon this argument and presumption Nilus is thought to spring from hence, for that the pourtraict of this source is consecrated by the said prince at Cæsarea, in Iscum, and is there at this day seene. Moreover, observed it is, that as the Snow or raine doe satisfie the countrey in Mauritania, so Nilus doth encrease. When it is run out of this lake, it cometh to run through the sandie and overgrown places, and hideth himselfe for certaine daies journey. And then soone after out of a greater lake, it breaketh forth in the countrey of the Massæyli, with Mauritania Cæsariensis, and looketh about viewing mens companie, carrying the same arguments still of living creatures bred within it. Then, once againe being received within the sands, it is hidden a second time for twentie daies journey, in the desarts as farre as to the next Æthyopes: and so soone as hee hath once againe espied a man, forth hee starteth (as it should seeme) out of that Spring, which they called Nigris. And then deviding Africk from Æthyopia, being acquainted, if not presently with people, yet with the frequent companie of wild and savage beasts, and making shade of woods as he goeth, he cutteth through the middelt of the Æthyopians: there surnamed Astapus, which in the language of those nations signifieth a water flowing out of darkenesse. Thus dasheth hee upon such an infinite number of Islands, and some of them so mightie great, that albeit he beare a swift streame, yet is he not able to passe beyond them in lesse space than five daies. About the goodliest and fairest of them Meroc, the chanell going on the left hand is call Astabores, that is to say, the branch of a water coming forth of darkenesse: but that on the right hand Astulapes, which is as much as, Lying hid, to the former signification. And never taketh the name of Nilus, before his waters meet againe and accord all whole together. And even so was he aforetime named Siris, for many miles space: and of *Homer* altogether Ægyptis: and of others, Triton: here and there, and ever and anon hitting upon Islands, and stirred as it were with so many provocations: and at the last enclosed and shut within mountaines, and in no place carrieth he a rougher and swifter streame, whiles the water that he beareth, hasteneth to a place of the Æthyopians called Catacapi, where in the last fall amongst the rockes that stand in his way, hee is supposed not to runne, but to rush downe with a mightie noise. But afterwards he becommeth more mild and gentle, as the course of his streame is broken, and his violence tamed and abated, yea, and partly wearied with his long way: and so though with many mouths of his, he dischargeh himselfe into the Ægyptian sea. Howbeit, at certaine set daies he swelleth to a great height: and when he hath travailed all over Ægypt, hee overfloweth the land, to the great fertilitie and plentie thereof. Many and diverse causes of this rising and increase of his, men have given: but those which carrie the most probabilitie, are either the rebounding of the water, driven backe by the winds Etesia, at that time blowing against it, and driving the sea withall upon the mouths of Nilus: or else the Summer raine in Æthyopia, by reason that the same Etesia bring clouds thither from other parts of the world. *Timæus* the

Mathematician, alledged an hidden reason thereof, to wit, that the head and source of Nilus is named Phiala, and the river it selfe is hidden, as it were drowned within certaine secret trenches within the ground, breathing forth vapours out of reeking rockes, where it thus lieth in secret. But so soone as the Sunne during those daies, commeth neere, drawne up it is by force of heat, and so all the while he hangeth aloft, overfloweth: and then againe for feare he should bee wholly devoured and consumed, putteth in his head againe, and lieth hid. And this happeneth from the rising of the Dog starre Sicinus, in the Sunnes entrance into Leo, while the Planet standeth plumb over the fountaine aforesaid: for as much as in that climate there are no shadowes to be seene. Many againe were of a different opinion, that a river floweth more abundantly, when the Sunne is departed toward the North pole, which happeneth in Cancer and Leo: and therefore at that time is not so easily dried: but when he is returned once againe backe toward Capricorn and the South pole, it is drunke up, and therefore floweth more sparily. But if according to *Timonius* a man would thinke it possible that the water should be drawne up, the want of shadowes during those daies, and in those quarters, continueth still without end. For the river beginneth to rise and swell at the next change of the Moone after the Sunne steed, by little and little gently, so long as he passeth through the signe Cancer, but most abundantly when he is in Leo. And when he is entred Virgo, he falleth and setteth low againe, in the same measure as he rose before. And is cleane brought within his bankes in Libia, which is, as *Herodotus* thinketh, by the hundreth day. All the while it riseth, it hath beene thought unlawfull for kings or governours to saile or passe in any vessell upon it, and they make conscience so to doe. How high it riseth, is knowne by markes and measures taken of certaine pits. The ordinarie height of it is sixteene cubites. Under that gage the waters overflow not all. Above that flint, there are a let and hinderance, by reason that the later it is ere they bee fallen, and downe againe. By these, the seed time is much of it spent, for that the earth is too wet. By the other there is none at all, by reason that the ground is drie and thirftie. The province taketh good keepe and reckoning of both, the one as well as the other. For when it is no higher than 12 cubites, it findeth extreame famine: yea, and at 13 it feelth hunger still, 14 cubites comforts their hearts, 15 bids them take no care, but 16 affoordeth them plentie and delicious dainties. The greatest flood that ever was knowne untill these daies, was 18 cubites, in the time of prince *Claudius* Emperor: and the least, in the Pharfalian warre, against the death of *Pompey*: as if the very river by that prodigious token abhorred to see the same. When at any time the waters seeme to stand and cover the ground still, they are let out at certaine sluces or floud-gates drawne up and set open. And so soone as any part of the land is freed from the water, streight waies it is sowed. This is the onely river of all others that breatheth out no wind from it. The Seignorie and dominion of *Ægypt* beginneth at Syene, the frontier town of *Æthyopia*. For that is the name of a demie Island a hundred miles in compasse, wherein are the *Cerastæ* upon the side of Arabia: and over against it the foure Islands *Philæ*, 600 miles from the partition of Nilus, where it began to be called *Delta*, as we have said. This space of ground hath *Artemidorus* delivered, and withall, that within it were 250 townes, *Iuba* setteth down 400 miles. *Aristocreon* saith, That from *Elephantis* to the sea is 750 miles. This *Elephantis* being an Island, is inhabited beneath the lowest cataract or fall of water three miles, and above Syene 16: and it is the utmost point that the *Ægyptians* saile unto: and is from *Alexandria* 586 miles. See how farre the authors above written, have erred and gone out of the way: there meet the *Æthyopian* ships, for they are made to fold up together, and carrie them upon their shoulders, so often as they come to those cataracts or downefalls aforesaid. *Ægypt*, over and above all other their boast and glorie of antiquitie, brags that in the reigne of king *Amasis*, there were inhabited in it and peopled twentie thousand cities. And even at this day full it is of them, such as they be, and of base account. Howbeit, that of *Apello* is much renowned, as also neere unto it another of *Leucatheia*, and **Diospolis* the great, the very same that *Thebes*, famous for the hundred gates in it. Also, *Captos*, a great mart towne next to Nilus, much frequented for merchandise & commodities out of *India* & *Arabia*. Moreover, the town of *Venus*, and another of *Jupiter*, and *Tentyris*, beneath which standeth *Abydus*, the roiall seat of *Memnon*, and *Osiris* renowned for the temple there, seven miles and an halfe distant from the river, toward *Lybia*. Then *Ptolemais*, *Panopolis*, and another yet of *Venus*. Also in the *Lybian* coast, *Lycou*, where the hill doe bound *Thebais*. Soone after, these townes of *Mercurie*, *Alabastron*, *Canum*, and that of *Hercules* spoken of before. After these, *Arfinoe*, and the above said *Memphis*, betwene which

* The cittie of Jupiter.

A and the dioceſe Arſinoetis, in the Lybian coaſt, the towres called Pyramides, the Labyrinth built up in the lake of Moeris without any jote of timber to it, and the towne Crialon. One more beſides, ſtanding within-forth and bounding upon Arabia, called The towne of the Sunne, of great account and importance.

CHAP. X.

☞ *Alexandria.*

B Vt right worthy of praiſe is Alexandria, ſtanding upon the coaſt of the Ægyptian ſea, built by *Alexander* the Great on Africke ſide, 12 myles from the mouth of Canopus, neare to the lake Mareotis: which was before-time called * Arapotes. *Dinocrates* the Architect, (a *or Rachobes, man renowned for his ſingular wit many waies) laid the modell and platforme thereof by a ſubtill and wittie deviſe: for having taken up a circuit of 15 myles for the cittie, hee made it round like to a Macedonian cloke, full in the ſhirts, bearing out into angles and corners, as well on the left hand as the right, ſo as it ſeemed to lye in folds and plaits; and yet even then he ſet out one fiſt part of all this plot for the kings pallace. The lake Mareotis from the South ſide, meeteth with an arme of the river Nilus, brought from out of the mouth of the ſaid river called Canopicus: for the more commodious trafficke and commerce out of the firme ground and inland Continent. This lake containeth within it ſundry Ilands, and (according to *Claudius Ceſar*) it is thirtie myles over. Others ſay, that it lyeth in length fortiē Schoeni, and ſo, whereas every Schoene is 30 ſtadia, it commeth by that account to be 150 myles long, and as many broad. Over and beſides, there be many goodly faire townes of great importance, ſtanding upon the river Nilus where he runneth, and thoſe eſpecially which have given name to the mouthes of the river, and yet not to all thoſe neither (for there be 11 of them in all, over and beſides foure more, which they themſelves call baſtard mouthes) but to 7 of the principall: to wit, upon that of Canopus, next to Alexandria; then Bolbitinum, and ſo forth to Sebenniticum, Phatuiticum, Mendeficum, Taniticum, and laſt of all Peluſiacum. Other cities there be beſides, to wit, Buſros, Pharoetis, Leontopolis, Achribis, Iſis towne, Buſiris, Cynophis, Aphroditis, Saïs, Naucratis, of which ſome thinke the mouth Naucraticum tooke the name, which they be that call Heracleoticum, preferring it before Canopicum, next unto which it ſtandeth.

CHAP. XI.

☞ *Arabia [the Deſert or Petrae.]*

B Eing once paſt that arme of the river Nilus, which entreth into the ſea at Peluſium, you come into Arabia, conſining upon the red Sea: and that other Arabia, ſo rich and odoriferous, and therefore renowned with the ſurname of Happie. As for this Deſert Arabia, poſſeſſed it is by the Catabanes, Eſbonites, and Screnite Arabians: all barren and fruitleſſe, ſave whereas it meeteth with the confines of Syria, and ſetting aſide the mountaine Caſius, nothing memorable. This region confronteth the Arabians Canchlei on the Eaſt ſide, and the Cedraei Southward, and they both confine together afterwards upon the Nabarhaes. Moreover, two Baies there be, the one called, The gulfe of Heroopolis, and the other of Elani: both in the red ſea on the coaſt of Ægypt, 150 myles diſtant, betweene two townes, Elana and Gaza, which is in our [Mediterranean] ſea. *Agrippa* counteth from Peluſium to Arſinoe, a towne ſituate upon the red ſea, an hundred and five and twentie myles. See how ſmall a way lyeth between two Climates ſo different in nature.

CHAP. XII.

☞ *Syria, Paleſtine, Phœnice.*

V Ppon the coaſt of the ſaid Arabia, confineth Syria; a Region in times paſt, the chiefe and moſt renowned upon earth: and the ſame diſtinguiſhed by ſundrie names. For where it confineth upon the Arabians, called it was Paleſtina, Iurie, Coele-Syria, and afterward, Phœnicie: But goe farther within the firme land, Damascene. Turne more ſtill Southwards, it is named Babylonia. And the ſame, between the rivers Euphrates and Tygris, carrieth the name

of Mesopotamia. Beyond the mountaine Taurus, it is Sophene: but on this side the hill, they call Comagene. The countrey beyond Armenia, is Adiabena, named before time Assyria: but the marches of Syria which confront Cilicia, is knowne by the name of Antiochia. The whole length of Syria, from the frontiers of Cilicia to Arabia, containeth 470 miles: the breadth betweene Seleucia Pieria, to Zeugina a towne seated upon Euphrates, taketh 175 miles. They that make a more subtil and particular division, would have Phœnice to be environed with Syria. And first, as you come from Arabia, is the sea-coast of Syria, which compriseth in it Idumæa and Iudæa: then, you enter into Phœnicia, and so into Syria again, when you are past Phœnicia. And within-forth farther into the countrey, Phœnice is enclosed with Syria Damascena. All that sea yet, which beateth upon that coast, beareth the name of the Phœnician sea. As for the nation it selfe of the Phœnicians, have been highly reputed for their Science and learning, and namely, for the first invention of letters, for their knowledge in Astrologie, navigation, and martiall skill. Being past Pelusium, you come to a citie called Chabriae Castra to the mountain Casius, and the temple of *Iupiter Casius*: also the tombe of *Pompeius Magnus*; and last of all to the citie Ostracium. To conclude, from Pelusium to the frontiers of Arabia the Desert [along the coast of Syria] are 65 miles.

CHAP. XIII.

§ *Idumæa, Syria, Palæstina, Samaria.*

Soon after, beginneth Idumæa & Palæstina, even from the rising up of the lake Sirbon, which some have reported to carie a circuit of 150 miles. *Herodotus* saith, it is hard under the foot of the hill Casius: but at this day it is but a small lake. As for the townes there, they be Rhinocolura, and more within the land, Rhaphæa: also Gaza a port towne, and farther within, Anthedon, and the mountain Angoris. From thence you descend to the coasts of Samaria, the free citie Ascalon, and Azotus: the two Iamnes, whereof the one is well within the land; and so forward to Ioppe, a towne in Phœnicia, which by report, is more auncient than the deluge. Situate it is upon a hill, with a rocke before it, wherein are to be seene the tokens and reliques of ladie *Andromædaes* prison where she was bound. Within a chappell there, the Siren *Decreto*, whereof the Poets tell such tales, is worshipped. Being past Ioppe, you meet with Apollonia: the towne of Strato, called also Cæsarea, founded by king *Herode*: it beareth now the name of Prima Flavia, a colonie there planted and endowed with priviledges by *Vespasian* the Emperour. The bounds of Palæstina be 180 miles from the confines of Arabia: and there entreth Phœnice. Within-forth in the countrey, are the townes of Samaria, and Neapolis, which beforetime was named Mamortha [or Maxbota.] Also Sebaste upon the mountaine, and Gamala, which yet standeth higher than it.

CHAP. XIII.

§ *Iurie and Galilæa.*

Above Idumæa and Samaria, Iudæa spreadeth out farre in length and breadth. That part of it which joyneth to Syria, is called Galilæa: but that which is next to Syria and Ægypt, is named Peræa, [i. beyond Iorden:] full of rough mountaines dispersed here and there: and severed it is from other parts of Iurie, by the river Iordan. As for the rest of Iudæa, it is divided into ten governments or territories, called Toparchies, in this order following: to wit, that of Hiericho, a vale richly planted with date trees: Emmaus, well watered with fountains: Lydda, Ioppica, Accrabatena, Gophnitica, Thamnitica, Betholene, Tephena, and Orine, wherein stood Hierusalem, the goodliest citie of all the East parts, and not of Iurie onely. In it also is the principallitie Herodium, with a famous towne of that name.

CHAP. XV.

§ *Iordane the river.*

The river Iordan springeth from the fountaine Pancades, which gave the surname to the citie Cæsarea, whereof wee will speake more. A pleasant river it is, and as the site of the countrey will permit and give leave, winding and turning in and out, seeking as it were for love

A love and favour, and applying it selfe to please the neighbour inhabitants. Full against his will, as it were, he passeth to the lake of Sodome, Asphaltites, that ill-favoured and cursed lake: and in the end falleth into it, and is swallowed up of it, where amongst those pestilent and deadly waters, he loofeth his owne that are so good and wholesome. And therefore to keepe himselfe out of it as long as hee possibly could, upon the first opportunitie of any valleys, hee maketh a lake, which many call Genesara, which is 16 miles long, and sixe broad. The same lake is environed with divers faire and beautifull townes, to wit, on the East side, with Iulias and Hippo; on the South, with Tarichea, of which name, the lake by some is called Tarichian: and on the West, with Tiberias, an healthfull place for the baines there of hote waters.

B CHAP. XVI.

¶ Asphaltites.

A Asphaltites, or the lake of Sodome, breedeth and bringeth forth nothing but Bitumen; and thereupon it tooke the name. No living bodie of any creature doth it receive into it: bulles and camels swim and stote aloft upon it. And hereupon ariseth that opinion which goeth of it, That nothing there will goe downe and sinke to the botome. This lake in length exceedeth 100 miles, 25 miles over it is at the broadest place, and sixe at the narrowest. On the East, the Arabian Nomades confront it; and on the South side, Machærus regardeth it: in time past, the second fortresse of Iudæa, and principall next to Ierusalem. On the same coast, there is a fountaine of hote waters, holosome and medicinable, named Callirhoe, and good against many diseases. The very name that it carrieth, importeth no lesse praise and commendation.

CHAP. XVII.

¶ The people Esseni.

A Long the West coast, inhabite the Esseni. A nation this is, living alone and solitarie, and of all others throughout the world most admirable and wonderfull. Women they see none: carnall lust they know not: they handle no money: they lead their life by themselves, and keepe companie onely with Date trees. Yet neverthelesse, the countrey is evermore well peopled, for that daily numbers of straungers resort thither in great frequence from other parts: and namely, such as be wearie of this miserable life, are by the surging waves of frowning fortune driven hither, to sort with them in their manner of living. Thus for many thousand yeers [a thing incredible, and yet most true] a people hath continued without any supply of new breed and generation. So mightily encrease they evermore, by the wearisome estate and repentance of other men. Beneath them, stood sometime Engadda, for fertilitie of soile and plentie of Date-tree groves, accounted the next citie in all Iudæa, to Ierusalem. Now, they say, it serveth for a place onely to interre their dead. Beyond it, there is a castle or fortresse situate upon a rocke, and the same not farre from the lake of Sodome Asphaltites. And thus much as touching Iudæa.

E CHAP. XVIII.

¶ Decapolis. [i. Cæle-Syria.]

T Here joyneth unto it on Syria side, the region Decapolis, so called of the number of towns and cities in it. Wherein, all men observe not the same, nor make like account: howbeit most men speake of Damascus and OOTOS, watered with the river Chysoforroa. Also, Philadelphia, renowned for the fruitfull territorie about it. Moreover, of Scythopolis, taking name of the Scythians there planted: and beforetime Myfa, so named of Prince or Father *Bacchus*, by reason that his nource there was buried. Also Gadara, situate upon the river Hieromiæx, running even before it. Besides, the above-named Hippos Dios. Likewise Pella, enriched with the good fountaines: and last of all, Galaza and Canatha. There lye betweene and about these cities, certaine Royalties called Triarchies, containing every one of them as much as an whole countrey: and reduced they be as it were into severall countries, namely, Trachonitis Panias, wherein standeth Cæsarea, with the fountaine above-said, Abila, Arca, Ampeloesa, and Gabe.

Returne now we must to the sea-coast of Phœnicie. A river runneth there called Crocodilon, whereupon stood a towne in times past bearing the name. Also there remaine in those parts the bare reliques still of cities, to wit, Dorum, Sycaminum, the cape or promontorie Carmelum: and a towne upon the hill, so named; but in old time called Ecbatana. Nere thereto Getta and Iebba: the river Pagida or Pelus, carrying chrystall glasse with his sands upon the shore. This river commeth out of the meere Ceudevia, from the foot of mount Carmell. Nere unto it is the citie Ptolemais, erected in forme of a colonie, by *Claudius Casar*; in auncient time called Are. The towne Ecdippa, and the cape Album. Then followeth the noble citie Tyrus, in old time an Iland, lying almost 3 quarters of a mile within the deepe sea: but now, by the great travaile and devises wrought by *Alexander* the Great at the siege thereof, joyned to the firme ground: renowned, for that out of it have come three other cities of ancient name, to wit, Lep-tis, Ytica, and that great Carthage, which so long strove with the Empire of Rome for the monarchie and dominion of the whole world: yea and Gades, divided as it were from the rest of the earth, were peopled from hence. But now at this day all the reputation and glory thereof, standeth upon the dye of purple and crimsen colours. The compass of it is 19 miles, so ye comprise Palætyrus within it. The very towne it selfe alone, taketh up 22 stadia. Neere unto it are these townes, Lubydra, Sarepta, and Ornithon: also Sydon, where the faire and cleer glasses be made, and which is the mother of the great citie Thebes in Bœœtia.

Behind it, beginneth the mount Libanus, and for 1500 stadia reacheth as farre as to Smyrna, whereas Coele-Syria taketh the name. Another promontorie there is as bigge over-against it, called Antilibanus, with a valley lying betweene, which in old time joyned to the other Libanus with a wal. Being past this hil, the region Decapolis sheweth it selfe to you within-forth, called Decapolis; and the above-named Tetrarchies or Realmes with it, and the whole largenesse that Palestine hath. But in that coast and tract still along the foot of the mount Libanus, there is the river Magoras: also the colonie Berytus, called Fœlix Iulia. The towne Leon-tos; the river Lycos: also Palæbyblos, [*i.* Byblos the old.] Then ye come upon the river Adonis; and so to these townes, Byblos [*the new,*] Botrys, Gigarta, Trieris, Calamos, and Tripolis, under the Tyrians, Sydonians, and Aradians. Then meet you with Orthosia, and the river Eleutheros. Also these townes, Simyra, Marathos; and over-against, Aradus, a towne of seven stadia: and an Iland lesse than a quarter of a mile from the Continent. When you are once past the countrey where the said mountaines doe end, and the plaines lying betweene, then beginneth the mount Bargylis: and there, as Phœnicie endeth, so begins Syria againe. In which countrey, are Carne, Balanea, Paltos, and Gabale: also the promontorie, wherupon standeth the free citie Laodicea, together with Diospolis, Heraclea, Charadrus, and Posidium.

Go forward in this tract, and you shall come to the cape of Syria Antiochena: within-forth is seated the noble and free citie it selfe Antiochena, surnamed Epidaphne: through the mids whereof runneth the river Orontes. But upon the very cape, is the free citie Seleucia, named also Pieria.

Above the citie Seleucia, there is another mountaine named Casius, as well as that other, which confronteth Arabia. This hill is of that heighth, that if a man be upon the top of it in the darke night season, at the reliefe of the fourth watch, he may behold the Sunne arising.

A sing. So that with a little turning of his face and bodie, hee may at one time, see both day and night. To get up by the ordinarie high way to the verie pitch of it, a man might fetch a compassse of 19 miles; but climbe directly upright, it is but foure miles. In the borders of this countrey, runneth the river Orontes, which ariseth betweene Libanus and Antilabanus, neere to Helio- polis. Then, the towne Rhosos appeareth: and behind it, the streight passages and gullers be- tweene the mountaines Rhosij and Taurus, which are called Portæ Syriæ. In this tract and coast, standeth the towne Myriandros, the hill Avanus (where is the towne Bomilæ) which separateth Cilicia from the Syrians.

CHAP. XXIII.

¶ Cœle-Syria, [or high Syria.]

IT remaineth now, to speake of the townes and citties in the mid-land parts within the firme land. And to begin with Cœle-Syria, it hath in it Apamia, separated from the Nazerines Te- trarchie by the river Marsia: likewise Bambyce, otherwise called Hierapolis; but of the Syri- ans, Magog. There, is honoured the monstrous Idoll of the Meermaid, Atargatis, called of the Greeks, Decreto. Also Chalcis with this addition, Vpon Belus: from which, the region Chalci- dene, which is most fertile of all Syria, taketh name. Then have you the quarter Cyrhistica, with Cirrus, Gazatæ, Gindarenes, and Gabenes. Moreover, two Tetrarchies, called Granucomatæ. Over and besides, the Hemisenes, Hylates, the Ituræans countrey, (and principally those of them who are named Betarrani) & the Mariammitanes. The Tetrarchie or Principalties, named Mam- mifeat the citie Paradisus, Pagra, Pinarites, and two Seleucia, besides the above-named, one cal- led Vpon Euphrates, and the other, Vpon Belus: and last of all, the Carditenses. The rest of Syria, hath these States (over and above those which shall be spoken of with the river Euphra- tes) the Arethusians, Beræenses, and Epiphanenses. And Eastward, the Laodicenes, namely, those who are entituled, Vpon Libanus: the Leucadians, and Larissæans: besides 17 Tetrar- chies reduced into the forme of Realmes, but their names are but barbarous.

CHAP. XXIIII.

¶ Euphrates.

AND here, me thinkes, is the fittest and meetest place to speake of Euphrates. The source of it, by report of them that saw it last and neerest, is in Caranitis, a State under the go- vernment of Armenia the greater: and those are *Domitius* and *Cosbulo*, who say, That it springeth in the mountaine Aba. But *Licinius Mutianus* affirmeth, That it issueth from under the foot of the mountaine, which they call Capotes, 12 miles higher into the countrey, than is Simyra: and that in the beginning it was called Pyxirates. It runneth first directly to Derezene, and so forth to Ana also, excluding the regions Armenia, the greater as well as the lesse, from Cappadocia. The Dastusæ from Simyra are 75 miles. From thence it is navigable to Pastona, fiftie miles: from it to Melitene in Cappadocia, 74 miles. So forward to Elegia in Armenia, ten miles: where hee receiveth these rivers, Lycus, Arsanua, and Arsanus. Neere to Elegia, hee meeteth afront with the hill Taurus: yet stayeth hee not there, but prevaileth and pierceth tho- row it, although it beare a breadth there of twelve miles. At this entrie where hee breaketh thorough the hill, they call him Omiras: and so soone as he hath made way and cut through it, he is named Euphrates. And yet being past this mountaine, full of rockes hee is and very vio- lent. Howbeit hee passeth through the countrey of the Moeri, where he carrieth a streame of three Schoenes breadth, where hee parteth Arabia on the left hand, from Comagene on the right. And neverthelesse, even there whereas hee conquereth and getteth the upper hand of Taurus, he can abide a bridge to be made over him. At Claudiopolis in Cappadocia, hee taketh his course Westward. And now the mountaine Taurus, for all he was resisted and over- come at first, impeacheth and hindreth him of his way: and notwithstanding (I say) hee was over-matched and dismembred one peece from another, hee getteth the better of him another way, hee breaketh his course now, and drives him perforce into the South. Thus Nature see- meth to match the forces of these two champions equally in this maner, That as Euphrates go- eth on still without stay as far as he will, so Taurus will not suffer him yet to run what way he will.

Now

Now, when these Cataracts and downefals of the river are once past, navigable it is againe, and fortie miles from that place standeth Samosata the head cittie of all Comagene. Now, hath Arabia besides the towns aforesaid, Edessa, sometime called Antiochea, Callirhoe taking name of the fountaine: and Carræ so famous and renowned for the defeature there of *Crassus* and his armie. Hereunto joineth the government and territorie of Mesopotamia, which also taketh the first beginning from the Assyrians, in which stand the townes Anthemusa and Nicephorium. Having passed this countrey, streight waies yee enter upon the Arabians called Rhetavi, whose capitall cittie is Singara. Now to returne to Samosata, from it in the coast of Syria, the river *Matfys* runneth into *Euphrates*. As *Gingla* limitteth Comagene, so the land of the Meri beginneth there. The townes *Epiphania* and *Antiochia* have the river running close to them, and hereupon they have this addition in their names, Standing upon *Euphrates*. *Zenyma* likewise 72 miles from Samosata is ennobled for the passage over *Euphrates*: for joined it is to *Apamia* right against, by a bridge, which *Seleucus* the founder of both, caused to bee made. The people that joine hard to Mesopotamia, bee called *Rhoali*. As for the townes of Syria which bee upon this river, are *Europum*, *Thapsacum* in times past, at this present *Amphipolis*; and last of all the Arabian *Scænita*. Thus passeth *Euphrates*, as farre as to the land *Vra*, where, turning his course to the East he leaveth behind him the desarts of *Palmyra* in Syria, which reach to the cittie *Petra* and the countrey of Arabia called *Happie*.

CHAP. XXV.

§ *Palmyra.*

THe noble citie *Palmyra* is passing well seated, as well for the riches of the soile, as for that it hath water at commaundment, which embelish and set out the countrey on every side. As rich and long as it is, the territorie all about is environned and enclosed with barres of sands. And as if Nature had a desire to exempt it from all other lands to live apart in peace, shee hath set it just in the middest and confines betweene two puissant and mightie Empires, to wit, the Romanes and the Parthians. For there is not so soone any warre proclaimed betweene those two States and Monarchies, but at first they have on both sides a regard of it as a neutre. It is from *Seleucia* of the Parthians, namely that upon *Tigris*, 537 miles: and from the next port or coast of Syria 252: and from *Damasco*, 27 neerer.

CHAP. XXVI.

§ *Hierapolis.*

Beneath the desarts and wildernesse of *Palmyra*, lieth the countrey *Stelendena*, wherein are the citties named at this day *Hierapolis*, *Beroea* and *Chalcis*. Beyond *Palmyra* also, *Hemesa* taketh up some part of those said desarts: and likewise *Elutium*, neerer to *Petra* by the one halfe than is *Damascus*. And next to *Afura* standeth *Philiscum*, a towne of the Parthians, upon *Euphrates*. From which by water it is a journey of tenne daies to *Seleucia*, and from thence as many likewise to *Babylon*. For *Euphrates*, fourescore and three myles from *Zeugma*, about the village *Massice*, devideth it selfe into two armes: on the left side hee passeth into Mesopotamia, even through *Seleucia*, and about it entreth into the river *Tygris* that runneth hard by: but on the right hand, he carrieth a current in his channell toward *Babylon*, the cheefe cittie sometime of *Chaldæa*; and passing through the middest thereof, as also of another which they call *Otris*, hee parteth asunder into sundrie Lakes and Meeres. And there an end of *Euphrates*. Hee riseth and falleth at certaine times after the order of *Nilus*: yet some little difference there is betweene them in the manner, for he overfloweth Mesopotamia, when the Sunne is the 20 degree of *Cancer*, and beginneth againe to diminish and flake, when the Sunne is past *Leo*, and is newly entred into *Virgo*: so as in the 29 degree of *Virgo*, he is downe againe, and come to his ordinarie course.

CHAP. XXVII.

§ *Cilicia, and the nations adjoining, to wit, Isauricæ, Homonades, Pisidia, Lycaonia, Pamphylia: the mountaine Taurus, and Lycia.*

BVt time it is to returne now to the coasts of Syria, and to *Cilicia* that confronteth it. Where in the first place we meet with the river *Diaphanes*, the mountaine *Crocodilus*, the streights and

A and passages of the mount Amanus: more rivers also, to wit, Andricon, Pinarus and Lycus, together with the gulfe Issicus. The towne Issa standeth upon it, then come wee to Alexandria, to the river Chlorus, the free towne Æge, the river Pyramus, and the streights in the entrance to Cilicia. Beyond them we encounter the townes Mallos and Magarfos. As for Tarsos, it is more within the country. From this towne wee enter upon the plaines Aleij, and so forward to these townes, Cassipolis and Mopsum, which is free, and standeth upon the river Pyramus; Thynos, Zephyrium, and Anchialæ. On forth still, and yee shall have the rivers Saros and Sydnus, which runneth through. Tarsus a free cittie, farre from the sea: then are yee in the country Celeuderitis, together with the capitall towne thereof. And anon yee shall set foot in a place called Nymphæum, and Solœ Cilicij now Pompeiopolis, Adana, Cibira, Pinar, Pedalie, Halix, Arsinoe, Tabæ, and Doron: and neere the sea side ye shall find a towne, an harbour and a cave, named all Corycos. Soone after, the river Calycadnus. The cape Sarpedon, the townes Olme and Mylæ, the cape and towne both of *Venus*, the very next harbour from whence men passe into the Isle Cypres. But in the maine land ye shall find these townes, Myanda, Anemurium, Coracesum: and the river Melas, the ancient bound that limitteth Cilicia. Farther within-forth are to be spoken of, the Anazarbenes, at this day Cæsar-Augustani; Castabla, Epiphania, beforetime Eniandos, Eleusa, and Iconium. Seleucia upon the river Calicadmus, furnished also Trachiotis, a citie removed backward from the sea, where it was called Hormia. Furthermore, within the country, the rivers Liparis, Bombos, and Paradisus. Last of all, the mountaine Iubarus. All Cosmographers have joined Pamphylia to Cilicia, and never regarded the nation Isaurica. But a country it is by it selfe, having within it these townes, Isaura, Clibanus, Lalassis. And it shooteth downe to the sea side full upon the frontiers of the country Anemurium abovesaid. In like sort, as many as have set forth Maps and descriptions of the world, had no knowledge at all of the nation Homonades confining upon it, notwithstanding they have a good towne within it, called Homona. Indeede the other fortresses to the number of 44, lie hidden close among the hollow vallies and hills of that country. There inhabite the mountainers over their heads, the Pisidians sometime called Sobyimi, whose cheefe Colonie is Cæsarea, the same that Antiochia. Their townes be Oroanda, and Sagaleffos. This nation is enclosed as it were within Lycaonia, lying within the jurisdiction of the lesse Asia: and even so together with it, the Philomelians, Tymbrians, Leucolithi, Pelteni, and Hyrienfes, resort thither for law and justice. There is a government or tetrarchie also, but out of the quarter of Lycaonia, on that side that bordereth upon Galatia: unto which belong foureteene States or citties, whereof the principall is called Iconium. As for the nations of Lyconia, those of any name, be Tembasa upon Taurus, Sinda in the confines of Galatia and Cappadocia. But on the side thereof above Pamphilia, yee meet with Mylæ, descended in old time from Thrace, who have for their head cittie Aricanda. As for Pamphylia, it was in auncient time called Mopsopia. The Pamphylian sea joineth to the Cilician. The townes situate upon that coast, be Side, Apendus on the hill, Platanistus, and Perga. Also the cape Leucolla, the mount Sardemisus, the river Eurymedon running hard by Apendum. Moreover, Cataractes the river, neere unto which stand Lyrnessus and Olbia; and the utmost towne of all that coast, Phaselis. Fast upon it lieth the Lycian sea, and the nation of the Lycians, where the sea maketh an huge great gulfe. The mountain Taurus likewise, confining upon the Levant sea, doth limit Lycia and Cilicia, with the Promontorie Chelidonium. This Taurus is a mightie mountaine, and determineth as a judge an infinite number of nations. So soon as he is risen from the coast of the East Indian sea, he parteth in twaine: and taking the right hand, passeth Northward, and on the left hand Southward, somewhat bending into the West: yea, and deviding Asia through the mids: and (but that he meeteth with the seas) readie to stop up & dam the whole earth besides. He retireth backe therefore, as being curbed, toward the North; fetching a great circuit, and so making himselfe way, as if Nature of purpose opposed the seas estsoones against him to barre him of his passage; of one side the Phœnician sea, on another the great sea of Pontus; the Caspian and Hyrcanian seas likewise, and full against him the Lake Mœotis. And notwithstanding all these barres, within which he is pent, twined, and wrested, yet maketh hee meanes to have the maistrise and get from them: and so winding bias, hee passeth on, untill hee encounter the Riphæan hills, which are of his owne kind: and ever as he goeth, is entituled with a number of new names. For where hee first beginneth, called hee is Imaus: a little forward Emodus, Paropamisus, Circius, Canibades, Parphariades, Choatras, Oreges, Oroandes, Niphates, and then Taurus. Howbeit,

where

where he is highest, and as it were, overreacheth himselfe, there they name him Caucasus: where he stretcheth forth his armes, like as if he would now and then be doing with the seas, hee changeth his name, to Sarpedon, Coracefus, and Cragus: and then once againe hee taketh his former name Taurus, even where he openeth, and maketh passage as it were to let in the world. And yet for all these waies and ouvertures, he claimeth his owne still, and these passages are called by the names of gates, in one place Armenia, in another Caspia, and sometime Cilicia. Over and besides, when he is broken into parcels, and escaped farre from the sea, he taketh many a name of diverse and sundrie nations on every side, for on the right hand he is termed Hyrcanus and Caspius: on the left, Pariedrus, Moschicus, Amazonicus, Coraxicus, and Scythicus. And generally throughout all Greece, Ceraunius.

To returne then to Lycia, being past the foresaid cape there Chelidonium, yee come to the towne Simena, the hill Chimæra, which casteth flames of fire every night, the cittie Hephæstium, where the mountaines about it likewise oftentimes, are knowne to burne. Sometime the citie Olympus stood there, but now, nothing to bee seene but mountaines, and among them these townes, Gage, Corydalla, and Rhodiopolis. Vpon the sea coast, the citie Lymira upon a river, unto which Arycandus runneth: also the mountaine Massyrites, the citties Andriara and Myra. Moreover, these townes, Apyre and Antiphellos, which sometime was called Habessus, and more within-forth in a corner, Phellus. Then come ye to Pyrrha, and so forth to Xanthus, fifteen miles from the sea, and to a river likewise of that name. Soone after ye meet with Patara, beforetime named Sataros, and Sydinia seated upon an hill, and so to the Promontorie Ciagus. Beyond which ye shall enter upon a gulfe as big as the former, upon which standeth Pinara, and Telmessus, the utmost bound in the marches of Lycia. In auncient time Lycia had in it threescore townes, but now not above 36. Of which, the principall and of greatest name besides the abovenamed, bee Canæ, Candyba, where is the famous wood Oenium, Podalia, Choma upon the river Adefa, Cyane, Ascandalis, Amelas, Noscopium, Tlos, and Telanorus. As for the midland parts of the maine, you shall find Chabalia, with three townes thereto belonging, Oenonda, Balbura, and Bubon.

When you are beyond Telmessus, you meet with the Asiaticke sea, otherwise called Carpathium, and this coast is properly called Asia. Agrippa hath divided it in two parts, whereof the one by his description confronteth upon Phrygia and Lycaonia, Eastward: but on the West side it is limited with the Ægean sea. Southward it boundeth upon Ægypt: and in the North upon Paphlagonia. The length thereof by his computation, is 470 miles, the breadth 300. As for the other, hee saith, That Eastward it confineth upon Armenia the lesse: Westward upon Phrygia, Lycaonia, and Pamphylia. On the North it butteth upon the province or realme of Pontus: and on the South side is enclosed with the Pamphylian sea. He addeth moreover, That it containeth 575 miles in length, and 325 in breadth. The next coast bordering thereupon, is Caria: and when you are past it, Ionia, and beyond that, Æolis. As for Caria, it encloseth Doris in the mids, environning it round on every side, as farre as to the sea. In it is the Cape Pedalium, also the river Glaucus, charged with the river of Telmessus. The townes of any respect be Dædala and Crya, peopled onely with banished persons. Therein you find the river Axoum, and the towne Calydua.

CHAP. XXVIII.

§ The river Indus.

THE river Indus, arising from the mountaines of the Cybirates, receiveth into it threescore other running rivers maintained with springs, of other small rivers and brookes fed with land floods, above an hundred. Vpon it standeth the free towne Caunos, and a little off, Pyrnos. Soone after ye meet with the port Cressa, overagainst which is discovered the Island Rhodus, within the kenning of twentie myles. Being past that haven, you shall enter upon the plaine Loryma, upon which are seated the townes Tylanusa, Taridion, Larymna. Then meet you with the gulfe Thymnias and the cape Aphrodisias: and on the other side of it the towne Hyda, and another gulfe Schoenus. Then followeth the countrey Bubassus, wherein stood in auncient time the towne Acanthus, otherwise called Dulopolis. Also upon the cape there, the free cittie Gnidus, Triopia, then Pegusa, called likewise Stadia. Beyond which you enter into the countrey of Doris.

A Doris. But before we passe farther, meet it were to speake of those cities and States which are in the midland countrey, and which lie behind: and namely of one, named Cibiratica. The towne it selfe is in Phrygia, and to it resort for law and justice 25 citties.

CHAP. XXIX.

§ Laodicea, Apamia, Ionia, Ephesus.

THe principall cittie in those quarters (of the Cibirates) is Laodicea. Seated it is upon the river Lycus: and yet there run hard to the sides thereof two other rivers, Asopus, and Caper. This cittie in times past was called Diospolis, and afterwards Rhoas. The other nations **B** belonging to that jurisdiction of the Cibirates, worth the naming, be the Hydrelites, Themisones, and Hierapolites. Another countie-court or towne of resort there is, which taketh the name of Synnada: and to it repaire for justice, the Licaonians, Appians, Encarpenes, Dorylæi, Midæi, Iulieneses, and other States of no great reckening, fiftene. A third Seignorie or Shire there is that goeth to Apamia, which in old time was called Celænæ, and afterwards Ciboron: situate it is at the foot of the hill Signia, environed with three rivers, Marfyas, Obrima, and Orga, falling all into the great river Mæander. As for the river Marfyas (which a little from his spring was hidden under the ground, where as *Marfyas* the musician strove with *Apollo* in playing upon the flute) sheweth himselfe againe in Aulocrenæ, for so is the valley called, ten miles from Apamia, as men travaile the high way to Phrygia. Vnder this jurisdiction, we should doe well to **C** name the Metropolitess, Dionysopolites, Euphorbenes, Acmoneses, Peltenes, and Silbians: There are besides, to the number of 60 small townes of no account. But within the gulfe of Doris, there stand Leucopolis, Amaxites, Eleus, and Euthenæ. Moreover, other townes of Caria, Pitaium, Eutanæ, and Halicarnassus. And to this cittie were annexed, as subiect and homages by *Alexander* the Great, sixe other townes, namely, Theangela, Sibde, Medmossa, Euranium, Pedasium, and Telnessum: which townes are inhabited between the two gulfes, Ceramicus, and Iasius. From thence yee come to Myndus, and where sometime stood Palæmyndus, Neapolis, Nariandus, Carianda, the free cittie Termera, Bergyla, and the town Iasus which gave the name to the gulfe Iasius. But Caria is most renowned and glorious for the places of name within it in the firme land: for therein are these citties, to wit, Mylasa free, and Antiochia, now standing **D** where sometime were the townes, Seminerthos, and Cranaos: and environed now it is about with the rivers Mæander, and Mossinus. In the same tract stood sometime Mæandropolis also. There is besides, the citie Eumenia, upon the river Cludrus: the river Glaucus: the towne Lysias, and Orthasia. The tract or marches of Berecinthus, Nysa, Tralleis, which also is named Euanthia, Seleucia, and Antiochia; which is situate upon the river Eudone that runneth hard by it, and Thebanis which passeth quite through it. Some there be, who report, that the dwarfes called Pigmaei, sometime there dwelt. In which region besides, were these townes, Thydonos, Pyrrha, Eurome, Heraclea, Amyzon, and the free citie Alabanda, whereof that shierewicke or jurisdiction tooke name. Also the free towne Stratonicea, Hynidos, Ceramus, Troezene, and Phorontis. Yea there be nations farther remote, that resort thither to plead and have justice in **E** that Court: namely, the Othroniens, Halydiens or Hyppines, Xystianes, Hydissenses, Apolloniates, Trapezopolites, and of free condition the Aphrodisians. Over and besides these, there are Cossinus, and Harpasa, situate upon the river Harpafus, which also ran under Trallicon, when such a towne there was. As for the countrey of Lydia, watered it is in many places with the recourse of Mæanders streame, winding and turning in and out, as his manner is: and it reacheth above Ionia: confining upon Phrygia in the East, upon Misia in the North, and in the South side enclosing all the countrey of Caria. This Lydia was sometimes named Mœonia. The capitall cittie of this region, is Sardis, seated upon the side of the mountaine Timolus, called beforetime Timolus, a hill well planted with vineyards. Moreover, renowned is this countrey for the river Pactolus issuing forth of this mountaine; which river is called likewise Chrysothoas: as also for the fountaine Tarnes. The citie abovesaid, was commonly by the Mœonians called Hyde, famous for the meere or lake of Gyges. All that jurisdiction is at this day called Sardinia. Thither resort besides the abovenamed, the Caduenes, descended from the Macedonians; the Lorenens, Philadelphenes, yea and the very Mœonians, such as inhabite upon the river Cogamus at the foot of Timolus; and the Tripolitanes who together with the Antoniopolites, dwell upon **F**

the river Mæander. Furthermore, the Apollonos-Hierita, Myformolites, and others of small reputation. G

Ionia beginneth at the gulfe Iafius, and all the coast thereof is very full of creekes and reaches. The first gulfe or creeke therein is Basilicus; and over it the cape Pofideum, and the towne called sometime, the Oracle of Branchidæ, but at this day, of Apollo Didymæus, 20 stadia from the sea side. Beyond which 180 stadia, standeth Milletus, the head citie of Ionia, named in time past Lelegeis, Pityüsa, and Anaëtoria. From which, as from a mother citie, are descended more than eightie others, all built along the sea-coast by the Millefians. Neither is this citie to be defrauded of her due honour, for bringing forth that noble citizen *Cadmus*, who devised and taught first to write in Prose. Concerning the river Mæander, it issueth out of a lake at the foot of the mountaine Anlocrene: and passing under many towns, and filled still with as many rivers running into it, it fetcheth such windings to and fro, that oftentimes it is taken for to run backe againe from whence it came. The first countrey that it passeth through, is Apamia: and from thence it proceedeth to Euenetica, and so forward through the plaines Barylletici. Last of all, hee commeth gently into Caria, and when hee hath watered and overflowed all that land with a most fat and fruitfull mud that he leaveth behind him, about ten stadia from Milerus, hee dischargeth himselfe into the sea. Neere to that river, is the hill Latmus: the citie Heraclæa, surnamed Caryca, of an hill of that name: also Myus, which as the report goeth, was the first citie founded by the Ionians after their arrivall from Athens, Naulochum, and Pyrene. Also upon the sea coast, the towne called Trogilia, and the river Gelfus. Moreover, this quarter all the Ionians resort unto in their devotion; and therefore named it is Panionia. Neere unto it was built a priviledged place for all fugitives, as appeareth by the name Phygela: as also the towne Marathesium stood there sometime: and above it, the renowned citie Magnesia, surnamed, Vpon Mæander; of the foundation of that other Magnesia in Thesalië. From Ephesus it is 15 miles; and from Tralleis thither, it is three miles farther. Beforetime, called it was Thesalocce, and Androlitia: and being otherwise situate upon the strond, it tooke away with it other Ilands called Derasides, and joynethem to the firme land from out of the sea. More within the maine standeth Thyatira (in old time called Pelopia and Euhippa) upon the river Lycus. But upon the sea coast, yee have Manteium, and Ephesus founded in times past by the Amazones. But many names it had gone through before; for in time of the Trojane warre, Alopes it was called: soon after, Ortygia, and Morges; yea and it tooke name Smyrne, with addition of Trachea, [though] Samornium, and Ptelea. Mounted it is upon the hill Pione, and hath the river Caystrus under it, which commeth out of the Cilbian hills, and bringeth downe with it many other rivers, and principally is maintained and enriched with the lake Pegaseum, which dischargeth it selfe by reason of the river Phyrtes that runneth into it. With these rivers he bringeth downe a good quantitie of mud, whereby he encreaseth the land: for now alreadie a good way within the land, is the Iland Syrie, joyned to the Continent. A fountaine there is within the citie, called Callipia: and two rivers (hight both Selinus) comming from divers parts, environ the temple of *Diana*. After you have been at Ephesus, you come to another Manteium, inhabited by the Celophonians: and within, the couniry Colophon it selfe, with the river Hæfius under it. Then meet you with the noble temple of *Apollo Clarius*, and Lebedos. And in this quarter sometime was to be seene the towne Notium. The promontorie also Corycon is in this coast: and the mountaine Mimas, which reacheth out 250 miles, and endeth at length in the plaines within the continent that joyne unto it. This is the place, wherein *Alexander* the Great commaunded a trench severie miles long and an halfe to be cut through the plaine, for to joyne two gulfes in one, and to bring Erythreë and Mimas together for to be environed round therewith. Neere this citie Erythreë were sometimes the townes, Pteleon, Helos, and Dorion: now, there is the river Aleon, and the cape Corineum: upon the mount Mimas, Clazomene, Parthenia, and Hippia called Chytophoria, having beene sometime Ilands: the same, *Alexander* caused to be united to the firme land, for the space of two stadia. There have perished within forth and beene drowned, Daphnus, Hermesia, and Sipyllum, called before-time Tantalus, notwithstanding it had beene the chiefe citie of Micoonia, situate in that place, where now is the meere or lake Sale. And for that cause Archæopolis succeeded in that preeminence, and after it Colpe, and in stead thereof Lebede. As you retourne from thence toward the sea side, about twelve miles off, you come upon the citie Smyrna, built by an Amazonite, but repaired and fortified by *Alexander* the Great. Situate

A tuate it is pleasantly upon the river Meles, which hath his head and source not farre off. The most renowned hills in Asia for the most part, spread themselves at large in this tract, to wit, Mastusia, on the backe side of Smyrna; and Termetis, that meeteth close to the foot of Olympus. This hill Olympus, taketh his end at the mountaine Imolus; Imolus at Cadmus; and Cadmus at Taurus. When you are past Smyrna, you come into certaine plaines, occasioned by the river Hermus, and therefore adopted in his name. This river hath his beginning neere unto Doryleus a citie of Phrygia, and taketh into it many other cities, and principally Phryge, which giveth name to the whole nation, and divideth Phrygia and Caria asunder. Moreover, Lyllus and Crios, which also are bigge and great by reason of other rivers of Phrygia, Mysia, and Lydia, which enter into them. In the verie mouth of this river stood sometime the towne Temnos: but now in the utmost nouke of the gulfe, certaine stonie rockes called Myrmecece. Also the towne Leuce upon the cape so called, sometime an Iland it was: and last of all, Phocæa, which limiteth and boundeth Ionia. But to returne unto Smyrna: the most part of Æolia, wherof we will speake anon, repaireth commonly thither to their Parliament and Assises. Likewise the Macedonians, surnamed Hircani, as also the Magnetes from Sipylum. But unto Ephesus, which is another principall and famous citie of Asia, resort those that dwell farther off, to wit, the Casarians, Metropolitans, Cylbianes, the Myso-Macedonians, as well the higher as the lower, the Mastaurians, Brullites, Hyppocœnians, and Dios-Hieriteæ.

CHAP. XXX.

Æolis, Troas, and Pergamus.

A Æolis, in old time called Mysia, confronteth upon Ionia: so doth Troas, which boundeth upon the coast of Hellespontus. Being then past Phocæa, you meet with the port Ascænius, and the place where sometimes Larissa stood: and now Cyme, and Myrina which loveth to be called Sebastopolis. Within the firm land, Ægæ, Attalia, Posidea, Neon-richos and Temnos. But upon the coast, the river Titanus, and a citie taking name thereof. The time was when a man might have seene there the citie Grynia: but now there is but an haven, and the bare ground, by reason that the Iland is taken into it, and joyned thereto. The towne Elæa is not farre from thence; and the river Caicus comming out of Mysia. Moreover, the towne Pytane, and the river Canaius. Other townes there were in old time, but they are lost and perished, namely Canæ, Lysimachia, Atarneæ, Carenæ, Cisthene, Cilla, Cocillum, Thebæ, Astyre, Chrysa, Palæsthepsis, Gergithos, and Neandros. Yet at this day are to be seene, the citie Perperene, and beyond it, the tract and territorie Heracleotes, the towne Coryphas, the river Gryliofolius, the quarter called Aphrodisias, before-time Politice. Orgas the countrey, and Scepsis the new. The river Evenus, upon the banke whereof stood once Lyrmessos and Miletos, but now they are gone. In this tract is the mountaine Ida. Moreover, in the sea-coast, Adramytteos, sometime called Pedasus, where the Parliament and Tearme is holden, and whereof the gulfe is named Adramitteos. Other rivers be there besides, to wit, Astron, Cornalos, Eryannos, Alabastro, and Hieros out of Ida. Within-forth be Gargara, a towne and hill both. And then againe toward the sea side, Antandros, before-time called Edenis: then, Cymeris, and Assos, which also is Apollonia. Long since also there was a towne called Palamedium. After all these, you come upon the cape Leolon, the middle frontier betweene Æolus and Troas. And there had been in auncient time, the citie Polymedia, and Cryssa, with another Larissa also. As for the temple Smintheum, it remaineth still. But farther within, the towne Colone that was, is now decayed and gone, and the trafficke and negotiation in all affaires, turned from thence to Adramyteum. Now as touching the territorie of the Apollonians, after you be past the river Rhyndicus, you find these States, the Eresians, Miletopolites, Pœmanenes, Macedonians, Aschilacæ, Polychnæi, Pionites, Cilices, and Mandagandenes. In Mysia, the Abretines, and those called Hellespontij; besides others of base account and estimation. The first citie you encounter in Troas, is Amaxitus: then, Cebrenia, and Troas it selfe, named sometime Antigonia, now Alexandria, and is entituled a Romane Colonie. Beyond Troas, standeth the towne Nec: there, runneth also Scamander, a river navigable: and Sigæum, a towne sometime, upon the cape so called. At length, you come to the haven of the

Greekes, into which Xanthus and Somoeis runne jointly together, as also Palæ-Scamander, but first it maketh a lake. The rest that *Homer* so much speaketh of, and namely, Rhæsius, Hep-taportus, Carefus and Rhodius, there is no mention or token remaining of them. As for the river Granicus, it runneth from diverse parts into the channell of Propontis. Yet there is at this day a little cittie called Scamandria: and one mile and an halfe from the port or Sea, the free cittie Ilium, that enioieth many immunities and liberties: of which towne goeth all that great name. Without this gulfe, lieth the coast Rhoetea, inhabited with these townes upon it, namely, Rhoeteum, Dardanium, and Arisbe. There stood sometimes also Acheleum, a towne neare unto the tombe of *Achilles*: founded first by the Mityleneans, and afterwards reedified by the Athenians upon the Bay Sigæum, under which his fleet rode at anker. There also was A-cantium built by the Rhodians, in another coine or canton of that coast, where *Ajax* was in-terred, a place thirtie stadia distant from Sigæum, and the very Bay wherein his fleet also lay at harbour. Above Æolis and one part of Troas, within the Continent and firme land, there is the towne called Teuthrania, which the Mysians in old time held. And there springeth Caicus the river abovesaid. A large countrey this is of it selfe, and especially when it was united to Mysia, and all so called: containing in it Pionix, Andera, Cale, Stabulum, Conisum, Tegium, Balcea, Tiare, Teuthranie, Sarnaca, Haliserne, Lycide, Parthenium, Thymbrum, Oxyopum, Lygdanum, Apollonia: and Pergamus the goodliest cittie of them all by many degrees, through it passeth the river Selinus, and Cærius runneth hard under it, issuing out of the mountaine Pindafus. And not farre from thence is Elea, which as we said standeth upon the strand. And verily all that tract and jurisdiction is of that cittie, named Perganena. To the parliament and judicall Assises, there resort the Thyatyrenes, Mygdones, Moissines, Bregmenteni, Hieracomitæ, Perpereni, Tyareni, Hierapolenses, Harmatapolites, Attalenses, Pantaenses, Apollonidenses, and other petty cit-ties of no name and account. As for Dardanium, a pretie towne it is, threescore and tenne sta-dia distant from Rhoeteum. Eighteene myles from thence is the cape Trapeza, where the sea beginneth to rush roughly into the streight Hellespont. *Eratosthenes* mine authour saith, That the citties of the Solymi, Leleges, Bebrices, Colycantij and Trepfedores sometime flourished, but now are utterly perished. *Isidorus* reporteth as much of the Arymeos and Capreta, the very place where Apamia was built by king *Seleucus*, betweene Cilicia, Cappadocia, Catao-nia and Armenia. And for that hee had vanquished most fierce and cruell nations, at the first hee named it Damea.

CHAP. XXXI.

☞ *The Islands lying before little Asia, and in the Pamphylian sea. Also Rhodes, Samus, and Chios.*

THE first Island of Asia is just against the mouth or channell of Nilus, called Canopicus, of *Canopus*, (as men say) the Pilot of king *Menelaus*. The second is Pharus, which is joined to Alexandria by a bridge. In old time it was a daies sailing from Ægypt to it: and now by fires from a watch-tower, saylers are directed in the night, along the coast of Ægypt. *Caesar* Dictatour erected therein a Colonic. And in truth it serveth in right good steed as a Lanterne: for the havens about Alexandria be very dangerous and deceitfull, by reason of the barres and shelves in the sea: and there are but three channels & no more, by which a man may passe safely to Alexandria, to wit, Tegamum, Posideum, & Taurus. Next to that Isle, in the Phænician sea before Ioppa, lieth Paria, an Island of no great compasse, for it is all a bare towne. And this is the place, folke say, where ladie *Andromeda* was exposed and cast out to a monster. Moreover, A-rados, the Isle before named, betweene which and the Continent there is a fountaine, as *Muti-anus* writeth, in the sea where it is fiftie cubites deepe, out of which fresh water is drawn and con-veighed from the very bottome of the sea, through pipes made of leather. As for the Pamphy-lian sea, it hath very small Islands of little or no reckoning. In the Cicilian sea there is Cyprus, one of the five greatest in those parts, and it lieth East and West full against Cilicia and Syria. The seat it was in times past, whereunto nine kingdomes did homage, and of which they held. *Timosthenes* saith, That it contained in circuit foure hundred and nineteene miles and an halfe: but *Isidorus* is of opinion, that it is but three hundred seventie five miles about. The full length thereof

A thereof betweene the two capes, Dinaretas and Acamas, which is Southward, *Artemidorus* reporteth to bee a hundred and sixtie miles and a halfe: and *Timosthenes* two hundred, who saith besides, that sometime it was called Acamantis: according to *Philonides*, Cerastis: after *Nezagoras*, Aspelia, Amathusia, and Macatia: *Asynomus* calleth it Cryptos and Colonia. Townes there bee in it fiftene, Paphos, and Palsapaphos (tharis, Paphos the new, and Paphos the old,) Curias, Citium, Corineum, Salamis, Amathus, Lapethos, Solor, Tamaleus, Epidaurum, Chytri, Arsinoe, Carpasium, and Golgi. There were in it besides, Cinirya, Marium, and Idalium: but now are they come to nothing. And from the cape Anemurium in Cilicia, it is fiftie myles distant. All that sea which lieth betweene it and Cilicia, they call Anlon Cilicium, that is to say, The plaine of Cilicia. In this tract is the Island Eleusa: and foure others besides, even before the cape, named Clides, overagainst Syria. Likewise one more, named Sciria, at the other cape or point of Cilicia. Moreover, against Neampaphos, [i. new Paphos] the Isle Hierocepia. Against Salamis, Salaminæ. Moreover, in the Lycian sea there be Isles, Illyris, Telendos, Artelebussa, and three Cypriæ, all barren and fruitlesse: besides Dionysia, beforetime called Caretha. Moreover, against the Promontorie of Taurus, and the Chelidonia, hurtfull and dangerous to saylers: and besides them as many more, together with the towne Leucola, called Pactiæ, namely, Lassa, Nymphous, Macris, Megitka, in which the cittie that stood, is gone. Besides these, many others there were, but of no importance. But overagainst the cape Chimera, Dolichiste, Chiroygium, Crambussa, Rhoge, Enagora, of eight myles. Against Dædaleon, two: against Cyeon, three: Strongyle moreover, against Sidynia, which king *Antiochus* founded: and toward the river Glaucus, Lagusa, Macris, Didymæ, Helbo, Scope, Aspis, and Telandria: howbeit, the towne in it is sunke and gone: last of all the Isle Rhodusa, next to the harborough or haven Caunus. But the fairest of all is the Isle Rhodes, a free state, and subject to none: It containeth in compasse a hundred and thirtie myles, or if wee rather give credite to *Isidorus*, a hundred and three. Three great townes there bee in it well peopled, Lindus, Camirus, and Ialysus, now called Rhodes. By the account of *Isidorus* it is from Alexandria in Ægypt, five hundred seventie and eight myles: but according to *Eratosthenes* five hundred sixtie and nine: after *Mutianus* five hundred, and from Cyprus foure hundred and sixteenc. Many names hath it beene knowne by in times past, to wit, Ophysa, Aferia, Æthraea, Trinacia, Corymbia, Pœessa, Atabyria of king *Atabyris*: and finally, Macaria, and Oloessa. Many other Islands bee subject to it, and namely Carpathus (which gave name to the sea Carpathium) Casos, Achme in times past: and Nisyros, distant from Gnidus twelve myles and a halfe, which heretofore had beene called Porphyris. And in the same ranche, Syme, betweene Rhodes and Gnidus, and is in circuit fixe and thirtie myles and an halfe. Enriched this Island is with eight commodious havens. Over and besides these, there lie about Rhodes, Cyclopius, Teganon, Cordylusa, foure under the name of Diabete: Hymos, Chalcis, wherein standeth a good towne: Scutusa, Narthecusa, Dimastos, and Progne. Being past Gnidus, yee shall discover Ciferusa, Therionarce, Calydræ beautified with three towies, to wit, Notium, Nisyros, Mendeterus: with Arconesus the Isle, wherein standeth the towne Ceramus. Vpon the coast of Caria, the Islands, twentie in number, called Argiæ: besides, Hye-tussa, Lepsia, and Leros. But the goodliest and most principall of all others in that coast is Cos, which lieth from Halicarnassus fiftene myles; and in compasse about, it beareth a hundred myles: as men thinke, Meropé it was called: as *Stephylus* saith, Cos: but according to *Dionysius*, Meropis: and afterwards Nymphæa. This Isle is fortified with the mount Prion: and as some thinke, Nisyris the Island, named beforetime Porphyris; was of old united to this, and afterwards dismembered from it. Beyond this Island yee may discover Carianda, with a towne in it: and not farre from Halicarnassus, Pidofus. Moreover, in the gulfe Cerynæus, Priaponesus, Hipponesus, Pfyra, Mya, Lampemandus, Passila, Crusa, Pyrhe, Sepiussa, Melano. And within a litle of the maine, another called Cinedopolis, by occasion of certaine Carmites and shamefull baggages that king *Alexander* the Great left there. The coast of Ionia hath in the sea the Islands Ægeæ and Corsea, besides Icaros, spoken of before. Also Lade, beforetime called Latæ: and among some other litle ones of no worth, the two Camelides neere to Miletus. Moreover, Mycalum, Trogyliæ, Trepilion, Argennon, Sardalion: and the free Island Samos, which in circuit hath fourescore and seven miles, or as *Isidorus* thinketh, a hundred. *Aristotle* writeth, how at the first it was called Parrhania, afterwards Dryusa, and then Anthemusa:

Aristocritus giveth it moreover other names, to wit, Melamphyllus, yea, and Cyparissia: others rearme it Partheno-arusa, and Stephane. Rivers in it bee Imbrabus, Chesius, and Ibettes: fountaines of fresh water, Gigarto and Leucothea: but no other hills, save onely Cercetius. There lie adjoining to it other Islands besides, namely, Rhypara, Nymphæa, and Achillea. Fourescore and thirteene miles from it, you may discover Chios, a free State, with a towne in it, which is an Island as renowned every way as Samos: *Ephorus* by the auncient name calleth it *Æthalia*: *Metrodorus* and *Cheobulus*, Chia, of a certaine ladie nymph, whose name was *Chio*: others supposed it was so called of Chion, *i.* Snow: and some would have it to be Macris and Pityusa. An hill there is in it called Pellenæus, where the good marble is digged, called Chium. The auncient Geographers have written, That it is a hundred twentie and five miles about; and *Isidorus* addeth nine more. Situate it is betweene Samos and Lesbos, full opposite unto the cape Erythræ. Neere unto it lie Thallusa (which some write Dapnusa), Oenussa, Elaphites, Euryanassa, Arginussa with a towne. Now are all these about Ephesus, as also the Isles of *Pisistratus*, so called: and those which are named Anthinæ, to wit, Myonnesus, and Diareusa. In both these the townes that were, bee lost through water. Furthermore, the Island Porofelenæ with a towne in it, Cercia, Halone, Cominone, Illetia, Lepria, and Rhespheria, Procusæ, Bolbulæ, Phanæ, Priapos, Syce, Melane, Ænare, Sidusa, Pela, Drymusa, Anydros, Scopelos, Sycussa, Marathussa, Pfile, Peritheusa, and many others of no reckoning. But among the Isles of name, is that of Teos, lying farther in the deepe sea, which hath a towne in it: and lieth from Chios fourescore and one miles, and as much from the Bay Erythræ. Neere unto Smyrna are the Islands Peristerides, Carteria, Alopece, Elæussa, Bachina, Pystira, Crommyonnesus, and Megale. And just before Troas, the Isles Ascaniæ, and three Plateæ. Then the Lamia, and two Plitanæ. Moreover, the Islands Plate, Scopelos, Getone, Artheidon, Celæ, Lagussæ, & Didymæ. But the most stately of all others in this sea, is Lesbos, which lieth from Chios threescore and five miles. Named it was in times past, Hemerte, Lafia, Pelasgia, Ægira, Æthyope and Macaria: within it were eight townes of name; whereof one, namely Pyrrha, is swallowed up of the sea: and another, to wit, Arisbe, overthrowne by an earthquake. As for the Isle Methymna was peopled from Antissa, which was united to it, and wherein were eight townes, and is about seven and thirtie miles from *Asia the lesse. As for the townes Agamede and Hiera which were in it, gone they be now and utterly perished. Yet there remaine Eresos, Pyrrha, and Mitylenæ, which hath continued for five hundred yeeres, mightie and puissant. *Isidorus* saith, That this Island is in circuit about a hundred seventie and three miles: but the old Geographers, a hundred ninetie and five. In it are these mountains, Lepethymus, Ordymnus, Maristus, Creon, and Olympus. Eight myles and an halfe it is from the Continent, where it lieth neere. About this Island Lesbos, there lie neere at hand other little ones, namely, Saudalion, and the five Leucæ. Of which, Cydonea is one, wherein is a fountaine of hote water. As for Argenussæ, from thence to Ægæ is reckoned foure miles. There are besides in this coast Phellusa and Pedua. Now without Hellespont, overagainst the bay and cape Sigeum, lieth the Isle Tenedus, called sometimes Leucophrys, Phænice, and Lyrnessos. From Lesbos it is sixe and fiftie miles, and from Sigæum twelve miles and an halfe.

CHAP. XXXII.

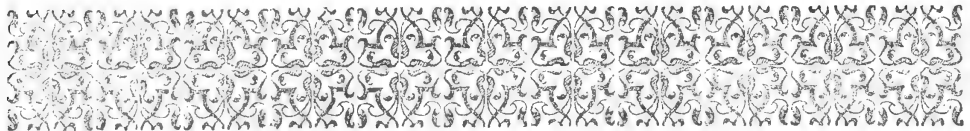
☞ *Hellespontus, Mysia, Phrygia, Gallatia, Bithynia, Bosphorus.*

LEt us now leave the Isles in the sea Ægeum, and come to Hellespont, now called the streights of Callipolis: whereinto the maine sea gusherh with a mightie force and violence, with his gulfes and whirlepooles, digging before him a way, untill he have limited and divided Asia from Europe. The promontorie first appearing there, wee named Trapeza. From which, tenne myles off, standeth the towne Abydum, where the streights are but seven stadia over. Beyond it is Percote the towne: and Lampfacum, called beforetime Pityusa. Moreover, the Colonic Parium, which *Homer* named Adraffia. Moreover, the towne Priapos, the river Ælepus and the cape Zelia. Then come yee to Propontus, for so is the place called where the sea beginneth to enlarge it selfe. Into this channell runneth the river Granicum, which maketh the haven Artace, where once stood a towne. Beyond it there is an Island, which *Alexander* the great joined to the Continent [by two bridges, according to *Strabo*] in which standeth the towne Cyzicum,

A zicum, founded by the Milesians, called heretofore Arconnesos, Dolionis, and Dindymis, neere the top whereof is the mountaine Dindymus. When yee are beyond Cizycum, you meet with these townes besides, Placia, Ariacos, Scylacum: & behind them, the hill Olympus, called sometime Mæsius. Also the cittie Olympena. The rivers Horisius and Rhyndacus, named heretofore Lycus. This river taketh his beginning in the marish or meere Artynia, neere to Miletopolis. It receiveth into it Marestos and many others, and seperateth Asia from Bithynia. This region in auncient time was called Cronia: afterward Theffalis, then Malianda and Strymonis. All this nation of these quarters, *Homer* named Halizones, for that they bee environned with the sea. Therein stood in old time a mightie great cittie named Attusa. At this day fifteene cities it hath, among which is Gordiu-come, now called Iuliopolis, and in the very coast upon the sea, Dascylos. Goe further on, and yee meet with the river Gebes: and within the maine, the towne Helgas, the same that Germanicopolis, knowne also by another name Booscoete, as also Apamea, now called Myrtea of the Colophonians. Being past it, you come to the river Etheleum, the auncient limit of Troas, & where Mysia beginneth. Afterwards, you enter into the gulfe (of Bryllion) whereinto runneth the river Ascanium, upon which standeth the towne Bryllion. And beyond it you shall see the rivers Helas and Cios, together with a town of that name. A mart town this was, whereunto resorted the Phrygians that border neere unto it, for to trafficke and furnish themselves with merchandise: built verily it was by the Milesians, but the place whereon it stood was called Ascania of Phrygia. And therefore me thinkes we cannot doe berter, than even here to speake of that countrey. Phrygia then spreadeth out above Troas and the nations before named, from the cape Lectus unto the river Etheleus. It confronteth on the North side upon part of Galatia, Southward it boundeth hard to Lycaonia, Pisidia, and Mygdonia. And on the East part, it reacheth to Cappadocia. The townes of greatest name, besides those before rehearsed, be Ancyra, Andria, Celænæ, Colossæ, Carina, Cotiaion, Ceranæ, Iconium, and Midaion. Certaine authors I have, who write, That out of Europe there come to inhabite these parts, the Myssi, Bryges, and Thyni, of whom are descended and likewise named, the Mysians, Phrygians, and Bithynians.

And even here I thinke it good to write also of Galatia, which lying higher than Phrygia, yett possesseth a greater part of the plaine countrey thereof, yea, and the capitall place of it sometime called Gordium. They that inhabited and held that quarter of Phrygia, were Gaules, called **D** Tolistobogi, Voturi, and Ambitui: but they that occupied the countrey of Mæonia and Paphlagonia, were named Trocmi. This region confronteth Cappadocia on the North and East side: and the most plenteous and fruitfull tract thereof the Tectosages and Teutobodiaci kept in their possession. And thus much for the principall nations of this countrey. As for the States, Tetrarchies, and Regiments, there bee in all a hundred ninetic and five. The townes are these. Of the Tectosages, Ancyra: of the Trocmi, Tavium: of the Tolistobogians, Pelinus. Besides these, there be States of good account, Attalenses, Arafenses, Comenses, Diochieronitæ, Lyftreni, Neapolitani, Oeandenses, Seleucenses, Sebasteni, Timmoniacenses, and Tebaseni. This Galatia extendeth even as farre as to Gabalia and Milyæ in Pamphylia, which are situate about Baris: also Cyllanticum and Oroadicum, the marches of Pisidia: likewise Obigene, part of Lycaonia. Rivers there bee in it, beside those before named, Sangarium and Gallus, of which river, the gelded priests of dame *Cybele*, mother of the gods, were named Galli. Now it resteth to speake of the townes upon the sea-coast. Yet I cannot overpasse Prusa neere to Cios, which lieth farre within the countrey of Bithynia, which *Anniball* founded at the foot of the hill Olympus. From Prusa to Nicæa, are counted five and twentie myles, in which way lieth the lake Ascanius betweene. Then come yee to Nicæa, in the very outmost part of the gulfe Ascanium, which before was called Olbia: also to another Prusa, built under the mountaine Hippus. Once there were in this coast, Pythopolis, Parthenopolis, and Choryphanta. And now there bee upon the sea side, these rivers, Æsius, Bryazon, Plataneus, Areus, Siros, Gendos, named also Chrysothoas. The Promontorie also, upon which stood the towne Megaricum. Then the gulfe or arme of the sea which was called Craspedites; for that that towne before named, stood as it were, in a fold, plait, or nouke thereof. Sometimes also there was the towne Astacum, whereupon the creeke rooke the name Astacenus. Moreover, in old time the towne Libyssa, by report, was planted there: where now remaineth nothing else to be seene but the tombe of *Anniball*. But in the inmost part of the gulfe where it endeth, there standeth the goodly cittie of Bithynia, called Nico-

media. The cape Leucatas which encloseth the gulfe Astartenus, is from Nicomedia 42 miles and an halfe. Being past this gulfe, the sea beginneth to streighten again, and the land to meet neere together: and these streights reach as far as to Bosphorus in Thracia. Vpon these streights standeth the free citie Chalcedon, 72 miles and an halfe from Nicomedia. Beforetime it was called Procerastis: then Compusa: afterwards, The citie of the Blind; for that they who founded it, being in a place but seven stadia from Bizantium, where was a feat in all respects more commodious and fit for a citie, were so blind as that they could not choose it for the plot of Chalcedon. But within the firme land of Bithynia, is the colonie Apamena: and there inhabite also, the Agrippenses, Iuliopolites, and they of Bithynium. Moreover, for rivers, ye have Syrium, Lapsias, Pharmicas, Alces, Crynis, Lylæus, Scopius, Hieras, which parteth Bithynia from Galatia. Beyond Chalcedon, stood Chryfopolis: then, Nicopolis, of which the gulfe still reteineth the name: wherein, is the haven of Amycus: the cape Naulochum: Estia, wherein is the temple of Neptune: and the Bosphorus, a streight halfe a mile over, which now once againe parteth Asia and Europa. From Chalcedon, it is twelve miles and an halfe. There beginneth the sea to open wider, where it is eight miles and a quarter over: in that place where stood once the towne Philopolis. All the maritime coasts are inhabited by the Thyni, but the inland parts by the Bithynians. Lo here an end of Asia, and of 282 nations, which are reckoned from the limits and gulfe of Lycia, unto the streights of Constantinople. The space of the streights of Hellepont and Propontis together, untill you come to Bosphorus in Thracia, containeth in length 188 miles, as we have before said. From Chalcedon to Sigeum, by the computation of *Isidorus*, are 372 miles and an halfe. Ilands lying in Propontis before Cyzicum, are these, Elaphonnesus, from whence cometh the Cyzicen marble; and the same Ile was called Neuris, and Proconnesus. Then follow Ophyiſa, Acanthus, Phœbe, Scopelos, Porphyrione, and Halone, with a towne. Moreover, Delphacia, and Polydora: also Artacaon, with the towne. Furthermore, over-against Nicomedia, is Demenessos: likewise, beyond Heraclea, just against Bithynia, is Thynnias, which the Barbarians call Bithynia. Over and besides, Antiochia: and against the fosse or river Rhyndacus, Besbicos, 18 miles about. Last of all, Elæa, two Rhoduffa, Erebinthus, Magale, Chalcutis, and Pityodes.



THE SIXTH BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECUNDVS.

CHAP. I.

☞ *Pontus Euxinus.*



He Sea called Pontus Euxinus, and named by the Greeks in old time Axenos, for the hard usage that passengers found at the hands of those savage nations upon the coasts thereof, is spread also between Europe & Asia, upon a very spite and speciall envie of Nature, as it should seeme, unto the Earth, and a wilfull desire to maintaine still the Sea in his greatnesse, and to fulfill his greedie and endles appetite. For contented she was not to have environed the whole earth with the maine Ocean, yea and taken from it a great part thereof, with exceeding rage overflowing the same, and laying all emptie and naked: it sufficed not, I say, to have broken through the mountaines, and so to rush in, and after the sea had dismembred * Caspe from Affricke, to have

A have swallowed up much more by farre than is left behind to be scene: no nor to have let Pro-
pontis gush through Hellepont, and so to encroach againe upon the earth and gaine more
ground: unlesse from the streights of Bosphorus also he enlarge himselfe into another huge and
vast sea, and yet is never content, untill the lake Mœotis also with his streight, meet with him as
he thus spreadeth abroad and floweth at libertie, and so joine together and part as it were, their
stolne good betweene them. And verily that all this is happened maugre the earth, and that it
made all resistance that it could, appeareth evidently by so many streights and narrow passages
lying betweene these two elements of so contrarie nature (considering that in Hellepont, the
space is not above 875 paces from land to land: and at the two Bosphori the sea is so passeable,
that oxen or kine may swim at ease from the one side to the other: and hereupon they both took
B their name:) the which vicinitie serveth very well to entertaine and nourish amitie among na-
tions, separated by nature one from another: and in this disunion as it were, appeareth yet a bro-
therly fellowship and unitie. For the cocks may be heard to crow, and the dogges to barke, from
the one side to the other: yea and men out of these two worlds may parly one to another with au-
dible voice, and have commerce of speech together, if the weather be calme, and that the winds
doe not carrie away the sound thereof.

Well, the measure some have taken of the sea, from Bosphorus Thracius unto the lake of
Mœotis, and have accounted it to be 1438 miles and a halfe. But *Eratoſthenes* reckoneth it lesse
by one hundred. *Agrippa* saith, that from Chalcedon to Phasis, it is a thousand miles, and so to
Bosphorus Cimmerius 360 miles. As for us, wee will set downe summarily and in generall, the
C distances of places, according to the moderne knowledge of our nation in these daies, for as
much as our armies have warred in the verie streight and mouth of this Cimmerian streight.

Being passed then from the streight of Bosphorus Thracius, we meet with the river Rhebas,
which some have called Rhœsus: and beyond it, Pfillis another river: then, come we to the port
of Calpas, and Sangarius one of the principall rivers of Asia: it ariseth in Phrygia: it receiveth
other huge rivers into it, and among the rest Tembrogius and Gallus. The same Sangarius, was
called also Coralius. After this river, begin the gulfes Mariandini, upon which is to be scene the
towne Heraclea, situate upon the river Lycus. It is from the mouth of Pontus 200 miles. Beyond
it is the port Acone, cursed for the venomous hearb and poisonous Aconitum, which taketh
name thereof. Also the hole or cave Acherusia, Rivers also there be, Pedopiles, Callichorum,
D and Sonantes. One towne, Tium, eight and thirtie miles from Heraclea: and last of all, the
river Bilis.

CHAP. II.

☞ *The nation of the Paphlagonians, and Cappadocians.*

Beyond this river Bilis, is the countrey Paphlagonia, which some have named Pylæmerina;
and it is enclosed with Galatia behind it. The first towne yee meet in it, is Mastya, built by
the Milesians: and next to it, is Cromna. In this quarter the Heneti inhabite, as *Cornelius*
Nepos saith. Moreover, from whence the Venetians in Italie, who beare their name, are descen-
ded, as he would have us beleeve. Neere to the said towne Cromna, is another called Sefamum
E in times past, and now Amastris. Also the mountaine Cytorus, 64 miles from Tium. When you
are gone past this mountaine, you shall come to Cimolus and Stephane, two townes, and like-
wise to the river Parthenius: and so forward to the cape or promontorie Corambis, which rea-
cheth forth a mightie way into the sea: and it is from the mouth of the sea Pontus 315 miles, or
as others rather thinke, 350. As farre also it is from the streight Cimmerius, or as some would
rather have it, 312 miles and an halfe. A towne there was also in times past of that name: and
another likewise beyond it called Arminum: but now, there is to be scene the colonie Sinope,
164 miles from Citorum. Being past it, you fall upon the river Varetum, the people of Cappa-
docia, the townes Gazima, and Gazelum, and the river Halyto, which issuing out of the foot of
F the hill Taurus, passeth through Cataonia and Cappadocia. Then meet you with these townes
following, Gangre, Carissa, and the free citie Amisum, which is from Sinope 130 miles. As you
travell farther, you shall see a gulfes carrying the name of the said towne, where the sea runneth so
farre within the land, that it seemeth to make Asia well-neere an Iland: for from thence to the
gulfes Issicus in Cilicia, is not above 200 miles through the continent. In all which tract, there be

no more than three nations which justly and by good right, may be called Greekes, to wit, the Dorians, Ionians, and Æolians: for all the rest are reputed barbarous. Vnto Amisum, there joyned the towne Eupatoria, founded by *K. Mithridates*: and after that he was vanquished, both together tooke the name of Pompeiopolis.

CHAP. III.

⌘ *Cappadocia.*

IN Cappadocia, there is a cittie well within the land, called Archelais, situate upon the river Halys: which *Claudius Cesar* the Emperour erected as a colonie, and peopled it with Roman soldiers. There is besides a towne which the river Sarus runneth under: also Neo-cæsarea, which Lycus passeth by: and Amasia, with the river Iris runing under it, within the country Gazacena. Moreover, in the quarter called Colopena, there stand Sebastia and Sebastopolis, little townes indeed, howbeit comparable with those abovesaid. In the other part of Cappadocia, there is the cittie Melita, built by queene *Semiramis*, not farre from Euphrates: also, Dio-Cæsarea, Tyana, Castabala, Magnopolis, Zela: and under the mountaine Argæus, Mazaca, which now is named Cæsarea. That part of Cappadocia which lieth before Armenia the greater, is called Melitene: that which bordereth upon Comagene, Cataonia: upon Phrygia, Garsauritis: upon Sargaurasana, Cammaneum: and finally upon Galatia, Morimene. And there the river Cappadox seperateth the one from the other. Of this river the Cappadocians took name, whereas beforetime they were called Leucosyri. As for the lesse Armenia, the river Lycus devideth it from Neo-Cæsarea abovesaid. Within the countrey there runneth also the great river Ceraunus. But on the coast side, when you are past the cittie Amysum, you meet with the towne Lycastum, and the river Chadisia: and once past them, you enter into the countrey Themiscyra. In this quarter also you may see the river Iris, bringing downe with it another river Lycus that runneth into it. And in the midland parts there is the citie Ziela, ennobled for the overthrow of *Triarius*, whom *C. Cesar* defeated with his whole armie. But in the coast againe you shall encounter the river Thermodon, which issueth from before a castle named Phanarœa, and passeth beside the foot of the mountaine Amazonius. In which place there stood sometime a towne of that name, and other five, namely, Phamizonium, Themiscyra, Sotira, Amasia, Comana, at this present called Manteium.

CHAP. IIII.

⌘ *The people of the region Themiscyrene.*

Moreover, in Pontus ye have the nations of the Generæ and the Chalybes, together with a towne of Cotyi. People besides called Tibareni, and Mossyni, who brand and marke their bodie with hore searing yrons. Also the nation of the Macrocephali, with the towne Cerasus, and the port Cordulæ. Beyond which you come to a people named Bechires, and Buzeri, and to the river Melas. And so forward to the quarter of the Macrones, Sideni, and so to the river Sydenum, upon which is situate the towne Polemonium, distant from Amisum 220 myles: where yee shall find the rivers Iasonius and Melanthius: and a towne 80 miles from Amisum, called Pharnacea: the castle and river of Tripolis. Item, Philocalia and Liviopolis without a river: and lastly the imperiall and free cittie Trapezus, environned with an high mountaine, 100 miles from Pharnacea. And being past Trapezus, you enter into the countrey of the Armenochalybes, and Armenia the greater: which are 30 myles asunder. But upon the coast you shall see the river Pyxites that runneth even before Trapezus: and beyond it the countrey of the Sanni Heniochi. Moreover, the river Abfarus, in the mouth whereof there is a castle likewise so named, from Trapezus 150 miles. Behind the mountains of that quarter, you meet with the region Iberia: but in the coast thereof the Heniochi, Ampreutæ and Lazi. The rivers Campseonytis, Nogrus, Bathys. When yee are once past them, you come into the countrey of the Colchians, where standeth the towne Matium, with the river Heracleum passing under it, and a Promontorie of that name, and last of all, the most renowned river of all Pontus, called Phasis. This river riseth from out of the Moschian mountaines, and for 38 miles and an halfe, is navigable, and beareth any great vessels whatsoever. And then for a great way it carrieth smaller bottomes, and hath over it

A 120 bridges. Beautified it was sometimes with many faire townes upon the bankes thereof on both sides, and the principall of them all, were Tyritum, Cygnus, and the cittie Phasis situate in the very mouth thereof, as it falleth into the sea. But the goodliest cittie planted upon this river, and most famous of all the rest was *Æa*, fiftene myles distant from the sea: where Hippos and Cyanos, two mightie great rivers, comming from divers parts, enter both into the river Phasis. But now there is no count made of any but of Surium onely, which taketh name of the river Sutium which runneth to it. And thus farre wee said that Phasis was capable of great ships. Among other rivers which it receiveth, for number and greatnesse admirable, is the river Glau-cus. In the fosse and mouth of this river Phasis, where hee is discharged into the sea, there bee some little Islands of no reckoning. And there, from Bfarus it is 75 miles. Being past Phasis, you meet with another river called *Chârien*: upon which bordereth the nation of the *Salæ*, named in old time *Phthirophagi* and *Suani*, where you shall meet with the river *Cobus*, which issueth out of *Caucasus*, and runneth through the countrey of the *Suani* abovesaid. Then you come to another river *Rhoas*, and so forward to the region *Ecretice*: to the rivers *Sigania*, *Terfos*, *Atel-pos*, *Chrysorhoas*, and the people *Abfilæ*: the castle *Sebastopolis*, a hundred miles from *Pha-sis*, the nation of the *Sanigores*, the towne *Cygnus*, the river and towne both called *Pityus*. And last of all yee arrive upon the countrey of the *Heniochæ*, where be nations entituled with many and fundrie names.

CHAP. V.

¶ *The region of Colchis, the Achæi, and other nations in that tract.*

NEXT followeth the region of *Colchis*, which is likewise in *Pontus*: wherein the mountaine *Caucasus* wind & turn toward the *Rhiphæan* hills, as hath ben said before, and that moun-taine of the one side bendeth downe toward *Euxinus*, *Pontus*, and *Mæotis*; and of the o-ther, enclineth to the *Caspian* and *Hircane* seas. When ye are descended to the maritime coasts, yee shall find many barbarous and savage nations there inhabiting, to wit, the *Melanchlæni*, and the *Choruxi*, where sometimes stood *Dioscurias* a cittie of the *Cholchians*, neere unto the ri-ver *Anthemus*, which nowlieth wast and dispeopled, notwithstanding it was so renowned in times past, that by the report of *Timosthenes*, there repaired thither and inhabited therein 300 nations of diverse languages. And even afterwards our Romanes were forced to provide themselves of 130 interpreters, when they would negotiate and trafficke with the people in and about *Dioscurias*. Some there be that thinke how it was first founded by *Amphius* and *Telchius*, who had the charge of the chariots of *Castor* and *Pollux*: for certain it is, that the fierce and wild nation of the *Heniochi*, are from them descended. Being passed *Dioscurias*, you come up the towne *Heraclium*, which from *Sebastopolis* is 80 miles distant: and so forward to the *Achæi*, *Mardi*, and *Cercetæ*: and after them to the *Serri*, and *Cephalotomi*. Far within that tract stood the most rich and wealthie towne *Pitius*, which by the *Heniochians* was ransacked and spoiled. On the backe part thereof inhabite the *Epagerites* [a nation of the *Sarmatians*] even upon the mountaine *Caucasus*: and on the other side of that hill, the *Sauromatæ* (the countrey is at this day called *Tartaria* the great.) Hither retired and fled king *Mitbridates* in the time of *Claudius Cesar* the Emperor: who made report, that the *Thali* dwell thereby, and confine Eastward upon the very opening of the *Caspian* sea: which by his report remaineth drie, whensoever the sea doth ebbe. But now to returne to the coast neere unto the *Cercetæ*, you meet with the river *Ica-rusa*, with a towne and river called *Hierum*, 136 miles from *Heraclium*. Then come yee to the cape *Cronea*, in the very ridge and high pitch whereof the *Toretæ* inhabite. But beneath it you may see the cittie *Sindica*, 67 miles situate from *Hierum*: and last of all, you arrive upon the ri-ver *Sceaceriges*.

CHAP. VI.

¶ *Mæotis, and the streights thereof called Bosphorus Cimmerius.*

FROM the said river to the very entrance of the *Cimmerian Bosphorus* are counted 88 miles and an halfe. But the length of the very demie Island, which extendeth and stretcheth out between *Pontus* and *Mæotis*, is not above 87 miles and a halfe, and the breadth in no place lesse

lesse than two acres of land. This the paissants of that countrey doe call Eione. The very coasts of this streight Bosphorus, both of Asia side and Europa, boweth and windeth like a curb to Mœotis. As touching the townes here planted, in the very first entrie thereof standeth Hermonassa, and then Cepi, founded by the Milesians. Being past Cepi, you come soone after to Stratilia, Phanagoria, and Apaturos, in manner unpeopled and void: and last of all, in the verie utmost point of the mouth where it falleth into the sea, you arrive at the towne Cimmerius, named beforetime Cerberian.

CHAP. VII.

Nations about Mœotis.

BEING passed Cimmerium, you come to the very broad lake Mœotis, whereof we spake before in the Geographic of Europe. Vpon the coast whereof, beyond Cimmerium on the side of Asia, inhabite the Mœotici, Vari, Serbi, Archi, Zingi, and Psefij. After this, you come to the great river Tanais, which runneth into Mœotis with two armes or branches: and on the sides of it dwell the Sarmatians, an offspring descended in old time (as men say) from the Medians: but so multiplied now, that they themselves are divided and dispersed into many nations. And first of all are the Sauromatæ, surnamed Gynæcocatpumeni, i. (as one would say) subject to women: from whence the Amazons are provided and furnished of men to serve their turne in stead of husbands. Next to them, are the Euazæ, Cottæ, Cicimeni, Messeniani, Costobocci, Choatræ, Zigæ, Dandari, Thuslageræ, and Turcæ, even as farre as the wildernesses, Forrests, chafes, and rough vaileys. But beyond them are the Arnuphæi, who confine upon the mountaine Rhiphæi. As for the river Tanais, the Scithians call it Silys: and Mœotis, they name Temerinda, that is to say, the mother of the sea, or rather, the seas end. In auncient time there stood a great town upon the very mouth of Tanais, where it falleth into the sea. As for the neighbour borders of this sea, inhabited they were sometime by the Lares: afterwards, by the Clazomenij and Mœones: and in processe of time, by the Panticapenses. Some Authours write, that about Mœotis toward the higher mountaines Ceraunij, these nations following doe inhabite, to wit, first upon the very coast and sea side, the Nupææ: and above them, the Eßedones, joyning upon the Colchi, and the high mountaines [Corax.] After them, the Carmaces, the Oranes, Anticæ, Mazacæ, Ascantici, Acapæates, Agagaminatæ, Phycari, Rhimosoli, and Ascomarci. Moreover, upon the hill Caucasus, the Icatales, Imaduches, Ranes, Anclaks, Tydiens, Charastafci, and Aficiandes. Moreover, along the river Lagous, issuing out of the mountains Cathei, and into which Opharus runneth, these nations ensuing doe dwell, to wit, the Caucadians, and the Opharites: beyond whome, runneth the rivers Menotharus, and Imitues, out of the mountaines Cissij, which passeth through the Agedi, Carnapes, Gardei, Accisi, Gabri, and Gregari: and about the source or spring of this river Imitues, the people Imitui and Apartheni. Others say, that the Sures, Auchenetes, Satarnei, and Asampates, invaded and conquered these parts; and that the Tanaites and Nepheonites, were by them put to the edge of the sword, and not one person of them spared. Some write, that the river Opharius runneth through the Cantecci, and the Sapæi: and that the river Tanais traversed sometime through the Phatareans, Herricei, Spondolici, Synthictæ, Amassi, Issi, Catareti, Tagori, Catoni, Neripi, Agandei, Mandareci, Saturchei, and Spalci.

CHAP. VIII.

Cappadocia.

HERETO have we treated and gone through the nations and the inhabitants of the coasts upon the Mediteranean sea. Now are wee to speake of the people inhabiting the verie midland parts of the maine within: wherein I protest, and denie not, but that I will deliver many things otherwise than the auncient Geographers have set downe: forasmuch as I have made diligent search into the state of those regions, as well by enquire of *Domitius Corbulo* (who lately went with an armie through those quarters) as of divers kings and princes, who made repaire to Rome with suites and supplications, but especially of those kings sonnes that were left as hostages in Rome. And first to begin with the nation of the Cappadocians. This is a country that

A that of all others which bound upon Pontus, reacheth farthest within the firme land: for on the left hand it passeth by both Armenias, the greater and the lesse, and Comagene: and on the right, all those nations in Asia before-named: confining many others: and still prevailing with great might, growing on and climbing Eastward up to the mountaine Taurus, it passeth beyond Lycaonia, Pisidia, and Cilicia: and with that quarter which is called Caronia, pierceth above the tract of Antiochia, and reacheth as far as to the region Cyrrestica, which lyeth well within that countrey. And therefore the length of Asia there, may containe 1250 miles, and the breadth 640.

CHAP. IX.

§ Armenia the greater and the lesse.

THe greater Armenia, beginning at the mountaines Pariedri, is divided from Cappadocia by the river Euphrates, as hath been said before: and where the river Euphrates beginneth to turne his course from Mesopotamia, by the river Tigris as renowned as the other. Both these rivers is it furnished withall, which is the cause that it taketh the name of Mesopotamia, as being situate betweene them both. The maine land which lyeth betweene, is possessed by the mountaines of Arabia called Orei: howbeit, it extendeth untill it confine upon Adiabene. Being past it once, it is hemmed in with mountaines that encounter it overthwart, which cause it to enlarge it selfe into a breadth on the left hand, as far as to the river Cyrus: and then it turneth ever crosse, untill it meet with the river Araxes: but it carrieth his length into the lesse Armenia, confining still upon the river Abfarus, which falleth into the Ponticke sea: and the mountaines Pariedri (from which the said river issueth) which divide it from the lesse Armenia. As for the river Cyrus, it springeth in the mountaines Heniochij, which some have called Coraxici. But Araxes issueth out of the same mountaine from whence Euphrates commeth, and there is not above fixe miles space betweene them both. This river Araxes is augmented with the river Musis; and then himselfe looseth also his name, and as most have thought, is carried by the river Cyrus into the Caspian sea. As for the townes of name in the lesse Armenia, they be these, Cæsarea, Asa, and Nicopolis. In the greater, yee have Arfamole, fast upon the river Euphrates: likewise Carathiocerta, situate upon Tigris. In the higher countrey, is the citie Tigranocerta, built in the plaine beneath, neere unto Araxes, Artaxata. *Aufidius* saith, that both the Armeniae containe in all 500 miles. *Claudius Caesar* reporteth, that in length from Dascusa, to the confines of the Caspian sea, it taketh 1300 miles, and in breadth halfe so much, to wit from Tigranocerta to Iberia. This is well knowne, that divided it is into certaine regiments, which they call Strategians; and yet some of them in old time, were as large each of them as realmes and kingdomes: and to the number they were of 120, but such barbarous names they had, that they cannot well be set downe in writing. Enclosed it is Eastward with the mountaines, but neither the hills Caranij, nor yet the region Adiabene, doe presently and immediatly confine thereupon: for countrey of the Sopeni lyeth betweene: then you come to the mountaines aforesaid; and being past them, you enter into the countrey of the Adiabenes. But on that coast where the plaines lye and the flat valleys, the next neighbours to Armenia, be the Menobardi and Moscheni. As for Adiabene, environed it is partly with the river Tigris, and partly compassed with unaccessible steepe mountaines. On the left hand, it confineth upon the Medians, and hath a prospect to the Caspian sea, the which commeth out of the Ocean (as we shall shew in meet and convenient place) and is enclosed wholly within the mountaines of Caucasus. As for the nations there inhabiting along the marches and confines of Armenia, now will we speake of them.

CHAP. X.

§ Albania, and Iberia.

ALL the plaine countrey betweene Armenia and the river Cyrus, the Albanois of Asia do inhabit. Beeing past it, you enter anon into the Iberians region, who are separated from the Albanois aforesaid by the river Alazon, which runneth downe from the Caucasian hills into Cyrus. The towns of importance, in Albania, is Cabalaca; in Iberia, Harmastis, neere to the river Neoris: beyond which, is the region Thasie, and Triare, as farre as to the mountaines

The sixth Booke of

taines Partedori. And when you are past them, you enter into the deserts of Cholchis: and on the side of them which lyeth toward the Ceraunij, the Armenochalybes do inhabite: and so forward you come into the tract and marches of the Moschi, which extend to the river Iberus, that runneth into Cyrus. Beneath them, inhabite the Sacassani, and beyond them the Macroniens, who reach even to the river Absarus. Thus you see how the plaines and the hanging of the hills in these parts, are inhabited. Againe, from the marches and frontiers of Albania, all the forefront of the hills is taken up and possessed by the savage people of the Sylvi; and beneath them, of the Lubienes, and so forward by the Didurians, and Sodij.

CHAP. XI.

§ The gates and passages of the mountaine Caucasus.

WHEN ye are beyond the Sodij, you come to the streights of the hill Caucasus, which many have erroneously called Caspiæ Portæ. And certes, Nature hath performed a mightie peece of worke, in cleaving asunder at one instant those mountaines, where the gates were barred up as it were with iron portcullises, whiles under the mids thereof, the river Dyriodorus runneth: and on this side of it, standeth a strong fort and castle called Cumania, situate upon a rock, able to impeach an armie never so puissant and innumerable that would passe thereby; in such sort, as in this place by meanes of these bar-gates, one part of the world is excluded from the other: and namely most of all they seeme to be set opposite as a rampart against Harmastis a towne of Iberia. But being passed these said gates, you come to the mountaines Gordyei, where the Valli and Suarni, barbarous and savage nations, are employed onely in the mines of gold. Beyond them as farre as to the Ponticke sea, you enter into the country of the Heniochi, whereof be many sorts: and soone after, to the Achei. And thus much as touching this tract of the sea Ponticke, and of the most renowned gulfes of all others. Some have set downe in writing, that betweene Pontus and the Caspian sea, it is not above 375 miles. *Cornelius Nepos* saith it is but 150. See into what great streights between both seas Asia is driven again, and as it were thronged. *Claudius Cesar* hath reported, that from Cimmerius Bosphorus unto the Caspian sea, it is 150 miles, and that *Seleucus Nicator* purposed if he had lived, to cut the land through from the one side to the other: but in this purpose of his, himselfe was cut short and flaine by *Ptolomeus Ceraunus*. To conclude, it is in manner held for certein, that from those gates of Caucasus unto the Ponticke sea, it is 200 miles and no lesse.

CHAP. XII.

§ The Islands in the Ponticke sea.

In the Ponticke sea, lye the Islands Planctæ, otherwise Cyaneæ or Symplegades. Then Apollonia, named also Thynnias, for distinction sake from that other so named in Europe: it is from the continent one mile, and is in circuit three. Just over-against Pharnacea, is the Isle Chalceritis, which the Greekes called Aria, consecrated as it were to Mars; wherein they say the foules that are, used to fight and flutter with their wings against all other birds that come thither.

CHAP. XIII.

§ The regions and people confining upon the Scythian Ocean.

HAVING thus sufficiently discoursed of all the countries within the firme land of Asia, let us now determine to passe over the Rhiphæan hilles, and discover the coasts of the Ocean which lye on the right hand of those hills. Wherein we have to consider, that Asia is dashed and beaten upon by this maine sea on three parts: to wit, on the North side, and there it is called Scythicus: on the East, where they call it Eous: and last from the South, and there they name it Indicus. And according to the sundrie gulfes and creekes that it maketh, and the inhabitants by whom it passeth, many names it taketh. Howbeit, a great part of Asia toward the North, lyeth desert, and hath in it much wildernesse inhabitable, by reason of the extreme cold of that frozen climate, so subject to the Pole Arcticke. But being once past the utmost quarter of the

A the North point, and came to the Northeast where the sunne ariseth at midsummer, then you come to the Scythians. Beyond whome, and the very point of the North pole and the wind from thence, some have placed the Hyperborei; of whome we have spoken at large in the treatise of Europe. On this side the Hyperborei, the first cape or promontorie that you meet withall in the countrey Celtica, is named Lyarmis: and then you come into the river Caramanicus, where, by the forcible influence of the starres, the high mountaines Rhiphaea, as being wearied, begin to settle and abase themselves lower. At the fall and descent of which mountaines, I have heard say, that certaine people named Arnuphaea inhabited: a nation not much unlike in their manner of life to the Hyperboreans. They have their habitations in Forrests: their feeding is upon berries of trees: shorne they be all and shaven, for both women and men count it a shame to have haire on their heads: otherwise they are civile enough in their conversation and behavior: and therefore, by report, they are held for a sacred people and inviolable, in so much as those cruell nations and inhumane that border upon them, will offer them no abuse; neither do they respect them onely, but also in regard and honour of them, they forbear those also that flie unto them as to a place of franchise and priviledge. Goe beyond them once, you come among the *Scythians indeed, the Cimmerij, Cicianthi, Georgi, and the nation of the Amazons, and these confront the Caspian or Hircan sea: for it breaketh forth of the deep Scithian Ocean, toward the back parts of Asia, and taketh divers names of the inhabitants coasting upon it, but especially above all other of the Caspians and Hircaneans. *Clitarchus* is of this opinion, that this sea is full as great and large as Pontus Euxinus. And *Eratosthenes* setteth down the very meature and purpise thereof: namely, from East to South along the coast of Cadusia and Albania, 5,400 stadia: from thence by the Aratiatics, Amarbi, and Hircanij, to the mouth of the river Zolun, 4800 stadia: from it to the mouth of Iaxartes where it falleth into the sea, 2,400 stadia: which being put together amount in all to 1575 miles. *Artemidorus* counteth lesse by 25 miles. *Agrippa* in bounding out and limiting the circuit of the Caspian sea, and the regions coasting upon it, together with them Armenia both the greater and the lesse, namely Eastward with the Ocean of the Seres, Westward with the mountains of Caucasus, on the South side with the hill Taurus, and finally on the North with the Scithian Ocean, hath written, That the whole precinct and compasse of these parts may contain in length [so far as is known and discovered of those countries] 590 miles, and 290 in breadth. Yet for all this, there want not others who say, That the whole circuit of that sea, and begin at the very mouth and firth thereof, ariseth to 2500 miles. As for this mouth aforesaid where it breaketh into the sea, it is very narrow, but exceeding long: howbeit when it beginneth once to enlarge it selfe and grow wide, it turneth and fetcheth a compasse with horned points like to a quarter moon, and after the manner of a Scithian bow, as *M. Varro* saith, it windeth along from his mouth toward the lake Mæotis. The first gulfe that it maketh, is called Scythicus; for the Scithians inhabit on both sides, and by the meanes of the narrow streight betweene, have commerce and trafficke one with another: for of the one side are the Nomades and Sauromate, comprising under them many other nations of sundry names: and on the other, the Abzoæ, who have no fewer states under them. At the very entry of this sea on the right hand, the Vdines, a people of the Scithians, dwell upon the very point of this mouth: and then along the coast, the Albanois, a nation descended (as men say) from *Iafon*; where the sea lying before them is called Albanum. This nation is spread also upon the mountaines of Caucasus, and so along downe the hills as far as to the river Cyrus, which confineth the marches betweene Armenia and Iberia, as hath been said. Above the maritime coasts of Albania and the Vdines country, the Sarmatians, called Vtidorsij, and Arotères, are planted: and behind them, the Amazons, whome we have alreadye shewed; who also are women Sauromatians. The rivers of Albanie which fall into the sea, are Cassios and Albanos: and then Cambises, which hath his head in the Caucasian mountains: and soon after Cyrus, which ariseth out of the hills Corax, as before is said. Moreover *Agrippa* writeth, that this whole coast of Albanie (fortified with those high and inaccessible mountains of Caucasus) containeth 425 miles. Now when you are past the river Cyrus, the Caspian sea beginneth to take that name, for that the Caspians do inhabite the coast thereof. And here the error of many is to be laid open and corrected, even of those also who were in the last voyage with *Corbulo* in Armenia with the Romane armie: for they tooke it, that those gates of Caucasus whereof wee spake before, were the Caspian gates, and so called them: and the verie mappes and descriptions which are painted and sent from thence, beare that name and title.

* At this day, the Moscovites, white & black Russians, Georgians, Amazons, & the lesse Tartarie.

Likewise the menacing commaundements, and threatning commissions sent out by *Nero* the Emperour for to gaine and conquer those gates, which through Iberia lead into Sarmatia, made mention of the gates Caspia there, which had in a manner no passage at all to the Caspian sea, by reason that the mountaine Caucasus empeached it. Howbeit in very truth, there be other gates so called, which joyn upon the Caspian nations, which we had never known from the other, but by relation of those that accompanied *Alexander* the Great in his voyage and expedition to those parts. For the realme and kingdome of the Persians, which at this day wee take that the Parthians hold, lyeth aloft betweene the Persian and Hircane seas upon the mountaines of Caucasus, in the very hanging and descent thereof, on both sides confining upon Armenia the greater: and on that part which lyeth to Comagene, confronteth and joyneth (as we have said) upon Sephenia: and upon it againe bordereth Adiabene, where the realme of the Assyrians doth begin: whereof Arbelitis, which boundeth next upon Syria, taketh up a good part: which is the country wherein *Alexander* the Great discomfited and vanquished *Darius*. All this tract, the Macedonians who entred with *Alexander*, surnamed Mygdonia, for the resemblance of that in Greece from which they came. Townes of name there be in it, Alexandria, and Antiochia, which they call Nisbis: and from Artaxata it is 750 miles. There was also another cittie called Ninus or Ninive, seated upon the river Tygris, which regarded the West, which in times past was highly renowned. But on the other side, where it lieth toward the Caspian sea, lyeth the region Atropatene, separated by the river Araxes, from Otene in Armenia: wherein is the citie Gazæ, 450 miles from Artaxata: and as many from Ecbatana in Media, whereon some part the Atropatenes doe hold.

CHAP. XIII.

¶ *Media, and the gates Caspia.*

AS for Ecbatana the head citie of Media, *Seleucus* the king founded it: and it is from Seseucia the great 750 miles: and from the Caspian gates 20. The other great townes of importance in Media, be Phausia, Agamzua, and Apamia, named also Rhaphane. And as for the streights there, called the Caspian gates, the same reason is there of that name, as of the other by Caucasus; by reason that the mountaine is cloven and broken through, and hath so narrow a lane, that hardly a waine or cart is able to passe by it, and that for the length of 8 miles: all done by the picke-axe and mans hand. The rockes and clifses that hang over on the one side and the other, be like as if they were scorched and halfe burnt: so dry and thirstie is all that tract, and without fresh water for 38 miles space: for all the liquor and moisture issuing out of those craggie rockes, runneth through it, which letteth the passage and causeth folke to avoid that way. Besides, such a number of serpents doe there haunt, that no man dare passe that way but in winter onely.

CHAP. XV.

¶ *Nations about the Hircane sea.*

VNTO Adiabene, joyneth the country of the Carduchi, so called in times past, and now Cordueni, by which the river Tigris runneth: and upon them the Pratitæ doe confine, called also Paredoni, who keepe the hold of the Caspian gates aforesaid. On the other side of whom, you shall meet with the deserts of Parthia, and the mountaine Cithenus: but being passed that once, you come streight into the most pleasant and beautifull tract of the same Parthia, called Choara: and there, stand two citties of the Parthians, built sometimes as forts opposite against the Medians: namely, Calliope and Issatis, situate in times past upon another rocke. As for the capitall cittie of all Parthia, Hecatompylos, it is from the Caspian gates aforesaid 133 miles. Thus you see how the kingdome of the Parthians also is limited and separated by these mountaines and streights. When a man is once gotten forth of these gates, presently he entred upon the Caspians country, which reacheth as farre as to the sea side, and gave the name as well to it as to the gates aforesaid. Howbeit all the region upon the left hand is ful of mountains: from whence backward to the river Cyrus, are by report 220 miles, but from that river if you would goe higher up to those gates, you shall find it 700 miles. And in very truth from this place began *Alexander* to make the account and reckoning of his journies, in that voyage of his to India,

A India, saying, that from those gates to the entrance of India, it was 15680 stadia: from thence to the citie Bacha, which they call Zariaspa 3700, and so to the river Iaxartes 5 miles.

CHAP. XVI.

¶ Other nations also.

FROM the Caspians countrey Eastward, lieth the region called Zapanortene, & in it the land Daricum, the most fertile tract of all those parts. Then come you to the Tapyrians, Anariaci, Stauri and Hircani, at whose coasts the same sea beginneth to take the name Hircanum, even from the river Syderis. About it are other rivers, to wit, Mazeras and Stratos, all issuing out of Caucasus. Out of the realme of Hircania, you enter into the countrey Margiana, to commendable for the warme Sunne shine weather there, and the onely place in all that quarter which yeeldeth vines. Environned it is on every side with goodly pleasant hills to the cie, for the compasse of 1500 stadia. Fortified it is besides, and affourdeth hard acceffe unto it by reason of the sandie and barren desarts for the space of 120 myles. And situate it is even against the tract of Parthia, wherein *Alexander* the great sometime had built Alexandria, which being rased and destroyed by the Barbarians, *Antiochus* the son of *Seleucus* reedified in the same place upon the river Margus, which runneth through it, together with another river Zocale, and it was called *Syriana*. Howbeit, he desired rather that it should be named Antiochia. This citie containeth in circuit 70 stadia: and into it, *Orodes* after that hee had defeated *Crassus* and his host, brought

*Or rather Seleucia.

C all the Romanes whom he had taken prisoners. Being past the high countrey Margiana, you come to the region of the Mardi, a fierce & savage people, subject unto none, they inhabit the mountaine Caucasus, and reach as farre as to the Bactrians. Beyond that tract are these nations, the Ochanes, Chomares, Berdrigei, Hermatotrophi, Bomarci, Commani, Marucari, Mandrueni and Iatij. The rivers also, Mandrus and Gridinus. Beyond inhabit the Chorasmij, Gandari, Attasini, Paricani, Sarangæ, Parrasini, Maratiani, Nasotiani, Aorfi, Gelæ, whom the Greekes called Cadusij, and the Matiani. Moreover, in it stood the great towne Heraclea, built by *Alexander* the great, which afterwards was subverted and overthrowne: but when it was repaired againe by *Antiochus*, he named it Achais. Beneath in the countrey, the Derbines do inhabit, through whose marches in the very midst, runneth the river Oxus, which hath his beginning out of a lake called Oxus. Beyond them are the Syrmatae, Oxij, Tagæ, Heniochi, Bateni, Saraparae, and Bactrians, with their towne Zariaspe, called afterwards Bactrum, of the river Bactra. This nation inhabiteth the backe parts of the hill Paropamisus, over against the source and spring of the river Indus, and is environned with the river Ochus. Beyond the Bactrianes are the Sogdianes, and Pauda the principall cittie of that countrey. In the very utmost marches of their territorie standeth the towne Alexandria built by *Alexander* the great, wherein are to be seene the Altars and Columns, erected by *Hercules*, prince *Bacchus*, *Cyrus*, *Semiramis*, and *Alexander*: supposed and taken to be the very end of all their voiajes in that part of the world, resting within the river Iaxartes, which the Scythians call Silys. For *Alexander* and his souldiours thought it had bene Tanaïs. Howbeit, captaine *Demonax*, who served under the kings *Seleucus* and *Antiochus*, passed over that river with an armie, and at the end of his voiage set up altars unto *Apollō Didymus*. And this *Demonax* wee follow, especially in this description and Geographic of ours.

CHAP. XVII.

¶ The Scythian nation.

Beyond the realme Sogdiana, inhabit the nations of the Scythians. The Persians were wont to call them in generall Sacas, of a people adjoining unto them, so named. In old time they were known by the name of Arameans. And on the other side, the Scythians for their part used to tearme the Persians, Chorfari: and the hill Caucasus, they called Graucasus, that is to say, white with snow. The principall nations of Scythia, bee the Saræ, Massagetæ, Dahæ, Eshedones, Ariacæ, Rhymnici, Pefici, Amordi, Histi, Edones, Camæ, Camacæ, Eucharæ, Cotieri, Antariani, Pitalæ, Arimaspi beforetime called Cacidiri, Asæi and Oetei. As for the Napæans & Apellæans who sometime dwelt there, they be utterly extinct and gone. The rivers there of name bee Mandagræus and Caspafius. And surely there is not a region wherein Geographers doe varie

and disagree more than in this: and as I take it, this commeth of the infinite number of those nations, wandering to and fro, and abiding never in one place. *Alexander* the great and *M. Varro* make report, that the water of the Scythian sea is fresh in tast, and potable. And in truth *Pompey* the great had such water brought unto him from thence to drinke, when he waged warre thereby against *Mitridates*: by reason no doubt of the great rivers that fall into it, which overcome the saltnesse of the water. *Varro* saith moreover, That during this expedition and journie of *Pompeius*, it was for certaine knowne, that it is but seven daies journey from out of India to the *Bactrians* countrey, even as farre as to the river *Icarus* which runneth into *Oxus*: and that the merchandise of India, transported by the *Caspian* sea, and so to the river *Cyrus*, may bee brought in five daies by land as farre as to *Phasis* in *Pontus*. Many Islands there lie all over that sea: but one above the rest, and most renowned, is *Tazata*: for thither all the shipping from out of the *Caspian* sea and the *Scythian* Ocean, doe bend their course and there arrive: for that all the sea coasts doe affront the *Levant*, and turne into the East. The frontiers of *Scythia* from the first cape thereof, is uninhabitable by reason of the snow that lieth continually: neither are the next regions thereto frequented and tilled, for the barbarous crueltie of those nations that border upon it: such as the *Anthrophagi*, who live of mans flesh, and haunt those parts. Hereupon it commeth, that you shall find nothing there but huge desert Forrests, with a number of wild beasts, lying in wait for men as savage as themselves. When you are past this region, you enter againe among the *Scythians*, where you shall find likewise a wildernesse full of wild beasts, even as far as to the promontorie and mountaine called *Tabis*, which regardeth the sea. In such sort as one moietie in manner of that coast, all along which looketh toward the East, lieth wast, and is not inhabited. The first people of any knowledge and acquaintaunce, be the *Seres*, famous for the fine silke that their woods doe yeeld. They kembe from the leaves of their trees the hoarie downe thereof, and when it is steeped in water, they card and spin it, yea, and after their manner make thereof a sey or web, wherupon the dames here with us have a double labor both of undoing, and also of weaving againe this kind of yearne. See what adoe there is about it, what labour and toile it costeth, and how farre set it is: and all for this, that our ladies and wives when they goe abroad in the street may cast a lustre from them, and shine againe in their silkes and velvets. As for the *Seres*, a mild and gentle kind of people they are by nature: howbeit, in this one point they resemble the bruit and wild beasts, for that they cannot away in the commerce with other nations, with the fellowship and societie of men, but shun and avoid their companie, notwithstanding they desire to trafficke with them. The first river known among them is *Pfitaras*: the next to it, *Carabi*: the third *Lanos*: and then you come to a cape of that name. Beyond it is the gulf *Chryse*, the river *Attanos*, and another bay or creeke called *Attanos*. By it lieth the region of the *Attaci*, a kind of people, secluded from all noisome wind and aire, keeping upon hills, exposed to the pleasant Sunne shine, where they enjoy the same temperature of aire, that the *Hiperboreans* live in. Of this countrey and people, *Armonetus* hath written a severall booke of purpose: like as *Heratius* hath compiled such another treatise of the *Hyperboreans*. Beyond the *Attaci* or *Attacores*, the *Thyrians* and *Tocharians* do inhabit; yea, and the *Casitians*, who now by this time belong to the *Indians*, and are a part of them. But they within forth that lie toward the *Scythians*, feed of mans flesh. As for the *Nomades* of India, they likewise wander to and fro, and keepe no resting place. Some write, that they confine upon the very *Ciconians* and *Brytians* on the North side. But there (as all Geographers doe agree) the mountaines *Emodi* arise and shoot up: and there entereth the countrey of the East *Indians*, and extendeth not onely to that sea, but also to the Southerne, which wee have named the *Indian* sea. And this part of the *Oriental* *Indians*, which lieth directly streight forth, as farre as to that place where India beginneth to twine and bend toward the *Indian* sea, containeth 1875 miles. And all that tract which windeth and turneth along the South, taketh 2475 myles (as *Eratosthenes* hath collected and set downe) even unto the river *Indus*, which is the utmost limit of India Westward. But many other writers have set downe the whole length of India in this manner, namely, that it requireth 40 daies and nights sailing, with a good gale of a fore-wind: also, that from the North to the South coast thereof, is 2750 myles. Howbeit, *Agrippa* hath put downe in writing that it is 3003 miles long, and 2003 broad. *Pofidonius* took measure of it from the Northeast to the Southeast: and that by this means it is directly opposite unto *Gaule*, which hee likewise measured along the West coast, even from the Northwest point where the Sunne goeth downe at Midsummer, to the Southwest where it setteth in the

* Even at this day they set abroad their wares with the prices, upō the shore, and goe their waies: then the forain merchants come and lay down the money, and have away the merchandise: and so depart without any communication at all.

A in the middest of Winter. He addeth moreover and saith, That this West wind which from behind Gaule bloweth upon India, is very healthsome and hole some for that country, and this he proved by very good reason and demonstration. And verily the Indians have a farre different aspect of the skie from us. Other starres rise in their Hemisphere, which we see not. Two Summers they have in one yeere, and as many harvests: and their Winter between hath the Etesian winds blowing in our dogdaies, in steed of the Northren blasts with us. The winds are kind & mild with them: the sea alwaies navigable: the nations there dwelling, and the citties and towns there built, innumerable, if a man would take in hand to reckon them all. For India hath been discovered, not onely by *Alexander* the great his mightie and puissant armie, and by other kings his successours, (and namely *Seleucus* and *Antiochus*, & their Admirall *Patrocles*, who sailed about it even to the Hircane and Caspian seas;) but also by diverse other Greek Authiors, who making abode, and sojourning with the kings of India (like as *Megasthenes* and *Dionysius* sent thither of purpose from Philadelphus) have made relation of the forces which those nations are able to raise and maintaine. And yet further diligence is to bee employed still in this behalfe, considering they wrote of things there so diverse one from another, and incredible withall. They that accompanied *Alexander* the great in his Indian voiage, have testified in their writings, that in one quarter of India which hee conquered, there were of townes 500 in number, and not one lesse than the citie Cos: of severall nations nine. Also that India was a third part of the whole earth: and the same so well inhabited, that the people in it were innumerable. And this they delivered (beleeve me) not without good apparance of reason: for the Indians were in manner the onely men of all others that never went out of their owne country. Moreover, it is said, That from the time of *Bacchus* unto *Alexander* the great, there reigned over them successively 154 kings, for the space of 5402 yeeres betweene, and three moneths over. As for the rivers in that country, they be of a wonderful bignesse. And reported it is, that *Alexander* sailed every day at the least 600 stadia upon the river Indus, and yet in lesse than five months and some few daies over, hee could not come to the end of that river: and lesse it is than Ganges by the confession of all men. Furthermore, *Seneca* a Latine writer, assaied to write certaine commentaries of India: wherein he hath made report of 60 rivers therein, and of nations, 120 lacking twaine. As great a labour it were to reckon up and number the mountaines that bee in it. As for the hils Imaus, Emodisus, Paropamisus, as parts all and members of Caucasus, butt one upon another, and conjoine together. And being past them

D yee goe downe into a mightie large plaine country, like to *Ægypt*. It remaineth now to shew the continent and firme land of this great country, and for the more evident demonstration, let us follow the steps of *Alexander* the great, and his Historiographers. *Diogenes*, and *Beton* who set downe all the geasts & journeies of that prince, have left in writing, That from the Caspian ports unto the citie Hecatopylos which is in Parthia, there are as many miles as we have set downe already. From thence to Alexandria in the Ariane country (which citie the same king founded) 562 myles: from whence to Prophthasia in the Dranganes land, 199 miles: and so forward to the capitoll towne of the Arachosians, 515 myles. From thence to Orthosparum, 250 myles: last of all, from it to the citie of Alexandria in Opianum, 50 myles. In some copies these numbers are found to varie and differ. But to returne to this foresaid citie, situate it is at the very foot of Caucasus. From which to the river Chepta and Peneolaitis, a towne of the Indians, are counted 227 myles. From thence to the river Indus and the towne Tapila, 60 myles: and so onward to the noble and famous river Hidaspes, 120 myles: from which to Hypafis, a river of no lesse account than the other 4900, or 3900. And there an end of *Alexanders* voiage. Howbeit, he passed over the river, and on the other side of the banke, hee erected certaine altars and pillers, and there dedicated them. The letters also of the king himselve, sent backe into Greece, do carie the like certificate of his journeies, and agree just herewith. The other parts of the country were discovered & surveied by *Seleucus Nicator*: namely from thence to Hefudrus 168 miles: to the river Ioames as much: and some copies adde 5 miles more therto: from thence to Ganges 112 miles: to Rhodapha 119, and some say, that between them two it is no lesse than 325 miles. From it to Calinipaxa, a great town 167 miles & an halfe, others say 265. And so the confluent of the rivers Iomanes and Ganges, where both meet together 225 miles, and many put thereto 13 miles more: from thence to the town Palibotta 425 miles: and so to the mouth of Ganges where he falleth into the sea 638 miles. As for the nations, which it paines me not to name, from the mountaines Emodi, & the principall cape of them, Imaus, which signifieth in that country language full of snow, they

The sixth Booke of

be these: the Isari, Cofyri, Izgi, & upon the very mountains, the Ghisotofagi: also the Brachma- G
næ, a name common to many nations, among whom are the Maçcocalingæ. Of rivers besides,
there are Pinnas & Cainas, the later of which twain runneth into Ganges, & both are navigable.
The people called Calingæ, coast hard upon the sea. But the Mandei and Malli, among whom
is the mountaine Mallus, are above them higher in the country. And to conclude, then you
come to Ganges, the farthest bound and point of all that tract, India.

CHAP. XVIII.

¶ *The river Ganges.*

MAny have beene of opinion, and so have written, that the spring of Ganges is uncertain, H
like as that also of Nilus: and that he swelleth, overfloweth, and watereth all the countries
whereby he passeth, in the same sort that Nilus doth. Others againe have said that it issu-
eth out of the mountaines of Scythia: and how into it there run 19 other great rivers: of which
over and above those before named, certaine are navigable, namely, Canucha, Vama, Errano-
boa, Cofaogus, and Sonus. There bee also that report, that Ganges presently ariseth to a great
bignesse of his owne sources and springs, and so breaketh forth with great noise and violence, as
running downe with a fall over craggie and stonie rockes: and when hee is once come into the
flat plaines and even country, that he taketh up his lodging in a certaine lake: and then out of it
carrieth a mild and gentle streame, 8 miles broad where it is narrowest: and 100 stadia over for
the most part, but 160 where he is largest: but in no place under 20 paces deepe, [i. a 100 foot.] I

CHAP. XIX.

¶ *The nation of India, beyond the river Nilus.*

When yee are over Ganges, the first region upon the coast that you set foot into, is that K
of the Gandaridæ and the Calingæ, called Parthalis. The king of this country hath
in ordinance for his warres 80000 foot, 1000 horse, and 700 Elephants, readie upon
an houres warning to march. As for the other nations of the Indians that live in the champion
plaine countries, there be diverse states of them, of more civilitie than the mountainers. Some
applie themselves to tillage and husbandry: others set their minds upon martiall feats: one sort
of them practise merchants trade, transporting their owne commodities into other countries, L
and bringing in forraine merchandise into their owne. As for the nobilitie and gentrie, those also
that are the richest and mightiest among them, they manage the affaires of State and Com-
monweale, and sit in place of justice, or else follow the court, and sit in counsell with the king. A
fift estate there is besides in great request, & namely of Philosophers and Religions, given whol-
ly to the studie of wisdom and learning; and these make profession of voluntarie death: and ver-
ily, when they are disposed to die at any time, they make a great funeral fire, cast themselves into
it, and so end their daies. Besides all these, one thing there is amongst them halfe brutish, and of
exceeding toile & travell (and yet it is that which partly maintaineth all the other estates above-
said) namely, the practise of hunting, chasing and taming Elephants. And in very truth, with M
them they plough their ground, upon them they ride up and downe: with these beasts are they
best acquainted: they serve in the wars for the maintenance of their libertie, & defence of their
frontiers against all invasion of enemies. In the choise of them for warre service, they regard and
consider their strength, their age, and bignesse of bodie. But to leave them. An Island there is
within the river Ganges, between two armes thereof, of great largeness and capacitie, which re-
ceiveth one nation by it selfe, apart from others, and named it is Modogalica. Beyond it are fea-
ted the Modubians and Molindians, where standeth the stately cittie Molinda, situate in a plen-
tiful and rich soile. Moreover, the Galmodroefians, Pretians, Calissæ, Sauri, Fassalæ, Colubæ,
Orxulæ, Abali, and Taluctæ. The king of these countries hath in ordinarie for his warres 50000
foot, 3000 horse, and 400 Elephants. Then you enter into a country of a more puissant and vali- M
ant nation, to wit, the Andarians, planted with many villages well peopled: and moreover with
thirtie great townes, fortified with strong walls, towers, & bastiles. These find and maintaine prest
and readie to serve the king in his wars, an Infanterie of 100000 foot, a Cavallerie of 2000 horse,
and a 100 Elephants besides, well appointed. Of all the regions of India, the Dardanian country

A is most rich in gold mines; and the Selian, in silver. But above all the nations of India throughout, and not of this tract and quarter onely, the Prasij farre exceed in puissance, wealth, and reputation; where the most famous, rich, and magnificent citie Palibotria standeth: whereof some have named the people about it, yea and all the nation generally beyond Ganges, Palibotrians. Their king keepeth continually in pay 600000 footmen, 30000 horsemen, and 9000 Elephants, every day in the yeere. Whereby you may soone guesse the mightie power and wealth of this prince. Beyond Palibotria, more within the firme land, inhabire the Monedes and Suari, where standeth the mountaine Maleus: and there for fixe moneths space, the shadowes in winter time fall Northward; and in summer season, goe into the South. The pole Arcticke starres in all that tract, are seene but once in the yeere, and that, no longer than for 15 dayes, as *Beton* maketh report: but *Megasthenes* writeth, that this is usuall in other parts of India. The Antarctick or Souli pole, the Indians call Dromosa. As for the river Iomanes, which runneth into Ganges, it traversed through the Palibotrians countrey, and passeth betweene the townes Methora and Cyri-foborca. Beyond the river Ganges, in that quarter and climate which lyeth Southward, the people are caught with the sunne, and begin to be blackish: but yet not all out so sun-burnt and black indeed as the Moores and Æthiopians. And it seemeth, that the neerer they approach to the river Indus, the deeper coloured they are and tanned with the sunne: for you are not so soone past the Prasians country, but presently you are upon Indus: and among the mountains of this tract, the Pygmæans (by report) doe keepe. *Artemidorus* writeth, that betweene these two rivers, there is a distance of 21 miles.

CHAP. XX.

§ The river Indus.

The great river Indus, which the people of that countrey call Sandus, issueth out of a part or dependance of the hill Caucasus, which is called Paropamisus: he taketh his course and runneth full against the sun-rising, and maketh 19 rivers more to loose their names, which he taketh in unto him. Among which, the principall are these, Hydaspes one, bringing with him foure more: and Cantabra another, accompanied with three besides. Moreover, of such as are of themselves navigable without the help of others, Acesines and Hypafis. And yet for all these additions, the river of Indus (such a sober and modest course as it were, his waters keepe) is in no place either above 50 stadia over, or deeper than 15 paces, *i.* threescore and fiftene foot, or twelve fadome and a halfe. This river encloseth within two branches of it, a right great Island named Prasiane, and another that is lesse, which they call Patale. As for himselfe, they that have written of him with the least, say that hee beareth vessels for 1240 miles: and turning with the course of the sunne, keepeth him companie Westward, untill he is discharged into the Ocean. The measure of the sea-coast from Ganges unto him, I will set downe generally and in grosse, as I find it written: albeit there is no agreement at all of Authors, as touching this point. From the mouth of Ganges where he entred into the sea unto the cape Caliuon, and the towne Dandagula, are counted 725 miles: from thence to Tropina 1225 miles. Then to the promontorie of Perimula, where standeth the chieffemart or towne of merchandise in all India, they reckon 750 miles: from which to the towne abovesaid Patale within the Island 620 miles. The mountainer inhabiting betweene it and Iomanes, are the Cesti and Celiboni, wild and savage people: next to them, the Megallæ, whose king hath in ordinarie prest for service 500 Elephants; of foot and horsemen a great number, but uncertaine it is how many; sometime more, sometime fewer. As for the Chryseans, Parafangians, and Afangians, they are full of the wild and cruell tygres: they are able to arme 30000 foot and 800 horse, and to set out with furniture 300 Elephants. This countrey is on three sides environed and enclosed with a raunge of high mountaines: all desert and full of wildernesse for 625 miles, and of one side confined with the river Indus. Beneath those wild hills, you enter among the Dari and Suræ; and then you come againe to wast deserts for 188 miles, compassed about for the most part with great barres and bankes of sand, like as the Islands with the sea. Under these desert Forrests, you shall meet with the Maltecores, Cingians, Marobians, Rarungians, Moruntes, Masuæ, and Pangungæ. Now for those who inhabite the mountaines, which in a continuall raunge without interruption stand upon the coasts of the Ocean, they are free states and subject to no prince, and many faire townes and cities they hold

among

among these cliffes and craggie hills. Then come you to the Naræans, enclosed within the highest mountaine of all the Indian hills, Capitalia. On the other side of this mountaine, great store there is all over it, of gold and silver mines, wherein the inhabitants doe digge. Then, yee enter upon the kingdome of Oratura, whose king hath indeed but 10 Elephants in all, howbeit a great power of footmen. And so forward to the Varetates, who under their king keepe no Elephants at all for his service, trusting upon their Cavallerie and Fanterie, wherein they are strong. And next to them the Odomboërians and Salabastres, where standeth a goodly faire citie called Horata, environed and fortified with deepe fosses and ditches full of standing water: wherein there keepe a great number of Crocodiles, which for the greedie appetite they have to devoure mens bodies, will suffer none to passe into the towne, but over the bridge. Another towne there is besides among them, of great name and importance, to wit, Automela, standing upon the sea side: and otherwise much resort there is unto it of merchants from all parts, by reason of 5 great rivers which meet all there in one confluence. Their king maintaineth in ordinarie 1600 Elephants, 150000 footmen, and 5000 horse. The king of the Charmians is but poore to speake of, his strength lyeth in 60 Elephants; for his power otherwise is but small. Being past that realme, you come into the countrey of the Padians, the only nation of all the Indians, which is governed by women. One of this sexe, they say, was begotten sometime by *Hercules*, in which regard shee was the better accepted, and had the prerogative of the regencie over the greatest kingdome. From her the other Queens fetch their pedigree, and have the dominion and rule over thirtie great townes, and the commaund of 150000 foot and 500 Elephants. Beyond this realme, you come to the nation of the Syrieni, containing 300 cities: and from them to the Deraugæ, Posunge, Bugæ, Gogyarei, Vmbræ, Nereæ, Brancofi, Nobundæ, Cocondæ, Nesei, Pedatritæ, Solobriafæ, and Oloitræ, who confine upon the Island * Patale: from the utmost point of which Island unto the gates Caspiæ, are reckoned 1802 5 miles. Now on this side the river Indus, just against them, as appeareth by evident demonstration, there dwell the Amataæ, Bolingæ, Gallitalutæ, Dimuri, Megari, Ordabæ, and Meseæ. Beyond them, the Vri and Sileni: and then you come to the deserts for 250 miles: which when yee have passed over, you shall meet with the Organages, the Abaorts, Sibaræ, and the Sueræ: and beyond these, a wildernesse againe, as great as the former. Passe on farther, you come among the Sarophages, Sorgæ, Baromataæ, and the Gumbretes: of whom there be 12 severall nations, and each one hath two great cities apeece. As for the Azeni, they people three cities: their capital cite is Bucephala, built in the very place where king *Alexanders* horse called Bucephalus, was enterred. Above them, are the mountainers on the rising of the hill Caucasus, named Soleadæ and Sondræ: and when you are on the other side of the river Indus, as you goe along the coast and banks thereof, you shall see the Samarabrians, the Sambrucenes, the Brisfabrites, Olij, Autixeni, and Taxillæ, with a famous citie called Amandria: of which all that tract now lying more flat and plaine within the countrey, is named Amandria. Foure other nations there are besides of Indians, the Peucolaitæ, Arfagalites, Geretes, and Asei: for many of the Geographers set not down Indus the river, for to determine the marches of the Indians Westward; but lay thereto 4 other provinces and severall seignories, to wit, of the Gedrosians, Arachotes, Arij, and Paropamisades.

CHAP. XXI.

☞ *The Arij, and other nations depending unto them.*

Other writers are of opinion, that the utmost frontier and limit of India, is the river Cophetes, and both it and all those quarters are included within the territorie or province of the Arij: yea and most of them affirme, that the citie Nysa, as also the mountaine Merus consecrated to god *Bacchus*, belong unto India as parcels thereof. This is that mountaine whereof arose the poeticall fable, That *Bacchus* therein was borne and issued out of *Jupiter* his thigh. Likewise they assigne and lay to India, the countrey of the Aspagores, so plentifull in vines, laurels, and box, and generally of all sorts of apple trees and other fruitfull trees that grow within Greece. Many strange, wonderfull, and in maner fabulous things, they report of the fertilitie of that land, of the divers sorts of corne, of trees bearing cotton, of wild beasts, of birds, and other creatures there breeding and living: which because they are not properly belonging to this treatise now in hand, I will reserve them for another part of this worke, and write more particularly

A larly of them in their due and severall places. And as for those 4 provinces or Satrapies, which I touched before, I will speake of them soone after and within a while: for now I hasten and thinke it long untill I have said somewhat of the Island Taprobane. And yet before I come to it, there be other Isles which I cannot passe by, and namely that of Patala, which I noted to lye in the verie mouth of the river Indus; and it carrieth the forme and fashion of a triangle figure, and is 220 miles long. Without the mouth of the river Indus, two other Islands there be, Chryse and Agyrae, so named (as I thinke) of the gold and silver mines which they doe yeeld: for I cannot easily beleieve, that the verie earth and soile there is all gold and silver entire, as some have made report. Twentic miles from them, lyeth the Isle Crocala: and 12 miles farther into the sea, Bibaga; where, of oysters and other shell-fishes called Purples, are found good store. And last of all, nine miles beyond it, Toralliba sheweth it selfe, and many other petie Islands of no regard.

CHAP. XXII.

& The Island Taprobane.

I hath beene of long time thought by men in auncient dayes, that Taprobane was a second world, in such sort as many have taken it to be the place of the Antipodes, and called it, The Antichthonos world. But after the time of *Alexander* the Great, and the voiage of his armie into those parts, it was discovered and knowne for a truth, both that it was an Island, and what compassed it bare. *Onesicritus* the Admirall of his fleet, hath written, that the Elephants bred in this Island be bigger, more fierce and furious for war-service, than those of India. *Megasthenes* saith, that there is a great river which parteth it in twaine, and that the people thereof dwelling along the river, be called Palæogoni: adding moreover, that it affourdeh more gold, and bigger pearles by far, than India doth. *Eratosthenes* also tooke the measure thereof, and saith, that in length it beareth 7000 stadia, and in bredth 5000: that in it there be no cities & great towns, but villages to the number of 700. It beginneth at the Levant sea of Orientall Indians, from which it stretcheth and extendeth between the East and West of India: and was taken in times past to lye out into the sea from the Prasian countrey twentic dayes sailing. But afterwards, for that the boates and vessels used upon this sea in the passage thither, were made and wound of papyr reeds like those of the river Nilus, and furnished with the same kind of tackling, the voyage thither from the foresaid countrey was gaged within a lesse time: and well knowne it was, that according to the faile of our ships and gallies, a man might arrive there in seven daies. All the sea lying betweene, is verie ebbe, full of shallowes and shelves, no more than five fathom deepe. Howbeit in certain chanelles that it hath, it is so deepe that it cannot be founded, neither will any ankers reach the botome and there rest: and withall, so streight and narrow these chanelles are, that a ship cannot turne within them: and therefore to avoid that necessitie of turning about in these seas, the ships have proes at both ends, and are pointed each way. In sailing, they observe no starre at all. As for the North pole, they never see it: but they carrie ever with them certaine birds in their shippes, which they send out oftentimes when they seeke for land, observing ever their flight; for knowing well that they will flie to land, they accompanie them, and bend their course accordingly: neither use they to saile more than one quarter in the yeere: and for one hundred dayes after the sunne is entred into Cancer, they take most heed and never make saile; for during that time it is winter season with them. And thus much we come to knowledge of, by relation of auncient writers. But wee came to farre better intelligence, and more notable information, by certaine Embassadours comming out of that Island, in the time of *Clavdus Caesar* the Emperour: which happened upon this occasion and after this manner. It fortuneth, that a freed slave of *Annius Plocamus*, who had sermed of the Exchequer the customes for impost of the red sea, as he made saile about the coasts of Arabia, was in such wise driven with the North winds besides the realme of Carmania, and that for the space of 15 dayes, that in the end hee fell with an harbour thereof called Hippuros, and there arrived. When he was set on land, he found the king of that countrey so courteous, that hee gave him entertainment for 6 moneths, and entreated him with all kindnesse that could be devised. And as he used to discoure and question with him about the Romanes and their Emperour, he recounted unto him at large of all things. But among many other reports that he heard, he wondred most of all at their justice in all their dealings, and was in love therewith, and namely, that their Denieres of the money which was taken were alwaies of like

like weight, notwithstanding that the sundry stamps and images upon the peeces shewed plainly that they were made by divers persons. And hereupon especially was he mooved and sollicitated to seeke for the alliance and amitie of the people of Rome: and so dispatched 4 Embassadours of purpose, of whome one *Rachias* was the chiefe and principall personage. By these Embassadours we were enformed of the state of that Island, namely, that it contained five hundred great towns in it: and that there was a haven therein regarding the South coast, lying hard under *Palesimundum* the principall citie of all that realme, and the kings seat and pallace: that there were by just account 200000 of commoners and citizens: more over, that within this Island there was a lake 270 miles in circuit, containing in it certaine Islands good for nothing else but pasturage, wherein they were fruitfull; out of which lake there issued two rivers, the one, *Palesimundas*, passing neere to the citie abovesaid of that name, and running into the haven with three streames, whereof the narrowest was five stadia broad, and the largest 15; the other Northward on India side, named *Cydara*: also that the next cape of this country to India, is called *Colaicum*, from which to the neereest port of India is counted four daies sailing: in the mids of which passage, there lyeth in the way, the Island of the Sunne. They said moreover, that the water of this sea was all of a deepe greene colour; and more than that, full of trees growing within it: in somuch as the pylots with their helmes many times brake off the heads and tops of those trees. The starres about the North pole, called *Septentriones*, the *Waines* or *Beares*, they wondred to see here among us in our Hemisphere: as also the Brood-hen, called *Vergilia* in Latine, as if it had been another heaven. They confessed also they never saw with them, the moone above the ground before it was 8 dayes old, nor after the 16 day. That the *Canopus*, a goodly great and bright starre about the pole *Antarcticke*, used to shine all night with them. But the thing that they marveiled and were most astonied at was this, that they observed the shadow of their own bodies fell to our Hemisphere, and not to theirs; and that the sunne arose on their left hand and set on their right, rather than contrariwise. Furthermore they related, that the front of that Island of theirs which looked toward India, contained 10000 stadia, and reached from the Southeast beyond the mountains *Enodi*. Also, that the *Seres* were within their kenning, whom they might easily discover from out of this their Island; with whome they had acquaintance by the meanes of trafficke and merchandise: and that *Rachias* his father used many times to travaile thither. Affirming moreover, that if any straungers came thither, they were encountred and assailed by wild and savage beasts: and that the inhabitants themselves were giants of stature, exceeding the ordinarie proportion of men, having red haire, eyes of colour blewish, their voice for sound horrible, for speech not distinct nor intelligible for any use of trafficke and commerce. In all things else their practise is the same that our merchants and occupiers doe use: for on the farther side of the river, when wares and commodities are laid downe, if they list to make exchange they have them away, and leave other merchandise in lieu thereof to content the forrein merchant. And verily no greater cause have we otherwise to hate and abhor this excessive superstition, than to cast our eye so far and consider with our selves, what it is that we seeke for, from what remote parts we fetch it, and to what end we so much desire all this vanitie. But even this Island *Taprobane*, as farre off as it is, seeming as it were cast out of the way by Nature, and divided from all this world wherein we live, is not without these vices and imperfections wherewith we are tainted and infected. For even gold and silver also is there, in great request and highly esteemed: and marble, especially if it be fashioned like a tortoise shell. Iemmes and precious stones; pearles also, such as be orient and of the better sort, are highly prized with them: and herein consisteth the verie heighth of our superfluous delights. Moreover, these Embassadours would say, that they had more riches in their Island, than wee at Rome, but we more use thereof than they. They affirmed also, that no man with them had any slaves to commaund: neither slept they in the morning after day-light, ne yet at all in the day time. That the manner of building their houses was low, somewhat raised above the ground and no more adoe: that their markets were never deare, nor price of victuals raised. As for courts, pleading of causes, and going to law, they knew not what it meant. *Hercules* was the onely god whome they worshipped. Their king was alwayes chosen by the voices of the people: wherein they had these regards; that hee were aged, mild, and childlesse: but in case hee should beger children afterward, then hee was deposed from his regall dignitie, to the end that the kingdome should not in proesse of time be hereditarie and held by succession, but by election onely. This king being thus chosen and invested,

A invested, hath thirtie other governours assigned unto him by the people : neither can any person bee condemned to death, unlesse hee be cast by the more part of them, and pluralitie of voices : and thus condemned as hee is, yet may hee appeale unto the people. Then are there 70 judges deputed to sit upon his cause ; and if it happen that they assoile and quit this partie condemned : then those 30 who condemned him, are displaced from their state and dignitie, with a most bitter and greivous rebuke, and for ever after, as disgraced persons live in shame and infamie. As for the king, arraid he is in apparrell as prince *Bacchus* went in old time : but the subjects and common people are clad in the habit of Arabians. If it fortune that the king offend, death is his punishment : howbeit, no man taketh in hand to doe execution. All men turne away their faces from him, and deigne him not a looke nor a word. But to doe him to death in the end, they appoint a solemne day of hunting, right pleasant and agreeable unto Tygres and Elephants, before which beasts they expose their king, and so he is presently by them devoured. Moreover, in that Island good husbands they are for their ground, and til the same most diligently. Vines have they no use of at all : for all sorts of fruits otherwise they have abundance. They take also a great pleasure and delight in fishing, and especially in taking of tortoisses : and so great they are found there, that one of their shels will serve to cover an house : and so the inhabitants doe employ them in stead of rouses. They count an hundred yeeres no long life there : that is the ordinarie time of their age. Thus much we have learned and knowne as touching Taprobane. It remaineth now to say somewhat of those foure Satrapies or provinces, which we did put off, unto this place. Of them therefore as followeth.

CHAP. XXIII.

§ Capissene, Carmanis.

Beyond those nations that confine hard upon the river Indus, as ye turne toward the mountaines, yee enter upon the realme of Capissene, wherein sometime stood the citie Capissa, which *Cyrus* the king caused to bee raised. At this day there standeth the citie Arachosia, with a river also of that name in the countrey Arachosia : which citie some have called Cophe, founded by queene *Semiramis*. There likewise is to be seen the river Hermandus, which runneth by *Abeste*, a citie of the Arachosians. The next that confront Arachosia Southward, toward part of the Arachotes, are the Gedrosi : and on the North side, the Paropamisades. As for the towne Carrana, named afterwards Tetragonius, situate it is at the foot of the mountain Caucasus. This countrey lieth overagainst the Bactrians : then you come to the principall towne thereof Alexandria, named so of king *Alexander* the founder thereof : upon the marches whereof are the Sydrari, Dangulae, Porapiiani, Cantaces, and Maci. Moreover, upon the hill Caucasus standeth the towne Cadrusi, built likewise by the said *Alexander*. On this side all these regions lieth the coast of the river Indus. Then followeth the region of the Arianes, all scorched and fenged with the parching heat of the Sunne, and environned about with deserts : howbeit, many shaddowie vallics lie betweene to allay the exceeding heat. Well peopled it is about the two rivers especially, Tonderos and Arosapes. Therein standeth the citie Artaccana. Being past it, the river Arius runneth under the citie Alexandria, built by *Alexander* the great. The towne containeth in compasse 30 stadia. Then come you to Artacabane, a citie as it is much more auncient, so it is also fairer by farre, which by *Antiochus* the king was walled the second time, and enlarged to 50 stadia. The next in order is the nation of the Dorisci. The rivers Pharnacotis and Ophradus. Prophrasia, a towne in Zarasparia. The Drangæ, Argetæ, Zarangæ, and Gedrusij. Townes moreover, Peucolais and Lymphiora. After you are past their territorie, you enter into the deserts of the Methoricanes : and so to the river Mauain, and the nation of the Augutari. The river Borru, the people called Vrbi, the navigable river Ponamus, which passeth through the marches of the Pandanes. Over and besides, the river Ceberon within the countrey of the Sorares, which in the mouth thereof where it falleth into the sea, maketh many baies and harbours. As you go farther, you come upon the towne Candigramma, with the river Cophes : into which there runne other rivers that carrie vessels, to wit, Sadarus, Paraspus, and Sodus. As for the countrey Daritus, some would have it to be a part of Ariana, and they set downe the measure of them both together, to be in length 1950 miles, and in breadth lesse by halfe than India. Others have set downe that the countrey of the Gedrusians and Scyrians may containe 183 miles. Being passed which

quarters,

quarters, you enter into the region of the Ichthyophagi, surnamed Orithæ or Mountainers (who have a proper language by themselves, and speake not in the Indian tongue) which reacheth on still for 200 miles. And beyond it you meet with the people of the Arabians, who likewise continue for other 200 miles. As for those Ichthyophagi beforenamed; *Alexander* by an expresse edict forbade them all to feed on fish. Being past them, you are in the deserts: and beyond them you come into Carmania, Persis, and Arabia. But before that we treat distinctly of these countries, I thinke it meet to set downe what *Onesicritus* (who having the conduct of a fleet under *Alexander* the great, sailed from off India, about the Southerly coasts of Persis) reporteth, according to those intelligences which came lately from king *Iuba*. In like manner those voiajes of ours for these yeeres past, performed, by which even at this day wee are guided. Howbeit, in the reports made by *Onesicritus* and *Nearchus* of their navigations, we find neither the distance, ne yet the names of the severall resting places, after every daies journey. And to begin with the citie Xyleneopolis built by *Alexander*, from which they entred first into their voiage, it is not put downe by them, either in what place it is situate, nor upon what river. Yet these particulars following are by them reported worth remembrance: to wit, that in this voiage *Nearchus* founded a town in those parts: that the river Nabrus runneth therby, and is able to bear great vessels: overagainst which there is an Island 70 stadia within the sea. Moreover, that *Leonatus* caused Alexandria to be built in the frontiers of that region, by direction and commandement from king *Alexander*, where the river Argenus entereth into the sea, and yeeldeth a safe and commodious haven. Also that the river Tuberum is navigable, along the bankes whereof the Parites inhabite. And after them the Ichthyophagi, who take up so long a tract, that they were 20 daies sailing by their coasts. They make relation likewise of the Island of the Sun, named also the couch or bed of the nymphs: This Island is red all over, and no living creature will live therein, but is consumed and perisheth no man knoweth how or upon what cause. They speake besides of the nation of the Orians: as also of Hytanis a river in Carmania, which affourdeth many baies and harbours, yea, and plentie of gold in the gravell and sand thereof. And here was the first place wherein they observed, that they had a sight of the North-pole starre. As for the starre *Arcturus*, they affirmed, that they saw it not every night, nor at any time all night long. Furthermore, that the countrey of the Achæmenides in Persia, reached thus farre. Over and besides, that as they travelled, ordinarily they found good store of mines, wherein was digging for brasse, yron, Arsenicke or Sardaracha, and Vermillion. And then they came to the cape of Carmania: from which to the coast overagainst them of the Maræ, a people in Arabia, the cut over sea is 50 miles. Upon these coasts they discovered three Islands, whereof Organa onely is inhabited, by reason of fresh waters within it, and from the continent it lieth about 25 miles. And foure Islands more they fell upon, even in the Persian gulfe overagainst Persia. And about these Islands they might see sea-adders and serpents so monstrous great, that as they came swimming toward them, they put the very fleet in great fright, for there were among them some, 20 cubites long. Beyond it they met with the Island Acrotadus: likewise the Gaurates Isles, wherein the nation of the Chiani doe inhabite. About the middle of this gulfe or arme of the sea, the river Hiperis hath his course, able to bear great hulkes and ships of burden. Also the river Sitiogagus, upon which a man may passe in seven daies to Pafargadia. Also a river that is navigable called Phiristimus, and an Island within it, but it is namelesse. As for the river Granus which runneth through Susiane, it carrieth but small vessels. Along the coast on the right hand of this river dwell the Deximontanes, who dresse and prepare Bitumen. Then they came to the river Oroatus, with a daungerous haven or mouth where it falleth into the sea, unlesse a man be guided by skilfull pilots: and full against this river there are discovered two little Islands. Past which, the sea is very low and shallow, full of shelves and sands, more like a meere and marsh water, than a sea. Howbeit, there bee certaine trenches or channels in it that draw deepe water, wherein they may without daunger faile. Then met they with the mouth of the river Euphrates. Also the lake, which the two rivers Eulæus and Tigris doe make, neere unto Characum. And so from thence they arrived upon the river Tigris, at Sufa. And there an end of the navigation performed by *Onesicritus* and *Nearchus*. For after they had bene three months embarked and in their voiage upon the sea, they found *Alexander* at Sufa (where he fasted and made solemne bankets) and that was seven months after he parted from them at Patalæ. And thus much concerning the voiage of *Alexander* his fleet. Now afterwards from Syagrus, a Promontorie in Arabia, it was counted unto Patalæ 1332 miles, and held it was for certain then, that

A that the West wind which the people of that countrey call Hypalus, was thought most proper for to make saile to the same place. Howbeit the age ensuing discovered a shorter and safer cut, namely, if from the said promontorie or cape Syagrus, they set their course directly to the mouth of the river Zizerus, which maketh an harborough in India. And in truth this passage held a long time, untill such time that in the end the merchants found out a more compendious and shorter course, and gained by their voiage to India: for every yeere now they saile thither, and for feare of pirates and rovers that were wont very much to infest and annoy them, they used to embarke in their ships certaine companies of Archers. And seeing that all these seas are now discovered, and never before so certainly, I will not thinke much of my paines, to declare and shew the whole course of our Indian voiages from our of Ægypt. And first and formost this is a thing

B worthie to be noted and observed of every man, that there is not a yeere goeth over our heads, but it costs our State to furnish a voiage into India, 500 hundred thousand Sesterces, fiftie millions of Sesterces. For which the Indians sendeth backe againe commodities and merchandise of their owne, which being at Rome, are sold for an hundred times as much as they cost, or yeeld in the price an hundredfold gaine. But to returne againe to our voiage, from Alexandria in Ægypt, it is two miles to Iuliopolis: from whence upon the river of Nilus, they saile 303 miles to Coptus, which may be done in twelve daies space, having the Etesian winds at the poupe. From Coptus they travell forward upon Cammels backs: and for great default of water in those parts, there be certaine set places for bait, lodging, and watering. The first is called Hydreuma, 32 miles from Coptus. The second one daies journey from thence, in a certaine mountaine. The third

C watering place at another Hydreuma, 95 miles from Coptus. The fourth againe in a second mountaine. The fifth is at a third Hydreuma of *Apollo*, from Coptus 184 miles. Beyond which, the resting place is upon another hill. And then to Hydreuma the new, from Coptus 234 miles. Another water towne there is, called Hydreuma the old, named also Troglodyticum, where two miles out of the port way lieth a garrison, keeping watch and ward both day and night: and foure miles distant it is from new Hydreuma. From whence they travell to the town Berenice, an haven towne standing upon the red sea, 258 miles from Coptus. But for as much as the journey all this way is for the most part performed in the night season, by reason of the excessive heat, and the travellers are forced to rest all the day long, therefore twelve daies are set down for the whole voiage betweene Coptus and Berenice. The time then that they usually begin to set saile, is about

D Midsummer before the dog daies, or presently upon the rising of the dog starre. And about the 30 daies end they arrive at Ocelis in Arabia, or els at Cama, within Saba, the country of incense. A third port there is besides called Muza, unto which there is no resort of merchants out of India: neither is it in request but with merchants that adventure onely for incense, drugs, and spices of Arabia. Howbeit, peopled this countrey is within forth, and hath divers great townes. Of which, Saphar is the principall, and the kings seat: and another besides of good importance called Sabe. But for them that would make a voiage to the Indians, the most commodious place to set forward is Ocelis: for from thence, and with the West wind called Hypalus, they have a passage of fortie daies sailing to the first towne of merchandise in India, called Muziris. Howbeit a port this is, not greatly in request, for the daunger of pirates and rovers, which keepe ordinarily

E about a place called Hydra: and besides that, it is not richly stored and furnished with merchandise. And more than so, the harborough is farre from the towne, so as they must charge and discharge their wares too and fro in little boats. At the time when I wrote this storie, the king that reigned there, was named *Celebotras*. But another haven there is more commodious, belonging to the Necanidians, which they cal Becare: the kings name at this present is *Pandion*: not far off is another town of merchandise within the firme land, called Madusa. As for that region, from whence they transport pepper in small punts or troughes made of one peece of wood, it is named Cotona. And yet of all these nations, havens, and townes, there is not a name found in any of the former writers. By which it appeareth, that there hath been great change and alteration in these places. But to come againe to India, our merchants returne from thence back in the beginning of our moneth December, which the Ægyptians call Tybis: or at farthest before the sixt day of the Ægyptians month Machiris, and that is before the Ides of Ianuarie: and by this reckoning they may passe to and fro, and make returne within the compass of one yeer. Now when they saile from India, they have the Northeast wind Vulturinus with them: and when they are entered once into the red sea, the South or Southwest. Now will we return to our purposed discourse

So as it appeareth that every daies journey was about 32 miles.

as concerning Carmania. The coast whereof after the reckoning of *Nicoarchus* may take in circuit 12050 miles. From the first marches thereof to the river Sabis is counted 100 miles. From whence all the way as farre as to the river Andaius, the countrey is rich and plenteous, for in it are vineyards and corne fields, well husbanded. This whole tract is called Amuzia. The principal towns of Carmania be Zeris and Alexandria. Vpon the marches of this realme, the sea breaketh into the land in two armes: which our countrey men are wont to call the red sea, and the Greekes Erythraeum, of a king named *Erythras*: or (as some thinke) because the sea by reason of the reflection and beating of the Sunne beames, seemeth of a reddish colour. There be that suppose that this rednesse is occasioned of the sand and ground which is red: and others againe, that the very water is of the owne nature so coloured.

CHAP. XXIII.

§ The Persian and Arabian gulfes.

THIS red sea is divided into two armes: that from the East is named the Persian gulfe; & beareth in compasse 2500 miles, by the computation of *Eratosthenes*. Over against this gulfe in Arabia, which lieth in length 1200 miles. On the other side another arme there is of it called the Arabian gulfe, which runneth into the Ocean, called Azanius. The mouth of the Persian gulfe where it maketh entrance, is five miles over, and some have made it but foure. From which to the furthest point thereof, take a direct and streight measure by a line, and for certaine it is knowne that it containeth 1125 miles: and is fashioned like for all the world to a mans head. *Onesicritus* and *Nearchus* have written, That from the river Indus to the Persian gulfe, & so from thence to Babylon by the meeres and fennes of the river Euphrates, it is 2500 miles. In an angle of Carmania inhabit the Chelonophagi, such as feed upon the flesh of Tortoises, and the shells of them serve for rouses to cover their cottages. They inhabite all that coast along the river Arabis, even to the very cape: rough they are, hairie all their bodie over but their heads, and weare no other garment but fish skinnes.

CHAP. XXV.

§ The Island Cassandrus: and the kingdomes under the Parthians.

WHEN you are passed this tract of the Cheloniophagi, directly toward India, there lieth fiftie miles within the sea, the Island Cassandrus, by report all desert and not inhabited: and neere unto it, with a little arme of the sea betweene, another Island called Stois; wherein pearles are good chaffer, and yeeld gainefull trafficke. But to returne againe to Carmania, when you are beyond the utmost cape thereof, you enter presently upon the Armozei, who joine upon the Carmanians. But some say, that the Arabij are between both: and that their coasts may containe in the whole 402 miles. There are to be seene the port or haven of the Macedonians, & the alters or columnes which *Alexander* erected upon the very promontorie & utmost cape. Where also be the rivers Saganos, Daras, and Salsos. Beyond which is the cape Themiscas, and the Island Aphrodisias well peopled. Then beginneth the realme of Persis, which extendeth to the river Oroatus, that devideth it from Elymais. Over against the coasts of Persis, these Islands bee discovered, Philos, Cassandra, and Aratia, with an exceeding high mountaine in it: and this Island is held consecrated unto *Neptune*. The very kingdome of Persis Westward hath the coasts lying out in length 450 miles. The people are rich, and given to roiall and superfluous expence in all things: and long since it is, that they are become subject unto the Parthians, and carie their name. And seeing that we are come to mention them, we will breiefely now speake of their Empire and dominion. The Parthians have in all 18 realmes under them: for so they tearmed all their provinces, as they lie devided about the two seas, as we have before said: namely the red sea Southward, and the Hircane sea, toward the North. Of which, eleven that lie above in the countrey, and are called the higher provinces, they take their beginning at the confines & marches of Armenia, and the coasts of the Caspians of the one side: and reach to the Scythians, whom they confront of the other side, with whom they converse and keepe companie together as equals. The other seven are called the base or lower Realmes. As for the Parthians, their land was alwaies counted to lie at the foot and descent of those mountaines, whereof we have so often spoken.

A spoken, which doe environ and enclose all those nations. It confineth Eastward upon the Arijs, and Southward, upon Carmania and the Arians: on the West side it butteth upon the Pratites and Modes: and on the North, boundeth upon the realm of Hircania: compassed round about with deserts and mountaines. The utmost nations of the Parthians before yee come to those deserts be called Nomades: and their cheefe townes seated toward the West, are Issaris and Calliope, whereof wee have written before: but toward the Northeast, Europum; and Southeast, Mania. In the heart and midland standeth the citie Hecatompylos, as also Arsacia. And there likewise the noble region of Nysæa in Parthyerum: together with the famous citie Alexandropolis, bearing the name of *Alexander* the first founder.

B CHAP. XXVI.

Media, Mesopotamia, Babylon, and Seleucia.

R Equisite now it is and needful in this place to describe the posture and situation of the Medians kingdome, and to discover all those countries round about, as farr as to the Persian sea, to the end that the description of other regions hereafter to bee mentioned, may the better bee understood. Wherein this first and formost is to bee observed, that the kingdome of Media on the one side confronteth both Persis and Persia, and casting forth a crooked and winding horne as it were toward the West, seemeth to enclose within that compasse both the said realmes. Neverthelesse, on the East side it confineth upon the Parthians and Caspians: on the South, Sittacene, Susiane, and Persis: Westward, Adiabene: and Northward, Armenia. As for the Persians, they alwaies confronted the red sea, wherupon it was called the Persian gulfe. Howbeit, the maritime coast thereof is called Cyropolis, and that part which confineth upon Media, Elymais. In this realme there is a strong fort called Megala, in the ascent of a steepe high hill, so direct upright, that a man must mount up to it by steps and degrees, and otherwise the passage is very streight and narrow. And this way leadeth to Persepolis the head citie of the whole kingdome, which *Alexander* the great caused to bee rased. Moreover, in the frontiers of this Realme, standeth the citie Laodicea, built by king *Antiochus*. From whence as you turn into the East, the strong fort or castle Paslagarda is seated, which the sages or wise men of Persia called Magi, doe hold, and therein is the tombe of *Cyrus*. Also the citie Ecbarana belonging to these sages, which

D *Darius* the king caused to be translated to the mountaines. Betweene the Parthians and the Arians lie out in length the Paroracenes. These nations and the river Euphrates serve to limit and bound the seven lower realmes beforenamed. Now are we to discourse of the parts remaining behind of Mesopotamia; setting aside one point and corner thereof, as also the nations of Arabia, wherof we spake in the former booke. This Mesopotamia was in times past, belonging wholly to the Assyrians, dispersed into perie villages and burgades, all save Babylon and Ninus. The Macedonians were the first, that after it came under their hands reduced it into great citties, for the goodnesse and plentie of their soile and territorie. For now besides the abovenamed townes, it hath in it, Seleucia, Laodicea, and Artemita: likewise within the quarters of the Arabians named Aroei and Mardani, Antiochea: and that which being founded by *Nicanor*, governour of Mesopotamia, is called Arabis. Vpon these joine the Arabians, but well within the countrey are the Eldamarij. And above them is the cittie Bura, situate upon the river Pelloconta: beyond which are the Salmanes and Mascans, Arabians. Then there joine to the Gordixans those who are called Aloni, by whom the river Zerbis passeth, & so discharged into Tigris. Neere unto them are the Azones & Silices, mountainers, together with the Orentians: upon whom confronteth the citie Gaugamela on the West side. Moreover, there is Sue among the rocks: above which are the Sylici & Claffitæ, through whom Lycus the river runneth out of Armenia. Also, toward the Southeast, Absitris, and the town Azochis. Anon you come down into the plains & champion countrey, where you meet with these towns, Diospage, Posytelia, Stratonicca, and Anthemus. As for the citie Nicephorium, as we have once already said, it is seated neere to the river Euphrates,

F where *Alexander* the great caused it to bee founded, for the pleasant seat of the place, and the commoditie of the countrey there adjoining. Of the citie Apamia we have before spoken in the description of Zeugma: from which, they that goe Eastward meet with a strong fortified towne, in old time carying a pourprise and compasse of 65 stadia, called the roiall pallace of their great dukes and potentates, named Satrapæ, unto which from all quarters men resorted to pay their

imposts, customes, and tributes: but now it is come to be but a fort and castle of defence. But there continue still in their entier and as flourishing state as ever they were, the citie Hebara and Oruros, unto which by the fortunate conduct of *Pompey* the Great, the limits and bounds of the Romane Empire were extended; and it is from *Zeugma* 250 miles. Some writers make report, that the river *Euphrates* was divided by a governour of *Mesopotamia*, and one arme thereof brought to *Gobaris*, even in that place where wee said it parted in twaine: which was done for feare least one day or other the river with his violent streame should endaunger the citie of *Babylon*. They affirme moreover, that the *Assyrians* generally called it * *Armalchar*, which signifieth a royall river. Vpon this new arme of the river aforesaid, there stood sometime *Agrani*, one of the greatest townes of that region, which the *Persians* caused to be utterly rased and destroyed.

* Or rather, Nahal Nalca, i. the kings river.

As for the citie of *Babylon*, the capitall citie of all the *Chaldæan* nations, for a long time carried a great name over all the world: in regard whereof, all the other parts of *Mesopotamia* and *Assyria* was named *Babylonia*: it contained within the walls 60 miles. The walles were 200 foot in height, and 50 thicke; reckoning to everie foot 3 fingers breadth more than our ordinarie measure. Through the mids of this goodly great citie, passeth the river *Euphrates*: a wonderfull peece of worke, if a man consider both the one and the other. As yet to this day the temple of *Iupiter Belus* there standeth entire. This prince was the first inventor of *Astronomie*. It is now growne into decay and lyeth wast and unpeopled, by reason that *Seleucia* the citie standeth so neere it, which hath drawne from it all resort and traffick: and was for that purpose built by *Nicator* within 40 myles of it, in the verie confluent where the new arme of *Euphrates* is brought by a ditch to meet with *Tigris*: notwithstanding, surnamed it is *Babylonia*, a free state at this day and subject to no person: howbeit they live after the lawes and manners of the *Macedonians*. And by report, in this citie there are 600000 citzizens. As for the walls thereof, by report, they do resemble an *Eagle* spreading her wings: and for the soile, there is not a territorie in all the East parts comparable to it in fertilitie. The *Parthians* in despight againe of this citie, and for to doe the like by it, as sometime was done to the old *Babylon*, built the citie *Ctesiphon* within three miles of it, in the tract called *Chalonitis*, even to dispeople and impoverish it: which now at this present is the head citie of the kingdom. But when they could doe little or no good thereby to discredit the said new *Babylon*, of late daies *Vologesus* their king founded another citie hard by, called *Vologeso Certa*. Moreover, other cities there are besides in *Mesopotamia*, namely *Hypparenum*, a citie likewise of the *Chaldæans*, and ennobled for their learning as well as *Babylon*: situate upon the river *Narragon*, which gave the name unto that citie. Howbeit the *Persians* caused this *Hypparenum* to be dismantled, and the walls thereof to be demolished. There be also in this tract, the *Orchenes* toward the South: from whence is come a third sort of the *Chaldæans*, called *Orcheni*. Being past this region, you meet with the *Noties*, *Orthophants*, and *Græciophants*, *Nearchus* and *Onesicritus*, who registred the voyage of *Alexander* the Great into the *Indians*, report, That from the *Persian* sea to the citie of *Babylon* by the river *Euphrates*, is 412 miles. But the later and moderne writers, doe count from *Seleucia* to the *Persian* gulfe, 490 miles. *K. Iuba* writeth, that from *Babylon* to *Charax*, is 175 miles. Some affirme moreover, that beyond *Babylon*, the river *Euphrates* maintaineth his entire course and keepeth one channell 87 miles, before that hee is divided into severall branches here and there; for to water the countrey: and that he holdeth on his course from his head to the sea, for the space of 1200 miles. This varietie of Authors as touching the measure, is the cause that a man may not so well resolve and conclude thereof, considering that even the very *Persians* agree not about the dimensions of their *Scenes* and *Parasanges*, but have divers measures of them. Whereas the river *Euphrates* giveth over his owne channell, (which for the breadth thereof is a sufficient munition to it selfe) and beginneth to part into divers branches, which it doth about the marches and confines of *Charax*, in all that tract neere adjoining, great daunger there is of the *Attalæ*, a theevisish nation of the *Arabians*, who presently set upon all passengers comming and going to and fro. When ye are past this infamous and suspected region, you shall enter into the countrey of the *Schenites*. As for the *Arabians* called *Nomades*, they occupie all the coasts of the river *Euphrates*, as farre as to the deserts of *Syria*: from which place we said that he turned and tooke his way into the South, abandoning the deserts of *Palmyrene*. To conclude, from the beginning and head of *Mesopotamia*, it is counted to *Seleucia*, if you passe upon the river *Euphrates*, 1125 miles;

A miles: and from the red sea, if you goe by the river Tigris, 320 miles: from Zeugma 527 miles: and to Zeugma from Seleucia in Syria upon the coast of our sea, is reckned 175 miles. And this is the very true and just latitude there, of the firme land betweene the two seas, to wit, the Persian gulfe, and the Syrian sea. As for the kingdome of Parthia, it may containe 944 miles. Finally, there is yet another towne of Mesopotamia upon the banke of Tigris, neere the place where the rivers meet in one, which they call Digba.

CHAR. XXVII.

§ The river Tigris.

B **M**EEt also it is and convenient, to say somewhat of the river Tigris. It beginneth in the land of Armenia the greater, issuing out of a great fource, and evident to be seene in the verie plaine: the place beareth the name of Elongosine. The river it selfe so long as it runneth flow and softly, is named Diglito; but when it beginneth once to carrie a more forcible streame, it is called Tigris, for the switnesse thereof; which in the Medians language, betokeneth a shaft. It runneth into the lake Arethusa, which beareth up afore all that is cast into it, and will suffer nothing to sinke: and the vapours that arise out thereof, carrie the sent of Nitre. In this lake there is but one kind of fish, and that entreth not into the channell of Tigris as it passeth through, no more than any fishes swim out of Tigris into the water of the lake. In his course and color both, he is unlike; and as he goeth may be discerned from the other: and when he is once past the lake

C and encountreth the great mountaine Taurus, he looseth himselfe in a certaine cave and hole in the ground, and so runneth under the hill, untill on the other side thereof hee breaketh forth againe and appeareth in his likenesse, in a place which is called Zoroanda. That it is the same river, it is evident by this, that he carrieth through with him and sheweth in Zoroanda, whatsoever was cast into him before he hid himselfe in the cave before said. After this second spring and rising of his, he entreth into another lake and runneth through it likewise, named Thospites, and once againe taketh his way under the earth through certaine blind gutters, and 25 miles beyond he putteth forth his head about Nymphæum. *Claudius Cesar* reporteth, that in the country Arrhene, the river Tigris runneth so neere unto the river Arsanias, that when they both swell and their waters are out, they joyne both their streames together, yet so, as their water is not intermingled: for Arsanias being the lighter of the twaine, swimmeth and floteth over the other, for the space well-neer of 4 miles: but soone after, they part asunder, and Arsanias turneth his course toward the river Euphrates, into which he entreth. But Tigris receiving into him certain goodly great rivers out of Armenia, to wit, Parthenis, Agnice, and Pharion, and so dividing the Arabians and Troeans from the Adiabenes, and by this meanes making as it were an Iland Mesopotamia before said, after he hath passed by and viewed the mountaines of the Gordæans neere unto Apamia a town of Mesene on this side Seleucia surnamed Babylonia 125 miles: dividing himselfe in two armes or channells, with the one he runneth Southward to Seleucia, watering as he goeth the countrey of Mesene; and with the other windeth into the North: he goeth on the backe side of the said Mesene, and cutteth through the plaines of the Cauchians. Now when these two branches are reunited againe, the whole is called Pasitigris. After this, he taketh into him out of Media, the great river Coaspes: and so passing betweene Seleucia and Ctesiphon, as we have said, he falleth into the meeres and lakes of Chaldæa, which he furnisheth and replenisheth with water, for the compasse of threescore and ten miles: which done, he issueth forth againe, gushing out with a mightie great and large streame, and running along the towne Charax, on the right hand thereof, hee dischargeth himselfe into the Persian sea, carrying there a mouth ten miles over. Betweene the mouthes of these two rivers, Tigris and Euphrates, where they fall into the sea, were counted in old time 25 miles, or as some would have it, but seven: and yet both of them were navigable, and bare right great ships. But the Orcheniens & other neighbour inhabitants, long since turned the course of Euphrates aside to serve their owne turnes in watering their fields, and stopped the ordinarie passage thereof, in so much as they forced him to runne into Tigris, and not otherwise than in his channell to fall into the sea. The next country bordering upon Tigris, is called Parapotamia: in the marches therof is the citie Mesene, wherof we have spoken. The chiefe towne thereof is Dibatach: from thence you enter presently into the region Chalonitis joyning hard upon Ctesiphon, a rich countrey, beautified not onely with

rowes of date-trees, but also with olive, apple, and peare trees, and generally with all sorts of fruit. Unto this countrey extendeth the mountaine Zagrus, comming along from out of Armenia, betweene the Medes and Adiabenes, above Parætacene and the realme of Persis. Chalcinitis is from Persis 480 miles distant. And some write, that going the streight, direct, and neereſt way, it is ſo much and no more from the Caſpian ſea to Aſſyria. Betweene theſe countries and Meſene lyeth Sittacene, the ſame it is that Arbelitis and Palæſtine. The townes of importance therein, are Sittace held by the Græcians ſituate toward the Eaſt, and Sabara: but on the Weſt ſide, Antiochia, ſeated betweene the two rivers, Tigris and Tornadotus. In like manner Apamia, which *Antiochus* the king ſo called after his mothers name. This citie is environed as it were with the river Tigris, and divided with the river Archous that paſſeth through it. Somewhat lower than theſe countries, lyeth the region Suſiane, wherein ſtood the auncient royall pallace and ſeat towne of the Perſian KK. Suſa, founded by *Darius* ſonne of *Hyaſtes*: and from Seleucia Babylonia, it is 450 miles diſtant: and as much from Ecbarana in Media, taking the way along the mountaine Charbanus. Vpon that branch of the river Tigris that taketh his courſe Northward, ſtandeth the towne Babyrace: and from Suſa it is 135 miles. The people of this countrey are the onely men in the world that hate gold: and in very truth get it they doe, and when they have it, they burie it ſure enough within the ground, that it might ſerve for no uſe. Vpon the Suſianes Eaſtward, joine the Coſſeans, Brigands, and theeves generally all. Likewiſe the Mizæans, a free ſtate and ſubject to no government, having under them 40 nations, all wild and living as they liſt. Above theſe quarters, you enter into the countreys of the Parthufians, Mardians, Saïtes, and Hyans, who confine upon high Perſia, called Elemais, which joyneth to the maritime coaſts of Perſis, as is aboveſaid. The citie of Suſa is from the Perſian ſea 250 miles. On that ſide whereas the Armada of *Alexander* the Great came up the great river Paſitigris to Suſa, there ſtanderh a village upon the lake Chaldais, named Aphle: from which to Suſa, is 65 miles and an halfe by water. The next that border upon the Suſianes Eaſtward, are the Coſſæans: and above the Coſſæi Northward, lyeth Meſobatene under the hill Cambalidus, which is a branch and dependant of the mountaine Caucasus: and from thence is the moſt eaſie and readie paſſage into the region Bactriana. The river Eulæus maketh a partition betweene the high countrey of Perſis called Elimais, and Suſiane. This river iſſueth out of the Medians countrey, and in the mids of his courſe looſeth himſelfe in the ground: but being once up again, he runneth through Meſobatene, and environeth the fort and caſtle of Suſa, with the temple of *Diana*, which is had in great reverence and honour above all other temples in thoſe parts: yea and the very river it ſelle is in much requeſt, and the water thereof ceremoniouſly regarded: in ſuch wiſe, as the kings drinke of no other; and therefore they fetch it a great way into the countrey. And it receiveth into it the river Hedypnus, which commeth along the priviledged place whereinto the Perſians uſe to retire for ſanctuarie, and one more out of the Suſianes countrey. A town there is planted neer unto it, called Magoa, 15 miles from Charax. Yet ſome there be, that would have this town to ſtand in the utmoſt marches of Suſiana, even cloſe unto the deſerts and mountaines. Beneath the river Eubæus lieth Elimais, joyning unto Perſis in the very maritime coaſt, 240 miles it is from the river Oroates to Charax. The townes in it, be Seleucia and Sofirate, both ſituate upon the hanging of the hill Caſyrus. The flat coaſt and levell thereof which lieth before it, is as we have ſaid before, no leſſe dangerous and unacceſſible than the Syrts, for quavemires, by reaſon of the great ſtore of mud and land together, which the rivers Brixia and Ortacea bring downe with them. Over and beſides, the countrey Elimais is ſo fennie and ſtandeth with water ſo wet, that there is no way through it to Perſis, but a man muſt fetch a great circuit & compaſſe about it to come thereto. Moreover, much haunted it is and annoyed with ſerpents, which breed and come downe in thoſe rivers: and as troubleſome as the paſſage is all the countrey over, yet that part yeeldeth the worſt advences and is leaſt frequented, which they call Characene, of the town Charax, which limireth the kingdomes of Arabia: whereof we will ſpeake anon more at large, after we have ſet downe the opinion of *M. Agrippa*, which hee hath delivered as touching theſe quarters: for he hath written, that Media, Parthia, and Perſis, are bound on the Eaſt ſide with the river Indus; on the Weſt, with Tigris; on the North part, with the two mountaines, Taurus and Caucasus: and on the South coaſt, with the red ſea: alſo that they extend in length 1320 miles, and in breadth 840. Moreover, that Meſopotamia by it ſelfe alone, is enclosed Eaſtward with the river Tigris, and Weſtward with Euphrates; having on the North ſide the mountaine

Taurus,

Plinies Naturall Historie.

- A** Taurus, and on the South the Persian sea: lying out in length 800 miles, and in breadth 360. Now to returne unto Charax, the inmost towne within the Persian gulfe, from which Arabia called Eudæmon, *i. happie*, begins and runneth forth in length; situate it is upon a mount artificially reared by mans hands betweene the confluent of Tygris on the right hand, and Eulæus on the left: and yet notwithstanding it carrieth a pourprise or precinct of three miles compasse. Founded first it was by *Alexander* the great: who having drawne Coloners to inhabite it out of the kings citie Durine (which then was ruinate) and leaving there behind him those souldiours which were not fit for service, nor able to follow in the march, ordained, that this towne should be called Alexandria: and the territorie about it Pellaum, of that town where himselfe was borne: and withall appointed, that it should be peopled onely with Macedonians. But this towne of his
- B** by him founded, was overthrowen and destituted by the two rivers aforesaid. Afterwards king *Antiochus* the first rebuilt it againe, and named it of himselfe, Antiochia. But when it was decayed a second time by these rivers, *Spasines* sonne of *Sogdonicus*, who held Arabia, bordering neere by as an absolute king, and not (as *Iuba* reporteth) as a duke or governour under *Alexander*, raised great wharves, and opposed mightie dammes and causeies against those rivers, and so reedified the towne a third time. Which done, he called it after his owne name Charax of Spasines: and verily he fortified thus the site and foundation thereof, three miles in length, and little lesse in breadth. At the beginning it stood upon the sea coast, and from the water side not above ten stadia, and even from thence it hath certaine false bastard galleries: but by the report of *Iuba* in his time, 50 miles. Howbeit, at this day both the Arabian Embassadors, & also our merchants that
- C** come from thence, say it is from the sea shore 125 miles. In such sort, that it cannot be found in any place of the world againe, where the earth hath gained more, nor in so short a time, of the water, by reason of the store of mud brought down with rivers. And the more marvell it is, that considering the sea floweth, and the tide riseth farre beyond this towne, yet those made grounds are not beaten backe, and carried away againe. In this very towne I am not ignorant, that *Dionysius* the latest of our moderne Geographers, was borne: whom *Augustus* the Emperor sent of purpose beforehand into the East countries to discover those parts, and record faithfully in writing whatsoever hee there found, for the better advertisement of his elder son, who was upon his voiage and expedition of Armenia, to warre against the Parthians and Arabians. Neither have I forgotten, that in my first entrance into this worke in hand, I made some protestation to follow those who had written of their owne countries, as men lightly most diligent and of best intelligences in that behalfe. Howbeit, in this place I chuse rather to follow our martiall captaines that have warred there, and report me also to king *Iuba*, who hath written certaine bookes to *C. Caesar Caligula*, as touching the occurrences in the Arabian voiage.

CHAP. XXVIII.

✂ *Arabia, Nomades, Nabatæi, and Omani: Tylos and Ogyris two Islands.*

- E** Arabia commeth behind no countrey in the world, for largenesse and greatnesse especially, reaching out in length a mightie way. For it beginneth at the fall and descent of the mountaine Amanus overagainst Cilicia and Comagene, as we have before said: where it is peopled with many nations brought from thence thither by *Tigranes* the great, to inhabite that quarter, and in old time descended naturally, and reached as farre as to our sea and the Egyptian coast, as we have shewed: yea, and extendeth into the midland parts of Syria unto the mountain Libanus, where the hills reach up to the very clouds: upon which bound the Ramifians, then the Taraneans, and after them the Patami. As for Arabia it selfe, being like a demie Island, runneth out betweene two seas, the red and the Persian, by a certaine artificall workmanship of Nature, framed according to Italie in likenesse of forme and bignesse: yea, and lieth along the sea coasts in manner of Italie. And more than that, it regardeth the same quarter and line of heaven, without any difference at all. This tract thereof, for the rich seat it hath, is named *Felix*, *i. Happie*. The
- F** nations therein dwelling, from our sea coasts unto the deserts of Palmyreum, we have treated of already. Therefore overpassing them, wee will discourse of the rest forward. Now then, the Nomades and those robbers that so lie upon the Chaldæans and trouble them, the people called Scenitæ, as we have before said, doe confine upon. And even they also make no certaine place of abode and habitation, but are called Scenitæ, of their tabernacles and booths which they make
- of

of haire cloths, and encampe under them when and where they list. Being past them, you meet with the Nabateans in the vale, who inhabite a towne there named Petra, little lesse than two miles large; environned with steepe mountaines round about, which cut off all the aduenues to it: and besides, having a river running through the middest thereof. Distant it is from Gaza (a towne situate upon our coast in Syria) 600 miles: and from the Persian gulfe 122. And here at this towne meet both the port high waies, to wit, the one which passengers travell to Palmyra in Syria, and the other, wherein they goe from Gaza. Beyond Petra and the vale thereof, you enter into the Omanes countrey: which reached sometime as farre as to Carax, and inhabited two famous townes built by queene *Semiramis*, namely, *Abefanius*, and *Soraetia*. But now all is but a wilder nesse. Then come you to a towne named *Forath*, situate upon the river *Pasitigris*, and subject to the king of the *Caracins* or *Zarazins*: to which towne there is much resort from Petra, as to a shier towne: and from thence to *Charax*, they may passe with the tide when the water ebbeth, for the space of twelve miles. But they that come by water out of the *Parthian* kingdome, meet with a village called *Teredon*, lower than the place where *Euphrates* and *Tigris* meet together in one. Where the *Chaldæans* inhabite the left hand coast of the river, and the *Nomades* called *Scenitæ*, the right. Some writers affirme, that as yee saile and row upon the river *Tigris*, ye passe by two other townes distant farre asunder: the one called *Barbatia* in times past, and afterwards *Thumata*, which our merchants that trafficke in those parts, avouch to be tenne daies saile from Petra, and is under the king of the *Characenes*: and the other named *Apamia*, situate in the very place where *Euphrates* the river so swelleth over his bankes, that he joineth with *Tigris* in one confluent. And therefore the *Apamians*, at what time as the *Parthians* are about to make inrodes and invade their territorie, set open the sluices, and breake up the wharfes and bankes that keepe these two rivers asunder, and so impeach their enterprife by the overflow and innundation of the waters. Now being past *Charax*, we will discourse of the other coasts of Arabia, and namely that which first was discovered and declared by *Epiphanes*. And to begin with the place where sometime the mouth of *Euphrates* was. When you are once past it, you meet with a river of salt brackish water, and the Promontorie or cape *Chaldonum*: where the sea is more like a deepe pit or whirlepoole than a sea, for 50 miles. Vpon this coast you find the river *Achana*, and beyond it, deserts for 100 miles, untill you come to the Island *Ichara*. Then sheweth it selfe the gulfe or arme of the sea named *Capeus*, upon which inhabite the *Gaulopes* and *Chareni*. Beyond them another creeke called *Gerracius*, and the towne *Gerræ* upon it, five miles large: and fortified with turrets made of great huge stones squared, of salt minerall. Fiftie miles from the sea side is the region *Attene*: and overagainst it the Island *Tylos*, as many miles from the shore, with a towne in it, bearing the name of the Island, much frequented by merchants for the plentie of pearles that there bee sold: and not farre from it there is another somewhat lesse, not past twelve miles from the cape of the foresaid *Tylos*. Beyond these there are discovered by report certaine great Islands, but as yet they have not ben landed upon by our merchants. As for this last Island, it containeth as they say 112 miles and an halfe in circuit, and is farre from *Perfis*; but no access there is unto it, but onely by one narrow gutter or channell. Then sheweth it selfe the Island *Agilia*. And in these parts likewise are other nations, namely, the *Nocheti*, *Zurachi*, *Borgodi*, *Cataræi*, and *Nomades*: and withall the river *Cynos*. Beyond that, asking *Iuba* saith, there is no more discovered upon this sea of that side, by reason of the daungerous rockes therein. And I marvell much that hee hath made no mention at all of the towne *Batrasabe* in the *Omanians* countrey, ne yet of *Omana*, which the auncient Geographers have held to be an haven of great importance in the kingdome of *Carmania*. Item, hee saith not a word of *Omne* and *Athanae*, which our merchants report to bee at this day two famous mart townes, much frequented by those that trafficke from the Persian gulfe. Beyond the river *Caius*, asking *Iuba* writeth, there is an hill, which seemeth all scorched and burnt. Past which, you enter into the countrey of the *Epimaranites*: and anone after into the region of the *Ichthyophagi*: and past them there is discovered a desert Island, and the *Bathymians* countrey. And so forward, the mountaines *Eblitæi* are discovered, and the Island *Omoenus*, the haven *Machorbæ*, the Islands *Etaxalos*, *Onchobrice*, and the people called *Chadæi*. Many other Islands also of no account, and namelesse: but of importance, *Isura*, *Rhinnea*; and one other very neere thereto, wherein are standing certaine columns or pillers of stone engraven with unknowne characters and letters. A little beyond, the port-towne *Gobœa*, and the desert unpeopled Islands *Bragæ*. The nation of the *Thaludæans*: the

A the region Dabanogoris : the mountaine Orfa with an haven under it : the gulfe or arme of the sea called Duatus, with many Islands therein . Also the mountaine Tricoryphus : the countrey Cardalena, the Islands Solanidæ and Capina. Soon after you fall upon other Islands of the Ichthyophagi : and after them the people called Glarians. The strand called Hammæum, wherein are golden mines. The region Canauna. The people Apitami and Gasani. The Island Deuadæ, with the fountaine Goralus. Then come you to the Garphets countrey : the Islands Aleu & Amnamethu. Beyond which are the people called Darra, the Island Chelonitis, and many other of the Ichthyophagi. The Isle Eodanda which lieth desert, and Basage, besides many other that belong to the Sabæans. For rivers, you have Tamar and Amnon, and in them the Islands Dolica, wherein bee the fountaines Daulotes and Dora. Islands besides, to wit, Pteros, Labaris, Covoris and Sambracate, with a towne so named also in the firme land. On the South side many Islands there be, but the greatest of them all is Camari . Then have you the river Mysecros, the haven Leupas, and the Sabæans called Scenitæ, for that they live under tabernacles and tents. Moreover, many other Islands. The cheefest mart or town of merchandise in those parts is Acila, where the merchants use to embarke for their voiage into India. Then followeth the region Amithofcuria, and Damnia. The Mizians, both the greater and the lesse : the Drimutians and Macæ. A Promontorie of theirs is overagainst Carmania, & distant from it 50 miles. A wonderous thing is reported to have been there done, and that is this : that *Numenius* lord deputie under king *Antiochus*, over Mesena, and generall of his armie, defeited the navie of the Persians in sea fight, and the same day with the opportunitie of the tide returned to land again, and gave their hoisemen an overthrow to it : whereupon, in memoriall of a two-fold victorie in one day achieved, he erected two triumphant trophæes, the one in honour of *Jupiter*, and the other of *Neptune*. Far within the deepe sea there lieth another Island called Ogytis, distant from the continent 125 miles, and containing in circuit 112, much renowned for the sepulchre of king *Erythra*, who there was enterred. Another likewise there is of no lesse account, called *Dioscoridu*, lying in the sea *Azanium*, and is from *Syagrum*, the utmost point or cape of the maine, 280 miles. But to returne to the Continent: there remaine yet not spoken of, the *Antarides* toward the South, as you turne to the mountaines, which continue for seven daies journey over : then these nations, *Larendanes*, *Catabanes*, and *Gebanites*: who have many townes, but the greatest are *Nagia* and *Tamna*, with 65 churches or temples within it, whereby a man may know how great it is. From thence you come to a Promontorie : from which to the continent of the *Troglodites* it is 50 miles. And in those quarters remaine the *Toanes*, *Acchitæ*, *Chatramotitæ*, *Tomabei*, *Antidalei*, *Lexianæ*, *Agrei*, *Cerbanj*, and *Sabæi*, of all the Arabians for their store of frank-incense most famous, as also for the largeness of their countrey, reaching from sea to sea. Their townes situate upon the coast of the red sea, are *Marane*, *Marina*, *Cocolia* and *Sabarra*. Within the firme land are these townes, *Nascus*, *Cardava*, *Carnus*, and *Tomala*, where the Sabæans keepe their faires and markets for to vent & sell their commodities of incense, myrre, and such drugs and spices. One part of them are the *Atramites*, whose capitall citie *Sobotale*, hath within the walls thereof 60 temples. But the roiall citie and cheefe seat of the whole kingdome is *Nariaba* : situate upon a gulfe or arme of the sea that reacheth into the land 94 miles, full of Islands, beautified with sweet odoriferous trees. Vpon the *Atramites* within the maine land joine the *Minæi* : but the *Elamites* inhabit the maritime coast, where there standeth a cittie also called *Elamitum*. To them the *Cagulates* lie close : and their head towne is *Siby*, which the Greekes name *Apate*. Then come you to the *Arficodani* and *Vadei*, with a great towne : and the *Barascei* : beyond whom is *Lichemia*, and the Island *Sygaros*, into which no dogs will come willingly : and if any be put there, they will never lin wandering about the shore untill they die. In the farthest part of the abovesaid gulfe are the *Leanites*, whereof the gulfe tooke the name *Leanites*. Their head citie and roiall seat is *Agra* : but the cittie *Leana*, or as others would have it, *Ælana*, is situate upon the very gulfe. And hereupon our writers have called that arme of the sea *Ælaniticum*, others *Ælenaticum*; *Artemidorus*, *Aleniticum*; and king *Iuba*, *Læniticum*. Arabia is reported to take in circuit from *Charax* to *Leana*, 4870 myles : but *Iuba* thinketh it somewhat lesse than 4000. Widest it is in the North parts betweene the townes *Herous* and *Chræce*. Now it remaineth that wee speake of other parts within the midland thereof. Vpon the *Nabataei*, the *Thimaneans* doe border, after the description of the old Geographers : but at this day, the *Tavenes*, *Suellenes*, and *Saracenes* : their principall towne is *Arra*, wherein is the greatest trafficke and

resort of merchants. Moreover, the Hemnates and Analites, whose townes are Domada and Erag: also the Thamusiens, with their towne Badanatha: the Carreans, and their towne Chariati: the Achoali, and a citie of theirs Phoda. Furthermore, the Minæi, descended as some thinke from *Minos* king of Crete: whose citie Charinæi hath 14 miles in compasse. Other townes likewise be there standing as farre off, and namely, Mariaba, Baramalacum, a towne ywis of no meane account: likewise Carnon, and Ramei, who are thought to come from *Rhadamanthus* the brother of *Minos*. Over and besides, the Homerites, with their towne Massala: the Hamirei, Gedranitæ, Anapraë, Ilifanitæ, Bochilitæ, Sammei, and Amatheï; with these townes, Nessâ and Cennefferi. The Zamanenes, with these townes, Saiace, Scantate, and Bacasmani: the towne Rhiphearma, which in the Arabian tongue signifieth Barley: also the Antei, Rapi, Gyrei, and Marhatai. The Helmadenes, with the towne Ebode. The Agarturi in the mountaines, having a towne 20 miles about, wherein is a fountaine called Emischabales, that is as much to say, as The camels town. Ampelone, a colonie of the Milesians: the town Actrida: and the people Calingij, whose towne is named Mariaba, as much to say as, Lords of all. Townes moreover, Pallon and Muranimal, neere unto a river, by which men thinke that Euphrates springeth and breaketh forth above ground. Other nations besides, namely, Agrei and Ammonij: with a towne, Athennæ: and the Caurarani, which signifieth, Most rich in droves of cattaile. Then the Caranites, Cæsanes, and Choanes. There were sometime also certaine townes in Arabia, held by Greekes, and namely, Arethusa, Larissa, and Chalcis, which all in the end came to ruine and were destroyed in divers and sundrie warres. The only man among the Romans untill this day that warred in those parts, was *Ælius Gallus* a knight of Rome. As for *Caius Cæsar* the sonne of *Augustus* the Emperour, he did but looke onely into Arabia, and no more: but *Gallus* wasted townes that were not once named by Authors that wrate before, namely, Egra, Anestum, Elsa, Magusum, Tanuracum, Laberia, and the above-named Marieba, which was in circuit sixe miles about: likewise Caripeta, the farthest that he went unto. As for all other matters, he made report unto the Senate of Rome, according as he had found and discovered in those parts, to wit, that the Nomades live of milke and venison: the rest of the Arabians presse wine, like as the Indians doe, out of dates; and oyle of Sefama, a kind of graine or pulse in those countries. That the Homerites country of all others is most populous and replenished with people: the Minæans have plenteous and fruitfull fields, full of date trees and goodly hortyards stored with all sorts of fruit; but their principall riches lyeth in cattaile. The Cembanes and Arians are good warriours and martiall men, but the Chatramotites that way excell all the rest. The Caræans have the largest territories and most fertile fields for corne. As for the Sabæans, their wealth standeth most upon their woods and trees, that bring forth the sweet gummess of frankincense and myrrhe: also in mines of gold: having water at commaundement to refresh their lands, and plentie besides of honey and waxe. As concerning the sweet odours and spices that come from thence, wee will speake thereof in a severall booke by it selfe. The Arabians weare mitres or turbants ordinarily upon their heads, or else go with their haire long and never cut it: as for their beards, them they shave, save only on their upper lip, which they let grow still: and yet some there be of them that suffer their beards to grow long and never cut them. But this one thing I marveile much at, that being such an infinite number of nations as they be, the one halfe of them live by robberie and theeving, howsoever the other live by trafficke and merchandise. Take them generally, they be exceeding rich; for with them the Romans and Parthians leave exceeding summes of gold and silver, for the commodities out of their woods and seas which they sell unto them; but they themselves buy nothing of them againe. Now will wee speake of the other coast opposite unto Arabia. *Timosthenes* hath set downe, that the whole gulfes or arme of the sea called Red, was from one end to the other foure daies sailing: and from side to side, two dayes: that the streights of the firth were seven miles over. But *Eratosthenes* saith, that taking the measure at the very mouth, it is every way 1300 miles.

CHAP. XXIX.

☞ *The gulfes of the Red Sea: likewise of the Trogloditick and Ethiopian Seas.*

A *Rtemidorus* avoucheth, that the Red Sea toward Arabia side, is 1400 miles and fiftie: but on the coast of the Troglodites 1182, untill you come to the citie Ptolemis. Most Geographers have set downe the breadth thereof to be 462 miles: and that the mouth of it, where

- A** where it openeth wide, full against sun-rising in winter, [*i. Southwest*] some say, is 7 miles broad; and others 12. As for the posture and situation thereof, thus it lyeth: Beyond the braunch or arme thereof called *Ælaniticus*, there is another creeke which the Arabians call *Æant*, upon which standeth the towne *Heroon*. In old time there was a citie called *Cambisu*, betweene the *Nelians* and *Marchandians*, into which the sicke and feeble soldiers of our armie were conveyed, as to a place of retreat and repose. Beyond which, you enter into the land of *Tyra*: and there is the port *Daneon* to be seene, from which *Sesoftris* a king of *Ægypt*, was the first that imagined and devised to draw one arme of it with a channell navigable, into *Nilus*, in that part where it runneth to the place called *Delta*, and that for 62 miles space, which is betweene the said river and the red sea. This enterprife of his was followed by *Darius* king of the *Persians*: yea and by
- B** *Ptolomeus* king of *Ægypt*, second of that name, who made a channell 100 foot over, and thirtie deepe, for 37 miles in length and an halfe, even to the bitter fountaines. But this desfigne was interrupted and the ditch went no farther, for fear of a general deluge and inundation: for found it was, that the red sea lay above the land of *Ægypt* three cubits. Some alledge not that to be the cause, but this, namely, That if the sea were let into *Nilus*, the sweet water thereof (whereof they drinke onely and of none else) should be corrupted thereby and marred. Yet neverthelesse, although this worke went not forward, the way is well beaten all the countrey over betweene the *Red sea* and the *Ægyptian*, for trafficke: and three severall ordinarie waies there are betweene: the one from *Pelusiū* over the sands; where, unles there be reeds set up pitched in the ground to give guidance and direction, there would no path be found, for ever and anon the wind bloweth the sand over the tracts of mens feet and covereth all. A second beginneth two miles beyond the mountaine *Casius*, which after 60 miles commeth into the former *Pelusiacke* way. (Vpon this great rode way, the Arabians called *Autei*, doe inhabite.) The third taketh his head and beginning at *Gereun*, which they call *Adipson*, and holdeth on through the said Arabians, and is 60 miles neerer way, but full of craggie hills and altogether without waters. All these foresaid wayes lead to the citie *Arsinoë*, built upon the gulfe *Charandra* by *Ptolomeus Philadelphus*, and bare his sisters name: and verily hee was the first that discovered those parts, and searched narrowly into the region *Trogloditicum*: and the river that passeth by *Arsinoë*, hee called *Ptolomeus*. Within a litle of this place, there is a litle towne named *Ænum*; for which, some there be that write, *Philotera*. Beyond them, are the *Azarei*: Arabians of the wilder fort and halfe *Troglodites*, by reason they marrie their wives from out of the *Troglodites* countrey. Beeing past these coasts, you shall find the Ilands *Sapyrene* and *Scytala*: and within a litle thereof, deserts untill you come to *Myos-hormos*, where there is a fountaine called *Taduos*, the mount *Eos*, the Island *Lambe*, many havens besides, and *Berenice* a towne, bearing the name of the mother to *K. Ptolomeus Philadelphus*, to which there is a way lying from *Coptos*, as we have said: and last of all, the Arabians called *Autei*, and *Gnebadei*. Now it remaineth to speake of the region *Trogloditicum*, which the auncient men of old time called *Michoë*, and others *Mideë*: and therein standeth the mountaine *Pentedaetylos*. Vpon the coast of this countrey, there lye to be seene certaine Ilands called *Stenæ-deiræ*; and others no fewer in number, named *Halonnesti*: also *Cardamine*, and *Topazos*, which Iland gave the name to the precious stone called the *Topaze*.
- E** Then come you to an arme of the sea betweene two lands, full of petie Ilands, whereof that which is called *Mareu*, is well served with water sufficient: another, *Eratonos*, is altogether drie and unprovided of fresh water. These Ilands tooke name of two captaines and governors there under the king. Within forth farther into the firme land, inhabite the *Candei*, whome they call *Ophiophagi*, because they are wont to feed on serpents: and in truth there is not another countrey that breeds them more than it. King *Iubæ*, who seemeth to have taken great paines in the diligent perusing and discoverie of these parts, omitted in all this tract (unlesse there be some fault and defect in them that copied out his first originall) to speake of a second citie named *Berenice*, with the addition of *Panchryfos*; as also of a third called *Epidires*, and yet renowned it is in regard of the place whereupon it is seated: for situate it is upon a knap of land bearing far into the *Red sea*, even where the mouth of it is not above 4 miles and an halfe, from *Arabia*. Within the prospect of this tract there is the Island *Cytis*, which also bringeth forth good store of the *Topaze* stones. Beyond this quarter, nothing but woods and Forrests, where king *Ptolomeus* surnamed *Philadelphus* built the citie *Ptolemais*, onely for to chase and hunt the *Elephant*, neere to the lake *Monoleus*; and in regard of his game there, he named it *Epi-theras*. This is the verie
- country

countrie mentioned by me in the second booke: wherein for 45 dayes before mid-summer or the entrance of the sunne into Cancer, and as many after, by the sixt houre of the day, that is to say, about noone, no shadowes are to be seene: which being once past, all the day after they fall into the South. As for other dayes of the yeere besides, they shew into the North: whereas in that citie Berenice which wee mentioned first, upon the very day onely of the Sun-steed, at the sixt houre or noon-tide, the shadowes are cleane gone and none to be seene (for otherwise there is no alteration at all to be observed throughout the yeere) for the space of 600 miles all about Ptolemais. A strange and notable thing worth observation, that it should be so but in one hour all the yeere long, and a matter that gave great light and direction to the world, yea and ministered occasion to a singular invention and subtil conclusion: for *Eratosthenes* upon this undoubted argument and demonstration of the diversitie of shadowes, set in hand hereupon to take the measure of the whole globe of the earth, and put it downe in writing to all posteritie. Beyond this citie Ptolemais, the sea chaungeth his name and is called Azanium; over which the cape sheweth it selfe, which some have written by the name of Hispalus: also, anon appeareth the lake Mandalum, and in it the Island Colocastis: but in the deepe sea many more, wherein are taken many tortoises. Farther upon this coast is the towne Suchæ, and then you may discover in the sea the Island Daphnis, and the citie Aduliton, built by certaine Ægyptian slaves who ran away from their masters and tooke no leave: and verily this is the greatest and most frequented mart towne of all the Troglodites countrie, and put the Ægyptians to them: and it is from Ptolemais 5 daies sailing. Thither is brought great store of Ivoire, or the Elephants tooth, and of the horne of the Rhinoceros: there may a man have plentie of the Sea-horse hides, of tortoise shelles, of little monkies or marmosets: there also a man may be sped with bondslaves. A little beyond are the Æthiopians, called Arotères: also the Islands named Aliaæ: and besides them other islands, namely, Bacchias, Antibacchias, and Stratonis: being past them, there is a gulfe in the coast of Æthiopia, as yet not discovered or knowne by any name: a thing that may make us marveile much, considering that our merchants search into farther corners than so. Also a promontorie, wherein there is a fountaine of fresh water named Curios, much desired of the sailers that passe that way, and in great respect for the refreshing that it yeeldeth unto them: beyond it, is the harbor or port of Isis, distant from the town of the Adulites abovesaid, 10 daies rowing with ores: and thither is the Troglodites myrrhe brought and there laid up. Before this haven, there lye in the sea two Islands, named Pseudopylæ: and as many farther within, called Pylæ: in the one of them be certaine pillars of stones, engraven with straunge and unknowne letters. When you are past this haven, you come to an arme of the sea called Abalites: within it is the Island Diodori, and other lying desert and unpeopled. Also along the continent, there is much wilderness: but being past them, you come to the towne Gaza: the promontorie also and port Mossylites, unto which store of cynamon and canell is brought. Thus farre marched king *Sesestris* with his armie. Some writers make mention of one towne more in Æthiopia beyond all this, upon the sea side, called Baradaza. King *Tuba* would have the Atlantick sea to begin at this promontorie or cape above-named, Mossylites: on which sea (as he saith) a man may saile very well with a West-northwest wind, by the coasts of his kingdoms of Mauritania or Marochcho, as farre as to the coasts of Gibraltar called Gades: and sure he speaketh so confidently thereof, as I wil not altogether discredit his resolution in this behalfe. From a promontorie of the Indians called Lepteacra, and by others Drepanum, unto the Isle of Malchu, he saith plainly, that by a straight and direct course it is 15 hundred miles, and never reckon those parts that are burnt with the sunne. From thence to a place called Sceneos, he affirmeth it is 225 miles: and from it to the Island Sadanum, 150 miles: and thus by this meanes hee concludeth, that in all, to the open and known sea, it is 1885 miles. But all other writers besides him were of opinion, that there could not possibly be any sailing upon it, for the exceeding heat of the sunne. Over and besides, the Arabians named *Astiræ*, doe much harme and annoyance from out of the Islands which they hold, unto merchants that trafficke that way: for these Arabians, according as their name doth import, couple bottles made of good oxen leather, two by two together, and going upon them with ease as if it were a bridge under them, scour the seas, and shooting their empoisoned arrowes, practise pyracie, to the great losse and mischief of merchants and sailers. The same *Tuba* writeth moreover, that there be certaine people of the Troglodites, named Therothoes, for their hunting of wild beasts, of their exceeding and wonderfull swiftnesse in chasing of Deere upon

- A** upon land : as the Ichthyophagi for coursing of fish in the sea, swimming as naturally as if they were water creatures. Moreover, hee nameth other nations in those parts, as the Bargeni, Zageres, Chalybes, Saxinæ, Syreces, Daremes and Domazanes. Furthermore, hee affirmeth; that the people inhabiting along the sides of Nilus from Syene unto Meroë, are not Æthyopians, but Arabians, who for to seeke fresh water, approached Nilus, and there dwelt : as also that the citie of the Sunne, which we said before in the description of Ægypt, standeth not far from Memphis, was first founded and built by the Arabians. Contrariwise, other Geographers there bee, who affirme, that the farther side or banke of Nilus is no part of Æthyopia, and they lay it as a dependant annexed to Affrick. But be it as will be, I will not greatly busie my head thereabout, but suffer every man to abound in his owne sence, and have his own way : only I will content my
- B** selfe with this, to set downe the townes on both sides thereof, in that order as they are declared unto mee. And first to begin with that side toward Arabia : after you are past Syene, enter you shall upon the countrey of the Catadupi, and so forward into the land of the Syenites. Wherein these townes stand in order as followeth: Tacompson, which some have called Thatire, Aranium Sefanium, Sandura, Nasandum, Anadoma, Cumara, Beda and Bochiana, Leuphithorga, Tantarane, Machindira, Noa, Gophoa, Gyftatæ, Megeda, Lea, Rhemnia, Nupsia, Direa, Patara, Bagada, Dumana, Rhadata, wherein a golden cat is worshipped as a god. Boron in the midland part of the continent, and Mallos, the next towne to Meroë. Thus hath *Bion* digested and set them downe. But king *Tuba* hath raunged them otherwise in this manner. First, Megatichos, a towne situate upon a hill betweene Ægypt and Æthyopia, which the Arabians use to call Myrson : next to it Tacompson : then Aranium, Sefanium, Pide, Mamuda, and Corambis ; neere unto it a fountaine of liquid Bitumen : Hammodara, Profsa, Parenta, Mama, Theflara, Gallæ, Zoton, Graucome, Emeum, Pidibotæ, Hebdoimecontacometæ, and the Nomades, who ordinarily are encamped under tents and pavilions. Cyste, Pemma, Gadagale, Palois, Primmis, Nupsis, Dafelis, Patis, Gambrenes, Magafes, Segafinala, Cranda, Denna, Cadeuma, Thena, Batha, Alana, Macum, Scamos, and Gora within an Island. Beyond which, Abala, Androcalis, Seres, Mallos and Agoce. And thus much on the side of Arabia. Now for Affricke side, they are in this wise reckoned. First, Tacompfos, according to the others name, or a parcell rather of the former : then, Magora, Sea, Edofa, Pelenaria, Pyndis, Magusa, Bauma, Linitima, Spyntuma, Sydopta, Genfoa, Pindictora, Eugo, Orfima, Suasa, Maunna, Rhuma, Urbubuma, Mulona, which town the
- D** Greeks were wont to call, Hypaton : Pagoargas, Zanones, & there begin the Elephants to come in, Mamblia, Berresa, Cetuma. There was moreover a town sometime named Epis, situate against Meroë : but rased it was and utterly destroyed before that *Bion* wrote his Geographie. See what citties and towns of name were recorded in times past to have ben in those parts, untill you come to the Isle Meroë. And yet at this day there is neither sticke nor stone to be found of any of them in a manner, on neither side. Only deserts and a vast wildernesse in steed of them, by report made unto *Nero* the Emperour by the Prætorian souldiours, sent thither from him under the leading of a Tribune or Colonell, to discover those quarters of Æthyopia, and to relate accordingly : at what time as amongst other his designs, that prince intended an expedition with his armie against the Æthyopians. And yet before his time, even in the daies of *Augustus Casar* of happy memorie, the Romanes pierced thither with a power of armed men under the conduct of *Pub. Petronius*, a knight of Rome, and governour of Ægypt, deputed by the said Emperour. Where he forced by assault and conquered all those townes in Æthyopia which he then found standing, in this order following : namely, Pselcis, Primis, Abaccis, Phthuris, Cambusis, Attena, Stadisis, where the river Nilus runneth downe with such a mightie fall, that with the noise thereof the inhabitants there by, loose their hearing and become deafe. Besides these hee woon also and sacked Napata. And albeit he marched forward still a great way into the countrey, even 870 myles beyond Syene, yet this Romane armie of his laid not all wast in those parts, and left the countrey so desert as now it is. No, no : It was the Ægyptians warres and not the Romanes that gave the wast to Æthyopia : and albeit sometimes it woon and otherwhiles lost ; one time bare the scepter and ruled, another time underwent the yoke, and were subdued : yet was it of great name in the world and puissant, untill the reigne of king *Memnon*, who ruled at the time of the Trojane warre, yea, and Syria was subject unto it, as also the coast of our sea in king *Cepheus* daies, as appeareth by the fabulous tales that goe as touching *Andromeda*. Semblably, the Geographers varie and disagree much about the measure and dimension of Æthyopia. And first of all others, *Dalio*, al-

beit he passed farre beyond Meroë: after him, *Aristocreon*, *Bion*, and *Basilis*. As for *Simonides* (the younger and the later writer) had sojourned in Meroë five yeeres, when he wrot of Æthyopia. For *Timosthenes* the Admirall of *Ptolomæus Philadelphus* his navie, hath left in record, that from Syene to Meroë is 60 daies journey, without any other particularizing of the measure by miles. But *Eratosthenes* precisely noteth, that it is 625 miles. *Artemidorus* but 600. *Sebestus* affirmeth, That from the frontiers of Ægypt it is 1675 miles. From whence, the last rehearsed writers count forward but 1270. But all this difference and dispute about this point, is lately determined & ended by the report of those travellers whom *Nero* sent of purpose to discover those countries: and they made relation of the truth upon their certaine knowledge, that it is 874 miles from Syene in this manner particularly by journies. Namely, from the said Syene to Hiera-Sycaminon 54 miles: from thence to Tama 75 miles. From Tama to the Euonymites countrey, the first of all the Æthyopians, 120. Forward to Acina 54. To Pitara 25. To Tergedum 106 miles. Where by the way it is to be noted, that in the middest of this tract lieth the Island Gagandus: where they began first to have a sight of the birds called Parrats: and beyond another Island in the same way which is called Artigula, they might see monkies and marmosets: but being once beyond Tergedum, they met with the beasts Cynocephali. From thence to Napata 80 miles: this is the only little towne among all the rest before named. From which to the Island Meroë is 360 miles. They reported moreover, that about Meroë (& not before) the grasse and hearbes appeared fresh and Greene; yea, and the woods shewed somewhat in comparison of all the way besides; and that they espied the tracts of Elephants and Rhinocerotes where they had gone. As for the towne it selfe Meroë, they said it was within the Island from the very entrie thereof 70 miles: & that just by, there was another Island called Tatu, which yeelded a bay or haven to land at for them that took the arme and channell of Nilus on the right hand. As for the building within Meroë, there were but few houses in it: that the Isle was subject unto a ladie or queene named *Candace*, a name that for many yeeres alreadie went from one queene to another successively. Within this towne there is the temple of great holiness and devotion in the honour of *Jupiter Hammon*: and in all that tract many other chappels. Finally, so long as the Æthyopians swaied the scepter and reigned, this Island was much renowned and very famous. For by report, they were wont to furnish the Æthyopian king with armed men 250000, & to maintain of Artificians 400000. Last of all there have been counted 45 kings of the Æthyopians; and so it is reported at this day.

CHAP. XXX.

¶ *The manifold, strange, and wonderful formes and shapes of men.*

ALL Æthyopia in generall was in old time called Ætheria: afterwards Atlantia: and finally of *Vulcanes* sonne *Æthiops*, it tooke the name Æthyopia. No wonder it is, that about the coasts thereof there be found both men and beasts of strange and monstrous shapes, considering the agilitie of the Sunnes fierie heat, so strong and powerfull in those countries, which is able to frame bodies artificially of sundrie proportions, and to imprint and grave in them divers formes. Certes, reported it is, that far within the countrey Eastward there are a kind of people without any nose at all on their face, having their visage all plain and flat. Others again without any upper lip, and some tonguelesse. Moreover, there is a kind of them that want a mouth, framed apart from their nosethrills: and at one and the same hole, and no more taketh in breath, receiveth drinke by drawing it in with an oaten straw, yea, and after the same manner feed themselves with the graines of oates, growing of the owne accord without mans labour and tillage for their onely food. And others there be, who in steed of speech and words, make signes, as well with nodding their heads, as moving their other members. There are also among them, that before the time of *Ptolomæus Labyrinthus* king of Ægypt, knew no use at all of fire. Furthermore, writers there bee, who have reported, that in the countrey neere unto the meeres and marshes from whence Nilus issueth, there inhabit those little dwarfs called *Pygmei*. But to returne againe to the utmost coasts of Æthyopia, where we left: there is a continuall raunge and course of mountaines all red like fire, as if they were ever burning. Moreover, beyond Meroë there is a countrey lying above the Troglodites and the red sea: where, after you be three daies journey from Napata toward the coast of the said red sea, you shall find that in most places they save raine water for their ordinarie use to drinke, and otherwise: all the countrey betweene is very plenteous and full of

A of gold mines. All beyond this region is inhabited by the Atabuli, a people also of Æthiopia: As for the Megabares, whom some have named Adiabares, they lie against Meroë, and have a towne bearing the name of *Apollo*. Among them are certain Nomades encamping under tents and tabernacles, who live of Elephants flesh. Just against them in a part of Affricke are the long living Macrobianes. Againe, being past the Megabarenes, you come unto the Memnonnes & Daveli: and 20 daies journey from them, to the Critenses. Beyond whom you meet with the Dochis, and the Gymnetes who are ever naked. Soone after you shall find the Anderæ, Mathitæ, Messagebes, Hipporeæ, who be all over blacke, and therefore they colour and paint their bodies with a kind of red chalke or ruddle called Rubrica. But upon the coast of Affricke are the Medimni. Beyond whom you shall come to another sort of Nomades living under tents, who feed of no other thing but the milke of certaine creatures headed like dogs, called Cynocephali: also to the O-labi and Syrbotæ, who are reported to be eight cubites high. Moreover, *Aristocreon* saith, That on Libya side, five daies journey from Meroë, there is a towne called Tole: and 12 daies journey from thence, there standeth Elar, a towne built by the Ægyptians, who fled thither to avoid the crueltye and tyrannie of king *Psammeticus*. And reported it is, that the Ægyptians held it for 300 yeeres. Also, that the same fugitives founded the towne Daron on the contrarie side in the coast of Arabia. But that which *Aristocreon* nameth Elar, *Bion* called Sapa, and saith withall, that the very word Sapa signifieth in the Æthiopian language, strangers or aliens come from other parts. Hee affirmeth besides, that their capitall citie is within an Island, Sembobitis, and that Sai within Arabia, is the third citie of that nation. Now, betwene the mountaines and the river Nilus, are the Symbarians and the Phalanges: but upon the very hills live the Asachæ, who have many other nations under them: and they are by report seven daies journey from the sea. They live upon the venison of Elephants flesh, which they use commonly to hunt and chase. As for the Island within Nilus, of the Semberrites, it is subject to a queene. And eight daies journey from thence lieth the country of the Æthiopians, named Nubæi. Their cheefe town Tenupsis is seated upon the river Nilus. Beyond the Nubians, you enter upon the countrey of the Sambri: where all the foure-footed beasts, yea, even the very Elephants, are without eares. Upon the coast of Affricke inhabit the Ptoembari and Ptoemphanæ: who have a dog for their king, and him they obey, according to the signs which he maketh by moving the parts of his bodie, which they take to be his commaundements, and religiously they doe observe them. Their head citie is Aurussi, farre distant from Nilus. Beyond them are the Achisarmi, Phaliges, Marigeri, and Casamarri. *Bion* affirmeth, That beyond Psembobitis, there bee other townes in the Islands of that coast, toward Meroë, all the way as you passe for 20 daies journey. The towne of the next Island is Semberritarum, under the queene: likewise another called Asar. Also there is a second Island having in it the towne Daron: a third which they call Medæ, wherein standeth the towne Afel: and a fourth named Garode, like as the towne also. Then along the banks of Nilus are many townes, to wit, Navos, Modunda, Andabis, Setundum, Colligat, Secande, Navestabe, Cumi, Agrosfi, Ægipa, Candrogari, Araba, and Summara. The region above Sirbichim, where the mountaines doe end, is reported to have upon the sea coast certaine Æthiopians called Nificastes and Nifites, that is to say, men with three or four eies apeece: not for that they are so eied indeed, but because they are excellent archers, & have a speciall good eie in aiming at their mark, which lightly they will not misse. *Bion* affirmeth moreover, That from that clime of the heaven, which beareth above the greater Syrtis, & bendeth toward the South Ocean sea, they be called Dalion, to wit, the Cisforians and Longopores, who drinke and use raine water only. And beyond Oecalices for five daies journie, the Vnbalks, Isuelians, Pharusæans, Valians and Cispians. All the rest are nothing but deserts not inhabited. But then he telleth fabulous and incredible tales of those countries. Namely, that Westward there are people called Nigræ, whose king hath but one eie, and that in the mids of his forehead. Also he talketh of the Agriophagi, who live most of panthers and lions flesh. Likewise of the Pomphagi, who eat all things whatsoever. Moreover, of the Anthropophagi, that feed of mans flesh. Furthermore, of the Cynamolgi, who have heads like dogs. Over and besides, the Artabarites who wander and goe up and downe in the Forrests like fourefooted savage beasts. Beyond whom, as hee saith, bee the Hesperij, and Peroesi, who, as we said before, were planted in the confines of Mauritania. In certain parts also of Æthiopia the people live of locusts onely, which they powder with salt, and hang up in smoke to harden, for their yearly provision, and these live not above 40 yeers at the most. Finally, *Agrippa* saith

that all Æthiopia, and take the land with it of *Prester Iehan* bordering upon the red sea, containeth in length 2170 miles: & in breadth, together with the higher Ægypt, 1291. Some Geographers have taken the breadth in this maner. From Meroë to Sirbitum, 12 daies journie upon Nilus: from thence to the countrie of the Davillians another 12, and from them to the Æthiopian Ocean 6 daies. But in general al writers in a maner do resolve upon this, that between the Ocean and Meroë it is 725 miles: and from thence to Syene, as much as we have set down before. As for the posture and situation of Æthiopia, it lieth Southeast and Southwest. In the Meridian South parts thereof, there be great woods of Ebene especially, alwaies greene. Toward the mids of this region, there is a mightie high mountain looking over the sea, that burneth continually, which the Greeks call *Theon-ocheina*, that is to say, the chariot of the gods: from the which it is counted foure daies journey by sea to the promontorie or cape called *Hesperion-Ceras*, which consisteth upon *Africke*, neere to the *Hesperian Æthiopians*. Some writers hold, that this tract is beautified with pretie little hils, and those pleasantly clad and garnished with shadowie groves, wherein the *Ægipanes* and *Satyres* doe converse.

CHAP. XXXI.

¶ *The Islands in the Æthiopian sea.*

Ephorus, *Endoxus*, and *Timosthenes*, do all agree in this, that there be very many Islands in all that sea. *Clitarchus* witnesseth, that report was made to *Alexander* the Great, of one above the rest, which was so rich and well monyed, that for an ordinarie horse the inhabitants would not sticke to give a talent of gold: also of another, wherein was found a sacred hill adorned with a goodly wood upon it, where the trees distilled and dropped sweet water of a wonderful odoriferous smell. Moreover, full against the Persian gulfe, lyeth the Island named *Cerne*, opposite unto Æthiopia, but how large it is, or how farre off it beareth into the sea from the continent, is not certainly knowne: this onely is reported, that the Æthiopians and none but they, are the inhabitants thereof. *Ephorus* writeth, that they who would faile thither from the red sea, are not able for extreame heat to passe beyond certaine columnes or pillars, for so they call the little Islands there. Howbeit *Polybius* avoucheth, that this Island *Cerne* where it lyeth in the utmost coast of the *Mauritanian* sea over-against the mountaine *Atlas*, is but 8 stadia from the land. And *Cornelius Nepos* affirmeth, that likewise it is not above a mile from the land, over-against *Carthage*: and besides, that it is not above two miles in circuit. There is mention made also by Authors, of another Island before the said mountaine *Atlas*, named also thereupon *Atlantis*. And five daies sailing from it, appeare the deserts of the Æthiopian *Hesperians*, together with the foresaid cape, which we named *Hesperion-Ceras*, where the coasts of the land begin first to turne about their forefront to wind Westward, and regard the *Atlantick* sea. Iust over-against this cape, as *Xenophon Lampiscenus* reporteth, lye the Islands called *Gorgates*, where sometimes the *Gorgones* kept their habitation, and two daies sailing they are thought to be from the firme land. *Hanno*, a great commaunder and generall of the *Carthaginians*, landed there with an armie: who made this report from thence, That the women were all over their bodies hairie: as for the men, he could not catch one of them, so swift they were of foot that they escaped out of all sight: but he stead two of these *Gorgone* women and brought away their skinnes, which for a testimoniall of his beeing there, and for a wonder to posteritie, hee hung up in *Iunoes* temple, where they were seene, untill *Carthage* was woon and sacked. Beyond these Isles, there are by report, two more discovered, by the name of *Hesperides*. But so uncertaine are all the intelligences delivered concerning these parts, that *Statius Sebosus* affirmeth, that it is 40 good daies sailing from the Islands of these *Gorgones* along the coast of *Atlas*, unto the Isles of the *Hesperides*; and from thence to *Hesperion-Ceras*, but one. As little resolution and certaintie there is, as touching the Islands of *Mauritania*. In this onely they all jumpe and accord, that king *Iuba* discovered some few of them over-against the *Autolotes*, in which hee meant and purposed to die *Gætulian* purple.

CHAP. XXXII.

¶ *Of the Islands Fortunatæ, or Canarie.*

Some Authors there be who thinke, that the Islands *Fortunatæ*, and certaine others besides them, are beyond the *Autolotes*: among whome, the same *Sebosus* above rehearsed was so bold, as to speake of their distances: and namely, that the Island *Iunonia* is from *Gades* 750 miles:

- A** 750 miles: and that from it Westward, the Isles Pluvialia and Capraria, are as much. Also that in the Island Pluvialia there is no fresh water, but onely that which they have by shewres of rain. He saith moreover, that from them to the Fortunate Islands are 250 miles; which lye 8 myles from the coast of Mauritania to the left hand, called The coast of the sunne, or Valley of the sunne, for that it is like a valley or hollow leuell floore of earth, whereupon also it is called Planaria, resembling an even plaine. And in very truth, this valley containeth in circuit 300 miles: wherein are trees to be seene that grow up in height to 144 foot. As for the Islands named Fortunatae, *Iuba* learned thus much by diligent inquisition, that they lie from the South neere to the West 625 miles from the Ilands Purpurariae, where they die purple: so as to come thither, a man must saile 250 miles above the West, and then for 75 miles more bend his course Eastward.
- B** He saith moreover, that the first of these Islands is called Ombrion, wherein are to be seene no token or shew at all of houses. Also that among the mountains, it hath a lake or meere: and trees resembling the plant Ferula, out of which they presse water: that which issueth out of the blacke trees of that kind, is bitter; but out of the whiter sort, sweet and potable. As for a second, he writeth that it is named Iunonia, wherein there is one little house or chappel made of stone: beyond it, but neereby, there is a third of the same name, but lesse than the other: and then you come to a fourth called Capraria, full of great Lizards. Within a kenning from these, lieth the Island Nivaria, which tooke this name of the snow that lieth there continually; and besides, it is full of mists and fogges. The next to it and the last of all, is Canaria, so called by reason of a number of dogges of mightie bignesse; of which king *Iuba* brought away two: and in this Island there are some marks remaining of buildings which give testimonie that sometime it was inhabited and peopled. And as all these Ilands generally doe abound plentifully in fruitfull trees, and flying foules of all sorts: so this above the rest named Canaria, is replenished with rowes of date trees that beare abundance of dates, and likewise with pine trees that yeeld store of pine nuts. Furthermore he affirmeth, that there is great plentie of honey in it: that the rivers therein are well stored with fish, and the Sturgeon especially: in which there groweth the red Papyrus as ordinarily as in Nilus. Howbeit in conclusion he saith, that these Ilands are much annoyed with great whales and such monsters of the sea, that daily are cast upon the shore, which lye above ground and putrifie like carrion. Thus having at large gone through the description of the globe of the earth, as well without as within, it remaineth now to knit up briefly with the measure and compasse of the seas.
- D**

CHAP. XXXIII.

☞ *A summarie of the earth, digested according to the dimensions thereof.*

- P** *Phibius* saith, that from the streights of Gibraltar, unto the very mouth and firth of Mœotis, it is found by a direct and streight course to be 3437 miles and an halfe. Begin there againe, and hold on a right course Eastward to Sicilie, it is 1260 miles and an halfe. From thence forward to the Island Creta, 375 miles: forward to Rhodes, 146 miles and an halfe: to the Chelidonia Ilands as much, and so to Cyprus 325 miles: from whence to Seleucia Pieria in Syria, 115 miles. Which particulars being laid together, make by computation the grosse summe of 2340 miles. Howbeit, *Agrippa* counteth 3440 miles for all this distance above rehearsed, beginning at the streights of Gibraltar above laid, and carrying the length streight forward to the gulfe of Issa. In which reckoning of his, I wot not whether there be an error in the number, forasmuch as the same writer hath set downe from the streight of Messine in Sicilie to Alexandria in Ægypt, 1250 miles. As for the whole circuit that may be comprehending therein, all the gulfes and creekes before-named, from the same point where we first began, as far as to the lake Mœotis, is 15600 miles. *Artemidorus* addeth thereto 756 miles. And the same Geographer writeth, that take the lake Mœotis to the rest, all commeth to 17390 miles. Lo, what the measure is of the seas taken by Philosophers and learned men, without armour and weapon in hand;
- F** men I say, who have not feared to hazard themselves boldly and provoke Fortune, in traversing the seas so farre off. Now are we to compare respectively the greatnes of each part of the world in severall: notwithstanding that I shall find much adoe and difficultie enough therein, considering the disagreement of authors in that behalfe. But most fitly and easily shall this appeare which we seek for, if we join longitude & latitude together. According to which prescript rule to begin with

Europe, it may wel contain in largenes 8148 miles. Affricke (taking the middle and mean computation between them all that have set it down) containeth in length 3748 miles. As for the bredth of so much as is known and inhabited, in no place where it is widest exceedeth it 250 miles. True it is, that *Agrippa* would have it to contain 910 miles in breadth, beginning at the bounds of Cyrene, and so comprehending in this measure the deserts thereof as farre as to the Garamants, so far as is known and discovered, and then the whole measure collected into one generall summe, amounteth to 4608 miles. As for Asia, confessed it is and resolved upon by all Geographers, that in length it carrieth 63750 miles: and verily in bredth, (if you account from the *Æthiopian* sea to Alexandria situate upon Nilus, so as your measure run through Meroë and Syrene) it taketh 1875 miles: whereby it appeareth evidently, that Europe is little wanting of halfe as bigge againe as Asia: and the same Europa, is twise as much againe as all Africa and a sixt part over. Reduce now all these summes together, it will be found cleere, that Europe is a third part of the whole earth, and an eight portion over and somewhat more: Asia a fourth part, with an over-deale of 14: and Africke a fifth part, with an over-plus of a sixtieth portion. To this calculation, we will set to, as it were to boot, one subtill devise and invention more of the Greeks, which sheweth their singular wit (to the end we should omit nothing that may serve our turne in this Geographie of ours) and that is this: After that the posture and site of everie region is knowne and set downe, how a man may likewise come to the knowledge what societie and agreement there is betweene the one and the other, either by length of daies and nights, by the shadow at noone-day, or by the equalitie of climates of the world. To bring this about effectually, I must part and digest the whole earth into certaine sections or even portions, answerable to those in heaven; (whereof there be verie many) which our Astronomers and Mathematicians call Circles, but the Greekes, Parallels.

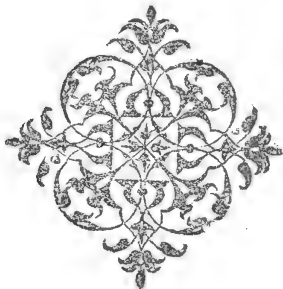
CHAP. XXXIIII.

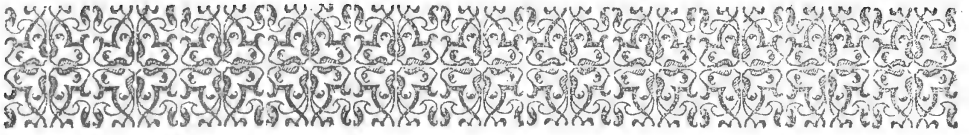
*The division of the earth into Climates or lines Parallele,
and equall shadows.*

FOR to make an equall partition of the world, begin we will at the Meridionall Indians, and go directly as farre as Arabia, and the inhabitants of the red sea. Vnder this climate are comprised the Gedrosians, Persians, Carmanes, and Elimæans: Parthyene, Aria, Sufiane, Mesopotamia, Seleucia surnamed Babylonia, Arabia so farre as Petrae inclusively, Coele-Syria, and Pelusium in *Ægypt*: the low countries, which are called the tract of Alexandria: the maritime coasts of Affricke: all the townes of Cyrenaica, Thapsus, Adrumetum, Clupea, Carthage, Utica, both Hippos, Numidia, both realmes of Mauritania, the Atlanticke sea, and *Hercules* pillars. In all the circumference of this climate and parallele, at noone-tide upon an *Æquinoctiall* day, the style in the diall which they call *Gnomon* 7 foot long, casteth a shadow not above foure foot. The longest night or day in this climate, is 14 houres: and contrariwise the shortest, ten. The second circle or parallele line, beginneth at the Indians Occidentall, and passeth through the mids of Parthia, Persepolis, the hithernmost parts of Persis (in respect of Rome) the hither coast of Arabia, Iudæa, and the borders neere unto the mountaine Libanus. Vnder the same are contained also Babylon, Idumæa, Samaria, Hierusalem, Ascalon, Ioppe, Cæsarea, Phoenice, Ptolemais, Sydon, Tyrus, Berytus, Botrys, Tripolis, Byblus, Antiochia, Laodicea, Seleucia, the sea coasts of Cilicia, Cyprus, the South part of Candie, Lilybœum in Sicilia, the North parts of Affricke and Numidia. The *Gnomon* in a diall upon the *Æquinoctiall* day 35 foot of length, maketh a shadow 24 foot long. The longest day or night, is 14 houres *Æquinoctiall*, and the fifth part of an houre. The third circle beginneth at the Indians next unto the mountaine Imaus, and goeth by the Caspian gates or streights hard by Media, Cataonia, Cappadocia, Taurus, Amanus, Iffus, the Cilician streights, Soli, Tarsus, Cyprus, Pisidia, Syde in Pamphilia, Lycaonia, Parara in Lycia, Xanthus, Caunus, Rhodus, Coüs, Halicarnassus, Gnidus, Doris, Chius, Delus, the mids of the Cyclades, Gytthium, Malea, Argos, Laconia, Elis, Olympia, Messene, Peloponnesus, Syracusa, Catine, the mids of Sicily, the South part of Sardinia, Cardei, and Gades. In this clime the *Gnomon* of 100 inches yeeldeth a shadow of 77 inches. The longest day hath *Æquinoctiall* hours 14 and an halfe, with a thirtieth part over. Vnder the fourth circle or parallele lye they that are on the other side of Imaus, the South parts of Cappadocia, Galatia, Myfia, Sardis,

- A** Sardis, Smyrna, Sipylus, the mountaine Tmolus in Lydia, Caria, Ionia, Trallis, Colophon, Ephesus, Milerus, Samos, Chios, the Icarian sea, the Islands Cyclades lying Northward, Athens, Megara, Corinth, Sicyon, Achæa, Patræ, Isthmos, Epirus, the North parts of Sicilie, * Narbonensis Gallia toward the East, the maritime parts of Spaine beyond new Carthage, and so into the West. To a Gnomon of 21 foot, the shadowes answere of 17 foot. The longest day is 14 Æquinoctiall houres, and two third parts of an houre. The 5 division containeth under it, from the entrance of the Caspian sea, Bactra, Iberia, Armenia, Myfia, Phrygia, Hellespontus, Troas, Tenedus, Abydus, Scepsis, Ilium, the hill Ida, Cyzicum, Lampfacum, Sinope, Anisum, Heraclea in Pontus, Paphlagonia, Lemnus, Imbrus, Thasus, Cassandria, Thessalia, Macedonia, Larissa, Amphipolis, Thessalonice, Pella, Edeffa, Beræa, Pharsalia, Carystum, Eubœa, Bœotia, Chalcis, Delphi, Acarnania, Ætolia, Apollonia, Brundisium, Tarentum, Thurij, Locri, Rhegium, Lucani, Naples, Puteoli, the Tuscan sea, Corsica, the Baleare Islands, the middle of Spain. A Gnomon of 7 foot, giveth shadow 6 foot. The longest day is 15 Æquinoctiall houres. The sixt parallele comprifeth the citie of Rome, and containeth withall the Caspian nations, Caucasus, the North parts of Armenia, Apollonia upon Rhindacus, Nicomedia, Nicæa, Chalcedon, Bizantium, Lyfimachia, Cherrhonesus, the gulfe Melane, Abdera, Samothracia, Maronea, Ænus, Bessica, the midland parts of Thracia, Pœonia, the Illyrians, Dyrhachium, Canusium, the utmost coasts of Apulia, Campania, Hetruria, Pisa, Luna, Luca, Genua, Liguria, Antipolis, Massilia, Narbon, Tarracon, the middle of Spaine called Tarraconensis, and so through Lusitania. To a Gnomon of 9 foot, the shadow is answerable 8 foot. The longest day hath 15 Æquinoctiall
- C** houres, and the ninth part of an houre, or the fifth as *Nigidius* is of opinion. The 7 division be ginneth at the other coast of the Caspian sea, and falleth upon Callatis, Bosphorus, Borysthenes, Tomos, the backeparts of Thracia, the Tribals countrey, the rest of Illyricum, the Adriaticke sea, Aquileia, Altinum, Venice, Viceria, Patavium, Verona, Cremona, Ravenna, Ancona, Picenum, Marsi, Peligni, Sabini, Umbria, Ariminum, Bononia, Placentia, Mediolanum, and all beyond Apenninum: also over the Alpes, Aquitane in Gaule, Vienna, Pyrenæum, and Celtiberia. The Gnomon of 35 foot, casteth a shadow 36 foot in length; yet so, as in some part of the Venetian territorie, the shadow is equall to the Gnomon. The longest day is 15 Æquinoctiall houres, and three fift parts of an houre. Hitherto have we reported the labours in this point of auncient Geographers, and what they have reported. But the most diligent and exactest moderne writers that followed, have assigned the rest of the earth not as yet specified, to three other sections or climates. The first, from Tanais through the lake Mœotis and the Sarmatians, unto Borysthenes, and so by the Dakes and a part of Germanie, containing therein Fraunce, and the coasts of the Ocean, where the day is sixteene houres long. A second, through the Hyperboreans and Britaine, where the day is 17 houres long. Last of all is the Scythian parallele, from the Rhiphean hills into Thule: wherein (as we said) it is day and night continually by turnes (for fixe moneths.) The same writers have set down two parallele circles, before those points where the other began, and which we set downe. The one through the Islands Meroë and Ptolemais upon the red sea, built for the hunting of Elephants, where the longest daies are but 12 houres and an halfe: the second passing through Syrene in Ægypt, where the day hath 13 houres. And the same Authours have put to every one of the other circles, even to the very last, halfe an houre more to the daies length, than the old Geographers.
- E**

Thus much of the Earth.





THE SEVENTH BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECUNDVS.

The Proëme.



Thus as you see, we have in the former bookes sufficiently treated of the Vniuersall world, of the Lands, Regions, Nations, Seas, Islands, and renowned Cities therein contained. It remaineth now to discourse of the living creatures comprised within the same, and their natures: a point doubtlesse that would require as deepe a speculation, as any part else thereof whatsoever, if so be the spirit and mind of man were able to comprehend and compasse all things in the world. And to make a good entrance into this treatise and historie, we thinke of right wee ought to begin at Man, for whose sake it should seeme that Nature made and produced all other creatures besides: though this great fauour of hers, so bountifull and beneficiall in that respect, hath cost themfull deere. In so much, as it is hard to iudge, whether in so doing she hath done the part of a kind mother, or a hard and cruell step-dame. For first and formost, of all other living creatures, man she hath brought forth all naked, and clothed him with the good and riches of others. To all the rest, giuen she hath sufficient to clad them euerie one according to their kind: as namely, shells, coats, hard hides, prickes, shagge, bristles, haire, downe feathers, quilts, skales, and fleeces of wooll. The verie trunks and stemmes of trees and plants, shee hath defended with barke and rind, yea and the same sometime double, against the iniuries both of heat and cold: man alone, poore wretch, she hath laid all naked upon the bare earth, euen on his birth-day, to cry and wraule presently from the very first houre that he is borne into this world: in such sort, as among so many living creatures, there is none subiect to shed teares and weepe like him. And verily to no babe or infant is it giuen once to laugh before he be fortie daies old, and that is couated verie early and with the soonest. Moreover, so soone as he is entred in this manner to enioy the light of the sunne, see how he is immediatly tyed and bound fast, and hath no member at libertie; a thing that is not practised upon the young whelpes of any beast among us, be he neuer so wild. The child of man thus untowardly borne, and who another day is to rule and commaund all other, loe how he lyceth bound hand and foot, weeping and crying, and beginning his life with miserie, as if he were to make amenas and satisfaction by his punishment unto Nature, for this onely fault and trespass, that he is borne alive. O follic of all follies, euer to thinke (considering this simple beginning of ours) that we were sent into this world to live in pride and carrie our head aloft! The first hope that wee conceiue of our strength, the first gift that Time affourdeth us, maketh us no better yet than four-footed beasts. How long is it ere we can goe alone? how long before we can prattle and speake, feed our selues, and chew our meat strongly? what a while continueth the mould and crowne of our heads to beat and pant, before our braime is well settled; the undoubted marke and token that bewrayeth our exceeding great weakenesse above all other creatures? What should I say of the infirmities and sicknesses that soone seaze upon our feeble bodies? what need I speake of so many medicines and remedies devised against these maladies: besides the new diseases that come euerie day, able to checke and frustrate all our provision of Physicke whatsoever? As for all other living creatures, there is not one, but by a secret instinct of nature knoweth his owne good, and whereto he is made able: some make use of their swift feet, others of their slight wings: some are strong of limme; others are apt to swimme, and practise the same: man onely knoweth nothing unlesse hee be taught; he can neither speake, nor goe, nor eat, otherwise than he is trained to it: and to be short, apt and good at nothing he is naturally, but to pule and crie. And hereupon it is, that some have been of this opinion,

A opinion, That better it had been, and simply best for a man, never to have been borne, or else speedily to die. None but we doe sorrow and waile, none but we are given to excesse and superfluitie infinitely in every thing, and shew the same in every member that we have. Who but we againe are ambitious and vainglorious? who but we are covetous and greedie of gathering good? wee and none but we desire to live long and never to die, are superstitious, carefull of our sepulture and buriall, yea, and what shall betide us when we are gone. Mans life is most fraile of all others, and in least securitie he liveth: no creature lusteth more after every thing than he: none feareth like unto him, and is more troubled and amazed in his fright: and if he be set once upon anger, none more raging and wood than he. To conclude, all other living creatures live orderly and well, after their owne kind: we see them flocke and gather together, and readie to make head and stand against all others of a contrarie kind: the Lyons as fell and savage as they be, fight not one with another: serpents sting not serpents, nor bite one another with their venomous teeth: nay the verie monsters and huge fishes of the sea, warre not amongst themselves in their owne kind: but beleeve me, Man at mans hand receiveth most harme and mischief.

CHAP. I.

¶ The straunge and wondrous shapes of sundrie nations.

C  Our Cosmographie and reports of nations and countreys, wee have spoken in generall of all mankind, spred over the face of the whole earth: neither is it our purpose at this present to decipher particulatly all their customes and manners of life, which were a difficult enterprife, considering how infinit they be, and as many in manner as there be societies and assemblies of men. Howbeit I think it good, not to over-passe all, but to make relation of some things concerning those people especially, who live farthest remote from our seas; among whom, I doubt not but I shall find such matter, as to most men will seeme both prodigious and incredible. And verily, who ever beleeved that the Æthiopians had been so blacke, before he saw them with his eye: nay what is it, I pray you, that seemeth not a wonder at the first sight? How many things are judged impossible before they are seene done and effected? And certes, to speake a truth, The power and majestie of Nature, in every particular action of hers and small things, seemeth incredible, if a man consider the same severally, and enter not into a generall conceit of her wholly as she is. For to say nothing of the painted peacocks feathers, of the sundrie spots of tygres, luzernes, and panthars, of the variable colours and markes of so many creatures besides: let us come to one only point, which to speake of seemeth but small, but being deeply weighed and considered, is a matter of exceeding great regard, and that is, The varietie of mens speech; so many tongues and divers languages are amongst them in the world, that one stranger to another seemeth well-neere to be no man at all. But come to view and marke the varietie that appeareth in our face and visage, albeit there be not past ten parts or litle more therein, see how among so many thousands as we are, you shall not find any two persons, who are not distinct in countenance and different one from another: a thing that no artificer nor painter (be he never so cunning and his craftsman every way) can perform, but in a few pictures, and take what heed he can with all his curious affectation. And yet thus much must I advertise the readers of this mine historie by the way, that I will not pawne my credit for many things that herein I shall deliver, nor bind them to beleeve all I write as touching straunge and forrein nations: referre them rather I will to mine authors, whome in all points (more doubtfull than the rest) I will cite and alledge, whom they may beleeve if they list: only let them not thinke much to follow the Greeke writers, who from time to time in this behalfe have been more diligent in penning, and more curious in searching after antiquities.

CHAP. II.

¶ Of the Scythians, and the diversitie of other nations.

F **T**hat there bee Scythians, yea, and many kinds of them that feed ordinarily of mans flesh, wee have shewed already in our former discourses. A report haply that would be thought incredible, if wee did not consider and thinke withall, how in the very middle and heart of the world, even in Sicilie and Italie, here hard by, there have beene such monsters of men,

men, namely, the Cyclopes and Lystrigones: nay, if we were not credibly enformed, that even of late daies, and goe no farther than to the other side of the Alpes, there be those that kill men for sacrifice after the maner of those Scythian people; and that wants not much of chewing and eating their flesh. Moreover, neere unto those Scythians that inhabite toward the pole Articke, and not farre from that climate which is under the very rising of the Northeast wind, and about that famous cave or hole out of which that wind is said to issue, which place they call Gef-clithron, [i.e. the cloisture or key of the earth] the Arimaspians by report doe dwell, who as wee have said before, are knowne by this marke, for having one eye onely in the mids of their forehead: and these maintaine warre ordinarily about the mettall mines of gold, especially with griffons, a kind of wild beasts that flie, and use to fetch gold out of the veines of those mines (as commonly it is received;) which savage beasts (as many authors have recorded, and namely *Herodotus* and *Aristotles* the Proconnesian, two writers of greatest name) strive as eagerly to keepe and hold those golden mines, as the Arimaspians to disseize them thereof, and to get away the gold from them. Above those, are other Scythians called Anthropophagi, where is a country named Abarimon, within a certaine vale of the mountaine Imaus, wherein are found savage and wild men, living and conversing usually among the brute beasts, who have their feet growing backward, and turned behind the calves of their legs, howbeit they run most swiftly. These kind of men can endure to live in no other aire nor in any other clime els than their owne, which is the reason that they cannot be drawne to come unto other kings that border upon them, nor could be brought unto *Alexander* the great: as *Beton* hath reported, the marshall of that princes camp, and who also put downe his geaits and journies in writing. The former Anthropophagi or eaters of mans flesh whom we have placed about the North pole, tenne daies journey by land above the river Borysthenes, use to drinke out of the skulls of mens heads, and to weare the scalpes, haire and all, in steed of mandellions or stomachers before their breasts, according as *Isogenus* the Niccan witnesseth. The same writer affirmeth moreover, That in Albanie there bee a sort of people borne with eyes like owles, whereof the sight is fire red: who from their childhood are grey headed, and can see better by night than day. He reporteth also, that tenne daies jounie beyond Borysthenes, the Sauromates never eat but one meale of meat in three daies. *Crates* of Pergamus saith, That in Hellepont about Parium there was a kind of men (whom he nameth Ophiogenes) that if one were stung with a serpent, with touching onely, will ease the paine: and if they doe but lay their hands upon the wound, are wont to draw forth all the venome out of the bodie. And *Varro* testifieth, that even at this day there be some there who warish and cure the stinging of serpents with their spittle, but there are but few such as he saith. *Agatharcides* writeth, that in Affricke the Pysyllians (so called of king *Pysyllus*, from whose race they were descended, and whose sepulchre or tombe is at this day present to bee seene in a part of the greater Syrtes) could doe the like. These men had naturally that in their owne bodies, which like a deadly bane and poyson would kill all serpents: for the very aire and sent that breathed from them, was able to stupifie and strike them flake dead. And by this meanes they used to trie the chastitie and honestie of their wives. For so soone as they were delivered of children, their manner was to expose and present the filie babes newborne, unto the most fell and cruell serpents they could find: for if they were not right but gotten in adultery, the said serpents would not avoid & flie from them. This nation verily in generall hath ben defeated, & killed up in manner all, by the Nasamones, who now inhabit those parts wherein they dwelt: howbeit, a kind remaineth still of them, descended from those that made thift away and fled, or else were not present at the said bloudie battell, but there are very few of them at this day left. The Marsians in Italie at this present continue with the like naturall vertue against serpents: whom being reputed for to have descended from ladie *Circes* sonne, the people in this regard doe highly esteeme, and are verily perswaded, that they have in them the same facultie by kind. And what great wonder is this, considering that all men carrie about them that which is poyson to serpents: for if it be true that is reported, they will no better abide the touching with mans spittle, than scalding water cast upon them: but if it happen to light within their chawes, or get into their mouth, especially if it come from a man that is fasting, it is present death. Beyond those Nasamones, and their neighbours confining upon them (the Machlyes) there bee found ordinarily Hermaphrodites, called Androgyni, of a double nature, and resembling both sexes, male and female, who have carnall knowledge one of another interchangeably by turns, as *Calliphanes* doth report. *Aristotle* saith moreover, that on the right side of their breast they have a lit-

A tle teat or nipple like a man, but on the left side they have a full pap or dug like a woman. In the same Affricke, both *Isogonus* and *Nymphodorus* doe avouch, there be certain houses and families of forcerers: who, if they chance to blesse, praise, and speak good words, bewitch presently withall; infomuch as sheepe therewith die, trees wither, and infants pine and winder away. *Isogonus* addeth furthermore, That such like there are among the Triballians and Illyrians, who with their very eiefight can witch, yea, and kill those whom they looke wifly upon any long time, especially if they be angered, and that their eies bewray their anger: and more subject to this daunger bee men growne, than children under fouretee yeeres of age. This also is in them more notable and to be observed, that in either eie they have two sights or apples. Of this kind and propertie, as *Apollonides* mine authour saith, there be certain women in Scythia named Bithyæ. *Phlarchus*

B witnesseth, That in Pontus also the whole race of the Thibians, and many others besides, have the same qualitie, and can do the like: & known they are (saith he) by these markes, In one of their eies they have two sights, in the other the print or resemblance of an horse. Hee reporteth besides of these kind of men, that they will never sink or drown in the water, be they charged never somuch with weightie & heauey apparel. Not unlike to these there are a sort of people in Æthiopia called Pharnaces, whose sweat if it chauce to touch a mans bodie, presently he falleth into a phtisick or consumption of the lungs. And *Cicero* a Romane writer here among us testifieth, that generally all women that have such double apples in their eies, have a venomous sight, and doe hurt therewith. See how Nature, having engrafted naturally in some men this unkind appetite (like wild beasts) to feed commonly upon the bowels and flesh of men, hath taken delight also & pleasure to give them inbred poysons in their whole bodie, yea, and venome in the very eies of some; that there should be no naughtinesse in the whole world againe, but the same might be found in man. Not farre from Rome cittie, within the territorie of the Falisci, there bee some few houses and families called Hirpiz, which at their solemne yeerely sacrifice celebrated by them in the honour of *Apollo* upon the mount Soracte, walke upon the pile of wood as it is on fire, in great jolitie, and never a whit are burnt withall. For which cause ordained it is by an expresse areft or act of the Senate, that they should be priviledged, and have immunitie of warfare and all other services whatsoever. Some men there bee that have certaine members and parts of their bodies naturally working strange and miraculous effects, and in some cases medicinable. As for example, king *Pyrrhus*, whose great toa of his right foot was good for them that had big, swelled, or indurate splenes, if he did but touch the parties diseased, with that toa. And they say moreover, that when all the rest of his bodie was burned (after the manner) in the funerall fire, that great toa the fire had no power to consume: so, that it was bestowed in a little case for the nones, and hung up in the temple for an holy relique. But principally above all other countries, India and the whole tract of Æthiopia is full of these strange and miraculous things. And first and formost, the beasts bred in India be exceeding big, as it may appeare by their dogs, which for proportion are much greater than those in other parts. And trees be growing there to that talnesse, that a man cannot shoot a shaft over them. The reason hereof is the goodnesse and fatnesse of the ground, the temperate constitution of the aire, and the abundance of water: which is the cause also that under one fig tree [beleeve it that list] there may certaine troupes and squadrons of horsemen

D stand in covert, shaded with the boughs. And as for reeds, they be of such a length, that between every joint they will yeeld sufficient to make boats able to receive three men apeece, for to row therein at ease. There are to bee seene many men there above five cubites tall: never are they known once to spit: troubled they are not with paine in the head, toothach, or greefe of the eies; and seldome or never complaine they of any forance in other parts of the bodie, so hardie are they, and of so strong a constitution through the moderate heat of the Sunne. Over and besides, among the Indians be certaine Philosophers, whom they call Gymnosophists, who from Sunne rising to the setting thereof are able to endure all the day long, looking full against the Sunne, without winking or once moving their eies: & from morning to night can abide to stand sometimes upon one leg, and sometimes upon the other in the sand, as scalding hot as it is. Upon a certaine mountaine named Milus, there be men whose feet grow the tother way backward, and of either foot they have eight toes, as *Megasthenes* doth report. And in many other hills of that countrey, there is a kind of men with heads like dogs, clad all over with the skins of wild beasts, who in lieu of speech use to barke: armed they are and well appointed with sharpe and trenchant nailes: they live upon the prey which they get by chasing wild beasts, and fowling. *Cresias* writeth

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that there were discovered and knowne of them above 120000 in number. By whose report also, in a certaine countrey of India the women beare but once in their life, and their infants presently waxe grey so soone as they are borne into the world. Likewise, that there is a kind of people named Monocelli, that have but one leg apeece, but they are most nimble, and hop wonderous swiftly. The same men are also called Sciopodes, for that in hottest season of the Summer, they lie along on their backe, and defend themselves with their feet against the Sunnes heat: and these people as he saith are not farre from the Troglodites. Againe, beyond these Westward, some there bee without heads standing upon their neckes, who carrie eies in their shoulders. Among the Westerne mountaines of India the Satyres haunt, (the countrey wherein they are, is called the region of the Cartaduli) creatures of all other most swift in footmanship: which one whiles run with all foure; otherwhiles upon two feet onely like men: but so light-footed they are, that unlesse they be very old or sicke, they can never bee taken. *Tauron* writeth, That the Choromandæ are a savage and wild people: distinct voice and speech they have none, but in steed thereof, they keepe an horrible gnashing and hideous noise: rough they are and hairie all over their bodies, eies they have red like the houlets, and toothed they be like dogs. *Eudoxus* saith, That in the Southerne parts of India, the men kind have feet a cubite long, but the women so short & small, that thereupon they be called Struthopodes, i. sparrow footed. *Megasthenes* is mine author, that among the Indian Nomades there is a kind of people, that in steed of noses have only two small holes, and after the manner of snakes have their legs and feet limmer, wherewith they crawl and creepe, and named they are Syriæ. In the utmost marches of India, Eastward, about the source & head of the river Ganges, there is a nation called the Astomes, for that they have no mouths: all hairie over the whole bodie, yet clothed with the soft cotton and downe that come from the leaves of trees: they live onely by the aire, and smelling to sweet odours, which they draw in at their nosethrils: No meat nor drinke they take, onely pleasant favours from divers and fundrie roots, floures, and wild fruits growing in the woods they entertaine: and those they use to carrie about with them when they take any farre journey, because they would not misse their smelling. And yet if the sent be any thing strong and stinking, they are soone therewith overcome, and die withall. Higher in the countrey, and above these, even in the edge and skirts of the mountaines, the Pygmæi Spythamei are reported to bee: called they are so, for that they are but a cubite or three shaftments (or spannes) high, that is to say, three times nine inches. The clime wherin they dwell is very wholesome, the aire healthie, and ever like to the temperature of the Spring: by reason that the mountaines are on the North side of them, and beare off all cold blasts. And these pretie people *Homer* also hath reported to be much troubled and annoied by cranes. The speech goeth, that in the Spring time they set out all of them in battell array, mounted upon the backe of rammes and goats, armed with bowes and arrowes, and so downe to the sea side they march, where they make foule woike among the egges and young cranelings newly hatched, which they destroy without all pitie. Thus for three moneths this their journey and expedition continueth, and then they make an end of their valiant service: for otherwise if they should continue any longer, they were never able to withstand the new flights of this foule, growne to some strength and bignesse. As for their houses and cottages, made they are of clay or mud, fouls feathers, and birds egge shels. Howbeit, *Aristotle* writeth, That these Pygmæans live in hollow caves & holes under the ground. For all other matters he reporteth the same that all the rest. *Isogonus* saith, that certaine Indians named Cyrni, live a hundred and fortie yeeres. The like he thinketh of the Æthiopian Macrobij, and the Seres: as also of them that dwel upon the mount Athos: and of these last rehearsed, the reason verily is rendered to be thus, because they feed of vipers flesh, and therefore is it that neither lice breed in their heads, nor other vermine in their cloths, for to hurt and annoy their bodies. *Onescrius* affirmeth, That in those parts of India where there are no shaddowes to be seene, the men are five cubites of stature, and two hand breadths over: that they live 130 yeeres: and never age for all that and sceme old, but die then, as if they were in their middle and settled age. *Crates* of Pergamus nameth those Indians who live above an hundred yeere, Gymnetes: but others there be, and those not a few, that call them Macrobij, *Csesias* saith there is a race or kindred of the Indians named Pandore, inhabiting certain vallies, who live two hundred yeeres: in their youthfull time the haire of their head is white, but as they grow to age, waxeth blacke. Contrariwise, others there be neere neighbours to the Macrobij, who exceed not fortie yeeres, and their women beare but once in their life time. And this also is avouched by *Agatharcides*,

A *tharcides*, who affirmeth moreover, that all their feeding is upon locusts, and that they are very quicke and swift of foot. *Clitarchus* and *Megasthenes* both nameth them Mandri, and make account that they have three hundred villages in their countrey. Over and besides, that the women bring forth children when they are but seven yeeres old, and waxe aged at fortie. *Artemidorus* affirmeth, That in the Island Taprobana the people live exceeding long without any maladie or infirmitie of the bodie. *Duris* maketh report, That certaine Indians engender with beasts, of which generation are bred certaine monstrous mungrels, halfe beasts and halfe men. Also, that the Calingian women of India conceive with child at five yeeres of age, & live not above eight. In another tract of that countrey, there be certaine men with long shagged tiales most swift and light of foot: & some again that with their eares cover their whole bodie. The Orites are neighbours to the Indians, divided from them onely by the river Arbis, who are acquainted with no other meat but fish: which they split and slice into peeces with their nailes, and rost them against the Sunne, and then make bread thereof as *Clitarchus* makes report. *Crates* of Pergamus saith likewise, That the Troglodites above Æthiopia be swifter than horses: and that some Æthiopians are above eight cubites high. And these are a kind of the Æthiopian Nomades, called Syrbotæ, as he saith, dwelling along the river Astapus, toward the North pole. As for the nation called Menisfimi, they dwell from the Ocean sea twentie daies journey, who live of the milk of certaine beasts that we call Cynocephales, having heads and snouts like dogs. And whole herds and flockes of the females they keepe and feed, killing the male of them all, save only to serve for maintenance of the breed. In the deserts of Affricke yee shall meet oftentimes with fairies, appearing in the shape of men and women, but they vanish soone away like fantastickall illusions. See how Nature is disposed for the nones to devise full wittily in this and such like pastimes to play with mankind, thereby not onely to make her selfe merrie, but to set us a wondering at such strange miracles. And I assure you, thus daily and hourly in a manner plaieth she her part, that to recount every one of her sports by themselves, no man is able with all his wit and memorie. Let it suffice therefore, to testifie and declare her power, that wee have set downe those prodigious and strange workes of hers, shewed in whole nations. And then goe forward to discourse of some particulars, approved and knowne in man.

CHAP. III.

Of prodigious and monstrous births.

E **T**hat women may bring forth three at one birth, appeareth evidently by the example of the three twins, *Horatij* and *Curiatij*. But to goe above that number, is reputed & commonly spoken to bee monstrous, and to portend some mishap: but onely in Ægypt, where women are more than ordinarie fruitfull, by drinking of Nilus water, which is supposed to helpe generation. Of late yeeres, and no longer since than in the latter end of the reigne of *Augustus Caesar*, at Ostia there was a woman (a Commoners wife) delivered at one birth of two boies and as many girdles, but this was a prodigious token, and portended no doubt the famine that ensued soone after. In Peloponnesus there is found one woman that brought forth at foure births twentie children, five at once, and the greater part of them all did well, and lived. *Trogus* is mine author, that in Ægypt it is an ordinarie thing for a woman to have seven at a burden. It falleth out moreover, that there come into the world children of both sexes, whom we call Hermophrodites. In old time they were knowne by the name of Androgyni, and reputed then for prodigious wonders, howsoever now men take delight and pleasure in them. *Pompey* the great, in his Theatre which he adorned and beautified with singular ornaments and rare devises of antique worke, as well for the admirable subject and argument thereof, as the most curious and exquisite hand of cunning and skilfull artificers, among other images and pourtraicts there set up, represented one *Eutiche*, a woman of Tralleis, who after she had in her life time borne thirtie births, her corps was carried forth by twentie of her children to the funerall fire for to bee burnt, according to the manner of that country. As for *Alceippe*, she was delivered of an Elephant, marie that was a monstrous and prodigious token, & foreshewed some heaveie fortune that followed after. As also in the beginning of the Marrians warre, there was a bondwoman brought forth a serpent. In summe, there be many mishapen monsters come that way into the world, of divers and sundrie formes. *Claudius Caesar* writeth, That in Thessalie there was borne a monster called an Hippocentaur, i. halfe

a man and halfe a horse: but it died the very same day. And verily, after he was come to wear the diademe, wee our selves saw the like monster, sent unto him out of Ægypt, embaulmed and preserved in honic. Among many strange examples appearing upon record in Chronicles, we read of a child in Sagunt, that very yeere that it was forced and rased by *Anniball*, which, so soone as it was come forth of the mothers wombe, presently returned into it againe.

CHAP. IIII.

¶ Of the change from one sex to another: and of twins borne.

IT is no lie nor fable, that females may turne to be males. For we have found it recorded in the yeerely Chronicles called *Annales*, that in the yeere when *Pub. Licinius Crassius*, and *C. Cassius Longinus* were Consuls of Rome, there was in Cassinum a maid child, under the very hand & tuition of her parents, without suspicion of being a changeling, became a boy: and by an ordinance of the Southsaiers called *Aruspices*, was confined to a certaine desert Island, and thither conveyed. *Licinius Mutianus* reporteth, That himsele saw at Argos one named *Arescon*, who beforetime had to name *Arescusa*, and a married wife: but afterwards in proesse of time, came to have a beard, and the generall parts testifying a man, and therupon wedded a wife. After the same sort he saw (as he saith) at Smyrna, a boy changed into a girl. I my selfe am an eye-witnesse, That in Affricke one *L. Coscius*, a citizen of Tisdrita, turned from a woman to bee a man, upon the very marriage day: and lived at the time that I wrote this booke. Moreover, this is observed, that if a woman bring twins, it is great good hap if they all live, but either the mother dieth in child bed, or one of the babes, if not both. But if it fortune that the twins be of both sexes, the one male, the other female, it is ten to one if both of them escape. Moreover, this is well known, that as women age sooner than men, and seeme old: so they grow to their maturitie more timely than men, and are apt for procreation before them. Last of all, when a woman goeth with child, if it be a man child, it stirreth oftener in the wombe, and lieth commonly more to the right side: whereas the female moveth more seldome, and beareth to the left.

CHAP. V.

¶ Of the generation of man: the time of child birth from seven months to eleven, testified by many notable examples out of histories.

ALL other living creatures have a set time limited by Nature, both of going with their young, and also of bringing it forth, each one according to their kind. Man onely is borne at all times of the yeere: and there is no certain time of his abode in the wombe, after conception. For one commeth into the world at the seventh months end, another at the eight, and so to the beginning of the ninth and tenth. But before the seventh month, there is no infant ever borne that liveth. And none are borne at seven months end, unlesse they were conceived either in the very change of the moone, or within a day of it under or over. An ordinarie thing it is in Ægypt for women to goe with young eight months, and then to be delivered. And even in Italie also now adaies, children so borne, live and doe well: but this is against the common received opinion of all old writers. But there is no certaintie for to ground upon in all these cases, for they alter divers waies. Dame *Vestilia* (the widow of *C. Herditius*, wife afterwards of *Pomponius*, and last of all, married to *Orfitus*, all right worshipfull cittizens, and of most noble houses) had foure children by her three husbands: to wit, *Sempronius*, whom she bare at the seventh month; *Suillius Rufus* at the eleventh; with *Corbulo* likewise (shee went seven months, yet they lived all: and these two last, came both to be Consuls. After all these sonnes, she brought forth a daughter, namely, *Casonia*, wife to the Emperour *Caius (Caligula)* at the eight months end. They that are borne thus in this month, have much adoe to live, and are in great daunger for fortie daies space. Yea, and their mothers are very sickly, and subject to fall into untimely travell all the fourth moneth and the eight: and if they fall to labour, and come before their time, they die for it. *Masurius* writeth, That *L. Papyrius* the Pretour or lord cheefe justice, when a second heire in remainder made claime, and put in plea for his inheritance of the goods, made an award, and gave judgement against him, in the behalfe of an infant the right heire, borne after the decease of his father: upon this, that the mother came in and testified how shee was delivered of that child, within thirteene months

A months after the death of the testator: the reason was, because there is no definite time knowne nor set downe for women to goe with child.

CHAP. VI.

Of Conceptions: and signes distinguishing the sex in great bellied women; before they are delivered.

If tenne daies after that a woman hath had the companie of a man, she feele an extraordinarie ach in the head, and perceiue giddinesse in the braine, seeming that all things went round; find a dazeling and mistinesse in the eies, abhorring and lothing of meat, and withall, a turning and wambling of the stomacke: it is a signe that she is conceived, and beginneth to breed. If she goe with a boy, better coloured will she be all the time, and delivered with more ease: and by the fortieth day she shall feele a kind of motion and stirring in her wombe. But contrariwise it falleth out in the breeding of a girle: shee goeth more heavily with it, and findeth the burden heavier, her legs and thighes about the share will swell a little. And ninetic daies it will be before shee perceiue any moving of the infant. But bee it male or female that shee breeds, they put her to much paine and greevance when their haire beginneth to bud forth, and ever at the full of the moone: and even the very infants after they are borne, are most amisse and farthest out of frame about that time. And verily, great regard must be had of a woman with child all the while that shee goeth therewith, both in her gate, and in every thing els that can be named. For if women feed usually upon over-salt and powdered meat, they will bring forth a child without nailes: and if they hold not their wind in their labour, longer it will be ere they be delivered, and with more difficultie. Much yawning in the time of travell is a deadly signe: like as to sneese presently upon conception, threateneth abortion, or a slip.

CHAP. VII.

Of the conception and generation of man.

IAm abashed much, and very sorrie to think and consider what a poore and ticklish beginning man hath, the proudest creature of all others: when the smell onely of the snuffe of a candle put out, is the cause oftentimes that a woman falleth into untimely travell. And yet see, these great tyrants, and such as delight onely in carnage & bloudshed, have no better originall. Thou then that presumest upon thy bodily strength, thou that standest so much upon fortunes favors and hast thy hands full of her bountifull gifts, taking thy selfe not to be a foster child and nurse-ling of hers, but her naturall sonne born of her own bodie: thou, I say, that buisest thy head evermore, and settest thy mind upon conquests and victories: thou that art upon every good successe and pleasant gale of prosperitie puffed up with pride, and takest thy selfe for a god, never thinkest that thy life, when it was hung upon so single a thred, with so small a matter might have miscaried. Nay more than that, even at this day in more danger art thou than so, if thou chance to be but stung or bitten with the little tooth of a serpent: or if no more but the very kernell of a raisin goe downe thy throte wrong, as it did with the poet *Anacreon*, which cest him his life. Or, as *Fabius* a Senatour of Rome, and lord cheefe justice besides, who in a draught of milke fortun-ed to swallow a small haire, and was strangled withall. Well then, think bettes of this point. For he verily that will evermore set before his eies, and remember the frailtie of mans estate, shall live in this world uprightly and in even balance, without enclining more to one side, than into another.

CHAP. VIII.

Of those that be called *Agrippæ*.

TO be borne with the feet forward, is unnaturall and unkind. And such as come in that order into the world, the Latines were wont to name *Agrippæ*, as if a man should say, Born hardly and with much adoe. And in this manner *M. Agrippa* (as they say) came forth of his mothers wombe: the only man almost that is knowne to have brought any good fortune with him, and prospered in the world, of all that ever were in that sort borne. And yet as happie as hee was,

and how well soever he chieued in some respects, hee was much pained with the gout, and passed all his youth and many a day after in bloudie warres, and in danger of a thousand deaths. And when he had escaped all these harmful perils, unfortunate he was in all his children, and especially in his two daughters the *Agrippina* both: who brought forth those unhappie impes so pernicious to the whole earth, namely, *C. Caligula* and *Domitius Nero*, two Emperours, that is to say, two fierie flames for to consume and wast all mankind. Over and besides, his infelicities herein appeared, that he lived so small a time, dying as he did a strong and lustie man, in the one and fiftie yeere of his age, tormented and vexed with the adulteries of his owne wife: oppressed with the heaue & intollerable seruitude that he was in under his wives father. In which regards it seemeth he paid full deere for the praefage of his untoward birth and nativitie. Moreover, *Agrippina* hath left in writing, That her sonne *Nero* also, late Emperour, who all the time of his reigne was a verieemie to all mankind, was borne with his feet forward. And in truth by the right order and course of Nature, a man is brought into the world with his head first, but it carried forth with his feet foremost.

CHAP. IX.

§ Births cut out of the wombe.

BVt more fortunate are they a great deale, whose birth costeth their mothers life, and part from their mothers by meanes of incision: like as *Scipio Africanus* the former, who came into the world in that wise: and the first that ever was surnamed *Cesar*, so called because hee was ript out of his mothers bellie. And hereof commeth the fore-name also of the *Casones*. In like manner also was that *Manlius* borne, who entred Carthage with an armie.

CHAP. X.

§ Who are *Vopisci*.

THe Latines were wont to call him * *Vopiscus*, who being one of two twinnes happened to stay behind in the wombe the full tearme, when the other miscarried before by abortive and untimely birth. And in this case there chaunce right straunge and wonderfull accidents, although they fall out but very seldome.

CHAP. XI.

§ Examples of many infants at one birth.

Few creatures there be but women again, that seeke after the male and can skill of their companie, after they be once conceived with young: one kind verily or two at the most there is, knowne to conceive double one upon the other. We find in bookes written by Physicians, and in their records who have studied such matters and gathered observations, that there have passed or been cast away from a woman at one onely slip, 12 distinct children: but when it falleth out that there is some prettie time betweene two conceptions, both of them may tarrie their complete time, and be borne with life: as it appeared in *Heracles* and his brother *Iphiclus*: as also in that harlot who was delivered of two infants, the one like her owne husband, the other resembling the adulterer: likewise in a Proconnesian bond-servant, who was in one day gotten with child, to wit, by her master, and his baily or procurator: and being afterwards delivered of two children, they bewraied plainly who were their fathers. Moreover, there was another who went her full time, even nine moneths for one child, but was delivered of another at the five moneths end. Furthermore in one other, who having dropped downe one child at the end of seven moneths, by the end of the ninth came with two twinnes more. Over and besides it is commonly seene, that children be not alwaies answerable to the parents in every respect: for of perfect fathers and mothers who have all their limmes, there are begotten children unperfect and wanting some members: and contrariwise, parents there are maimed and defective in some part, who nevertheles ingender children that are sound and entire, and with all that they should have. It is seene also, that infants are at a default of such parts as their parents misse: yea and they carrie often-times certaine markes, moles, blemishes, and skarres, of their fathers and mothers,

A as like as may be. Among the people called Dakes, the children usually carrie the markes imprinted in their armes, of them from whome they are descended, even to the fourth generation.

CHAP. XII.

¶ *Examples of many that have been very like and resembled one another.*

IN the rase and familie of the *Lepidi*, it is said there were three of them (not successively one after another, but out of order after some intermission) who had everie one of them when they were borne, a little pannicle or thinne skinne growing over the eye. Some have beene knowne to resemble their grandsires: and of two twinnes, one hath been like the father, the other the mother: but hee that was borne a yeere after, hath beene so like his elder brother, as if hee had beene one of the twinnes. Some women there bee that bring all their children like to themselves: and others againe, as like to their husbands: and some like neither the one nor the other. Yee shall have women bring all their daughters like to their fathers, and contrariwise, their sonnes like the mothers. The example is notable, and yet undoubted true, of one *Nicæus*, a famous wrestler of Constantinople, who having to his mother a woman begotten in adulterie by an *Æthiopian*, and yet with white skin, nothing different from other women of that countrey, was himselfe blacke, and resembled his grandfire, the *Æthiopian* above said. Certes, the cogitations and discourses of the mind make much for these similitudes and resemblances whereof wee speake: and so likewise many other accidents and occurrent objects, are thought to bee very strong and effectually therein, whether they come by sight, hearing, and calling to remembrance; or imaginations onely conceived, and deeply apprehended in the very act of generation, or the instant of conception. The wandering cogitation also and quicke spirit either of father or mother, flying too and fro all on a suddaine, from one thing to another, at the same time, is supposed to bee one cause of this impression, that maketh either the foresaid uniforme likenesse, or confusion and varietie. And hereupon it cometh, and no marvell it is, that men are more unlike one another, than other creatures: For the nimble motions of the spirit, the quicke thoughts, the agilike of the mind, the varietie of discourse in our wits, imprinteth diverse formes, and many markes of sundrie cogitations.

D Whereas the imaginatē facultie of other living creatures is unmoveable, and alwaies continueth in one: in all it is alike, and the same still in every one, which causeth them alwaies to engender like to themselves, each one in their severall kind. *Artenon* a meane man among the Commons, was so like in all points to *Antiochus* king of Syria, that *Laodicea* the queene, after that *Antiochus* her husband was killed, served her owne turne by the said *Artenon*, and made him play the part of *Antiochus*, untill shee had by his meanes, as in the kings person, recommended whom shee would, and made over the kingdome and crowne in succession and reversion to whom shee thought good. *Fibius* a poore Commoner of Rome, and *Publicius*, one newly of a bondslave made a free man, were both of them so like unto *Pompeius* the great, that unneeth or hardly the one could bee discerned from the other: so lively did they represent that good visage of his so full of honestie, so fully expressed they and resembled the singular majesticie of that countenance which appeared in *Pompeius* his forehead. The like cause it was that gave his father also the surname of *Menogenes*, his cooke, albeit hee was surnamed *alreadie Strabo*, for his squint eyes: but hee would needs beare the name of a defect and infirmitie even in his bondservant for the love hee had unto him, by reason of his likenesse. So was one of the *Scipios* also surnamed *Serapius* upon such an occasion, after the name of one *Serapia*, who was but a baselave of his, and no better than his swineheard, or dealer in buying and selling his swine. Another *Scipio* after him, of the same house, came to bee surnamed *Salutio*, because a certaine jester of that name was so like unto him. After the same manner one *Spinter*, a plaier of the second place or part, and *Pamphilus* another plaier of the third part, or in the third place, gave their names to *Lentulus* and *Metellus*, who both were Consuls together in one yeere, for that they resembled them so truly. And certes, mee thinkes this fell out very untowardly, and was but a ridiculous pageant, and a very unseemely shew upon a stage, to see both Consuls lively represented there at once in the persons of these two plaiers. Contrariwise, *Rubrius* the stage-plaier was surnamed *Plancus*, because hee was so like to *Plancus* the Oratour.

Againe, *Barbuleius* and *Menogenes*, both plaiers of Enterludes, resembled *Curio* the father or the elder, and *Messala Censorius*, for all he had been Censor, that the one could not shift & avoid the surname of *Barbuleius*, and the other of *Menogenes*. There was in Sicilie a certaine fisherman who resembled in all points *Sura* the pro-consull, not onely in visage and feature of the face, but also in mowing with his mouth when he spake, in drawing his tongue short, and in his huddle and thicke speech. *Cassius Severus* that famous Orator was reproched for being so like unto *Mirmillo* a drover or keeper of kine and oxen. *Toranius* a merchant slave-seller, sold unto *Marcus Antonius* (now one of the great Triumvirs) two most beautifull and sweet-faced boies, for twins, so like they were one to the other, albeit the one was borne in Asia, & the other beyond the Alpes. But when *Antonie* afterwards came to the knowledge thereof, and that this fraud and coufenage was bewraied and detected by the language and speech of the boies, he fell into a furious fit of cholera, and all to berated the foresaid *Toranius*. And when among other challenges hee charged him with the high price that he made him pay (for they cost him two hundred Sesterces, as for twins, and they were none such) the wilie merchant that was his craft-master, answered, That it was the cause why he held them so deere and sold them at so great a rate: For (quoth hee) it is no marvell at all, if two brethren twins that lay both together in one bellie, doe resemble one the other; but that there should bee any found, borne as these were in diverse countries, so like in all respects as they, he held it for a moit rare and wonderfull thing, and such a commoditie as could not be prized by a merchant to the worth. This answer of his was delivered in so good time, and so fitly to the purpose, that *Antonie* the great man, who never was well but when he outlawed citizens of Rome, and did confiscate their goods, he I say that erewhile was all enraged and set upon reviling and reprochfull tearmes; was not onely appeased, but also contented so with his bargaine, that he made as great a reckoning of those two boies, as of any thing els that hee had in all that wealth of his.

CHAP. XIII.

§ The cause and manner of generation.

Some bodies there be by a secret of Nature so disagreeing, that they are unfit for generation one with another. And yet as barren as they be themselves so coupled together, fruitful they are enough when they are joined with others. Such were *Augustus* the Emperor and his wife *Livia*. In like manner, some men there be as well as women, that can skill of getting and breeding none but daughters: and others there bee againe that are good at none but sonnes. And many times it falleth out that folke have sonnes and daughters both, but they by turns, this yeere a son and the next a daughter, in order. Thus [*Cornelia*] the mother of the *Gracchi*, who for twelve childbeds kept this course duly: and *Agrippina* the wife of *Cesar Germanicus* for nine, ever changing from the male to the female. Some women are barren all their youth: and others againe beare but once in their whole life. Some never goe their full time with their children: & such women, if peradventure by the helpe of physicke and other good means, and choise keeping, they overcome this infirmitie, bring daughters ordinarily, and no other. The Emperour *Augustus* among other singularities that he had by himselfe during his life, saw ere hee died the nephew of his neece, that is to say, his progenie to the fourth degree of lineall descent, and that was *Mar. Syllanus* who happened to be borne that very yeere when he departed out of this world. Hee having beene Consul, and afterward lord governour of Asia, was poysoned by prince *Nero*, to the end that hee might thereby attaine to the Empire. *Qu. Meilius Macedonicus*, left behind him fixe children, and by them eleven nephewes: but daughters in law, and sonnes in law, and of all such as called him father, seven. In the Chronicles of *Augustus Caesar* his acts for his time, wee find upon record, that (in his twelfth Consulship, when *L. Sylla* was his companion and colleague in government, upon the eleventh day of Aprill) *C. Crispinus Helarus*, a gentleman of Felulæ, came with a solemne pompe carried before him into the Capitoll, attended upon with his nine children, seven sonnes and two daughters; with seven and twentie nephewes, the sonnes of his children: and nine and twentie nephewes more, once removed, who were his sonnes nephewes, and twelve neeces besides, that were his childrens daughters, and with all these solemly sacrificed.

A is observed for an undoubted truth, that generally all men come short of the full stature in times past, and decrease still every day more than other: and seldome shall ye see the sonne taller than his father: for the ardent heat of the elementarie fire (whereunto the world inclineth already now toward the latter end, as sometimes it stood much upon the waterie element) devoureth and consumeth that plentiful humor and moisture of naturell seed, that engendreth all things: and this appeareth more evidently by these examples following. In Crete, it cauced that an hill clave asunder in an earthquake, and in the chinke thereof was found a bodie standing, 46 cubits high: some say it was the bodie of *Orion*: others, of *Otus*. We find in chronicles and records of good credit, that the bodie of *Orestes* being taken up, by direction from the Oracles, was seven cubits long. And verily that great and famous poet *Homer*, who lived almost a thousand yeeres agoe, complained and gave not over, That mens bodies were lesse of stature even then, than in old time. The *Annales* set not downe the stature and bigneess of *Nevius Pollio*; but that he was a mightie gyant, appeareth by this that is written of him, namely, That it was taken for a wonderfull straunge thing, that in a great rout and prease of people that came running together upon him, he had like to have been killed. The tallest man that hath been seene in our age, was one named *Gabbara*, who in the daies of prince *Claudius* late Emperour, was brought out of Arabia; nine foot high was he, and as many inches. There were in the time of *Augustus Caesar* 2 others, named * *Puffo* and *Secūdilla*, higher than *Gabbara* by halfe a foot, whose bodies were preserved and kept for a wonder in a charnell house or sepulchre within the gardens of the *Salustians*. Whiles the same *Augustus* sate as president, his neece *Iulia* had a little dwarfish fellow not above two foot and a hand breadth high, called *Conopas*, whome she set great store by and made much of: as also another shee-dwarfe named *Andromeda*, who sometime had been the slave of *Iulia* the princeesse, and by her made free. *M. Varro* reporteth, that *Manius Maximus*, and *M. Tullius*, were but two cubits high, and yet they gentlemen and knights of Rome: and in truth we our selves have seene their bodies how they lie embalmed and chested, which testifieth no lesse. It is well knowne, that there be some that naturally are never but a foot and an halfe high; others again somewhat longer: and to this heighth they came in three yeeres, which is the full course of their age, and then they die. We read moreover in the *Chronicles*, that in *Salamis* one *Euthimenes* had a sonne, who in three yeeres grew to be three cubits high, but hee was in his gate slow and heavie, and in his wit as dull and blockish: howbeit in this time under-growne he was, and his voice changed to be great, and at three yeeres end died sodainly of a generall crampe or contraction of all the parts of his bodie. It is not long since I saw my selfe the like in all respects (saying that undergrowing afore said) in a sonne of one *Cornelius Tacitus* a Romane knight, and a procurator or generall receiver and treasurer for the State in *Gaule Belgique*: such the Greekes call *εκτραπέλος*, *i. Ectrapelos*: we in Latine have no name for them.

* Ten foot and an halfe.

* Such an one as he is like to be, for to the nick-name signifieth.

CHAP. XVII.

☞ *Certaine notable observations in bodies of men and women.*

E Wee see tried by experience, that take measure of a man from the sole of the foot up to the crowne of the head, so faire it is betwene the ends of his two middle and longest fingers, when hee stretcheth out his armes and hands to the full. As also, that some men and women be stronger of the right side than of the left: others againe that be as strong of one as the other: and there be, that are altogether left handed, and best with that hand: but that is seldome or never seene in women. Moreover, men weigh heavier than women: and in everie kind of creature, dead bodies be more heavie than the quicke: and the same parties sleeping weigh more than waking. Finally, observed it is, that the dead corps of a man floteth upon the water with the face upward, but contrariwise women swimme groveling, as if Nature had provided to save their honestie and cover their shame, even when they are dead.

CHAP. XVIII.

☞ *Examples of divers extraordinarie cases in mans bodie.*

W Wee have heard, that some mens bones are solide and massie, and so do live without any marow in them: you may know them by these signes, they never feele thirst, nor put forth any sweat: and yet we know that a man may conquer and master his thirst if hee list:

list: for so a gentleman of Rome one *Julius Viator*, descended from the race of the Vocontians our allies; being false into a kind of dropsie betweene the skin and the flesh during his minoritie and nonage, and forbidden by the Physicians to drinke; so accustomed himselfe to observe their direction, that naturally he could abide it: in so much, that all his old age even to his dying day, he forbare his drinke. Others also have ben able to command and over-rule their nature in many cases, and breake themselves of divers things.

CHAP. XIX.

Of strange natures and properties of divers persons.

IT is said, that *Crassus* (grandfather to that *Crassus* who was slaine in Parthia) was never knowne to laugh all his life time, and thereupon was called *Agelastus*: and contrariwise, many have been found that never wept. Also that sage and renowned wise man *Socrates*, was seen alwaies to carrie one and the selfesame countenance, never more merrie and cheerfull nor more solemn and unquiet, at one time than at another. But this obstinate constancie and firme carriage of the mind, turneth now and then in the end into a certaine rigour and austeritie of nature, so hard and inflexible that it cannot be ruled, and in very truth despoileth men of all affections; and such are called of the Greekes, *Apathes*, who had the experience of many such: and (that which is a marvellous matter) those especially that were the great pillars of Philosophie and deepe learned Clerkes, namely *Diogenes* the Citricke, *Pyrrho*, *Heraclitus*, and *Timo*, and as for him he was so farre gone in this humor, that he seemed professedly to hate all mankind. But these were examples of a corrupt, perverse, and froward nature. As for other things, there be fundrie notable observations in many, as in *Antonia* the wife of *Drusus*, who as it was well knowne, never spit: in *Pomponius* the poet, one that had sometimes bene Confull, who never belched. But as for such as naturally have their bones not hollow, but whole and solid, they be very rare and seldom seene, and called they are in Latine *Cornei*, i. hard as horne.

CHAP. XX.

Of bodily strength and swiftnesse.

Varro in his treatise of prodigious and extraordinarie strength, maketh report of one *Tritanus*, a man that of bodie was but little and leane withall, howbeit of incomparable strength, much renowned in the sense schoole, and namely, in handling the Sammites weapons, wearing their manner of armor, and performing their feats and masteries of great name. He maketh mention also of a sonne of his, a souldier, that served under *Pompeius* the Great, who had all over his bodie, yea and throughout his armes and hands, some sinewes running streight out in length, others crossing over-thwart lattise-wise: and he saith moreover of him, that when an enemy out of the campe gave him defiance and challenged him to a combat, he would neither put on defensive harness, ne yet arme his right hand with offensive weapon; but with naked hand made means to foile and overcome him, and in the end when he had caught hold of him, brought him away perforce into his owne campe with one finger. *Iunius Valens* a captain, pensioner, or centurion of the guard souldiers about *Augustus Caesar*, was wont alone to beare up a charriot laden with certaine hogheads or a butt of wine, untill it was discharged therof, and the wine drawn out: also his manner was with one hand to stay a coach against all the force of the horses striving and straining to the contrarie: and to performe other wonderfull masteries, which are to be seene engraven upon his tombe: and therefore (quod *Varro*) being called *Hercules Rusticellus*, he tooke up his mule upon his backe and carried him away. *Fufius Sabinius* having two hundred pound weights at his feet, and as many in his hands, and twise as much upon his shoulders, went withall up a paire of staires or a ladder. My selfe have seene one named *Abrunatus*, do wonderfull strange matters in the open shew and face of the world, namely, to walke his stations upon the stage with a cuirace of lead weighing 500 pound, booted besides with a paire of buskins or greives about his legges that came to as much in weight. As for *Miltine* the great wrestler of *Crotone*, when hee stood firme upon his feet, there was not a man could make him stirre one foot: if he held a pomegranat fast within his hand, no man was able to stretch a finger of his and force it out at length. It was counted a great matter, that *Philippides* ran 140 stadia, to wit,

A wit, from Athens to Lacedæmon in two daies, untill *Lanisis* a courier of Lacedæmon, and *Philonides* footman to *Alexander* the great, ran betweene Sicyone and Olis in one day, 1200 stadia. But now verily at this day we see some in the grand cirque, able to endure in one day, the running of 160 miles. And but a while agoe wee are not ignorant, that when *Fontcius* and *Vipsianus* were Consuls, a young boy but nine yeers old, betweene noone and evening ran 75 miles. And verily a man may wonder the more at this matter, and come to the full conceit thereof, if hee doe but consider, that it was counted an exceeding great journey that *Tiberius Nero* made with three chariots (shifting from one to the other fresh) in a day and a night, riding post hast unto his brother *Drusus* then lying sicke in Germanie, and all that, was but 200 miles.

B

CHAP. XXI.

Examples of good eyesight.

WE find in histories as incredible examples as any be, as touching quicknesse of eyesight. *Cicero* hath recorded, that the whole Poëme of *Homer* called *Ilias*, was written in a peece of parchmin, which was able to be couched within a nut shell. The same writer maketh mention of one that could see and discern outright 135 miles. And *M. Varro* nameth the man, and saith he was called *Syrabo*: who affirmeth thus much moreover of him, that during the Carthaginian war hee was wont to stand and watch upon *Lilybæum*, a cape in Sicilie, to discover the enemies fleet lofing out of the haven of Carthage, & was able to tell the very just number of the ships. *Calliocrates* used to make Pismires and other such like little creatures, out of yvorie so artificially, that other men could not discern the parts of their bodie one from another. There was one *Myrmecides*, excellent in that kind of workmanship: who of the same matter wrought a chariot with foure wheeles and as many steeds, in so little rowme, that a silie flie might cover all with her wings. Also he made a ship with all the tackling to it, no bigger than a little bee might hide with her wings.

C

CHAP. XXII.

Of bearing.

AS for hearing, there is one example wonderfull. For the bruit of that battell, whereupon *Sybaris* was forced and sacked, was heard the very same day as farre as to *Olympia* [in Greece.] As touching the news of the *Cimbrians* defeature, as also the report and tidings of the victorie over the *Perfians*, made by the *Romane* *Castores*, the same day that it was atchieved, were held for divine revelations rather than humane reports, and the knowledge thereof came more by way of vision than otherwise.

D

CHAP. XXIII.

Examples of patience.

MAny are the calamities in this life, incident to mankind, which have affourded infinite trials of mens patience, in suffering paines in their bodie. Among others for women, the example of *Leena* the courtisan, is most rare and singular, who for all the dolorous tortures that could be devised, would never bewray *Harmodius* and *Aristogiton*, who slew the tyrannous king. And for men, *Anaxarchus* did the like, who being for such a cause examined upon the racke, in the middest of his torments bit off his owne tongue with his teeth, the onely meanes wherby he might haply reveale and disclose the matter in question, and spit it in the face of the Tyrant that put him to this torture.

E

CHAP. XXIIII.

Examples of memorie.

AS touching memorie, the greatest gift of Nature, and most necessarie of all others for this life; hard it is to judge and say who of all others deserved the cheefe honour therein: considering how many men have excelled, and woon much glorie in that behalfe. King *Cyrus* was

was able to call every souldior that he had through his whole armie, by his owne name. *L. Scipio* could doe the like by all the citizens of Rome. Semblably, *Cineas*, Embassador of king *Pyrrius*, the very next day that he came to Rome, both knew and also saluted by name all the Senate, and the whole degrees of Gentlemen and Cavallerie in the cittie. *Mithridates* the king, reigned over two and twentie nations of diverse languages, and in so many tongues gave lawes and ministred justice unto them, without truchman: and when hee was to make speech unto them in publicke assemblie respectively to every nation, he did performe it in their owne tongue, without interpreter. One *Charmidas* or *Carmadas*, a Grecian, was of so singular a memorie, that he was able to deliver by heart the contents word for word of all the bookes that a man would call for out of any librarie, as if he read the same presently within booke. At length the practise hereof was reduced into an art of Memorie: devised and invented first by *Simonides Melicus*, and afterwards brought to perfection and consummate by *Metroderus Scepsius*: by which a man might learne to rehearse againe the same words of any discourse whatsoever, after once hearing. And yet there is not a thing in man so fraile and brittle againe as it, whether it be occasioned by disease, by castal injuries and occurrents, or by feare, through which it faileth sometime in part, and otherwhiles decaieth generally, and is cleane lost. One with the stroke of a stone, fell presently to forget his letters onely, and could read no more: otherwise his memorie served him well ynough. Another, with a fall from the rouse of a very high house, lost the remembrance of his own mother, his next kinsfolke, friends, and neighbours. Another, in a sicknesse of his forgot his owne servants about him: and *Messala Corvinus* the great Oratour, upon the like occasion, forgot his owne proper name. So fickle and slipperie is mans memorie: that oftentimes it assaieth and goeth about to leefe it selfe, even whiles a mans bodie is otherwise quiet and in health. But let sleep creepe at any time upon us, it seemeth to be vanquished, so as our poore spirit wandereth up and down to seeke where it is, and to recover it againe.

CHAP. XXV.

¶ The praise of *C. Julius Caesar*.

FOR vigor and quicknesse of spirit, I take it, that *C. Caesar* Dictatour, went beyond all men besides. I speake not now of his vertue and constancie, neither of his high reach and deep wit, whereby he apprehended the knowledge of all things under the cope of heaven; but of that agilitie of mind, that prompt and readie conceit of his, as nimble and active as the very fire. I have heard it reported of him, that hee was wont to write, to read, to endite letters, and withall to give audience unto suiters and hear their causes, all at one instant. And being employed, as you know he was, in so great and important affaires, hee ordinarily endited letters to foure secretaries or clearkes at once: and when he was free from other greater businesse, he would otherwhiles find seven of them worke at one time. The same man in his daies fought fiftie set battels with banners displaid against his enemies: in which point, he alone outwent *M. Marcellus*, who was seene fortie times save one in the field. Besides the carnage of citizens that hee made in the civile warres when he obtained victorie, he put to the sword 1192000 of his enemies, in one battell or other. And certes for mine owne part, I hold this for no speciall glorie and commendation of his, considering so great injurie done to mankind by this effusion of blood: which in some part he hath confessed himselfe, in that he hath forborne to set downe the overthrowes and bloudshed of his adversaries (fellow-citizens) during the civile wars. Yet *Pompey* the great deserveth honor more justly for scouring the seas, and taking from the rovers 846 saile of ships. But to returne againe to *Caesar*, over and above the qualities of worth before rehearsed, an especiall propertie of his owne he had, for clemencie and mercie, wherein he so farre forth surmounted all other men, that hee repented therof in the end. As for his magnanimitie, it was incomparable, and he left such a president behind him, as I forbid all men to match or second it. For to speake of his sumptuosities, of his largesses, of the magnificent shewes exhibited to the people, the exceeding cost & charges therein bestowed, with all the stately furniture thereto belonging, were a point of him that favoured such lavish expence and superfluities. But herein appeared his true hautinesse of mind indeed, and that unmatched spirit of his, That when upon the battell at Pharsalia, as wel the coffers and caskets with letters & other writings of *Pompey*, as also those of *Scipioes* before *Thapsus*, came into his hands, he was most true unto them, & burnt al, without reading one script or scroll.

CHAP. XXVI.

¶ The commendation of Pompey the Great.

AS concerning all the titles and victorious triumphs of Pompey the great, wherein hee was equall in renowne and glorie, not onely to the acts of *Alexander* the great, but also of *Hercules* in a manner, and god *Bacchus*: if I should make mention thereof in this place, it would redound not to the honour onely of that one man, but also to the grandeur and majesticke of the Romane Empire. In the first place then, after he had recovered Sicilie, and reduced it under obeisance (where his first rising was, and where he began to shew himselfe in the quarell of the

B Commons, and to side with *Sylla*) having also conquered and subdued Affricke, and raunged it under the obedience of Rome, where hee acquired the surname of *Magnus*, by reason of the great bootie and pillage which hee brought from thence: being no higher of birth and calling, than a Romane gentleman or man of armes, entred with triumphant chariot into Rome: a thing that was never seene before in a man of that place and qualitie. Immediately after this, he made a voyage into the West, and having brought under obeisance of the Romanes 876 great townes, which he forced by assault betweene the Alpes and the marches of Spaine, he erected Trophies and triumphant columnes upon the mountaine Pyrenæus, with the title and inscription of these victorious exploits: and never made one word of his victorie over *Sertorius*, so brave a mind hee carried with him. And after the civile troubles and broiles appeased and quenched (which drew

C after them all forraine warres) hee triumphed againe the second time, being as yet but a knight of Rome: so oftentimes a generall of commaund and conduct: before hee ever served as soldiour in the field. These famous deeds achieved, sent out he was in another expedition, to scoure and cleere all the seas, and so forward into the East parts. From whence he returned with more titles still of honor to his country, after the manner of those that win victories at the solemn feastivall *Games. For as the victors use not themselves to accept the chaplets & guirlands in their

own names, but to be crowned therewith in the behalf of their native countries: even so, *Pompeius*, in that temple which he caused to be built of the bootie and pillage woun from the enemies, and dedicated to **Minerva*, entituled the cittie with the whole honour, and attributed all unto them in an inscription or table engraven in this manner: P O M P E I U S the Great, lord generall, having

D finished the warres which continued thirtie yeres, during which hee had discomfited, put to flight, slaine, or received to mercie upon submission 2183000 men: sunke or taken 846 saile: taken & brought to his devotion, of cities, townes, and castles, to the number of 1538: subdued and put under subiection all lands and nations, betweene the lake *Maotis* and the red sea, hath dedicated of right and good desert this temple to M I N E R V A. This is the breefe and summarie of his service in the East. As for the triumph, wherein he rode the third day before the Calends of October, in the yeere wherein *M. Messala* and *M. Piso* were Consuls, the tenure or title ran in this forme. Whereas *Cn. Pompeius*

E hath cleared all the sea-coasts from pirates and rovers, and thereby recovered unto the people of Rome the lordship and soveraigntie of the seas: and withall subdued Pontus, Armenia, Paphlagonia, Cappadocia, Cilicia, Syria: the Scythians, Iudæa, & the Albanois: the Island Creta, and the Bastarnians, hath triumphed over them all, as also for the vanquishing of the two kings *Mithridates* and *Tigranes*. But the greatest glorie of all glories in him was this (as himselfe delivered openly in a ful assembly, at what time as he discoursed of his own exploits) That whereas Asia when he received it, was the utmost frontier province and limit of the Roman Empire, he left the same in the very hart & mids therof, and so delivered it up to his country. Now if a man would set *Cæsar* on the other side against him, and likewise rehearse his noble acts, who indeed of the two seemed greater in the sight of the world, he had need verily to fetch a circuit about the world, & comprehend the whole globe thereof, which were an infinit peece of worke, and in all reason impossible.

CHAP. XXVII.

¶ The praise of Cato, the first of that name.

IN fundrie other kinds of vertues many men have diversly excelled. But *Cato*, the first of the *Porcian* house, was thought to be the only person who was able to perform three things in the highest degree that are most commendable in a man. For first and formost hee was a singular

Q

good

*Olympia,
Nemæa, Py-
thia, Isthmia.

* or Victorie.

good Oratour : secondly, a most brave captaine and renowned commander in the field : and last of all, a right worthie Senatour and approved counsellor. And yet in my conceit, all these excellent parts seeme to have shined more bright (although he came after the other) in *Scipio Æmylianus*. To say nothing of this blessed gift besides, that he was not hated and spighted of so many men, as *Cato* was. But if you will seeke for one especiall thing in *Cato* by himselfe, this is reported of him, That he was judicially called to his answer 44 times, and never was there man accused oftener than he, yet went he ever cleare away and was acquit,

CHAP. XXVIII.

Of Valour and Fortitude.

AN endlessse peece of worke it were to know and set downe who bare the price for valiancie, & namely if we admit the fabulous tales of poets. As for the poet *Ennius*, he had in greatest admiration. *T. Cæcilius Tenuer*, and especially his brother : and in regard of those two, he compiled the sixt booke of his Annales to the rest . But *L. Siccus Dentatus*, a Tribune of the Commons, not long after the banishment of the kings, when *Sp. Tarpeius* and *A. Æternus* were Consuls, by most voices surpasseth in this kind, if it be true that a number of men report of him: namely, that he served in 120 foughten fields: 8 times maintained combate with his enemy, giving defiance, and evermore got the upper hand: carried before him the glorious markes of 45 skarres received by wounds, and never a one in the backe parts of his bodie. Moreover, hee woon the spoile of 34 severall enemies: and had given him of his captaines, for his proesse and good service, 18 headlesse speares, 25 caparisons and furnitures of great horses, 83 chains, 160 bracelets for to adorne his arms: 26 crowns, or triumphant chaplets, wherof 14 were civick, for rescuing of Roman citizens in jeopardie of death, 8 of beaten gold: three other murall, for mounting first over the enemies wall: and last of all, one obsidionall, for enforcing the enemy to levie and breake up his siege and depart: also with a stipend or pension-fee out of the Exchequer & chamber of the citie: and lastly, the price or raunsome of ten prisoners, with twentie oxen besides to make up the reward: and in this glorious pompe and shew he followed nine captaine Generals, going before him, who by his meanes triumphed all. Over and besides (which I suppose, was the worthiest act that ever he did) he accused in open court before the bodie of the people, one commander and great captaine, named *T. Romulus*, (notwithstanding he had been a Consul) & convicted him for his ill management and conduct of the warres. As for *Manlius Capitolinus*, he wan as many honourable testimonies of valour, but that he lost them all againe, with that unhappie end of his life that hee made. Before hee was full 17 yeeres of age, hee had gained already two complete spoiles of his enemies. He was the first Roman knight or man of armes, that was honored with a murall crown of gold for skaling over the wall in an assault: with sixe civike chaplets for saving the life of citizens sixe times out of the enemies hands. Moreover, he received 37 gifts of the people for his good service, and carried the skarres in the fore-part of his bodie of 33 wounds. He rescued *P. Servilius*, generall of the Roman Cavallerie, and in the rescue was himselfe wounded for his labour in shoulder and thigh both. Above all other hardie acts, hee alone guarded and defended the Capitoll, and thereby the whole State of Rome, against the Gaules: a brave peece of service, but that he marred all againe in aspiring to beeking over the same. In these above rehearsed examples, certes vertue hath carried a great stroke, but yet fortune hath been the mightier, and prevailed more in the end. And in my judgement verily, none may right and justly preferre any man before *M. Scorgius*: albeit *Catiline* his nephewes sonne discredited that name of his, and derogated much from the honour of his house. The second time that hee went into the field and served, his hap was to loose his right hand: and in two other services hee was wounded no fewer than three and twentie times: by meanes whereof hee had little use of either hand, and his feet stood him in no great steed. Howbeit, thus maimed and disabled as he was for to be a soldiour, he went many a time after to the warres, attended with one slave onely, and performed his devoire. Twise was he taken prisoner by *Anniball*, (for hee dealt not I may tell you with ordinarie enemies) and twise brake he prison and made escape, notwithstanding, that for twentie moneths space he was every day ordinarily kept bound with chaines and fetters. Foure times fought hee with his left hand only, untill two horses one after another, were killed under him. Then he made himselfe a right hand of yron, which he fastened to his arme, and fighting with the helpe of it, he

raised

A raised the siege from before Crémona, and saved Placentia. In Fraunce he forced twelve fortified camps of the enemies. All which exploits appear upon record in that Oration of his which hee made in his Pretourship, at what time as his Colleagues and companions in government would not permit him to be at the solemne sacrifices, because he had a maime, and wanted a lim. But what heapes of crownes and chaplets, thinke you, would hee have gathered together, if hee had been committed and matched with any other enemies but *Anniball*? Certes, to know a man of worth indeed, much materiall it is to consider in what time he liveth, and is employed, for the prooffe of his valour. For what store of civicke coronets and garlands, yeilded either the battell of Trebia and Ticinus, or of Thrasymenus the lake? what crowne could have been gained and woon at the journey of Cannæ, where the best service was by good footmanship to flie and run away? To conclude, all others may vaunt verily, that they have vanquished men: but *Sergius* may boast, that he hath conquered and overcome even Fortune her selfe.

CHAP. XXIX.

§ The commendations of some men for their quicke wits.

WHO is able to make a muster as it were of them that have been excellent in wit: so difficult a matter it is to run through so many kinds of sciences, and to take a survey of curious handie workes in such varietie, of most rare and singular artisanes? Vnlesse haply wee agree upon this, and say, that *Homer* the Greeke poet excelled all other, considering either the subiect matter, or the happie fortune of his worke. And hereupon it was, that *Alexander* the great (for in this so proud a censure and comparifon, I shall doe best to cite the judgement of the highest, and of those that bee not subiect to envie) having found among the spoiles of *Darius* the king, his perfumier or casket of sweet ointments, and the same richly embellished with gold, with costly pearles and precious stones: when his friends about him, shewed him many uses whereto the said coffer or cabinet might bee put unto, considering that *Alexander* himselfe could not away with those delicate perfumes, being a wariour, and flurried with bearing armes, and following warfare: when, I say, his gallants about him could not resolve well what service to put it to: himselfe made no more adoe, but said thus, I will have it to serve for a case of *Homer*'s bookes: judging hereby, that the most rare and precious worke proceeding from that so admirable a wit of man, should bee bestowed and kept in the richest boxe and casket of all others. The same prince, in the forcing and saccage of the cittie of Thebes, caused by expresse commaundement, That the dwelling house and whole familie of *Pindarus* the Poet should bee spared. Hee built againe the native cittie wherein *Aristotle* the Philosopher was borne: and in so glorious a shew of his other worthie deeds, would needs intermingle this testimonie of his bountie, in regard of that rare cleark who gave light to all things in the world. The murderers of *Archilochus* the Poet, the verie Oracle of *Apollo* at Delphi, disclosed and revealed. When *Sophocles* the prince of all tragicall Poets was dead in Athens, at what time as the cittie was besieged by the Lacedæmonians, god *Bacchus* appeared sundrie times by way of vision in a dreame to *Lysander* their king, admonishing him to suffer his delight, and him whom he set most store by, for to bee entered. Whereupon the king made diligent enquirie who lately was departed this life in Athens: and by relation of the citizens soone found it out and perceived who it was that the foresaid god meant, and so gave them leave to burie *Sophocles* in peace, and to performe his funerals without any molestation or impeachment.

CHAP. XXX.

§ Of Plato, Ennius, Virgil, M. Varro, and M. Cicero.

DEnis the tyrant, borne otherwise to pride and crueltie, being advertised of the comming and arrivall of *Plato*, that great clerke and prince of learning, sent out to meet him a ship adorned with goodly ribbands, and himselfe mounted upon a charriot drawne with foure white horses, received him as if hee had beene a K. at the haven, when hee disbarked and came a land. *Isocrates* sold one Oration that he made, for 20 talents of gold. *Æschines*, that famous orator of Athens in his time, having at Rhodes rehearsed that accusatorie oration which hee had

made against *Demosthenes*, read withall his adversaries defence againe; by occasion whereof he was confined to Rhodes, and there lived in banishment: and when the Rhodians that heard it wondred thereat; Nay (qd. *Aeschines*) you would have marvelled much more at it, if you had heard the man himselfe pronouncing it, and pleading *Viva voce*: yeelding thus as you see a notable testimonie of his adversarie, in the time of his adversitie. The Atheniens exiled *Thucydides* their Generall captain: but after he had written his Chronicle, they called him home againe, wondring at the eloquence of the man, whose vertue and prowesse they had before condemned. The KK. of Ægypt and Macedonic gave a singular testimonie how much they honoured *Mænanther* the Comickall poet, in that they sent embassadours for him, and a fleet to waite him for his more securitie: but he wan unto himselfe more fame and glorie by his owne setled judgement, for that he esteemed more of his owne privat studie and following his booke, than of all those favours offered unto him from great princes. Moreover, there have beene great personages and men of high calling at Rome, who have shewed the like in token, how they esteemed and regarded the learned crew of forrein nations. *Cn. Pompeius*, after he had dispatched the warre against *Mithridates*, intended to go and visit *Posidonius*, that renowned professor of learning; and when he should enter into the mans house, gave straight commandement to his Liçtors or Huiffers, that they should not (after their ordinarie manner with all others) rap at his dore: and this great warrior, unto whome both the East and West parts of the world had submitted, vailed bonet as it were, and bafed his armes and ensigns of state which his officers caried, before the very dore of this Philosopher. *Cato* surnamed *Censorius*, upon a time when there came to Rome that noble embassage from Athens, consisting of three, the wisest Sages among them; when hee had heard *Carneades* speake (who was one of those three) gave his opinion presently, That those embassadours were to be dispatched and sent away with all speed; for feare least if that man argued the case, it would be an hard peece of worke to sound and find out the truth, so pregnant were his reasons and so wittie his discourses. But Lord! what a change is there now in mens manners and dispositions! This *Cato*, the renowned Censor, both now and at all times else, could not abide to have any Grecian within Italy, but alwayes gave judgement to them all in generall to be expelled: but after him there comes his nephew once removed, or his nephewes sonne, who brought one of their Philosophers over with him, when he had ben militaric Tribune or knight marshall: and another likewise upon his embassage to Cypres. And verily a wonder it is and a memorable thing, to consider how these two *Catoes* differed in another point: for the former of them could not away with the Greeke tongue; the other that killed himselfe at Vtica, esteemed it as highly. But to leave strangers, let us now speake of our owne countreyemen, so renowned in this behalfe. *Scipio Africanus* the elder, gave expresse order and commaunded, That the statue of *Q. Ennius* the poet should be set over his tombe, to the end, that the great name and stile of *Africanus*, or indeed the bootie rather that hee had woon and carried away from a third part of the world, should in his monument upon the relickes of his ashes be read together with the title of this poet. *Augustus Caesar* late emperour, expressly forbad that the Poëme of *Virgil* should be burned, notwithstanding that he by his last will and testament upon a modestie, gave order to the contrarie: by which means there grew more credit and authoritie unto the Poët, than if himselfe had approved and allowed his owne verses. *Asinius Pollio* was the first that set up a publick librarie at Rome, raised of the spoile and pillage gained from the enemies. In the librarie of which gentleman, was erected the image of *M. Varro*, even whiles he lived: a thing that woon as great honour to *M. Varro* in mine opinion (considering that among those fine wits, whereof a great number then flourished at Rome, his hap onely was to have the guirland at the hands of a noble citizen and an excellent oratour beside:) as that other navall crowne gained him, which *Pompey* the Great bestowed upon him for his good service in the pyrats warre. Infinite examples more there are of us Romanes, if a man would seeke after them and search them out: for this onely nation hath brought forth more excellent and accomplished men in every kind, than all the lands besides of the whole world. But what a sinne should I commit, if I proceeded farther and spake not of thee, ô *M. Cicero*? and yet how should I possibly write of thee according to thy worthinesse? would a man require a better prooffe of thy condigne praises, than the most honorable testimonie of the whole bodie of that people in generall, and the acts onely of thy Consulship, chosen out of all other vertuous deeds throughout thy whole life? Thine eloquence was the cause that all the Tribes renounced the law *Agrarius*, as touching the division of lands among

A among the commons, albeit their greatest maintenance and nourishment consisted therein: Through thy persuasion they pardoned *Rofcius*, the first authour of that seditious bill and law, whereby the States and degrees of the cittie were placed distinctly in their seats at the Theatre: they were content, I say, and tooke it well, that they were noted and pointed at for this difference in taking place and rowmes, which he first brought in. By meanes of thy orations, the children of proscrip and outlawed persons, were ashamed and abashed to sue for honorable dignities in common-weale: thy wittie head it was that put *Catiline* to flight, and banished him the cittie: thou, and none but thou didst out-law *M. Antonius*, and put him out of the protection of the state. All haile therefore, *o M. Tullius*: faire chieve thee, thou that first was saluted by the name of *Parens Patrie*, i. Father of thy countrey: first that deserved triumph in thy long robe, and the lawrell guirland, for thy language: the only father indeed of eloquence and of the Latin tongue: and (as *Cesar* Dictator sometime thine enemy hath written of thee) hast deserved a crowne above all other triumphs, by how much more praise-worthie it is, to have amplified and set out the bounds and limits of Romane wit and learning, than of Romane ground and dominion.

CHAP. XXXI.

☞ *Of a certaine maiestie in behaviour and carriage.*

T hose, who among other gifts of the mind have surpassed other men in sage advise and wisdom, were thereupon at Rome surnamed *Cati*, and *Corculi*. In Greece, *Socrates* carried the name away from all the rest, being deemed by the Oracle of *Apello Pythius*, the wisest man of all others.

CHAP. XXXII.

☞ *Of Authoritie.*

A Gaine, *Chilo* the Lacedemonian was of so great reputation among men, that his sayings were held for Oracles: and three precepts of his were written in letters of gold, and consecrated in the temple of *Apello* at Delphi: where the first was this, *Know thy selfe*: the second, *Set thy mind too much of nothing*: the third, *Debt and law are alwaies accompanied with misery*. His hap was to die for joy, upon tidings that his sonne wan the best prize and was crowned victour at the solemne game Olympica: and when he should be interred, all Greece did him honour, and solemnized his funerals.

CHAP. XXXIII.

☞ *Persons of a diuine spirit and heavenly nature.*

A mong women, *Sibylla* was excellent at divination, and for a certaine fellowship and societie with coelestiall wights, of great name. As for men, among the Greekes, *Melampus*: and with us Romanes, *Martius*, carried as great an opinion.

CHAP. XXXIIII.

☞ *Scipio Nasica.*

S *Cipio Nasica* was judged once by the Senat (sworne to speake without passion and affection) to be the best and honestest man that ever was from the beginning of the world: howbeit the same man, as upright as hee was, suffered a repulse and disgrace at the peoples hands in his white robe when he sued for a dignitie: and to conclude, in the end his hap was not to depart this life in his owne countrey; no more than it was the will of God that *Socrates* the wisest man, (so deemed by the Oracle of *Apello*) should die out of prison.

CHAP. XXXV.

☞ *Of Chastitie.*

S *Alpimia*, daughter of *Paterculus* and wife to *Fulvius Flaccus*, by all the voices in generall of Romane damies, carried away the prize for continencie, and was elected out of the hundred principall matrons of Rome to dedicate and consecrate the image of *Venus*, according to an

an ordinance out of *Sibyls* bookes. *Claudia* likewise, was by a religious and devout experiment proved to be such another, at what time as shee brought the mother of the gods, *Cybele*, to Rome.

CHAP. XXXVI.

Of Pietie, or kindnesse.

IN all parts verily of the world, there have been found infinite examples of naturall love and affection, but one example thereof at Rome hath been knowne singular above all others, and incomparable. There was a poore young woman of the common sort, and therefore base and of no account, who lately had been in childbed, whose mother was condemned to perpetuall prison, and there lay, for some great offence that she had committed: this daughter of hers and young nourse aforesaid, obtained leave to have accessse unto her mother, and evermore by the goaler was narrowly searched for bringing to her any victuall, because her judgement was to be famished to death: thus shee went and came so long, untill at last she was found suckling of her mother with the milke of her breasts. This was reputed for such a straunge and wondrous example, that the mother was releasd and given to the daughter for her rare pietie and kindnes: both of them had a pension out of the cittie allowed them for their maintenance for ever; and the place where this hapned was consecrated to *Pietie*: in so much, as when *C. Quintius* and *M. Acilius* were Consuls, there was a temple to her built, in the very place where this prison stood, just where as now standeth the Theatre of *Marcellus*. The father of the *Gracchi* happened to light upon and take two serpents within his house, whereupon hee sent out to the soothsayers for to know, What this thing might presage? who made this answer, That if he would himselfe live, the female snake should be killed: Nay marry (qd. hee) not so, but rather kill the male; for my wife *Cornelia* is young enough, and may have more children. This said he, meaning to spare his wives life, in consideration of the good shee might doe to the common-weale. And in truth, like as the wizards prophesied, so it fell out soone after, and their words tooke effect. *M. Lepidus* so entirely loved his wife *Apuleia*, that he died for very thought and griefe of heart, after shee was divorced from him and turned away. *P. Rutilius* chanced to be somewhat ill at ease and sickish, but hearing of his brothers repulse and that he was put by his Consulship (for which hee stood in suite) died sodainly for sorrow. *P. Catiens Philotimus* so loved his lord and master, that notwithstanding he was by him made his sole heir of all that ever he had, yet for kind heart, cast himselfe into the funerall fire to be burnt with him.

CHAP. XXXVII.

Of divers excellent men in many Arts and Sciences, and namely, in Astrologie, Grammer, and Geometrie.

IN the skill and knowledge of sundrie Sciences, an infinite number of men have excelled: howbeit, we will but take the very flower of them of them all, and touch those onely whome meet it is to be named for their speciall desert. In Astrologie, *Berosus* was most cunning: in so much as the Atheniens for his divine predictions and prognostications, caused his statue with a golden tongue, to be erected in the publicke schoole of their Vniversitie. For Grammer, *Apolodorus* was singular, and therefore was highly honoured of the States of Greece, called Amphictyones. In Physicke, *Hippocrates* excelled, so farre forth as by his skill he fore-told of a pestilence that should come out of Sclavonia: and for to cure & remedie the same, sent forth his disciples and schollers to all the citties about. In recompence of which good desert of his, all Greece by a publicke decree ordained for him the like honours, as unto *Hercules*. For the very same cunning and science, king *Ptoloma* gave unto *Cleombrotus* of Cea (at the solemne feast holden in the honour of the great mother of the gods) a hundred talents, and namely for curing king *Antiochus*. *Critobulus* likewise acquired and got himselfe a great name, for drawing an arrow forth of king *Philips* eie, and curing the wound when he had done, so as the sight remained, and no blemish or deformity appeared. But *Asclepiades* the Prusian, surpassed al others in this kind, who was the first authour of that new sect which bare his name, rejected the Embassadors, the large promises and favours offered of king *Mithridates*: found out the way and meanes to make wine holefome and medic-

A medicinable for sicke folke: and recovered a man to his former state of health, who was carried forth upon his beire to be buried: and lastly he attained to the greatest name, for laying a wager against fortune, and pawning his credite so farre, as hee should not to be reputed a Physician, in case he ever were knowne to be sicke, or any way diseased. And in truth the wager hee woon. For his hap was to live in health untill he was very aged, and then to fall downe from a paire of staires and so to die suddainely. A singular testimonie of skill and cunning *M. Marcellus* gave unto *Archimedes* that notable Geometrician and Engineer of Syracuse, who in the saccage and rifling of that cittie, gave expresse commaundement concerning him alone, that no violence should bee done unto his person; howbeit his will failed of execution, by occasion of a soldior, who in that hurliburly slew him, and knew not who he was. Much commended & praised is *Ctesiphon* of Gnosos for his notable knowledge in Architecture, and namely, for the wonderfull frame of *Dianaes* temple at Ephesus. *Philon* likewise was highly esteemed for making the Arsenall at Athens, able to receive a thousand ships. *Ctesibius* also was much accounted of for devising wind instruments: and by the meanes of certaine engines to draw and send water to any place. *Democrates* moreover the Engineer, immortalised his name for casting the plot, and divising the Modell of Alexandria in Ægypt, at what time as *Alexander* the gear founded it. To conclude, this mightie prince and commander *Alexander*, streightly forbad by expresse ediēt, That no man should draw his pourtrait in colours, but *Apelles* the painter: that none should engrave his personage, but *Pyrgoteles* the graver: and last of all, that no workman should cast his image in brasse, but *Lysippus* the founder. In which three feats, many Artifanes have excelled for their rare workmanship.

CHAP. XXXVIII.

§ Singular workes of Artificers.

King *Attalus* cheapened one picture wrought by *Aristides* the Thebane painter, and bad a hundaed talents for it. *Cesar* the Dictatour offered unto *Timomachus* eight talents for two pourtraits, to wit, of *Medea* and *Ajax*, which hee meant to set up and consecrate in the temple of *Venus Genetrix*, i. Mother *Venus*. King *Candaules* bought of *Butarchus* a painted table, wherein was drawne the defeature and destruction of the Magnetes, which tooke up no great roume, and weighed out the poise thereof in good gold. King *Demetrius* surnamed *Expugnator* [i. the conquerour and great forcer of citties] forbare to set Rhodes on fire, because hee would not burne one painted table, the handie worke of *Protogenes*. *Praxiteles* was ennobled for a rare Imager, and cutter of stones and marble: hee eternised his memoriall by making one image of *Venus*, for the Gnidians, so lively, that a certaine young man became so amorous of it, that hee doted for love thereof, and went besides himselfe: which peece of worke was esteemed of such price by king *Nicomedes*, that whereas the Gnidians owed him a great sum of money, hee would have taken it for full paiement and satisfaction of the whole debt. The statue of *Iupiter Olympius* is to be seene, and daily commendeth the workeman *Phydias*. *Iupiter* likewise *Capitolinus*, and *Diana* in Ephesus yeeld good testimonies of *Mentors* cunning: & the tooles or instruments of the said workeman were consecrated (for their exquisite making) unto them in their temples, and there remaine.

CHAP. XXXIX.

§ Of servants and slaves.

IHave not knowne or hard to this day of a man borne a slave, that was prised so high as *Daphnis* the Grammarian was: for *Cn. Pisarensis* held him at 300700 Sesterces to *M. Scavrus* a great man, and a principall person of Rome. Howbeit, in this our age certaine stage plaiers have gone beyond this price, and that not a little: marry they were such as had bought out their freedom before, and were not then slaves. And no marvell, for wee find upon record, That the great actor *Roscins* in former time might yeerely dispend by the stage 500000 Sesterces. Vnlesse a man desire in this place to heare of the Treasurer and purveieur generall of the armie in Armenia for the late wars of king *Tyridates*, who was enfranchised by the meanes of *Nero*, for 120000 Sesterces. But it was the warre that cost thus much, and not the man. Like as *Sutorius Priscus* gave unto *Seianus* 3500 Sesterces, for *Pazon*, one of his guelded Eunuches: for a man would say this

was more for to satisfie his filthy lust, than for any especiall beautie to be seen in the said *Parzon*. G
 But hee took the vantage of the time, and went cleere away with this impious villanie: for at
 what time as hee bought him, the citie was in perplexitie and sorrow, and no-man for thinking
 of greater affaires and troubles, had any leisure to find fault or say a word in reproofe of such
 enormities.

CHAP. XL.

¶ *The excellencie of Nations.*

Doubtlesse it is, and past all question, that of all nations under the sunne, the Romanes H
 excell and are the onely men for all kind of vertues: but to determine who was the hap-
 piest man in all the world, it is above the reach of humane wits; considering that some take
 contentment and repose felicitie in this thing, others in that; and every one measureth it accord-
 ing to his severall fancie and affection: but to say a truth and judge aright indeed, laying aside
 all the glosing flatteries of Fortune, and without courting her to determine this point, There is
 not a man to be counted happie in this world. Right well it is of our side, and Fortune dealth
 in exceeding favour with us, if we may not justly be called unhappie: for, set case there be no o-
 ther miserie and calamitie besides, yet surely a man is ever in feare least Fortune will frown upon
 him and doe him a shrewd turne one time or another: and admit this feare once, there can be
 no sound happinesse and contentment in the mind. What should I say moreover to this, That
 there is not a man, at all times wise and in his perfect wits? Would God that this were taken of
 most men for a poets word only, and not a true said saw indeed. But such is the vanitie and follie
 of poore mortall men, that they flatter themselves, and are verie wittie to deceive themselves,
 making their accounts and reckonings of good and evill fortune, like to the Thracians; who by
 certaine white and blacke stones which they cast into a certaine vessell, and there laid up, for the
 better prooffe and triall of every daies fortune; and at their last day and time of death they fall to
 parting these stones one from another and telling them apart: and according to the number of
 the white and the blacke, give judgement and pronounce of ech ones fortune. But what say they
 to this, that many times it falleth out that the day marked with a white stone for a good day, had
 in it the beginning and overture of some great misfortune and calamitie? How many a man hath
 seemed to fall into fortunes lap, and entred upon great empires and dominions, which in the
 end turned to their afflictions and miseries? How many have wee seene overthrowne, punished
 extremely, and brought to utter ruine, even by the meanes of their owne good parts and com-
 mendable gifts? Certes these be good things and great favours, if a man could make full ac-
 count to enjoy them but one hour with contentment. But thus verily stands the case, and this is
 the ordinarie course of this world; one day is the judge of another, and the day of death judgeth
 and determineth all: and therefore there is no trust in them, neither may wee assure our selves of
 any. To say nothing of this, That our good fortunes are not in number æquall to our bad: and
 say there were as many of the one as the other, Is there any one joy and mirth to be weighed in
 true ballance against the least grieffe and sorrow that commeth? Foolish and sottish men that wee
 are with all our curiositie! for we reckon our dayes by tale and number, whereas we should
 ponder and poise them by weight. L

CHAP. XLI.

¶ *Of the highest tipe and pitch of felicitie.*

L*Ampido* a Lacedæmonian ladie, is the onely woman that ever was knowne, to have been
 the daughter to a king, a kings wife, and mother of a king. Also *Pherenice* was knowne a-
 lone to be the daughter, sister, and mother to them that wan the victorie and carried away
 the best prize at the Olympian games. In one house and race of the *Curios*, there were knowne
 to have been three excellent oratours one after another, by descent from the father to the sonne. M
 The onely familie and line of the *Fabij* affourded three Presidents of the Senate in course, one
 immediatly under another, to wit, *M. Fabius Ambustus* the father, *Fabius Rullianus* the sonne,
 and *Q. Fabius Gurges* the nephew.

CHAP. XLII.

Examples of Fortunes mutabilitie.

Infinite examples otherwise wee have of the varietie and inconstancie of Fortune: for what great joyes to speake of gave she ever, but upon some mishap or other? Againe, the greatest miseries and calamities that have beene, have they not ensued upon the most joyes and contentments?

CHAP. XLIII.

Of one twice outlawed and out of protection: as also of *Q. Metellus*, and *L. Sylla*.

Fortune preserved for fixe and thirtie yeeres *M. Fidusius* a Senator, outlawed by *Sylla*: yet was his hap afterwards to be outlawed the second time: for hee over-lived *Sylla* and continued unto the time of *Marcus Antonius*; and for certaine it is knowne, that by him he was banished and outlawed againe, for no other reason but because hee had been so before time. So kind was Fortune to *P. Ventidius*, as that shee would have him triumph alone over the Parthians: but shee had been before-time so good as to play with him, when shee saw him led (being a boy) as prisoner in *Cn. Pompeius Strabo* his triumph for the desfeiture and overthrow of the *Asfulanes*. Although *Massurius* testifieth, that he was so led in triumph as a slave twise; *Cicero* saith, that he was at first but a mulitier & drave mules laden with meale for the oven, to serve the camp. Many other affirme, that in his youth he was a poore fouldier, and served as a footman in his single trouffes and grieves. Moreover, such good fortune had *Balbus Cornelius*, as to be the Senior Confull and declared Elect, before his fellow: but before-time he had been in trouble and judicially accused, yea and a jurie was empanelled to goe of him, so as in daunger he was to be whipped, upon their verdict. Well, this mans hap for all this, was to be the first Romane Confull of forreiners, and namely, *Ilanders* within the maine ocean: hee (I say) attained to that place of dignitie, which our fore-fathers denyed flatly to the *Latines* their neighbours. Among other notable examples, *L. Fulvius* may goe for one, who was Confull of the *Tusculans* when they revolted and rebelled against the *Romanes*: howbeit forsaking his owne citizens and returning to Rome, was presently by the whole people advanced to the same honour among them: and hee was the man alone knowne to have triumphed at Rome over them whose Confull hee was, even the same yeere that he was himselfe a *Romane* enemy in the field. *L. Sylla* was the only man untill our time, that challenged to himselfe the surname of *Felix*, i. happie, or fortunate. But how was he adopted as it were into this name? forsooth even by shedding and spilling so much blood of good *Romane* citizens, and by waging warre against his native country. And whereupon, I pray you, grounded he this happinesse of his, and had so great an opinion thereof, if this were not it, That hee was able to banish, confiscate, and put to death, so many thousand citizens? O false and deceitfull interpretation, daungerous, unhappie, and pernicious, even to posteritie and the time to come! For were not they more blessed and happie, who then fortun'd to loose their lives, whose death at this day wee pittie, and whome we take compassion of, than *Sylla*, whome there is no man living at this day but he hateth and abhorreth? Moreover, was not his end more cruell and horrible, than the miserie of all those that by him were outlawed and their goods forfeit? for his owne wretched bodie did eat, gnaw, and consume it selfe, and bred daily and hourelly vermine to put the same to paine and torment. And say that hee dissembled all this, and would not be knowne of it; and suppose we gave credit to that last dreame of his (wherein hee lay as it were dead and in a trauance) upon which he gave out this speech, That himselfe and none but he had his glorie to surmount all *Envie*: yet in this one thing he plainly confessed, That his felicitie came short and was defective, in that he had not time to consecrate the *Capitoll* temple. *Q. Metellus* in that funerall oration of his which he made in praise and commendation (as the manner was) for *L. Metellus* his father, gave these lawdable reports of him, That he had been the soveraigne Pontife or high priest of Rome, twise Confull, Dictatour, Generall of the horse, one of the 15 *Quindecemvirs* deputed for division of lands among fouldiers and commons, and that in the first *Punicke* warre hee shewed many *Elephants* in a triumph: moreover he left in writing, That he had accomplished ten of the greatest and best points belonging to this life; in seeking whereof

whereof and in attaining thereunto, all the great Sages of the world spend their whole time: for (saith hee) his desire was, and therto he aimed, namely, to be a most doubtie and hardie warrior, an excellent orator, a right valiant captaine and commaunder: *Item*, to have the conduct, charge, and execution of the greatest and most important affaires, to be in the highest place of honour, to be singular for wisdom, to be accounted the principall and chiefe in Senat, to come to great wealth and riches by good and lawfull meanes, to leave much faire issue behind him: and to conclude, to be simply the best man of all other, and the noblest personage in the cittie. To these perfections, he and none but he since the time that Rome was Rome, attained. Now to confute this, were a long and needlesse peece of worke, considering that one onely mischance checked these favours of Fortune, and fully disprooved all: for the very same *Metellus* became blind in his old age: for he lost both his eyes in a skare-fire, at what time as he would have saved and got away the Palladium, *i.* the image of *Minerva*, out of the temple of *Vesta*. His act, I confesse, was vertuous and memorable, but the event was ill for him and miserable. In regard whereof, I know not how he should be called unhappie and wretched: and yet I see not why he should be named happie and fortunate. This I must needs say in conclusion, that the people of Rome graunted unto him that priviledge, that never man before him in the world was known to have, namely, to ride in his coach to the Senat-house so oft as hee went to sit at the councill table. A great prerogative I confesse, and most stately, but it was allowed him for the want of his eyes.

CHAP. XLIIII.

Of another *Metellus*.

A Sonne likewise of this *Q. Metellus*, who gave out those commendations abovesaid of his father, may be put in the ranke of the most rare precedents of felicitie in this world: for over and besides the most honourable dignities and promotions that hee was advanced unto in his life time, and the glorious addition and surname of *Macedonicus*, which hee got in Macedonie; when he was dead, there attended upon his dead corps at his funerals to interre it, foure sonnes of his; the one Pretor for the time being: the other three had been Consuls in their time: and of these three, two had triumphed in Rome, and the third had ben Censor. These were points, I may tell you, of great marke and regard, and few men are to be found in comparison, that can come to any one of them. And yet see! in the very prime and flower of all these honours, it fortun'd that *Catinius Labeo* surnamed *Maccio*, a Tribune or protector of the commons (whome he before-time by vertue of his Censorship had displaced out of the Senat) waited his time when he returned about noone from *Mars* field, and seeing no man stirring in the market place nor about the Capitoll, tooke him away perforce to the cliffe *Tarpeius*, with a full purpose to pitch him downe headlong from thence, and to breake his necke. A number came running about him of that crew and companie, which was wont to salute him by the name of Father; but not so soone as such a case required, considering this so sodaine an occurrent: and when they were come, went but slowly about any rescue, and kept a soft pace as if they had waited upon some corps to a buriall: and to make resistance and withstand perforce the Tribune, armed with his sacrosanct and inviolable authoritie, they had no warrant by law: in so much as he was like to have perished and come to a present mischiefe, even for his vertue and faithfull execution of his Censorship, had there not been one Tribune of ten found, hardly and with much ado to step betweene, and oppose himselfe against his colleague, and so by good hap rescued him out of his clutches, and saved him as it were at the very pits brinke, even from the utmost point of death. And yet he lived afterwares of the courtesie and liberalitie of other men: for why? all his goods from that day forward, were seized as forfeit and confiscate, by that Tribune whom before-time he had condemned: as if he had not suffred punishment and sorrow enough at his hands, to have his necke so writhed by him, as that the bloud was squeased out at his verie eares. Certes, for mine owne part, I would reckon this for one of his crosses and calamities, That he was an enemy to the later *Africanus Emilianus*, even by the testimonie and confession of *Macedonicus* himselfe. For after the death of the said *Africanus*, these were his words unto his owne sonnes: Go your waies sirs, and doe honour unto his obsequies, for the funerals of a greater personage and a better cittizen, shall ye never see. And this spake hee to them, when as they had conquered Creta and the Balearie Ilands, and therof wer surnamed *Creticus* and *Balearicus*, and

A and had wore the lawrell diademe in triumph: being himselfe alreadie entituled with the stile of *Macedonicus*, for the conquest of Macedonie. But if wee consider and weigh that onely wrong and injurie offered unto him by the Tribune, who is it that can justly deeme him happie, being exposed so as he was to the pleasure, mercie, and devotion of his enemy, farre inferiour to *Africanus*, and so to come to confusion? What were all his victories to this one disgrace? what honours and triumphant charriots strooke not fortune downe with her foot, and overturned all againe, or at least wise set not backe againe with this her violent course, suffering a Romane Censor to bee haled and tugged in the very heart of the cittie (the onely way indeed to bring him to his death) to be harried I say up to that capitoll hill, there to make his end, whether aforetime he ascended triumphant, but never committed that outrage upon those prisoners and captives, whom he led in triumph, and for whose spoiles he triumphed, as to hale and pul them in that rude fort? And verily, the greater was this outrage, and seemed the more heinous, in regard of the felicitie which afterwards ensued: considering, that this *Macedonicus* was in danger to have lost so great an honour as he had in his solemne and stately sepulture, namely, wherein hee was carried forth to his funerall fire, by his triumphant children, as if hee had triumphed once againe at his very buriall. In summe, that can bee no sound and assured felicitie which is interrupted by any indignitie or disgrace whatsoever, much lesse then by such an one as this was. To conclude, I wot not well whether there be more cause to glorie for the modest carriage of men in those daies, or to greeve at the indignitie of the thing, in that among so many *Metelli* as then were, so audacious a villaine as this was of *Catinius*, was never revenged to this day.

CHAP. XLV.

§ Of *Augustus Caesar*, late Emperour.

A S touching the late Emperour *Augustus*, whome all the world raungeth in this ranke of men fortunate: if we consider diligently the whol course of his life, we shall find the wheele to have turned often, and perceive many chaunges of variable Fortune. First and formost his owne vnclie by the mothers side put him by the Generallship of the horse; and notwithstanding all his earnest suite, preferred *Lepidus* to that place before him: secondly, he was noted and thought hardly of for those outlawries of Romane citizens, and thereby purchased himselfe much hatred and displeasure: tainted also he was for being one of those three in the Triumvirate, yoked and matched with wicked companions and most dangerous members to the weale publick: and this galled him the more, That in this fellowship, the Romane Empire was not equally and indifferently parted among them three, but *Antonie* went away with the greatest share by ods. Also his ill fortune was in the battaile before Philippos to fall sicke, to take his flight; and for three daies, diseased as he was, to lurke and lye hidden within a marish: whereupon (as *Agrippa* and *Mecenas* do confesse) he grew into a kind of drop sicke, so as his belly and sides were puffed up and swelled with a waterish humor gotten and spread between the flesh and the skin. Furthermore he suffered shipwracke in Sicily, and there likewise he was glad to skulke within a cave in the ground. What should I say, how when he was put to flight at sea, and the whole power of his enemies hard at his heels, he besought *Proculus* in that great danger to rid him out of his life: how he was perplexed for the quarels and contentions at Perusium: in what fear and agonie he was in the battell at Actium (a towne of Albanie,) as also for the issue of the Pannonian war, for the fall of a bridge, and a towne both. So many mutinies among his souldiours: so many dangerous diseases that put him to a plung. The jelousie and suspicion that he had evermore of *Marcellus*. The reproch and shame that he sustained for confining and banishing *Agrippa*: his life so many times laid for, by poison and other secret traines: the death of his children, suspected to have bene wrought by indirect meanes: the double sorrow and greefe of heart thereby: and not altogether for his childlesse estate: the adulterie of his owne daughter, and her purpose of taking his life away, detected and made knowne to the world: the reprochfull departure and slipping aside of *Nero*, his wives sonne: another adulterie committed by one of his neeces. Over and above all this, thus many crosses more and troubles comming one in the necke of another: namely, want of pay for his souldiours: the rebellion of Slavonia: the mustering of slaves and bond-servants to make up his armie, for want of other able youths to levie unto the warres: pestilence in Rome citie: famine & drought universally through Italic: and that which more is, a deliberate purpose

and

and resolution of his to famish and pine himsele to death, having to that end fasted 4 dayes and G
 foure nights, and in that time received into his bodie the greater part of his own death. Besides,
 the overthrow and rout of *Varius* and his forces, the foule staine and blemish to the touch of his
 honour and majestie very neer: the putting away of *Posthumius Agrippa* after his adoption, and
 the misse that he had of him after his banishment: then, the suspition that he conceived of *Fa-*
brius, for disclosing his secrets: adde hereto, the opinion and conceit that he tooke of his owne
 wife and *Fiberius*, which surpassed all his other cares. To conclude, that god, and hee who I
 wot not whether he obtained heaven or deserved it more, departed this life, and left behind him
 for his heire to the crowne, his enemies sonne.

CHAP. XLVI.

¶ Whome the Gods iudge most happie: H

I Cannot over-passe in this discourse and consideration, the Oracles of Delphos, delivered
 from that heavenly god to chastise and repress as it were, the folly and vanitie of men: and
 two there be which give answer to the point in question, after this manner: First, that *Pheaius*
 (who but a while before died in the service of his country) was most happie. Moreover, *Gyges*
 (the most puissant K. in those daies of al the earth) sent a second time to know of the Oracle, Who
 was the happiest man next him? and answer was made, That *Aglaus Psophidius* was happier than
 the former: now this *Aglaus* was a good honest man well stept in yeeres, dwelling in a very nar- I
 row corner of Arcadia, where he had a little house and land of his own, sufficient with the yeerly
 commodities thereof to maintaine him plentifully with ease; out of which hee never went, but
 employed himsele in the tillage and husbandrie thereof, to make the best benefite he could: in
 such sort, that (as it appeared by that course of life) as he coveted least, so he felt as little trouble
 and adversitie while he lived.

CHAP. XLVII.

¶ Who was canonized a god, here upon earth living.

BY the ordinance and appointment of the same Oracle, as also by the assent and approbation K
 of *Iupiter* the soveraigne God, *Euthymus* the famous wrestler (who evermore wan the best
 prize at Olympia, save once) was reputed and consecrated a god while he lived, and knew
 thereof; borne he was at Locri in Italie, where one statue of his, as also another at Olympia, were
 both upon one day stricken with lightning: whereof I see *Callimachus* wondred at, as if nothing
 else were worthie admiration, and gave order that he should be sacrificed unto as a god: which
 was performed accordingly, both while he lived and after he was dead. A thing, that I marveile
 more at than any thing else, That the gods were therewith contented, and would permit such a
 dishonour to their majestie.

CHAP. XLVIII.

¶ Of the longest lives. L

THE tearme and length of mans life is uncertein, not only by reason of the diversitie of cli-
 mats, but also because the Historians have delivered such varietie of mens ages, and every
 man by himsele hath a severall time limited unto him, at the very day of his nativitie. *He-*
siodus, the first writer (as I take it) who hath treated of this argument, and yet like a poet, in his
 fabulous discourse as touching the age of man, saith forsooth, That a crow liveth 9 times as long
 as we; and the harts or stags 4 times as long as the crow; but the ravens thrice as long as they. As
 for his other reports as touching the Nymphes and the bird Phoenix, they are more like poeti-
 call tales, than historical narrations. *Anacricon* the poet maketh report, that *Argant bonius* king
 of the Tartessians, lived 150 yeeres: and *Cynaras* likewise king of the Cyprians, ten yeeres lon- M
 ger. *Theopompus* affirmeth, that *Epimenides* the Gnoffian, died when he was 157 yeeres old. *Hel-*
lamicus hath written, that among the Epians in *Ætolia*, there be some that continue full two hun-
 dred yeeres: and with him accordeth *Damases*; adding moreover, that there was one *Pictoreus*
 among them, a man of exceeding stature, mightie and strong withall, who lived 300 yeeres.
Ephorus

A *Ephorus* testifieth, that ordinarily the KK. of Arcadia were 300 yeeres old ere they died. *Alexandri* *Cornelius* writeth of one *Dando* a Sclavonian, that lived 500 yeeres. *Xenophon* in his treatise of old age, maketh mention of a king of the Latines, or as some say, over a people upon the sea coasts; who continued alive 600 yeeres: and because he had not lied loud enough already, he goeth on still and saith, That his sonne came to 800. All these strange reports proceed from the ignorance of the times past, and for want of knowledge how they made their account: for some reckoned the summer for one yeere, and the winter for another. There were againe, that reckoned everie quarter for a yeere, as the Arcadians, whose yeere was but three moneths. We shall have some, and namely the *Ægyptians*, that count every change or new moone, for a yeere: and therefore no marveile if some of them are reported to have lived 1000 yeeres. But to passe from these uncertainties to things confessed and doubtlesse, held it is in manner for a certaine truth, that *Arganthinus* king of Calis, reigned full 80 yeeres: and it is supposed, that 40 yeeres old he was, when he came first to the crowne. And as undoubted true it is, that *Masanisa* ware the crowne 60 yeeres: as also that *Gorgias* the Sicilian lived untill hee was 108 yeeres old. As for *Q. Fabius Maximus* (a Romane) he continued Auguste 63 yeeres. *M. Perpenna*, and of late daies *L. Volusius Saturninus*, out-lived all those Senators who sat in counsell with them when they were Consuls, & whose opinions they were wont to aske. As for *Perpenna*, when he died, left but 7 of those Senators alive whom he had either chosen or re-elected in his Censhorship: & he lived himself 98 yeeres. Where by the way one thing commeth unto my mind worth the noting, That one Lustrum or 5 yeeres space there was, and never but one, in which there died not a Roman Senator: and that was from the time that *Flaccus* and *Albinus* the Censors, finished their survey and solemnly purged the citie after the order, unto the comming in of the next new Censors; which was from the yeere after the foundation of Rome 579. *M. Valerius Corvinus* lived 100 yeeres compleat: between his first Consulate and sixt, were 46 yeeres: he tooke his seat upon the yvorie chaire of estate, and was created a magistrate Curule 21 times; and no man ever besides him, so often. *Meteus* the Pontifice or soveraigne Priest, lived full as long as he.

To come now to women: *Livia* the wife of *Rutilius* lived 97 yeeres with the better. *Statilia* a noble ladic of Rome, in the time of *Claudius* the Emperour, was knowne to be 99 yeeres of age. *Ciceroes* wife *Terentia* out-lived her husband, untill she was 103 yeeres old. *Clodia* wife to *Ofilius*, went beyond her, and saw 113 yeeres, and yet she had in her youth 15 children. *Lucretia* a common vice in a play, followed the stage and acted thereupon 100 yeeres. Such another vice that plaid the foole and made sport betweene whiles in enterludes, named *Galeria Copiola*, was brought againe to act her feats upon the stage, when *Cn. Pompeius* and *Q. Sulpitius* were Consuls, at the solemne plaies vowed for the health of *Augustus Caesar* the Emperour, when she was in the 104 yeere of her age: the first time that ever she entred the stage to shew prooffe of her skill in that profession, was 91 yeeres before, and then she was brought thither by *M. Pompenius* an *Ædile* of the Commons, in the yeere that *C. Marius* and *Cn. Carbo* were Consuls. And once againe *Pompeius* the Great, at the solemne dedication of his stately Theatre, trained the old woman to the stage for to make a shew, to the wonder of the world. Moreover, *Asconius Padianus* is mine author, that one *Samula* lived 110 yeeres: and therefore I marveile the lesse, that one *Stephanio* (who was the first of the long robe that brought up dauncing and footing upon the stage) plaid his part and daunced in both the Secular plaies, as well those that were set out by *Augustus* late Emperour, as which *Claudius Caesar* exhibited in his 4 Consulate, considering that betweene the one and the other there were but 63 yeeres: and yet lived *Stephanio* many a day after. *Mutianus* witnesseth, that in *Tempis* (for so they call the crest or pitch of the mountaine *Imolus*) folke lived ordinarily 150 yeeres. At that age, *T. Fullonius* of *Bononia* entred his name into the subsidie booke, at the time that *Claudius Caesar* held the generall taxe: and that hee was fo old indeed, appeared truly as well upon record in the Registers office, by conferring and laying together severall payments that he had made from time to time, as also by certain things that he had seen and known done in his life time (for the Emperour had a special care & regard that way to find out the truth.)

CHAP. XLIX. Of the divers Horoscopes, or natiivities of men.

THis point would require the conference and advice of Astrologers: for *Epigenes* saith, that it is not possible for a man to live an hundred and two and twentie yeeres: and *Berosus* is of opinion, that one cannot passe an hundred and seventeene. The proportion and rec-

koning holdeth still for good which *Petofiris* and *Necessos* calculated and groundēd upon their Quadrant, which they call *Tetartemoron*, that is to say, the compasse in the Zodiacke of three signes (Orientall, which determine of the life or death of men) according to which account it is evident, that in the tract or climat of Italie, men may reach to a hundred twentie and six yeeres. The above-named Astrologers affirmed, that a man could not possibly passe the space of 90 degrees from the Ascendent or erection of his nativitie (which they call Anaphoras) and that even this course through the degrees of three signes, is many times interrupted and cut short, either by the opposition and encounter of some wicked planets, or by the maligne aspects of them or the sunne. On the other side, *Asclepiades* and his sect affirme, that the length of our life proceedeth from the influence of the [fixed] starres: but as touching the utmost tearme therof, they set downe nothing definitively: mary thus much they say, That the fewer sort of men live any long time; for that the greatest number by farre, have their nativitie incident and liable to the dangerous houres and times either of the moones occurrence (as in her Quadrature, Opposition, and Sextile aspect) or of daies according to the number of seven or nine (which are daily and nightly marked and observed:) wherupon ensueth the rule of the dangerous graduall yeeres, called Climaſtericke: and such as are in that wise borne, lightly live not above foure and fiftie yeeres. But here may wee see by the doubtfulnesse and incertitude of this Science of Astrologie, how uncertein this whole matter is which we have in hand. Over and besides, we found the contrarie by experience, and many examples; and namely, in the last taxation, numbring, and review of the provinces subject to Rome within Italie, that was taken under the *Cæsars Vespasians* the father and the sonne, both Emperours and Censors. And here we need not to search everie corner, and to ransacke every place narrowly; wee will onely give instance and set downe the examples of the one moitie thereof, namely that tract which lyeth betweene Apennine and the Po. At Parma, three men were found that lived a hundred and twentie yeeres: at Brixels, one that was an hundred twentie and five yeeres old: at Parma moreover two, an hundred and thirtie yeeres of age: at Plaisance, one elder by a yeere: at Faventia, there was one woman an hundred thirtie and two yeeres old: at Bononie, *L. Terentius* the sonne of *Marcus*, and at Ariminum *M. Apionius*, reckoned each of them an hundred and fiftie yeeres. *Tertullus* was knowne to be an hundred thirtie and seven yeeres old. About Plaisance, there is a towne situate upon the hills, named Velleiacium, wherein six men brought a certificate, that they had lived an hundred yeeres apeece: foure likewise came in with a note of an hundred and twentie yeeres: one, of an hundred and fourteen, namely *M. Mutius* sonne of *Marcus* surnamed *Galerius Felix*. But because we will not dwell long in a matter so evident and commonly confessed: in the review taken of the eighth region of Italie, there were found in the roll, foure and fiftie persons of an hundred yeeres of age: 57, of an hundred and ten: two, of an hundred and five and twentie: foure, of an hundred and thirtie: as many that were 135 or 137 yeeres old: and last of all, three men of an hundred and fortie. Let us leave these ages, and consider a while another inconstant varietie in the nature of mortall men: *Homer* maketh report, that *Heſtor* and *Polydamas* were borne in one night, men so different in nature and qualitie. Whiles *C. Marius* was Consull and *Cn. Carbo* with him, who had bene twice before Consull, the fifth day before the calends of Iune, *M. Cæcilius Rufus* and *C. Licinius Calvus* were borne upon a day, and both of them verily proved great Oratours: but they sped not alike, but mightily differed one from the other in the end. And this is a thing seene daily to happen throughout the world, considering that in one houre kings and beggers are borne, likewise lords and slaves.

CHAP. L.

Sundrie examples of divers diseases.

P*vb. Cornelius Rufus*, who was Consull together with *M. Curius*, dreamed that hee had lost his sight: and it proved true indeed, for in his sleepe he became blind and never saw again. Contrariwise *Phalerus* [or *Iason Phareus*] being given over by the Physicians for an impostume that he had in his chest, in despeaire of all health (purposing to kill himselfe for to be rid out of his paine) stabbed his breast with a knife; but he found this deadly enemy to be his onely Physicion. *Q. Fabius Maximus* being long sicke of a quartane ague, strucke a battaile with the people of Savoy and Auvergne neer the river Isara, upon the first day before the Ides of August, wherein

- A** wherein hee slew of his enemies 13000, and therewith was delivered from his fever, and never had fit more. Certes, this gift of life that wee have from Nature, be it more or be it lesse, is fraile and uncertein: and say that it be given to any in largest measure; it is but scant yet and very short, yea and of small use, if we consider the whole course thereof from the beginning to the end. For first, if we count our repose and sleepe in the night season, a man may be truly said to live but the one halfe of his life: for surely a good moitie and halfe deale thereof which is spent in sleeping, may be likened well to death: and if hee cannot sleepe, it is a paine of all paines and a very punishment. I reckon not in this place the yeeres of our infancie, which age is void of reason and sense; ne yet of old age, which the longer that it continueth, the more are they plagued that be in it. What should I speake of so many kinds of daungers, so many diseases, so many feares, so many pensive cares, so many prayers for death, as that in manner we pray for nothing oftner? In which regards, how can a man be said to live the while? and therefore Nature knoweth not what better thing to give a man, than short life. First and foremost, the senses waxe dull, the members and limmes grow benumbed, the eye-sight decayeth betimes, the hearing followeth soon after, then faile the supporters, the teeth also and the verie instruments that serve for our food and nourishment: and yet forsooth, all this time so full of griefe and infirmities, is counted a part of our life. Hereupon it is taken for a miraculous example, and that to which againe we cannot find a fellow, That *Xenophilus* the musitian lived 105 yeeres, without any sicknesse or defect in all his bodie. For all other men, beleve me, are vexed at certaine houres (like as no other creatures besides) with the pestiferous heats and shaking colds of the fever in every joynt, sinew, and muskle of the bodie, which goe and come, keeping their times in their severall fits, not for certaine houres in a day onely, but from one day to another, and from night to night; one while every third day or night, other-whiles everie fourth, yea and sometime a whole yeere together. Moreover, what is it but a very disease, To know the time and houre of a mans owne death, and so to die forsooth in wisdom? For maladies there be, in which Nature hath set downe certaine rules and laws: and namely, a quartane fever never lightly beginneth in the shortest daies of the yeere, neither in the three moneths of winter, [to wit, December, Januarie, and Februarie.] Some diseases are not incident to those that are above 60 yeeres of age: others againe, do end and passe away when youths begin to be under-growne, and especially this is observed in young maidens. Moreover, old folke of all other are least subject to take the plague. Furthermore, sicknesses there be, that follow this region or that, assailing and infecting the inhabitants generally therein. There be some againe, that surprize and take hold of servants onely, both all and some: others touch the best persons alone of the highest calling, and so from degree to degree. But in this place, observed usually it is by experience, That a pestilence beginning in the South parts, goeth alwaies toward the West; and never lightly but in winter, neither continueth it above three moneths.

CHAP. LI.

Of the signes of death.

- E** Now let us take a view of deadly tokens in sicknesse. In rage and furious madnesse, to laugh is a mortall signe. In phrensie, wherein men are bestraught of their right wits, to have a care of the skirts, fringes, and welts of their garments, that they be in good order, to keepe a fumbling and plecting of the bed-cloths; the neglect of such things as would trouble them in their sleepe and breake it; the voluntarie letting goe of their water; prognosticate death. A man may see death also in the eies and nose most certainly of all other parts: as also in the manner of lying; as namely, when the patient lieth alwaies upon his backe with his face upward. We gather signes also, by the uneven stroke of the arterie: as also when the pulse beateth so under the Physicians hand, as if he felt an ant creeping under it. Other signes moreover there be which *Hippocrates*, the prince and cheefe of all Physicians, hath very well observed and set downe. Now,
- F** whereas there bee an infinite number of signes that presage death: there is not knowne so much as one that can assure a man certainly of life and health. For *Cato* that famous Cenfor, writing to his sonne as touching this argument, hath delivered, as it were out of an Oracle, That there is an observation of death to be collected even in them that are in perfect health. For (saith hee) youth resembling age, is an undoubted signe of untimely death, or short life. As for diseases, they

are so innumerable, that *Pherecydes* of the Island Syros, died of a great quantitie of* creepers that came crawling out of his bodie. Some are knowne to be never free of the ague, as *C. Meccanas*. The same man for three yeeres together, before he died, never laid his eies together for sleep the minute of an houre. *Antipater Sidonius* the poet, once a yeere during his life, had an ague-fit upon his birth day onely. He lived for all that to be an old man, and upon the day of his natiuitie died in such a fit.

CHAP. LII.

Of such as were carried forth upon the biers to be buried, and revived againe.

A *Viola*, one that had been Confull, came againe to himselfe when he was cast or put into the funerall fire to be burnt: but because the flame was so strong that no man could come neere to recover him, burnt he was quick. The like accident (as it is reported) befell to *Lu. Lania*, Pretour lately before. As for *C. Ælius Tubero*, that he was brought alive againe from the like fire, after he had been Pretour of Rome, both *Messala Rufus*, and many besides, doe constantly affirme. See how it goeth with mortall men: see, I say, our uncertaine state and condition, and how wee are borne, exposed, and subject to these and such like occasions of fortune: in somuch, as in the case of man, there is not any assurance at all, no not in his death. We read in Chronicles, that the ghost of *Hermotimus Clazomenius* was wont usually to abandon his bodie for a time, and wandering up and downe into farre countries, used to bring him newes from remote places, of such things as could not possibly bee knowne, unlesse it had been present there: and all the while his bodie lay, as it were, halfe dead in a traunce. This manner it continued so long, untill the *Cantharidæ*, who were his mortall enemies, tooke his bodie upon a time in that extasie, and burnt it to ashes: and by that meanes disappointed his poor soule when it came back againe, of that sheath, as it were, or case, where shee meant to bestow her selfe. Moreover, wee find in records, That the spirit or ghost of *Aristeas* in the Island *Proconnesus*, was seene evidently to flie out at his mouth in forme of a raven; and many a like tale followeth thereupon. For surely I take it to be no better than a fable, which is in like manner reported of *Epmendes* the *Gnosian*; namely, that when he was a boy, he being for heat and travell in his journey all wearie, laid him downe in a certaine cave, and there slept 57 yeeres. At length he wakened as it were upon the next morrow, and wondered at such a suddaine change of every thing that hee saw in the world, as if hee had taken but one nights sleepe. Hereupon forsooth, in as many daies after, as hee slept yeeres, hee waxed old. Howbeit hee lived in all 175 yeeres. But to returne unto our former discourse, women of all others by reason of their sex, are subject to this daunger, to bee reputed for dead, when there is life within them: and namely, by occasion of the disease of the Matrice, called the rising of the Mother: which, if it be brought againe and settled streight in the place, they soone recover and take breath againe. Not impertinent to this treatise, is that notable and elegant book among the Greekes, compiled by *Heraclides*, where he writeth of a woman, that for a seven-night lay for dead, and fetched not her breath sensibly, who in the end was raised againe to life. Moreover, *Varro* reporteth, That upon a time when the twentie deputed commissioners were deviding lands in the territorie of *Capua*, there was one there carried forth in his bier to be burnt, & came home againe upon his feet. Also, that the like happened at *Aquinum*. Likewise, that in Rome one *Corfidius* who had married his owne aunt by the mothers side, after he had taken order for his funerals, and set out a certaine allowance therefore, seemed to yeeld up his ghost and die: howbeit he revived againe, and it was his chance to carie him forth indeed to buriall, who had provided the furniture before for his funerall. This *Varro* writeth besides, of other miraculous matters, which verily are worth the rehearfall at large. One of them is this. Two brethren there were, by birth and calling gentlemen of Rome: whereof the elder named *Corfidius*, happened (in all apparance) to die: and when his last will and testament was once opened and published, the younger brother, who was his heire, was verie busie and readie to set forward his funerall. In the meane while the man that seemed dead, fell to clap one hand against the other, and therewith raised the servants in the house: when they were come about him, hee recounted unto them, that hee was come from his younger brother, who had recommended his daughter to his tuition and guardenage: and moreover had shewed and declared unto him in what place hee had hidden certaine gold

- A** gold under the ground, without the privitie of any man: requesting him withall, to employ that funerall provision which he had prepared for him, about his owne buriall and sepulture. As hee was relating this matter, his brothers servitors came in great hast to the house of this elder brother, and brought word, that their maister was departed this life: and the treasure before said was found in the place accordingly. And verily, there is nothing more common in our daily speech than of these divinations, but they are not to be weighed in equall ballance with these, nor to be reported or credited all so confidently. For as much as for the inost part they are meere lies, as we will prove by one notable example. In the Sicilian voiage it fortun'd, that *Gabienus*, one of the bravest servitours that *Cesar* had at sea, was taken prisoner by *Sex. Pompeius*: and by commaundement from him, his head was stricken off in a manner, and scarce hung to the necke by the skin, and so lay he all day long upon the sands in the shore. When it grew toward the evening, & that a companie were flocked about him, hee fetch'd a great grone, and requested that *Pompeius* would come unto him, or at leastwise send some one of his deere familiars that were neere unto him: and why? Come I am (quoth he) from the infernall spirits beneath, and have a message to deliver unto him. Then *Pompey* sent divers of his friends to the man, unto whom *Gabienus* related in this manner, That the infernall gods were well pleased with the just quarrell and cause of *Pompey*: and therefore hee should have as good an issue thereof as hee could wish. Thus much (quoth he) was I charged & commaunded to deliver. And for a better prooffe of the truth in effect, so soon as I have done mine errand, I shall forthwith yeeld up the ghost. And so it came to passe indeed, Histories also make mention of them that have appeared after they were committed to earth.
- C** But our purpose is to write of Natures workes, and not to profecute such miraculou and prodigious matters.

CHAP. LIII.

Of suddaine deaths:

- A**S for suddaine death, that is to say, the greatest felicitie and happinesse that can fall unto a man; many examples we have thereof, that alwaies seeme strange and marvellous, notwithstanding they are common. *Verrius* hath set forth a number of them, but I will keepe within a meane, and make choise of them all. Besides *Chilon* the Lacedæmonian, of whom wee spake before, there died suddainely for very joy *Sophocles* the Poet; and *Denis*, a king or tyrant of Sicilie: both of them upon tidings brought unto them, that they had won the best price among the tragical Poets. Presently after that famous defeature at Cannæ, a mother died immediately upon the sight of her sonne alive, whom by a false messenger shee heard to have beene slaine in that battel. *Diodorus* a great professed Logician, for very shame that he could not readily assoile a frivolous question, nor answer to some demands proposed by *Stilbo*, swounded and never came againe. Without any apparent cause at all that could be seene, divers have left their life: namely, two of the *Cæsars*, the one Pretour for the time being: the other who had borne that dignitie, the father of *Cesar* the Dictatour: both of them in the morning when they were new risen, and putting on their shoes: the one at Pisæ, the former at Rome. In like manner *Q. Fabius Maximus* in his very Consulship, upon the last day of December, [which was the last allo of his magistracie, if hee had lived longer] in whose place *Rebilus* made suit to bee Confull, for a very few houres that remained of that yeere. Semblably, *C. Vulcatius Gurges* a Senatour. All of them in perfect health, so lustie and well liking, that they thought to goe forth presently, and of nothing lesse than to die before. *Q. Æmylius Lepidus*, even as he was going out of his bed-chamber, hit his great toa against the dore stile, and therewith died. *C. Aufidius* was gotten forth of his house, and as hee was going to the Senate, stumbled with his foot in the Comitium or common place of assemblies, and died in the place. Moreover, a certaine Embassadour of the Rhodians, who had to the great admiration of all that were present, pleaded their cause before the Senate, in the very entrie of the Counsell house, as he was going forth, fell downe dead, and never spake word.
- F***On. Bæbius Pamphilus*, who had been Pretour, died suddainely, as he was asking a boy what it was a clocke. *A. Pompeius*, so soone as he had worshipped the gods in the Capitoll, and said his Oraisons, immediately died. So did *M. Iuventius Talsa* the Confull, as he was sacrificing. And *Caius Servilius Pansa*, as hee stood at a shop in the market place, about eight of the clocke in the morning, leaning upon his brother *P. Pansa* his shoulders. *Bæbius* the judge, as hee was adjourning

ning the day of ones apparence in the court. *M. Terentius Corax*, whiles he was writing of letters in the market place. No longer since than the very last ycere, a knight of Rome, as he was talking with another that had beene Confull, and rounding him in the care, fell downe starke dead : and this happened before the yvorie statue of *Apollo*, which standeth in the Forum of *Augustus*. But above all others it is straunge, that *C. Julius* a Chyrurgian, should die as he was dressing of a fore eie with a salve, and drawing his instrument along the eie. What should I say of *L. Manlius Torquatus*, a man who had beene sometime Confull, whose hap was to die sitting at supper, even in reaching for a cake or wafer upon the bourd. *L. Durius Valla* the Physician, died whiles hee was drinking a portion of mede or sweet honnie-wine. *Appius Anseius* being come out of the Baine, after he had drunke a draught of honied wine, as hee was supping of a rere egge, died. *P. Quintius Scapula*, as he was at supper in *Aquillius Gallus* his house. *Decimus Sausseius* the Scribe, as hee sat at dinner in his owne house. *Cornelius Gallus*, one who had beene lord Pretour, and *T. Ætherius* a Romane knight, died both in the very act of *Venus*, whiles they lay upon women. The like befell in our daies to two gentlemen of Rome, who died both as they were dealing contrarie to kind with one and the same counterfet jester named *Mithycus*, a youth in those daies of surpassing beaurie. But of all others, *M. Ofilius Hilarus* an actor and plaier in Comedies, as it is reported by auncient writers, died most secure of death, and with the greatest circumstances about it. For after he had done much pleasure to the people, and made them sport to their contentment upon his birth day, he kept a feast at home in his house : and when the supper was set forth upon the table, he called for a messe of hot broth in a porrenger to drinke of : and withall, casting his eie upon the maske or visor that he put on that day, fitted it againe to his visage, and took off the chapel or guitland from his bare head, and set it thereupon : in this habite, disguised as he sat, hee was starke dead and key cold before any man perceived it : untill he that leaned next unto him at the bourd, put him in mind of his pottage that it cooled, and when he made no answer againe, they found in what case he was. These examples all be of happie deaths. But contrariwise, there bee an infinite number of those that are as miserable and unfortunate. *L. Domitius*, a man descended of a most noble house and parentage, being vanquished by *Cæsar* before Marseils, and taken prisoner at Corfinium by the same *Cæsar*, for very inkfomenesse of his tedious life, poysoned himselfe : but after he had drunke the poyson, repented of that which he had done, and did all that ever he could to live still, but it would not be. Wee find upon record in the publicke registers, That when *Felix* one of the carnation or flesh colour liverie, that ran with charriots in the great cirque or shew-place, was had forth dead to be burnt, one of his favourites and consorts flung himselfe into his funerall fire for companie. A frivolous and small matter it is to speake of : but they of the other side that tooke part with the adverse faction of other liveries, because this act should not turne to the honour and credite of their concurrent the active Charotier abovenamed, gave it out and said, That this friend and well-willer of his, did it not for love, but that his head was intoxicat with the strong favor of the incense and odours that were in the fire, and so being beside himselfe, did he wist not what. Not long before that this chanced, *M. Lepidus*, a gentleman of Rome, and descended of a most noble familie, who (as is abovesaid) died for thought and greefe of heart that he had divorced his wife, was by the violent force of the flame cast forth of the funerall fire : and because of the extreame heat thereof, no man could come neere to lay his corps againe in the place where it was and should be : they were faine to make another fire hard by of drie vine cuttings, and such like sticckes, and so he was burnt bare and naked as he was.

CHAP. LIIII.

Of Buriall and Sepulture.

TO burne the bodies of the dead, hath been no auncient custome among the Romanes: the manner was in old time to enterre them. But after that they were given once to understand that the corfes of men slaine in the warres a farre off, and buried in those parts, were taken forth of the earth againe, ordained it was to burne them. And yet many families kept them still to the old guise and ceremonie of committing their dead to the earth : as namely, the house of the *Cornely*, whereof there was not one by report burnt before *L. Sylla* the Dictatour. And hee willed it expressely, & provided for it aforehand, for feare himselfe should be so served as *C. Marius* was, whose corpses he caused to be digged up after it was buried. Now in Latine, hee is said to be

A bee *Sepultus*, that is bestowed or buried any way, it makes no matter how: but *humatus* properly, who is entered onely, or committed to the earth.

CHAP. LV.

Of the ghosts or spirits of men departed.

AFTER men are buried, great diversitie there is in opinion, what is become of their souls and ghosts, wandering some this way, and others that. But this is generally held, that in what estate they were before men were borne, in the same they remain when they are dead. For neither body nor soule hath any more sence after our dying day, than they had before the day of our nativitie. But such is the follie and vanitie of men, that it extendeth still even to the future time, yea, and in the very time of death flattereth it selfe with fond imaginations, and dreaming of I wor not what life after this. For some attribute immortalitie to the soule: others devise a certaine transfiguration thereof. And there be againe who suppose, that the ghosts sequestred from the bodie, have sence: whereupon they do them honour and worship, making a god of him that is not so much as a man. As if the manner of mens breathing differed from that in other living creatures: or as if there were not to bee found many other things in the world, that live much longer than men, and yet no man judgeth in them the like immortalitie. But shew mee what is the substance and bodie as it were of the soule by it selfe? what kind of matter is it apart from the bodie? where lieth her cogitation that she hath? how is her seeing, how is her hearing performed? what toucheth she? nay, what doth she at all? How is she employed? or if there bee in her none of all this, what goodnesse can there be without the same? But I would know where she setteth and hath her abiding place after her departure from the bodie? and what an infinite multitude of soules like shadows would there be, in so many ages, as well past as to come? now surely these be but fantastical, foolish, and childish toies: devised by men that would fain live alwaies, and never make an end. The like foolerie there is in preserving the bodies of dead men. And the vanitie of *Democritus* is no lesse, who promised a resurrection thereof, and yet himselfe could never rise againe. And what a follie is this of all follies to thinke (in a mischeefe) that death should bee the way to a second life? what repose and rest should ever men have that are borne of a woman, if their soules should remaine in heaven above with sence, while their shadows tarried beneath among the infernall wights? Certes, these sweet inducements and pleasing persuasions, this foolish credulitie and light-beliefe, marreth the benefite of the best gift of Nature, to wit, Death: it doubleth besides the paine of a man that is to die, if he happen to thinke and consider what shall betide him the time to come. For if it bee sweet and pleasant to live, what pleasure and contentment can one have, that hath once lived, and now doth not. But how much more ease and greater securitie were it for each man to beleeve himselfe in this point, to gather reasons, and to ground his resolution and assurance upon the experience that hee had before hee was borne?

CHAP. LVI.

The first inventers of diverse things.

BEFORE wee depart from this discourse of mens nature, me thinkes it were meet and convenient to shew their sundrie inventions, and what each man hath devised in this world. In the first place, prince *Bacchus* brought up buying and selling: he it was also that devised the diadem that roiall ensigne and ornament, and the manner of triumph. Dame *Ceres* was the first that shewed the way of sowing corne, whereas beforetime men lived of mast. Shee taught also, how to grind corne, to knead dough, and make bread thereof, in the land of Attica, Italie, and Sicilie: for which benefite to mankind, reputed shee was a goddesse. Shee it was that began to make lawes, howsoever others have thought, that *Rhadamanthus* was the first law-giver. As for letters, I am of opinion, that they were in Assyria from the beginning, time out of mind: but some thinke, and namely *Gellius*, that they were devised by *Mercurie* in *Ægypt*, but others say they came first from Syria. True it is, that *Cadmus* brought with him into Greece from Phoenice to the number of sixteene, unto which, *Palamedes* in the time of the Trojane warre added foure more in these characters following, Θ. Ξ. Φ. Χ. And after him *Simonides Melicus* came with other

other foure, to wit, *z. n. v. o.* the force of all which letters we acknowledge and see evidently expressed in our Latine Alphapher. *Aristotle* is rather of mind, that there were eighteene letters in the Greeke Alphapher from the beginning, namely, *A. B. Γ. Δ. E. Ζ. Η. Θ. Α. Μ. Ν. Ο. Π. Ρ. Σ. Τ. Υ. Φ.* and that the other two *Ϟ.* and *ϙ.* were set too by *Epicharmus*, and not by *Palamedes*. *Anticlidus* writeth, That one in *Ægypt* named *Menon*, was the inventor of letters, fifteene yeers before the time of *Phoroneus*, the most auncient king of Greece: and he goeth about to prove the same by auncient records and monuments out of histories. Contrariwise, *Epigenes*, an authour as renowned, and of as good credite as any other, sheweth, that among the Babylonians there were found Ephemerides containing the observation of the stars, for 720 yeeres, written in bricke & tiles: and they that speake of the least, to wit, *Berosus* and *Critodemus*, report the like for 480 yeeres. Whereby it appeareth evidently, that letters were alwaies in use, time out of mind. The first that brought the Alphabet into Latium or Italie, were the Pelasgians. *Euryalus* and *Hyperbius*, two brethren at Athens, caused the first bricke and tile kilns, yea, and houses therof to be made: whereas before their time men dwelt in holes and caves within the ground. *Gellius* is of opinion, that *Domus*, the sonne of *Calus*, devised the first houses that were made of earth and cley: taking his patterne from swallows and Martines neasts. *Cecrops* founded the first towne that ever was, and called it after his own name *Cecropia*: which at this day is the castle or citadell in Athens. Some will have that *Argos* was built before it, by king *Phoroneus*: and others againe, that *Sycione* was before them both. And the *Ægyptians* affirme, That long before that, their citie *Diospolis* was founded. *Cinyra*, the sonne of *Agriopa*, devised tiling and flating of houses first, as also found out the brasse mines: both, within the Isle *Cyprus*. He invented besides pinfers, hammers, yron crows, and the Anvil or Stithe. *Danaus* sunk the first pits for wels in Greece, which then was called *Argos Dipision*: & sailed out of *Ægypt* thither, for that purpose. *Cadmus* at *Thebes* (or, as *Theophrastus* saith) in *Phoenice*, found out stone quarries first. *Thrasion* was the first builder of towne walls: of towers and fortresses, the Cyclopes, as *Aristotle* thinketh: but the *Tyrinthians*, according to *Theophrastus*. Weaving was the invention of the *Ægyptians*: and dying wooll, of the *Lydians* in *Sardis*. *Closter* the sonne of *Arachne* taught the first making of the spindle for woollen yeare: and *Arachne* her selfe was the first spinner of flax thred; the weaver of linnen, and of nets. *Niceus* the *Megarean* devised the fullers craft: *Boethius* shewed the art of sowing, as well for railors, as *Corviners* and shoemakers. The *Ægyptians* would have the skill of physicke to have bene first among them: but others affirme, That *Arabus*, the son of *Babylon* & *Apollo*, was the author thereof. The first Herbarist and Apothecarie, renowned for the knowledge of simples, & composition of medicines, was *Chirion*, son of *Saturne* and *Phyllira*. *Aristotle* thinketh, that *Lydus* the *Scythian* taught the feat of casting and melting brasse, with the tempering also of the same: howbeit, *Theophrastus* saith it was *Delas* the *Phrygian*. As for the forges and furnaces of brasse, some think the *Chalypes* devised, others attribute that to the Cyclopes. The discoverie of the yron and Steele mines, as also the working in them, was the invention (as *Hesiodus* saith) of those in *Crete*, who were called *Dactyli Idæi*. Likewise of silver, *Erichthonius* the *Athenian* beareth the name, or (after some) *Aeacus*. The gold mines, together with the melting & trying thereof, *Cadmus* the *Phoenician* first found out neere the mountaine *Pangæus*: but there be that give the praise hereof to *Thoas* and *Aeacelis* in *Panchaia*: or els to *Sol* the sonne of *Oceanus*, unto whom *Gellius* attributeth the invention of Physicke, and making honny. *Midacritus* was the first man that brought lead out of the *Island Cassiteris*. And the Cyclopes invented first the yron-smiths forge. *Coræbus* the *Athenian* devised the potters craft, shewing how to cast earthen vessels in moulds, and bake them in furnaces. And therein, *Anacharsis* the *Scythian*, or after some, *Hyperbius* the *Corinthian*, invented the cast of turning the roundell or globe. Carpenters art was the invention of *Dædalus*, as also the tooles thereto belonging, to wit, the saw, the chip, axe, and hatchet, the plumbe line, the auger and wimble, the strong glew, as also fish-glew, and *stone-Saudre*. As for the rule & squire, the levell, the turners instrument, and the key, *Theodorus Samius* devised them. *Phidon* the *Argive*, or *Palamedes* as *Gellius* rather thinketh, found out measures and weights. *Pyrodes* the sonne of *Clix*, devised the way to strike fire first out of the flint: and *Prometheus*, the meanes to preserve and keepe it in a stalke of *Ferula*, or *Fennell* geant. The *Phrygians* invented first the waggon and charriot with foure wheeles. As for trafficke and merchandise, the *Carthaginians* had the first honour thereof. *Eumolpus* the *Athenian* was of name for planting, pruning, and cutting vines: also for setting and grafting trees. *Staphylus* the sonne of *Silenus* taught men how to delay wine with

A with water. *Aristeus* the Athenian invented the making of oyle olive, as also the presse and mill thereto belonging. The same man taught the cast of drawing honie out of the combes. *Buzzyges* the Athenian, or as others would have it, *Triptolemus*, yoked oxen first for tillage of the ground, and devised the plough. The Ægyptians were the first of all men that were governed by the Monarchie: and the Athenians, by a Popular state. After the reigne of *Theseus*, the first king or tyrant was *Phalaris*, at Agrigentum in Sicilie. The Lacedæmonians brought in, bondage & slave-rie, first. The first judgement that passed for life & death, was in the court Ariopagus at Athens. The first battell that ever was fought, was betweene the Affricanes and Ægyptians; and the same performed by bastons, clubs, & coultstaves, which they call Phalangæ. Shields, bucklers, and targuets were devised by *Prætus* and *Anisius*, when they warred one against the other: or els by *Calchus* the sonne of *Atamas*. *Midias* of Messene made the first cuirace. And the Lacedæmonians, the mourian, the sword, and the speare. The Carians devised the grieves, the crests, and penaches upon helmets. *Scythes* the sonne of *Jupiter*, devised bow and arrowes: although some say that *Perses*, the son of *Perseus*, invented arrowes. The Ætolians invented the launce and the pike: the dart with a loupe, *Ætolus* the sonne of *Mars*, devised. As for the light javelines, and the Partuisanes, *Tyrrhenus* brought them first into use: and *Penthesilea* the Amazon-queene, the gleive, bill, battell-axe, and halbard. *Pisus* found out the borespeare and chasing staffe. Among engines of artillery, the Cretes invented the Scorpion or cross-bow: the Syrians, the Catapult: the Phenicians the balist or brake, and the sling. *Pisus* the Tyrrhenian brought up the use of the brazen trumpet: and *Artenon Clazomenius* of the pavois, mantilets, targuet-roofes, for the assault of cities.

C The engine to batter walls (called sometime the horse, and now is named the ram) was the devise of *Epeus* at Troy. *Bellerophon* shewed first how to ride on horsebacke. *Peletronius* invented saddle, bridle, and other furniture for the horse. The Theffalians, called Centaures, inhabiting neere to the mountaine Pelius, were the first that fought on horsebacke. The Phrygians devised first to drive and draw a chariot with two horses: *Erichtonius*, with foure. *Palamedes* invented (during the Trojane warre) the manner of setting an armie in battaile array: also the giving of signall, the privie watch-word, the *corps de guard*, the watch and ward. In the time of the same warre, *Simon* devised the sentinels and watch-towers, as also the espiall. *Lycanor* was the first maker of truce. *Theseus*, of leagues and alliances. *Car*, of whom Caria took the name, observed first the flight and crie of birds, and thereby gave præsages and fore-tokens. *Orpheus* went farther in this skill, and tooke markes from other beasts. *Delphus* pried into beasts inwards, and thereby foretold things to come. *Amphiarauus* was the first that had knowledge in Pyromancie, and gathered signs by speculation of fire: like as *Tyresias* the Thebane, by the feeding and gesture of birds. *Amphiclyon* gave the interpretation of strange and prodigious sights, as also of dreames. *Atlas* the sonne of *Libya* (or as some say, the Ægyptians, and as others the Assyrians) invented Astrologie: and in that science *Anaximander* devised the Sphere. As for the knowledge & distinction of the winds, *Æolus* the sonne of *Hellen*, he professed it first. *Amphion* brought musicke first into the world. The flute and the single pipe or recorder, were the inventions of *Pan*, the son of *Mercurie*. The crooked cornet, *Midas* in Phrygia devised. And in the same countrey *Marsyas* invented the double fluit. But *Amphion* taught first to sing and play to the Lydian measures: *Thamyras* the Thracian to the Dorian: and *Marsyas* of Phrygia, to the Phrygian. *Amphion* likewise (or, as some say, *Orpheus*, and after others *Linus*) plaied first upon the Citterne or the Lute. *Terpander* put seven strings more unto it: *Simonides* added thereto an eight: and *Timotheus* the ninth. *Thamyras* was the first that plaied upon the stringed instrument, Lute, Citterne, or Harpe, without song: & *Amphion* sung withall, or according to some, *Linus*. *Terpander* was the first that set songs for the foresaid stringed instrument. And *Dardanus* the Trœzenian began first vocall musicke to the pipe. The Curets taught to daunce in armour; and *Pyrrhus* the Morisk, in order of battell: and both these were taken up first in Crete. The heroick or hexametre verse we acknowledge to have come first from the Oracle of *Pythius Apollo*. But about the originall of Poëmes and Poëtrie, there is a great question among authors. And it is probably gathered by histories, that there were Poëts before the time of the Trojane warre. *Pherecydes* of Syros, in the daies of king *Cyrus*, invented first the writing in prose. *Cadmus* the Milesian wrote Chronicles, and compiled the first historie. *Lycanor* hath the report of setting out the first publicke games, and proving of maistris and feats of strength and activitie, in Arcadia. To *Acastus* in Iolcum, wee are beholden for the first solemnities and games at funerals: and after him to *Theseus*, in the streights of Isthmus. *Hercules*

instituted the exercise of wrestlers and champions at Olympia: and *Pythius* was the first player at tennis. *Gyges* the Lydian gave the first proofe of painting and limning, in Ægypt: but in Greece, *Euchir* a cousin of *Dædalus* was the first painter, as *Aristotle* supposeth: but after *Theophrastus*, it was *Polygnotus* the Athenien. *Danaus* was the first that sailed with a ship, and so hee passed the seas from Ægypt to Greece: for before that time they used but troughs or flat planks, devised by king *Erythra* to crosse from one Iland to another in the red sea. But we meet with some writers who affirme, that the Trojans and Mysians were the first sailers, and devised navigation before them in Hellespont, when they set out a voyage against the Thracians. And even at this day in the British ocean, there be made certaine wicker boats of twigs covered with leather and stitched round about: in Nilus, of paper, cane-reed, and rushes. *Philostephanus* witnesseth, that *Iason* first used the long ship or galley: but *Egeſias* saith, that it was *Paralus*: *Ctesias* attributeth it to *Samyras*: *Saphanus*, to *Semyramis*: and *Archimachus*, to *Ægeon*. *Damastes* testifieth, that the Erythreans made the Bireme or galley with two bankes of oares. *Thucydides* writeth, that *Aminocles* the Corinthian built the first Trireme with three rowes of ores to a side. *Aristotle* saith, that the Carthaginians were the first that set to sea the Quadrireme with 4 rankes of oares to a side: and *Nesichiton* the Salaminian, set afoote the first Quinquereme with 5 course of oares on either side. *Zenagoras* of Syracusa brought up those of fixe: and so from it to those of ten, *Mnesigeton* was the inventer. It is said, that *Alexander* the Great built galleys for 12 bankes to a side: and *Philostephanus* reporteth, that *Ptolome* surnamed *Soter*, rose to fiftene: *Demetrius* the sonne of *Antigonus*, to thirtie: *Ptolome* *Philadelphus*, to fornie: and *Ptolome* *Philopator* surnamed *Tryphon*, to fiftie. As for ships of burden and merchandise, as hoyes, &c. *Hippus* *Tyrus* invented them. The Cyrenians, made fregates; the Phœnicians, the barke; the Rhodians, the pinnace and brigantine: and last of all, the Cyprians made the hulke and great carrack. The Phœnicians were the first that in sailing, observed the course of the stars. The Copeans devised the oare: the Plateans invented the broad and flat end thereof: *Icarus* the sailes: *Dædalus* the mast, and the crosse saile-yard. The vessels for transporting of horses, were the invention of the Samians, or else of *Pericles* the Athenien. The Thasij had the honour for framing the long shippes covered with hatch: for before-time they fought onely from out of the hindecke in the poupe, and the fore-castle in the proe. Then came *Pisius* the Tyrrhene, and armed the stemme and beake-head of the ship with sharpe tines and pikes of brasie: *Eupalamus* devised the anchor: *Anacharsis* made it first with two teeth or floukes: the grappling hookes and the yron hands were the devise of *Pericles* the Athenien: and finally, *Typhis* invented the helpe of the helme, for the pylot to steere and rule the ship. The first that set out an Armada to the sea for fight, was *Minos*. The first that killed beaſts was *Hyperbius* the sonne of *Mars*: and *Prometheus* ventured to slay an ox or a beuſe.

CHAP. LVII.

¶ Wherein appeared first the generall agreement of all nations.

THe secreet consent of all countries was shewed first in this, That they should universally in all places use the Ionian letters.

CHAP. LVIII.

¶ Of Antique letters.

THe old characters of Greeke letters, were the same in manner that the Latine be in these daies: and this appeareth sufficiently by an antique table of brasie which came from the temple at Delphos, the which at this day is in the great librarie of the Palatium dedicated to *Minerva*, by the liberalitie of the Emperours, with this or such like inscription upon it, *Ναυσικράτης ποσειδῶν ἀδελφῶν, κόρη ἢ ἀδελφῶ ἀνέθηκεν, ἢ Ναυσικράτης (the sonne) of Tisamenus* an Athenien, caused this table to be made and set up to the noble virgine *Minerva*.

CHAP. LIX.

¶ When Barbers were first seene at Rome.

THe next thing that all people of the world agreed in, was to enterraine Barbers, but it was late first ere they were in any request at Rome. The first that entred into Italie came out of Sicilie, and it was in the 454 yeere after the foundation of Rome. Brought in they were by

A by *P. Ticinius Mena*, as *Varro* doth report: for before-time they never cut their haire. The first that was shaven every day was *Scipio Africanus*: and after him commeth *Augustus* the Emperour, who evermore used the rasour.

CHAP. LX.

Of Horologes or Dials, when they were first devised.

THE third universall accord of all nations, was in the observation how the houres went; and this was a point grounded upon good reason: but at what time, and by whome this was devised in Greece, we have declared in the second booke of this worke: and long it was before

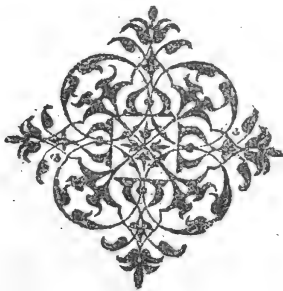
B this order came up at Rome, as well as the use of the Barber. In the 12 tables of Romane lawes, there is no mention at all made but of East and West: after certein yeeres, the noon-steed point in the South quarter also was observed, and the Consuls bedle or cryer pronounced noon, when standing at the hall or chamber of the councell, hee beheld the sunne in that wise betweene the pulpit called *Rostræ*, and the *Grecofastis* [which was a place where forreine embassadours gave their attendance:] but when that the same sunne enclined downward from the columnne named *Mœnia*, to the common goale or prison, then hee gave warning of the last quarter of the day, and so pronounced. But this observation would serve but upon cleere daies when the sunne shined: and yet there was no other meanes to know how the day went, untill the first Punicke warre.

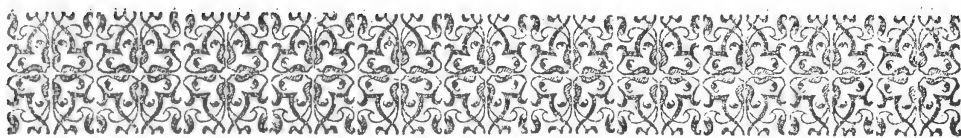
C *Fabius Vestalis* writeth, that *L. Papyrius Cursor* 12 yeeres before the warre with *Pyrhus*, was the first, that for to doe the Romanes a pleasure, set up a sunne-dyall to know what it was a clocke, upon the temple of *Quirinus* at the dedication thereof, when his father had vowed it before him.

Howbet mine author sheweth not either the reason of the making of that diall, or the workman; ne yet from whence it was brought, nor in what writer hee found it so written. *M. Varro* reporteth, that the first diall was set up in the common market-place, upon a columnne neere the foresaid *Rostræ*, in the time of the first Punicke warre, by *M. Valerius Messala* the Consull, presently after the taking of *Catana* in *Sicilie*; from whence it was brought, thirtie yeeres after the report that goeth of the foresaid quadrant and dyall of *Papyrius*, namely, in the yeere after the foundation of the cittie 477. And albeit the strokes and lines of this Horologe or dyall agreed not fit with the houres, yet were the people ruled and went by it for an hundred yeeres save one, even

D untill *Q. Martius Philippus* (who together with *L. Paulus* was Censor) set another by it, framed and made more exquisitely according to Art. And this peece of worke among other good acts done by the Censor during his office, was highly accepted of the people as a singular gift of his. Yet for all this, if it were a close and cloudie daie wherein the sunne shone not out, men knew not what it was a clocke certainly: and thus it continued five yeeres more. Then at last, *Scipio Nasica* being Censor with *Lenas*, made the devise first to divide the houres both of day and night equally by water, distilling and dropping out of one vessell into another. And this manner of Horologe or water-clocke, hee dedicated in the end within house, and that was in the 595 yeere from the building of Rome. Thus you see how long it was, that the people of Rome could not certainly tell how the day passed. Thus much concerning the Nature of man: let us returne now to

E discourse of other living creatures: and first of land beasts.





THE EIGHTH BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECVNDVS.

CHAP. I.

Of land beasts. The praise of Elephants: their wit and understanding.



Asse wee now to treat of other living creatures, and first of land beasts: among which, the Elephant is the greatest, and commeth neerest in wit and capacitie, to men: for they understand the language of that country wherein they are bred, they do whatsoever they are commaunded, they remember what duties they be taught, and withall take a pleasure and delight both in love and also in glorie: nay more than all this, they embrace goodnesse, honestie, prudence, and equitie, (rare qualities I may tell you to be found in men) and withall have in religious reverence (with a kind of devotion) not only the starres and planets, but the sunne and moone they also worship. And in very truth, writers there be who report thus much of them, That when the new moon be- ginneth to appeare fresh and bright, they come down by whole heards to a certaine river named Amelus, in the deserts and Forrest of Mauritania, where after that they are washed and solemnly purified by sprinkling & dashing themselves all over with the water, and have saluted and adored after their manner that planet, they returne againe into the woods and chases, carrying before them their yong calves that be wearied and tired. Moreover, they are thought to have a sense and understanding of religion and conscience in others; for when they are to passe the seas into another countrey, they will not embarke before they be induced thereto by an oath of their governours and rulers, That they shall returne againe: and seen there have been divers of them, being enfeebled by sicknesse (for as bigge and huge as they be, subject they are to grievous maladies) to lie upon their backs, casting and flinging hearbs up toward heaven, as if they had procured and set the earth to pray for them. Now for their docilitie and aptnesse to learne any thing; the king they adore, they kneele before him, and offer unto him guirlands and chaplets of flowers and green hearbs. To conclude, the lesser sort of them, which they call Bastards, serve the Indians in good stead to eare and plough their ground.

CHAP. II.

When Elephants were put to draw first.

THE first time that ever they were knowne to draw at Rome, was in the triumph of Pompey the great, after he had subdued Affricke, for then were two of them put in geres to his triumphant charriot. But long before that, it is said that Father Bacchus having conquered India, did the like when he triumphed for his conquest. Howbeit, in that triumph of Pompey, Pro- cilius affirmeth, That coupled, as they were, two in one yoke, they could not possibly goe in at the gates of Rome. In the late solemnitie of tournois and sword-fight at the sharpe, which Germanicus Caesar exhibited to gratifie the people, the Elephants were seen to shew pastime with leaping and keeping a stirre, as if they daunced, after a rude and disorderly manner. A common thing it was

A was among them to sling weapons and darts in the aire so strongly, that the winds had no power against them; to flourish also beforehand, yea, and to encounter and meet together in fight like sword-fencers, and to make good sport in a kind of Moriske daunce: and afterwards to goe on ropes and cords: to carie (four together) one of them laid at ease in a litter, resembling the manner of women newly brought a bed: last of all, some of them were so nimble and well practised, that they would enter into an hall or dining place where the tables were set full of guests, & passe among them so gently and daintily, weighing as it were their feet in their going, so as they would not hurt or touch any of the companie as they were drinking.

CHAP. III.

¶ *The docilitie of Elephants.*

This is knowne for certaine, that upon a time there was one Elephant among the rest, not so good of capacitie, to take out his lessons, and learne that which was taught him: and being beaten and beaten againe for that blockish and dull head of his, was found studying and conning those feats in the night, which he had been learning in the day time. But one of the greatest wonders of them was this, that they could mount up and climbe against a rope; but more wonderfull, that they should slide downe againe with their heads forward. *Mutianus*, a man who had in his time bene thrice Confull, reporteth thus much of one of them, that hee had learned to make the Greeke characters, and was woont to write in that language thus much, *This have I written and made an offering of to the Celicke spoiles*. Likewise hee saith, that himselfe saw at Puteoli, a certaine ship discharged of Elephants embarked therein: and when they should bee set ashore, and forced to goe forth of the vessell, to which purpose there was a bridge made for them to passe over, they were affrighted at the length thereof, bearing out so farre from the land into the water: and therefore to deceive themselves, that the way might not seeme so long, went backward with their tailes to the banke, and their heads toward the sea. They are ware, and know full well that their onely riches (for love of which, men lay wait for them) lieth in their armes and weapons that Nature hath given them: king *Iuba* calleth them their hornes: but *Herodotus*, who wrote long before him, and the custome of speech, hath tearmed them much better, *Teeth*. And therefore when they are shed and fallen off, either for age, or by some casualtie, the Elephants themselves hide them within the ground. And this in truth is the onely yvorie: for, all the rest, yea and these teeth also so farre as lay covered within the flesh, is of no price, and taken for no better than bone. And yet of late daies, for great scarcitie & want of the right teeth, men have been glad to cut and saw their bones into plates, and make yvorie thereof. For hardly can wee now come by teeth of any bignesse, unlesse wee have them out of India. For all the rest that might bee gotten in this part of the world betweene us and them, hath been employed in superfluities onely, and served for wanton toies. You may know young Elephants by the whiteneesse of these teeth: and a speciall care and regard have these beasts of them, above all. They look to one of them alwaies, that the point be sharpe; and therefore they forbear to occupie it, least it should bee blunt against they come to fight: the other they use ordinarily, either to get up roots out of the earth, or to cast down any bankes or mures that stand in their way. When they chance to bee environned and compassed round about with hunters, they set formost in the ranke to bee seene, those of the heard that have the least teeth: to the end, that their price might not bee thought worth the hazard & venture in chafe for them. But afterwards, when they see the hunters eager, and themselves overmarched and wearie, they breake them with running against the hard trees, and leaving them behind, escape by this raunsome as it were, out of their hands.

CHAP. IIII.

¶ *The clemencie of Elephants: their foresight and knowledge of their owne dangers: also the fell fiercenesse of the Tygre.*

A Wonder it is in many of these creatures, that they should thus know wherefore they are hunted, and withall take heed and beware of all their dangers. It is said, that if an Elephant chance to meet with a man wandering simply out of his way in the wilderneesse, hee will mildly and gently set him into the right way againe. But if he perceive a mans fresh footing, before he espie the man, he will quake and tremble for feare of being forelaid and surprisid: he will

stay from farther following the sent, looke about him every way, snuffe and puffe for very anger. Neither will he tread upon the tract of a mans foot, but dig it out of the earth, and give it to the next Elephant unto him, and he againe to him that followeth, and so from one to another passeth this intelligence and message as it were, to the utmost ranke behind. Then the whole heard makes a stand, and cast round about to returne backward, and withall put themselves in battell array: so long continueth that strong virulent smell of mens feet, and runneth through them all, notwithstanding for the most part they be not bare, but shod. Semblably, the Tigresse also, now fierce and cruell she be to other wild beasts, and careth not a whit for a very Elephant; if she happen to have a sight of a mans footing, presently, by report, conveigheth away her young whelpes, and is gone. But how commeth she to this knowledge of a man? where saw she him ever before, whom thus she feareth? For surely such wild woods and forests are not much travelled & frequented by men. Set case, that they may well wonder at the straunge sight and noveltie of their tracts, which are so seldome seene, how know they that they are to bee feared? Nay, what should bee the reason, that they dread to see a man indeed, being as they are, farre bigger, much stronger, and swifter by many degrees than a man? Certes, herein is to bee seene the wonderfull worke of Nature, and her mightie power; that the greatest, the most fell and savage beasts that be, having never seene that which they ought to feare, should incontinently have the sence and conceit, why the same is to be feared.

CHAP. V.

§ The understanding and memorie of Elephants.

THe Elephants march alwaies in troupes. The eldest of them leadeth the vaward, like a captain: and the next to him in age, commeth behind with the conduct of the arrear-guard. When they are to passe over any river, they put formost the least of all their companie, for feare, that if the bigger should enter first, they would, as they trod in the channell, make the water to swell and rise, and so cause the fould to bee more deepe. *Antipater* writeth, that king *Antiochus* had two Elephants, which he used in his warres above all the rest; and famous they were for their surnames, which they knew well ynough, and wist when any man called them thereby. And verily, *Cato* reciting in his *Annales* the names of the principall captain Elephants, hath left in writing, That the elephant which fought most lustily in the point of the Punick war, had to name *Surus*, by the same token, that the one of his teeth was gone. When *Antiochus* upon a time would have founded the fould of a certaine river, by putting the Elephants before, *Ajax* refused to take the water, who otherwise at all times was wont to lead the way. Whereupon the king pronounced with a lowd voice, That looke which Elephant passed to the other side, he should be the captain and cheefe. Then *Patroclus* gave the venture: and for his labour had a rich harness and caparison given him, & was all trapped in silver (a thing wherein they take most delight) & made besides, the soveraigne of all the rest. But the other that was disgraced thus, and had lost his place, would never eat any meat after, but died for very shame of such a reprochfull ignominie. For among other qualities, marvellous bashfull they are. For if one of them be overmatched and vanquished in fight, he will never after abide the voice and braying of the conqueror, but in token of submission, giveth him a turfe of earth, with vervaine or grasse upon it. Upon a kind of shamefaced modestie, they never are seene to engender together, but performe that act in some couvert and secret corner. They go to rut, the male at five yeares of age, the female not before she is ten yeares old. And this they doe every third yeare: and they continue therein five daies in the yeare (as they say) and not above: for upon the sixt day they all to wash themselves over in the running river: and before they be thus purified, returne not to the heard. After they have taken one to another once, they never change: neither fall they out and fight about their females, as other creatures doe most deadly and mortally. And this is not for want of love and hote affection that way. For reported it is of one Elephant, that he cast a fancie and was enamoured upon a wench in *Ægypt* that sold nosegaies and guirlands of floures. And least any man should thinke that hee had no reason thereto, it was no ordinarie maiden, but so amiable, as that *Aristophanes* the excellent Grammarian, was wonderfully in love with her. Another there was, so kind and full of love, that hee fancied a youth in the armie of *Ptolomæus*, that scarce had never an haire on his face, and so entirely hee loved him, that what day soever hee saw him not, hee would forebeare his meat

A meat, and eat nothing. King *Inba* likewise reporteth also of an Elephant that made court to another woman, who made and sold sweet ointments and perfumes. All these testified their love and kindnesse, by these tokens: joy they would at the sight of them, and looke pleasantly upon them: maketoward them they would (after their rude and homely manner) by all meanes of flatterie: and especially in this, that they would save whatsoever people cast unto them for to eat, and lay the same full kindly in their laps and bosomes. But no marvell is it that they should love, who are so good of memorie. For the same *Inba* saith, That an Elephant tooke knowledge and acquaintence of one man in his old age, and after many a yeere, who in his youth had ben his ruler and governor. He affirmeth also, that they have by a secret divine instinct, a certain sence of justice and righteous dealing. For when king *Bacchus* meant to bee revenged of 30 Elephants, which he had caused to be bound unto stakes, and set other 30 to run upon them, appointing also certaine men among to pricke & provoke them thereto; yet for all that, could not one of them be brought for to execute his butcherie, nor be ministers of anothers crueltie.

CHAP. VI.

28 When Elephants were first scene in Italie.

T He first time that Elephants were scene in Italie, was during the warre of king *Pyrrhus* and they called them by the name of *Lucae boves*; Lucane oxen, because they had the first sight of them in the Lucanes countrey, and it was in the 472 yeere after the citties foundation.

C But in Rome it was seven yeers after ere they were scene, and then they were shewed in a triumph. But in the yeere 502, a number of them were scene at Rome by occasion of the victorie of *L. Metellus Pontifex* over the Carthaginians: which Elephants were taken in Sicilie. For 142 of them were conveyed over upon planks and flat bottomes, which were laid upon ranks of great tunnes and pipes set thicke one by another. *Verrius* saith, that they were caused to fight in the great Cirque or shew place, and were killed there with shot of darts and javelins for want of better counsell, and because they knew not well what to doe with them: for neither were they willing to have them kept and nourished, ne yet to bee bestowed upon any kings. *L. Piso* saith they were brought out only into the shew-place or cirque aforesaid, and for to make them more contemptible, were chased round about it by certaine fellows hired thereto, having for that purpose certaine staves and perched, not pointed with iron, but headed with bals like foiles. But what became of them afterward, those authours make no mention: who are of opinion, that they were not killed.

CHAP. VII.

29 Their fights and combats.

M Vch renowned is the fight of one Romane with an Elephant, at what time as *Annibal* forced those captives whom he had taken of our men, to skirmish one against another to the utterance. For the onely Romane that remained unflaine in that unnaturall conflict, hee would needs match with an Elephant, and see the combate him selfe, assuring him upon his word, that if he could kill the beast, he should be dismissed and sent home with life and libertie. So this prisoner entered into single fight with the Elephant, and to the great hearts greefe of the Carthaginians slew him our right. *Annibal* then sent him away indeed according to promise and covenant; but considering better the consequence of this matter, and namely, that if this combate were once by him bruted abroad, the beasts would bee lesse regarded, and their service in the warres not esteemed: made after him certaine light horsemen to overtake him upon the way; to cut his throat, so making him sure for telling tales. Their long snout or trunk which the Latins call *Proboscis*, may be easily cut off; as it appeared by experience in the wars against king *Pyrrhus*. *Fenestella* writeth, That the first sight of them in Rome, was exhibited in the grand

F Cirque, during the time that *Claudius Pulcher* was *Ædile Curule*, when *M. Antonius* and *A. Posthumus* were Consuls: in the 650 yeere after the citie of Rome was built. In like manner, 20 yeer after, when the *Luculli* were *Ædiles Curule*, there was represented a combat betweene bulls and Elephants. Also in the second Consulship of *Cn. Pompeius* at the dedication of the temple to *Venus Victoresse*, 20 of them, or as some write, 17 fought in the great shew place. In which solemnitie

the Gætulians were set to launce darts and javelins against them. But among all the rest, one Elephant did wonders: for when his legs and feet were shot and stucke full of darts, he crept upon his knees, and never staied till he was gotten among the companies of the said Gætulians, where hee caught from them their targuets and bucklers perforce, flung them aloft into the aire, which as they fell, turned round, as if they had bene truncked by art, and not hurled and throwne with violence by the beasts in their furious anger: and this made a goodly sight, and did great pleasure to the beholders. And as strange a thing as that was seene in another of them, whose fortune was to bee killed out of hand with one shot: for the dart was so driven, that it entred under the eie, and pierced as farre as to the vitall parts of the head, even the ventricles of the braine. Whereupon all the rest at once assaied to breake forth and get away, not without a great hurrie and trouble among the people, notwithstanding they were without the lists, and those set round about with yron grates and barres. [And for this cause, *Cæsar* the Dictatour, when after wards hee was to exhibite the like shew before the people, cast a ditch round about the place, letting in the water, and so made a mote thereof: which, prince *Nero* afterwards stopped up, for to make more roume for the knights and men of armes.] But those Elephants of *Pompey* being past all hope of escaping and going cleere away, after a most pittifull manner and rufull plight that cannot be expressed, seemed to make mone unto the multitude, craving mercie and pitie, with greivous plaints and lamentations, bewailing their hard state and wofull case: in such sort, that the peoples hearts earned againe at this piteous sight, and with teares in their eies, for very compassion, rose up all at once from beholding this pageant, without regard of the person of *Pompey* that great Generall and Commaunder, without respect of his magnificence and stately shew, of his munificence and liberalitie, where he thought to have woongreat applause and honour at their hands; but in lieu thereof fell to cursing of him, and wishing all those plagues and misfortunes to light upon his head, which soone after ensued accordingly. Moreover, *Cæsar* the Dictatour in his third Consulship exhibited another fight of them, and brought forth 20 to maintaine skirmish against 500 footmen: and a second time hee set out 20 more, with wooden turrets upon their backs, containing 60 defendants apeece: and he opposed against them 500 footmen, and as many horse. After all this, *Cladius* and *Nero* the Emperours brought them forth one by one into single fight with approved, expert, and accomplished fencers, at the end of all the other solemnitie, when they had done their prizes. This beast, by report of all writers, is so gentle to all others that are but weake, and not so strong as himselfe, that if he passe through a flocke or heard of smaller cattell, it will with the nose or trunk which serveth in steed of his hand, remoove and turne aside whatsoever beast commeth in his way, for feare he should go over them, and so crush and tread under his foot any of them, ere it were aware. And never doe they any hurt, unlesse they be provoked thereto. Alwaies walke they by troups together, and worst of all other can they away with wandering alone, but love companie exceeding well. If it fortune that they be environed with horsemen, looke how many of their followers be feeble, wearie, or wounded, those they take into the mids of their Squadron: and as if they were marshalled and ordered by a Sergeant of a band, or heard the direction of some General, so skilfully and as it were with guidance of reason, doe they maintaine fight by turnes, and succeed one after another in their course. The wild sort of them, after they be taken, are soonest brought to bee tame and gentle, with the juice or decoction of husked barley.

CHAP. VIII.

The manner of taking Elephants.

THE Indians are wont to take Elephants in this manner: the governor driveth one of them that are tame, into the chafe and Forrests, and when he can meet with one of them alone, or single him from the heard, he all to beatech the wild beast untill he hath made him wearie, and then he mounteth upon him and ruleth him as well as the former. In Africk they catch them in great ditches which they make for that purpose: into which, if one of them chance to wander astray from his fellowes, all the rest immediatly come to succor him; they heap together a deale of boughs, they roll down blocks and stones, and whatsoever may serve to raise a banke, and with all that ever they can doe, labour to plucke him out. Before-time, when they meant to make them tractable, their manner was, by a troupe of horsemen to drive or traine them by little and little
a long

- A** a long way in a certain lawn or valley, made by mans hand for the nones, ere they wer aware, and when they wer enclosed within ditches or banks, there they would keep them from meat so long, untill for very hunger they would be glad to come to hand for food: & by this they might know they were gentle and tame enough to be taken, if they would meekely take a braunch of a bough presented and offered unto them. But now a daies, since they seek after them for their teeth sake, they make no more adoe but shoot at their legges, which otherwife naturally are tender enough and the softest part of their whole bodie. The Troglodites, a people bounding upon Æthiopia, who live onely upon the venison of Elephants flesh, use to clime trees that be neere their walke, and there take a stand: from thence (letting all the heard to passe quietly under the trees) they leape downe upon the buttockes of the hinmost: then, hee that doth this feat, with his left hand laith fast hold upon his taile, and setteth his feet and legges fast in the flanke of the left side, and so hanging and bending backward with his bodie, he curteth the ham-strings of one of his legs with a good keen bill or hatchet that he hath of purpose in his right hand: which done, the Elephant beginneth to slacke his pace, by reason that one of his legges is wounded: the man then maketh shift to get away and alighteth on foot, & for a farewell he hougheth the sinewes likewise of the other ham: and all this doth he in a trice with wonderfull agilitie and nimblenes. Others have a safer way than this, but it is more subtil and deceitfull: they set or sticke in the ground a great way off, mightie great bowes readie bent; to hold these fast, they chuse certaine tall, lustie, and strong fellowes, and as many others as sufficient as they, to draw with all their might and maine the said bowes against the other, and so they let flie against the poore Elephants as they passe by, javelins and bore-speares, as if they shot shafts, and sticke them therewith, and so follow them by their blood. Of these beasts, the females are much more fearfull than the male kind.

CHAP. IX.

¶ *The manner of taming Elephants.*

- A** S furious and raging mad as they be sometime; they are tamed with hunger and stripes: but men had need to have the helpe of other Elephants that are tame already, to restrain the unruly beast with strong chaines: of all times, when they goe to rut they are most out of order and starke wood; down go the Indian stables and beast-stals then, which they over-turn with their teeth: and therefore they keepe them from entering into that fit, and separate the females apart from the males, making their parkes and enclosures asunder, as they doe by other beasts. The tamed sort of them serve in the warres, and carrie little castles or turrets with armed souldiers, to enter the squadrons and battailons of the enemies: and for the most part, all the service in the warres of the East, is perourmed by them, and they especially determine the quarrell: these be they that breake the rankes, beare down armed men that are in the way, and stamp them under foot. These terrible beasts (as outrageous otherwise as they seeme) are frighted with the least grunting that is of a swine: be they wounded at any time or put into a fright, backward alwaies they goe, and doe as much mischief to their owne side that way, as to their enemies. The African Elephants are affraid of the Indian, and dare not look upon them; for in truth the Indian Elephants be farre bigger.

CHAP. X.

¶ *How they breed and bring forth their young: and of their nature otherwise.*

- T** He common sort of men thinke, that they goe with young ten yeeres: but *Aristotle* saith, that they goe but two yeeres, and that they breed but once and no more in their life, and bring not above one at a time: also that they live commonly by course of nature 200 yeeres, and some of them 300. Their youthfull time and strength of age beginneth when they be three-score yeeres old: they love rivers above all things, and lightly ye shall have them evermore wandering about waters; and yet by reason otherwise of their bigge and unweldie bodies, swim they cannot. Of all things they can worst away with cold; and that is it they are most subject unto, and feele greatest inconvenience by: troubled they be also with the chollicke, and ventosities, as also with the fluxe of the bellie: other maladies they feele not. I find it written in histories, that if

they drinke oile, the arrowes and darts which sticke in their bodies will come foorth and fall off: but the more that they sweat the sooner will they take hold and abide in stil the faster. The eating of earth breeds the consumption in them, unlesse they feed and chew often thereof: they deuoure stones also. As for the trunkes and bodies of trees, it is the best meat they have, and therein take they most delight. If the date trees be too high that they cannot reach the fruit, they will ouerturne them with their forehead, and when they lie along, eat the dates. They chew and eat their meat with their mouth: but they breath, drinke, and smell, with their trunk, which not improperly is called their hand. Of all other living creatures, they cannot abide a mouse or a rat, and if they perceive that their provander lying in the manger, tast and sent never so little of them, they refuse it and will not touch it. They are mightily tormented with paine, if they chauce in their drinking to swallow down an horsleeche (which worme, I observe, they begin now to call, a bloud-sucker:) for so soone as this horsleeche hath setled fast in his wind-pipe, he putteth him to intolerable paines. Their hide or skin of their backe, is most tough and hard; but in the belly, soft and tender: covered their skin is neither with haire nor bristle, no not so much as in their taile, which might serue them in good stead to drive away the busie and troublesome flie, (for as vast & huge a beast as he is, the flie haunteth and stingeth him) but full their skin is of crosse wrinckles lattise-wise; and besides that, the smell thereof is able to draw and allure such vermine to it: and therefore when they are laid stretched along, and perceive the flies by whole swarmes setled on their skin, sodainly they draw those cranies and crevices together close, and so crush them all to death. This serues them instead of taile, maine, and long haire. Their teeth beare a very high price, and they yeeld the matter of greatest request, and most commendable, for to make the statues and images of the gods: but such is the superfluitie and excesse of men, that they have devised another thing in them to commend; for they find forsooth a speciall daintie tast in the hard callous substance of that which they call their hand: for no other reason (I beleeeve) but because they have a conceit that they eat yvorie, when they claw this gristle of their trunk. In temples where to be seene Elephants teeth of the greatest size: howbeit in the marches of Africke where it confineth upon Æthiopia, they make of yvorie the verie principals and corner polts of their houses: also with the Elephants tooth, they make mounds and pales both for to enclose their grounds, and also to keepe in their beasts within parke, if it be true that *Polybius* reporteth, from the testimonie of king *Gulussa*.

CHAP. XI.

Where the Elephants are bred: how the Dragons and they disagree.

Elephants breed in that part of Africke which lyeth beyond the deserts and wildernesse of the Syrtis: also in Mauritania: they are found also among the Æthiopians and Troglodites, as hath been said: but India bringeth forth the biggest: as also the dragons, that are continually at variance with them, and evermore fighting, and those of such greatnesse, that they can easily claspe and wind round about the Elephants, and withall tye them fast with a knot. In this conflict they die, both the one and the other: the Elephant hee falls downe dead as conquered, and with his heaue weight crusheth and squeaseth the dragon that is wound and wreathed about him.

CHAP. XII.

The wittinesse and pollicie in these creatures.

Wonderful is the wit and subtiltie that dumb creatures have, & how they shift for themselves and annoy their enemies: which is the only difficultie that they have to arise and grow to so great an heighth and excessive bignesse. The dragon therefore espying the Elephant when he goeth to releefe, assaileth him from an high tree and launceth himselfe upon him; but the Elephant knowing well enough he is not able to withstand his windings and knittings about him, seeketh to come close to some trees or hard rockes, and so for to crush & squise the dragon between him and them: the dragons ware hercof, entangle and snarle his feet and legges first with their taile: the Elephants on the other side, undoe those knots with their trunk as with a hand: but to prevent that againe, the dragons put in their heads into their snout, and

A so stop their wind, and withall, fret and gnaw the tenderest parts that they find there. Now in case these two mortall enemies chaunce to reencounter upon the way, they bristle and bridle one against another, and addresse themselves to fight; but the principall thing the dragons make at, is the eye: whereby it commeth to passe, that many times the Elephants are found blind; pined for hunger, and worne away, and after much languishing, for very anguish & sorrow die of their venime. What reason should a man alleadge of this so mortall warre betweene them, if it be not a verie sport of Nature and pleasure that shee takes, in matching these two so great enemies together; and so even and equall in every respect? But some report this mutual war between them after another sort: and that the occasion thereof ariseth from a naturall cause. For (say they) the Elephants blood is exceeding cold, and therefore the dragons be wonderfull desirous thereof to refresh and coole themselves therewith, during the parching and hote season of the yeere. And to this purpose they lie under the water, waiting their time to take the Elephants at a vantage when they are drinking. Where they catch fast hold first of their trunk: and they have not so soone clasped and entangled it with their taile, but they set their venomous teeth in the Elephants eare, (the onely part of all their bodie, which they cannot reach unto with their trunk) and so bite it hard. Now these dragons are so big withall, that they be able to receive all the Elephants blood. Thus are they sucked drie, untill they fall down dead: and the dragons again, drunken with their blood, are squised under them, and die both together.

CHAP. XIII.

Of Dragons.

IN Æthiopia there be as great dragons bred, as in India, namely, twentie cubires long. But I marvell much at this one thing, why king *Iuba* should thinke that they were crested. They are bred most in a countrey of Æthiopia, where the *Asachæi* inhabite. It is reported, that upon their coasts they are enwrapped foure or five of them together, one within another, like to a hurdle or lattise worke, and thus passe the seas, for to find better pasturage in Arabia, cutting the waves, and bearing up their heads aloft, which serve them in steed of sailes.

CHAP. XIII.

Of monstrous great Serpents, and namely of those called Boæ.

M*Egasthenes* writeth, that there be serpents among the Indians grown to that bignesse, that they are able to swallow stags or bulls all whole. *Metrodorus* saith, That about the river *Rhyndacus* in Pontus, there be Serpents that catch and devour the foules of the aire, bee they never so good and flight of wings, and sore they never so high. Well knowne it is, that *Attilius Regulus*, Generall under the Romanes, during the warres against the Carthaginians, assailed a Serpent neere the river *Bagrada*, which caried in length 120 foot: and before he could conquer him, was driven to discharge upon him arrowes, quarrels, stones, bullets, and such like shot, out of brakes, slings, and other engines of artillerie, as if he had given the assault to some strong towne of warre. And the proove of this was to be seene by the markes remaining in his skin and chaws, which, untill the warre of *Numantia* remained in a temple or conspicuous place of Rome. And this is the more credible, for that wee see in Italie other serpents named *Boæ*, so big and huge, that in the daies of the Emperour *Claudius* there was one of them killed in the Vaticane, within the bellie whereof there was found an infant all whole. This Serpent liveth at the first of kins milke, and thereupon taketh the name of *Boæ*. As for other beasts, which ordinarily of late are brought from all parts into Italie, and oftentimes have there been seene, needlesse it is for mee to describe their formes in particular curiously.

CHAP. XV.

Of Scythian beasts, and those that are bred in the North parts.

Very few savage beasts are engendred in Scythia, for want of trees and pasturage. Few likewise in Germanie, bordering thereupon. Howbeit, that country bringeth forth certain kinds of goodly great wild boeufes: to wit, the *Bifontes*, mained with a collar, like Lions: and the

Vri, a mightie strong beast, and a swift: which the ignorant people call Buffles, whereas indeed the Buffle is bred in Affrica, and carrieth some resemblance of a calfe rather, or a stag. The Northern regions bring forth wild horses, which there are found in great troupes: like as in Asia and in Affricke there are to be seen wild asses. Moreover, a certaine beast, called the Alce, very like to an horse, but that his eares are longer; and his necke likewise with two markes, distinguishing them asunder. Moreover, in the Island Scandinavia, there is a beast called Machlis, nor much unlike to the Alce abovenamed: common he is there, and much talk we have heard of him, howbeit in these parts hee was never seene. Hee resembleth, I say, the Alce, but that hee hath neither joint in the hough, nor pasternes in his hind-legs: and therefore hee never lieth downe, but sleepeth leaning to a tree. And therefore the hunters that lie in wait for these beasts, cut downe the tree whiles they are asleepe, and so take them: otherwise they should never be taken, so swift of foot they are, that it is wonderfull. Their upper lip is exceeding great, and therefore as they graze and feed, they goe retrograde, least if they were passant forward, they should fold double that lip under their muzzle. There is (they say) a wild beast in Pæonia, which is called Bonafus, with a maine like an horse, otherwise resembling a bull: marie, his hornes bend so inward with their tips toward his head, that they serve him in no steed at all for fight, either to offend or defend himselfe; and therefore, all the helpe that he hath, is in his good footmanship; and otherwhiles in his flight by dunging, which hee will squirt out from behind him three acres in length. This ordure of his is so strong and hot, that it burneth them that follow after him in chase, like fire, if haply they touch it. A strange thing it is, and wonderfull, that the Leopards, Panthers, Lions (and such like beasts) as they go, draw in the points of their claws within their bodie, as it were into sheaths, because they should neither breake nor waxe blunt, but be alwaies keene and sharpe: also, that when they run, they should turne the hooked nailes of their pawes backe, and never stretch them forth at length, but when they meane to assaile or strike any thing.

CHAP. XVI.

Of Lions.

THe Lions are then in their kind most strong and courageous, when the haire of their main or collar is so long, that it covereth both necke and shoulders. And this commeth to them at a certaine age, namely, to those that are engendered by Lions indeed. For such as have Pards to their fires, never have this ornament, no more than the Lionesse. These Lionesses are very lacherous, and this is the very cause that the Lions are so fell and cruell. This, Affricke knoweth best, and seeth most: and especially in time of a great drought, when for want of water, a number of wild beasts resort by troupes to those few rivers that be there, and meet together. And hereupon it is, that so many strange shaped beasts, of a mixt and mungrell kind are there bred, whiles the males either perforce, or for pleasure, leape and cover the females of all sorts. From hence it is also, that the Greekes have this common proverbe, *That Affricke evermore bringeth forth some new and strange thing or other.* The Lion knoweth by sent and smell of the Pard, when the Lionesse his mate hath plaid false, and suffered her selfe to be covered by him: and presently with all his might and maine runneth upon her for to chastise and punish her. And therefore when the Lionesse hath done a fault that way, shee either goeth to a river, and washeth away the strong and ranke favour of the Pard, or els keepeth aloofe, and followeth the Lion farre off, that hee may not catch the said smell. I see it is a common received opinion, that the Lionesse bringeth forth young but once in her life, for that her whelpes in her kinling teare her belly with their nailes, and make themselves rouse that way. *Aristotle* writeth otherwise, a man whom I cannot name, but with great honour and reverence, and whome in the historie and report of these matters I meane for the most part to follow. And in very truth king *Alexander* the great, of an ardent desire that he had to know the natures of all living creatures, gave this charge to *Aristotle*, a man singular and accomplished in all kind of science and learning, to search into this matter, and to set the same downe in writing: and to this effect commanded certaine thousandes of men, one or other, throughout all the tract, as well of Asia as Greece, to give their attendance, & obey him: to wit, all Hunters, Faulconers, Fowlers, and Fishers, that lived by those professions. Item, all Forresters, Park-keepers, and Wariners: all such as had the keeping of heards and flockes of cattell: of bee-hives, fish-pooles, stews, and ponds: as also those that kept up foule, tame or wild,

- A** in mew, those that fed poultrie in barton or coupe: to the end that he should be ignorant of nothing in this behalfe, but be advertised by them, according to his commission, of all things in the world. By his conference with them, he collected so much, as thereof he compiled those excellent bookes *de Animalibus*, i. of Living creatures, to the number almost of fiftie. Which being couched by me in a narrow rounge, and breefe Summarie, with the addition also of some things els which he never knew, I beseech the readers to take in good worth: and for the discoverie and knowledge of all Natures workes, which that most noble & famous king that ever was desired so earnestly to know, to make a short start abroad with mee, and in a breefe discourse by mine owne paines and diligence digested, to see all. To return now unto our former matter. That great Philosopher *Aristotle* therefore reporteth, that the Lionesse at her first litter bringeth forth
- B** five whelpes, and every yeare after, fewer by one: and when she commeth to bring but one alone, shee giveth over, and becommeth barren. Her whelpes at the first are without shape, like small gobbets of flesh, no bigger than weasels. When they are sixe months old, they can hardly go, and for the two first, they stirre not a whit. Lions there be also in Europe (onely betweene the rivers *Achelous* and *Nessus*) and these verily be farre stronger than those of *Affricke* or *Syria*. Moreover, of Lions there be two kinds: the one short, well trussed and compact, with more crisp and curled maines, but these are timorous and but cowards to them that have long and plaine haire; for those passe not for any wounds whatsoever. The Lions lift up a legge when they piss, as dogges doe: and over and besides that, they have a strong and stinking breath, their very bodie also smelleth ranke. Seldome they drinke, and eat but each other day: and if at any time they
- C** feed till they be full, they will abstaine from meat three daies after. In their feeding, whatsoever they can swallow without chewing, down it goes whole: and if they find their gorge and stomach too full, and not able indeed to receive according to their greedie appetite, they thrust their pawes downe their throats and with their crooked clees fetch out some of it againe, to the end they should not be heavie and slow upon their fulnesse, if haply they be put to find their feet and flie. Mine author *Aristotle* saith moreover, that they live verie long: and he prooveth it by this argument, That many of them are found toothles for very age. *Polybius* who accompanied [*Scipio*] *Amyllanus* in his voyage of *Affrick*, reporteth of them, That when they be grown aged, they will prey upon a man: the reason is, because their strength will not hold out to pursue in chase other wild beasts. Then, they come about the cities and good towns of *Affrick*, lying in await for their
- D** prey, if any folk come abroad: & for that cause, he saith, that whiles he was with *Scipio* he saw some of them crucified & hanged up, to the end that upon the sight of them, other Lions should take example by them, and be skared from doing the like mischief. The Lion alone of all wild beasts is gentle to those that humble themselves unto him, and will not touch any such upon their submission, but spareth what creature soever lieth prostrate before him. As fell and furious as hee is otherwhiles, yet he dischargeth his rage upon men, before that he setteth upon women, and never preyeth upon babes unlesse it be for extreame hunger. They are verily persuaded in *Libya*, that they have a certaine understanding, when any man doth pray or entreat them for any thing. I have hard it reported for a truth, by a captive woman of *Geulia* (which being sed was brought home againe to her master) That shee had pacified the violent furie of many Lions within the
- E** woods and forrests, by faire language and gentle speech; and namely, that for to escape their rage, shee hath been so hardie as to say, shee was a fillie woman, a banished fugitive, a sickely, feeble, and weake creature, an humble suiter and lowly suppliant unto him the noblest of all other living creatures, the soveraigne and commaunder of all the rest, and that shee was too base and not worchie that his glorious majestie should prey upon her. Many and divers opinions are currant, according to the sundrie occurrences that have hapned, or the inventions that mens wits have devised. As touching this matter, namely, that savage beasts are dulced and appeased by good words and faire speech: as also that fell serpents may bee trained and fetched out of their holes by charmes, yea and by certaine conjurations and menaces restrained and kept under for a punishment: but whether it be true or no, I see it is not yet by any man set downe and determined.
- F** To come againe to our Lions: the signe of their intent and disposition, is their taile; like as in horses, their ears: for these two marks and tokens, certainly hath Nature given to the most courageous beasts of all others, to know their affections by: for when the Lion stirreth not his taile, hee is in a good mood, gentle, mild, pleasantly disposed, and as if hee were willing to be plaid withall; but in that fit he is seldome seene: for lightly hee is alwaies angrie. At the first, when hee
- entreteth

entreteth into his choller, hee beateth the ground with his taile: when hee groweth into greater G
heats; hee flappeth and jerketh his sides and flanks withall, as it were to quicken himselfe, and stirre
up his angry humor. His maine strength lieth in his breast: hee maketh not a wound (whether it
be by lath of taile, scratch of claw, or print of tooth) but the blood that followeth, is blacke. When
his belly is once full, all his anger is past, and he doth no more harme. His generositie and mag-
nanimitie he sheweth most in his daungers: which courage of his appeareth not onely herein,
That he seemeth to despise all shot of darts against him, defending himselfe a long time onely
with the terrible aspect of his countenance, and protesting as it were that he is unwilling to deale
unlesse he be forced thereto in his owne defence, *i. se defendendo*, and at length maketh head a-
gain, not as compelled and driven thereto for any perill that he seeth, but angered at their fol-
lie that assaile and set upon him: but herein also is seen rather his noble heart and courage, That H
be there never so many of hounds and hunters both following after him, so long as hee is in the
open plaines where he may be seene, hee maketh semblance as though hee contemned both dog
and man, dismarching and retiring with honour, and otherwhiles seeming in his retreat to turne
again and make head; but when he hath gained the thickets and woods, and gotten once into
the Forrests out of sight, then he skuds away, then hee runneth amaine for life, as knowing full
well that the trees and bushes hide him, that his shamefull dislodging and flight is not then es-
pied. When he chafeth and followeth after other beasts, hee goeth alwaies farrant or rampant;
which he never useth to doe when he is chased in fight, but is onely passant. If hee chaunce to be
wounded, hee hath a marvellous eye to marke the partie that did it, and be the hunters never so
many in number, upon him he runneth onely. As for him that hath let sic a dart at him, and yet I
missed his marke and done no hurt, if he chaunce to catch him, hee all to touzeth, shaketh, to-
seth, and turneth him lying along at his feet, but doth him no harme at all besides. When the
Lionesse fighteth for her young whelpes, by report, she setteth her eies wistly and entirely upon
the ground, because she would not be affrighted at the sight of the chasing-staves of the hunters.
Lions are nothing at all cratie & fraudulent, neither be they suspicious: they never look askew,
but alwaies cast their eie directly forward, & they love not that any man should in that sort looke
side-long upon them. It is constantly beleaved, that when they lie a dying they bite the earth, and
in their very death shed teares. This creature, so noble as he is, and withall so cruell and fell, rem-
bleth and quaketh to heare the noise of cartwheelles, or to see them turne about; nay he cannot
abide of all things charriots when they be void and emptie: frighted he is with the cocks comb, K
and his crowing much more, but most of all with the sight of fire. The Lion is never sick but of
the peevishnes of his stomacke, loathing all meat: and then the way to cure him, is to tie unto
him certaine three apes, which with their wanton mocking and making mowes at him, may move
his patience and drive him for the verie indignitie of their malapert saucinesse, into a fit of mad-
nesse; and then, so soone as he hath tasted their blood, he is perfectly well againe; and this is the
onely remedie. *Q. Scavola* the sonne of *Publius*, was the first at Rome that in his Curule *Aedile*-
ship exhibited a fight and combat of many Lions together, for to shew the people pastime and
pleasure: but *L. Sylla*, who afterwards was Dictatour, was the first of all others that in his Pre-
torship represented a shew of an hundred Lions with manes and collars of haire: and after him,
Pompeius the Great shewed 600 of them fighting in the grand Cirque, whereof 315 were male L
Lions with mane. And *Cesar* Dictatour brought 400 of them into the shew-place. The taking of
them in old time was a verie hard peece of worke, and that was commonly in pit-fals: but in the
Emperor *Claudius* his daies it chaunced, that a shepheard or heardman who came out of *Gæ-*
tulia, taught the manner of catching them: a thing (otherwise) that would have been thought in-
credible, and altogether unbecoming the name and honour of so goodly a beast. This *Getulian*
I say, fortun'd to encounter a Lion, and when he was violently assailed by him, made no more
adoe but threw his mandilion or cassocke full upon his eies. This feat or cast of his was soone af-
ter practised in the open shew-place, in such sort, that a man would hardly have beleaved, but he
that saw it, that so furious a beast should so easily be quailed and daunted so soone as ever hee felt
his head covered, were the things never so light; making no resistance, but suffering one to doe M
what he would with him, even to bind him fast, as if in very truth all his vigor and spirit rested in
his eyes. Lesse therefore is it to be marvelled at, that *Lysimachus* strangled a Lion, when as by
commaundement of *Alexander* the Great, he was shut up alone together with him. The first that
yoked them at Rome and made them to draw in a charriot, was *M. Antonius*. And verily it was in
the

A the time of civill warre, after the battaile fought in the plaines of Pharfalia, a shrewd fore-token and unhappie presage for the future event, and namely, for men of an high spirit and brave mind in those daies, unto whom this prodigious sight did prognosticate the yoke of subjection: for what should I say, how *Antonie* rode in that wise with the courtisan *Cytheris*, a common Actresse in Enterludes upon the stage? to see such a sight, was a monstrous spectacle, that passed all the calamities of those times. It is reported, that *Hanno* (one of the noblest Carthaginians that ever were) was the first man that durst handle a Lion with his bare hand, and shewe him gentle and tame, to follow him all the citie over in a slip like a dogge. But this devise and trick of his turned him to great damage, and cost him his utter undoing: for the Carthaginians hereupon laid this ground, that *Hanno*, a man of such a gift, so wittie and inventive of all devises, would be able to persuade the people to whatsoever his mind stood; and that it was a daungerous and ticklish point to put the libertie of so great a state as Carthage was, into the hands and managing of him, who could handle and tame the furious violence of so savage a beast: and thereupon condemned and banished him. Moreover we find in histories, many examples also of their clemencie and gentleness, seene upon divers casuall occasions. *Mentor* the Syracusan, fortun'd in Syria to meet with a Lion, who after an humble manner, in token of obedience and submission, seemed to tumble and wallow before him: he astonied for very feare, started backe and began to flie, but the wild beast followed him still, and was readie at every turne to present himselfe before him, licking the verie tracks of his footsteps as he went, in flattering manner, as if he would make love unto him. *Mentor* at length was ware that the Lion had a wound in his foot, and that it swelled therewith: whereupon he gently plucked out the spill of wood that had gotten into it, and so eased the beast of his paine. This accident is for a memoriall represented in a picture at Syracusa. Semblably, *Elpis* a Samian being arrived and landed in Affricke, chanced to espie neere the shoare, a Lion, gaping wide and seeming afar off to whet his teeth at him in menacing wise: he fled apace to take a tree, and called upon god *Bacchus* to help him (for then commonly we fall to our prayers when we see little or no hope of other helpe:) but the Lion stopped him not in his flight, albeit he could have crossed the way well enough; but laying himselfe downe at the tree root with that open mouth of his wherewith he had skared the man, made signes to move pitie and compassion. Now so it was, that the beast having lately fed greedily, had gotten a sharpe bone within his teeth which put him to exceeding paine; besides that, he was almost famished: and he looked pittifully up to the man, shewing how he was punished himself among those very weapons wherewith he was to annoy others, and after a sort with dumb & mute prayers besought his helpe. *Elpis* avised him well a pretie while, and besides that hee was not very forward to venture upon the wild beast, he staid the longer and made the lesse hast, while he considered rather this straunge and miraculous accident, than otherwise greatly feared. At the last hee commeth downe from the tree, and plucketh out the bone, while the Lion held his mouth handsomly to him, and composing himselfe for to receive his helpfull hand as fitly as possibly he could. In recompence of which good turne, it is said, that so long as this ship of his lay there at anchor, the Lion furnished him and his companie with good store of venison readie killed to his hand. And upon this occasion, *Elpis* after his returne, dedicated a temple in Samos to god *Bacchus*, which upon this reason the Greekes called *κλινωτός Διούσος, ι.* of *Gaping Bacchus*: or, *σωτήρης νέου Διούσος, ι.* The chappell of *Bacchus* the Saviour. Can wee marveile any more from henceforth, that wild beasts should marke and know the footing of a man, seeing that in their extremities and necessitics, they have recourse to him alone for hope of succour? And why went not they to other creatures? or who taught them that the hand of man was able to cure them? unlesse this be the reason peradventure, That grieffe, anguish, and extreame peril, forceth even savage beasts to seeke all meanes of helpe and reliefe.

CHAP. XVII.

Of Panthers.

F *Demetrius* the Philosopher, so well seen in the speculation of Natures workes, and the causes thereof, maketh mention of as memorable a case as the former, touching a Panther: for as hee saith, there was a Panther desirous to meet with a man, and therefore lay in the mids of an high-way until some passenger should come by, and sodainly was espied of the father of

of *Phalinos* the Philosopher, who travailed that way. The man (for feare) began to retire and go backe againe, but the wild beaft kept a tumbling and vaulting all about him; doubtlesse and by all appearance after a flattering sort, as if it would have had somewhat; and such a tossing and tormenting of it selfe she made, spiteously, that it might soone be seene in what griefe and paine the Panther was. The poore beaft had but lately kindled, and her young whelpes were falne into a ditch, as farre off: well, the first point that the man shewed of pittie and commiseration was, not to be affraid; and the next was, to have regard and care of her: follow hee did the Panther, as she seemed to traine and draw him by his garment (which with her clawes she tooke hold of full daintily) untill they were come to the pit or ditch above said. So soone then as he knew the occasion of her griefe and sorrow, and withall, what might bee the reward of his courtesie, even as much as his life came to, hee drew forth her little ones that were falne downe into the said pit: which done, she and her whelpes together leaping and shewing gambols for joy, accompanied him, and through the wildernesse directed him all the way, untill he was gotten forth. So as it appeared in her, that she was thankfull unto him and requited his kindnesse, albeit their passed no covenant nor promise betweene them of any such recompense: a rare example to be found even amongst men. This storie and such like, give great colour of truth to that which *Democritus* reporteth; namely, That *Thoas* in Arcadia saved his life by the meanes of a dragon. This *Thoas* being but a verie child, had loved this dragon when he was but young, exceeding well, and nourished him: but at last, being in some dread of the serpents nature, and not well knowing his qualities, and fearing withall the bignesse that now hee was growne unto, had carried him into the mountaines and deserts: wherein it fortun'd that hee was afterwards set upon and environed by thieves: whereupon he cried out, and the dragon knowing his voice, came forth and rescued him. As for babes and infants cast forth to perish, and sustained by the milke of wild beafts, like as *Romulus* and *Remus* our first founders, were suckled by a shee wolfe: such things in mine opinion are in all reason to be attributed more to fortune and fatall destinies, than to the nature of those savage beafts. The Panthers and Tygres, are in a manner the only beafts (that for their variety of spotted skins, and *fures which they yeeld) in great request, and commendable: for other beafts have each one a proper colour of their owne, according to their kind. Lions there be all blacke, but those are found in Syria onely. The ground of the Panthers skin, is white, beset all over with little blacke spots like eyes. It is said, that all four-footed beafts are wonderfully delighted and enticed by the smell of Panthers; but their hideous looke and crabbed countenance which they bewray so soone as they shew their heads, skareth them as much againe: and therefore their manner is, to hide their heads, and when they have trained other beafts within their reach by their sweet favour, they lye upon them and worrie them. Some report, that they have one marke on their shoulder resembling the moone, growing and decreasing as she doth, sometime shewing a full compassse, and other-whiles hollowed and pointed with tips like hornes. In all this kind and race of wild beafts, now a daies they call the male * *Varia* and *Pardi*: and great abundance there is of them in Affricke and Syria. Some there be againe, that make no other difference betweene the Luzernes, Leopards, and these Panthers, but onely this, that the Panthers be white; and as yet I know no other markes to discern them by. There passed an old Act and ordinance of the Senate, forbidding expressly that any Panthers of Affricke should be brought into Italie. Against this edict, *Cn. Aufidius* a Tribune of the commons, put up another Bill unto the people; and graunted it was, That for the solemnitie of the games Circenses, they might be brought over. *Scaurus* was the first man who in his *Ædileship* exhibited a shew unto the people of 150 Luzernes together. After him, *Pompeius* the Great brought forth 410. The Emperor *Augustus*, 420: who also in the yeere that *L. Tubero* and *Fabius Maximus* were Consuls together (upon the 4 day before the Nones of May, at the dedication of the Theatre of *Marcellus*) was the first of all others that shewed a tame tygre within a cage: but the Emperour *Claudius*, foure at once.

CHAP. XVIII.

Of the Tygre, and his nature: of Camels, Chamelopardales, and when they were first seene at Rome.

TYgres are bred in Hircania and India: this beaft is most dreadfull for incomparable swiftnesse, and most of all seene it is in the taking of her young: for her litter (whereof there is a great

* i. the Luzernes, or Libards.

* i. Luzernes, or Libards.

A great number) by the hunters is stolne and carried away at once, upon a most swift horse for the purpose; lying in wait to espie when the dam is abroad: and shifteth this bootie from one fresh horse to another, riding away upon the spure as hard as they can. But when the Tigresse cometh and finds her nest and den emptie (for the male Tigre hath no care nor regard at all of the young) she runnes on end after her young ones, and followeth those that carried them away, by the scent of their horse footing. They perceiving the Tigresse to approach by the noise that shee maketh, let fall or cast from them one of her whelpes: up shee taketh it in her mouth, and away she runneth towards her den swifter, for the burden that shee carrieth: and presently she setteth out againe, followeth the quest after her fawnes, and overtaketh the hunter that had them away. Thus runneth she too and fro, untill she see that they be embarked and gone, and then for anger that she hath not sped of her purpose, she rageth upon the shore and the sands, for the losse of her fawnes.

B As for Camels, they are nourished in the Levant or East parts among other herds of great cattaille. Two kinds there be of them, the Bactrians, and the Arabicke; and herein they differ: the Bactrians have two bunches upon their backs; the other, but one apeece there, but they have another in their breast, wherupon they rest and lie. Both sorts want the upper row of teeth in their mouthes, like as bulls and kine. In those parts from whence they come, they serve all to carrie packes like labouring horses, and they are put to service also in the warres, and are backed of horsemen: their swiftnesse is comparable to that of horses: they grow to a just measure, and exceed not a certaine ordinarie strength. The camell in his travailing, will not goe a jote farther than his ordinarie journey, neither will carrie more than his accustomed and usuall lode. Naturally they hate horses. They can abide to be foure daies together without drinke; and when they take occasion to drinke and meet with water, they fill their skin full enough to serve both for the time past and to come: but before they drinke, they must trample with their feet to raise mud and sand, and so trouble the water, otherwise they take no pleasure in their drinking. They live commonly 50 yeeres, and some of them an hundred. These creatures also otherwhile fall to be mad, so much as it is. Moreover, they have a devise to splay even the very females, to make them serviceable for the warres; for if they be not covered, they become the stronger and more courageous.

C Two other kinds of beasts there be, that resemble in some sort, the Camels: the one is called of the Æthyopians, the Nabis, necked like an horse, for legge and foot not unlike the boeufe, headed for all the world as a camell, beset with white spots upon a red ground, wherupon it taketh the name of Camelopardalus: & the first time that it was seen at Rome, was in the games Circenses set out by *Cesar* Dictatour: since which time, hee commeth now and then to Rome, to be looked upon more for sight than for any wild nature that he hath: wherupon some have given her the name of a Savage sheepe.

CHAP. XIX.

Of the Chaus and Cephis.

E The Hind-wolfe, which some call Chaus; and the Gaules were wont to name Rhapsius (resembling in some sort a wolfe with Leopards spots) were shewed first in the solemnities of the games and plaies exhibited by *Cn. Pompeius* the Great. He also brought out of Æthiopia other beasts, named * Cephi, whose fore-feet were like to mens hands, and the hinder feet * Semivulpes. and legges resembled those of a man. He was never seene afterwards at Rome.

CHAP. XX.

Of the Rhinoceros.

F IN the same solemnities of *Pompey*, as many times else, was shewed a Rhinoceros, with one horne and no more, and the same in his snout or muzzle. This is a second enemy by nature to an Elephant. He fileth that horne of his against hard stones, and maketh it sharpe against he should fight; and in his conflict with the Elephant, he layeth principally at his bellie, which he knoweth to be more tender than the rest. He is full as long as he, his legges are much shorter, and of the boxe colour.

Of Lynces or Onces, and Marmozets or Apes, called Springes: of Crocutes, Monkeys, Indish bæufes, Leocrocutes, Eale: Æthiopian bulles, the Mantichore, and Lycornes: of the serpents called Catoblepes, and the Basiliske

ONces are common, so are Marmozets, with a browne dusky haire, having dugs in their breast. Æthiopia breedeth them, like as many other monstrous beasts: to wit, horses with wings, and armed with hornes, which they call Pegasi. Also the Crocutes [a kind of mastive dogges] engendred between a dog and a wolfe: these are able to crash with their teeth whatsoever they can come by, and a thing is no sooner downe their swallow and got into their stomacke, but presently they digest it. Moreover, the * Monkeys with blacke heads, otherwise haired like Asses, differing from other Apes in their crie. The Indians have certaine bæufes with one horn, and others with three. Also the Leocrocuta, a most swift beast, as big almost as an hee-affe, legged like an Hart, with a neck, taile, and breast of a Lion, headed like these grayes or badgers, with a cloven foot in twaine: the slit of his mouth reacheth to his eares: in stead of teeth, an entire whol bone. They report, that this beast counterfeiteth a mans voice. They have among them besides all these, another beast named Eale, for bignesse equal to the river-horse, tailed like to an Elephant, either blacke or reddish tawnie of colour: his mandibles or chawes resemble those of a bore: he hath hornes above a cubit long, which he can stirre or moove as hee list; for being in fight, hee can set them both or one of them as hee will himselfe, altering them every way; one while streight forward to offend, other whiles bending byas, as he hath reason to nort or push, to ward or avoid his enimie. But the most fell and cruell of all others in that countrey, be the wild bulles of the Forrest, greater than our common field bulles: most swift, of colour brended, their eyes gray or blewish, their haire growing contrarie, their mouth wide and reaching to their eares: their hornes likewise hard by, mooveable; their hide as hard as a flint, checking the dent of any weapon whatsoever, and cannot be pierced: all other wild beasts they chase and hunt; themselves cannot be taken but in pit-fals: in this their wildnesse and rage they die, and never become tamed. *Ctesias* writeth, that in Æthiopia likewise there is a beast which he calleth Mantichora, having three rankes of teeth, which when they meet together are let in one within another like the teeth of combes: with the face and eares of a man, with red eyes; of colour sanguine, bodied like a lyon, and having a taile armed with a sting like a scorpion: his voice resembleth the noise of a flute and trumpet sounded together: very swift he is, and mans flesh of all others hee most desired. In India, there be found bæufes whole hoofed, with single hornes: also a wild beast named * Axis, with a skin like a fawn or hind-calf; howbeit marked with more spots, and those whiter. This beast is consecrated to *Bacchus*, and under his protection. The Orsians of India hunt Apes, and take a number of them, white all over. But the most fell and furious beast of all other, is the Licorne or Monoceros: his bodie resembleth an horse, his head a stagge, his feet an Elephant, his taile a bore; he loweth after an hideous manner; one blacke horn he hath in the mids of his forehead, bearing out two cubits in length: by report, this wild beast cannot possibly be caught alive. Among the Hesperian Æthyopians, there is a fountaine named Nigris, the head (as many have thought) of the river Nilus, and good reasons there be to carrie it, which we have alleadged before: neere to which spring, there keepeth a wild beast called Catoblepes, little of bodie otherwise, heaive also and slow in all his limmes besides, but his head onely is so great that his bodie is hardly able to beare it; hee alwaies carrieth it downe toward the earth, for if hee did not so, he were able to kill all mankind: for there is not one that looketh upon his eyes, but hee dyeth presently. The like propertie hath the serpent called a Basiliske: bred it is in the province Cyrenaica, and is not above twelve fingers-breadth long: a white spot like a starre it carrieth on the head, and setteth it out like a coronet or diademe: if he but hiss once, no other serpents dare come neere: he creepeth not winding and crawling byas as other serpents doe, with one part of the bodie driving the other forward, but goeth upright and aloft from the ground with the one halfe part of his bodie: he killeth all trees and shrubs not only that he toucheth, but that he doth breath upon also: as for grasse and hearbs, those hee sindgeth and burneth up, yea and breaketh stones in sunder: so venomous and deadly is he. It is received for a truth, that one of them upon a

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time

Cercopithecii.

* As some think, a Musk-gat.

A time killed with a launce by an horseman from his horsebacke, but the poison was so strong that went from his bodie along the staffe, as it killed both horse and man: and yet a sillie weazle hath a deadly power to kill this monstrous serpent, as pernicious as it is [for many kings have been desirous to see the experience thereof, and the manner how he is killed.] See how Nature hath delighted to match every thing in the world with a concurrent. The manner is, to cast these weazles into their holes and cranies where they lye, (and easie they be to know, by the stinking sent of the place all about them:) they are not so soone within, but they overcome them with their strong smell, but they die themselves withall; and so Nature for her pleasure hath the combat dispatched.

B CHAP. XXII.

Of Wolves.

IT is commonly thought likewise in Italie, that the eye-sight of wolves is hurtfull; in so much, as if they see a man before he espie him, they cause him to loose his voice for the time. They that be bred in Affricke and Ægypt, are but little, and withall nothing lively but without spirit. In the colder clime, they be more eger and cruel. That men may be transformed into wolves, and restored againe to their former shapes, we must confidently beleeeve to be a lowd lie, or else give credit to all those tales which wee have for so many ages found to be meere fabulous untruths. But how this opinion grew first, and is come to be so firmly settled, that when wee would give men the most opprobrious words of defiance that we can, wee rearme them * *Verispelles*, I ^{Turn-coats.} thinke it not much amisse in a word to shew. *Euanthes* (a writer among the Greekes, of good account and authoritie) reporteth, that hee found among the records of the Arcadians, That in Arcadia there was a certain house and race of the *Antai*, out of which one evermore must of necessitie be transformed into a wolfe: and when they of that familie have cast lots who it shall be, they use to accompanie the partie upon whome the lot is false, to a certaine meere or poole in that countrey: when he is thither come, they turne him naked out of all his clothes, which they hang upon an oke thereby: then he swimmeth over the said lake to the other side, and being entered into the wildernesse, is presently transfigured and turned into a wolfe, and so keepeth companie with his like of that kind for nine yeeres space: during which time, (if he forbear all the while to eat mans flesh) he returneth againe to the same poole or pond, and being swomme over it, receiveth his former shape againe of a man, save onely that hee shall looke nine yeeres elder than before. *Fabius* addeth one thing more and saith, That he findeth againe the same apparell that was hung up in the oke aforesaid. A wonder it is to see, to what passe these Greekes are come in their credulitie: there is not so shamelesse a lye, but it findeth one or other of them to uphold and maintaine it. And therefore *Agriopas*, who wrote the *Olympionica*, telleth a tale of one *Demanetus Parrhasius*, That he upon a time at a certain solemne sacrifice (which the Arcadians celebrated in the honour of *Jupiter Lycæus*) tasted of the inwards of a child that was killed for a sacrifice, according to the manner of the Arcadians (which even was to shed mans blood in their divine service) and so was turned into a wolfe: and the same man ten yeeres after, became a man againe, was present at the exercise of publicke games, wrestled, did his devoir, and went away with victorie home againe from Olympia. Over and besides, it is commonly thought and verily beleevd, that in the taile of this beast, there is a little string or haire that is effectuall to procure love, and that when he is taken at any time, hee casteth it away from him, for that it is of no force and vertue unlesse it be taken from him whiles he is alive. He goeth to rut in the whole yeere not above twelve daies. When he is very hungrie and can get no other prey, he feedeth upon the earth. In the case of presages and fore-tokens of things to come, this is observed, That if men see a wolfe abroad, cut his way and turne to their right hand, it is good; but if his mouth be full when he doth so, there is not a better signe nor more luckie in the world againe.

F There be of this kind that are called Hart-wolves, such as wee said that *Pompey* shewed in the grand Cirque, brought out of Fraunce. This beast (they say) be he never so hungry when hee is eating, if he chauce to looke backe, forgetteth his meat, flinketh away, and seeketh for some other prey.

The eighth Booke of

CHAP. XXIII.

Of Serpents.

AS touching Serpents, wee see it ordinarie that for the most part they are of the colour of the earth wherein they lie hidden : and an infinite number of sorts there be of them. The Serpent Ceraustes hath many times foure small hornes, standing out double: with moving whereof shee amuseth the birds, and traineth them unto her for to catch them, hiding all the rest of her bodie.

The Amphisbæna hath two heads, as it were, that is to say, one at the taile, as if shee were not hurtfull ynough to cast her poison at one mouth only. Some are skaled, others spotted and painted : but generally, the venome of them all is most deadly. There bee of them, that from the boughes of trees shoot and launce themselves : in such manner, as that we are not onely to take heed of Serpents, as they goe and glide upon the ground, but also to looke unto them that flie as a dart or arrow sent out of an engine. The Aspides swell about the necke when they purpose to sting : and no remedie is there for them that are stung or bitten by them, unlesse the parts that are wounded, bee cut off presently. This pestilent creature, as venomous as hee is, hath one point yet of understanding or affection rather : you shal not see them wandering abroad but two and two together, the male and female, as if they were yoked together ; and unneeth, or not at all, can they live alone without their mate : so that if the one of them bee killed, it is incredible how the other seeketh to bee revenged. It pursueth the murderer, it knoweth him againe amongst a number of people, be they never so many : him it courseth, and laieth for his life : notwithstanding what difficulties soever, it breaketh through all, be it never so farre thither, and nothing may impeach this revenging humor, unlesse some river be betweene to keepe it backe, or that the partie make speed and escape away in great hast. And I assure you, I am not able to say, whether Nature hath bene more free and prodigall in sending among us such noisome things, or giving us remedies againe for them. For to begin withall : she hath affourded to this hurtfull creature but a darke sight, and a dim paire of eies ; and those not placed in the fore-part of the head, to see forward and directly, but set in the very temples. And hereof it is, that these Serpents are raised oftener by their hearing than sight.

CHAP. XXIIII.

Of the Rat of India, called Ichneumon.

BESIDES the foresaid infirmitie, there is mortall warre betweene them and the Ichneumones or rats of India. A beast this is, well knowne to the Aspis, in this regard especially, that it is bred likewise in the same Egypt. The manner of this Ichneumon is, to wallow oftentimes within the mud, and then to drie it selfe against the Sunne : and when hee hath thus armed himselfe as it were with many coats hardnesse in this manner, he goeth forth to combat with the Aspis. In fight he sets up his taile, & whips about, turning his taile to the enemy, & therein lathereth and receiveth all the strokes of the Aspis, and taketh no harme thereby : and so long maintaineth he a defensive battell, untill he spie a time, turning his head aside, that he may catch the Aspis by the throat, & throttle it. And not content thus to have vanquished this enemy, he addresseth himselfe to a conflict with another, as hurtfull every way and dangerous as the former.

CHAP. XXV.

Of the Crocodile, Scinke, and River-horse.

THE river Nilus nourisheth the Crocodile : a venomous creature, foure footed, as dangerous upon water as the land. This beast alone, of all other that keepe the land, hath no use of a tongue. He onely moveth the upper jaw or mandible, wherewith he biteth hard : and otherwise terrible hee is, by reason of the course and ranke of his teeth which close one with another, as if two combes grew together. Ordinarily, he is above eightene cubites in length. The female laieth eggs as big as geese doe : and sitteth ever upon them out of the water. For a certaine naturall fore-knowledge she hath, how farre Nilus the river will that yeare rise when hee is at the highest,

A highest, and without it will seee bee sure to sit. There is not another creature againe in the world, that of a smaller beginning, groweth to a bigger quantitie. His feet be armed with claws for offence, and his skin so hard, that it wil abide any injurie whatsoever, and not be pierced. All the day time the Crocodile keepeth upon the land, but hee passeth the night in the water: and in good regard of the season he doth both the one and the other. When hee hath filled his bellie with fishes, he lieth to sleepe upon the sands in the shore: and for that he is a great and greedie devourer, somewhat of the meat sticketh evermore betweene his teeth. In regard whereof commeth the wren, a little bird called there Trochilos, and the king of birds in Italie: and shee for her victuals sake, hoppeth first about his mouth, falleth to pecking and piking it with her little neb or bill, and so forward to the teeth, which she cleanseth; and all to make him gape. Then getteth shee within his mouth, which he openeth the wider, by reason that he taketh so great delight in this her scraping and scouring of his teeth and chawes. Now when he is lulled as it were fast asleepe with this pleasure and contentment of his: the rat of India, or Ichneumon abovesaid, spieth his vantage, and seeing him lie thus broad gaping, whippeth into his mouth, and shooteth himselfe dowite his throat as quicke as an arrow, and then gnaweth his bowels, eateth an hole through his bellie, and so killeth him.

Within the river Nilus there breeds another Serpent called Scincos, like in forme and proportion somewhat to the Crocodile, but not all so big as the Ichneumon: the flesh whereof serveth for a singular Antidote or countre-poyson; as also for to provoke the heat of lust in men.

C But to returne againe to the Crocodile: the mischeefe that he doth is so great, that Nature is not content to have given him one mortall enemie and no more; and therefore the Dolphins also enter the river Nilus in despight of the Crocodiles, that take themselves for kings there, as if this river were their peculiar kingdome: but seeing they be otherwise inferior to the Crocodiles in strength, who alwaies drive them away from preiding or feeding there, they devise to overmatch him in stie craft and subtiltie, and so kill him. And in truth they have certain fins or wings as it were upon their backe, as trenchant and keene as knives, properly made as it were, for this purpose. For surely all creatures are herein naturally very skilfull and cunning, to know not onely their owne good, and what is for them, but also what may hurt and annoy their enemies. Wware they bee what offensive weapons they have, and of what force they are: they are not ignorant of fit occasions and opportunities to take their vantage, ne yet of the weake parts of their occurrents, by which they may assaile and conquer them the sooner. Thus the Dolphins knowing full well, that the skin of the Crocodiles bellie is thin and soft, make as though they were afraid of them as he commeth, and so dive under the water, untill he have gotten under his bellie, & then punch and cut it with the foresaid sharp-pointed finnes. Moreover, there is a kind of people that carie a deadly hatred to the Crocodile, and they bee called Tentyrites, of a certaine Island ever within Nilus, which they inhabit. The men are but small of stature, but in this quarrell against the Crocodiles, they have hearts of Lions, and it is wonderfull to see how resolute and courageous they are only in this behalfe. Indeed, this Crocodile is a terrible beast to them that sie from him: but contrarie, let men pursue him or make head againe, hee runneth away most cowardly. Now, these Islanders be the onely men that dare encountre him affront. Over and besides, they will take the river, and swim after them, nay they will mount upon their backs, and sit them like horsemen: and as they turne their heads, with their mouth wide open to bite or devour them, they will thrust a club or great cudgell into it crosse overthwart, and so holding hard with both hands each end thereof, the one with the right, and the other with the left, and ruling them perforce (as it were) with a bit and bridle, bring them to land like prisoners: when they have them there, they will so fright them onely with their words and speech, that they compell them to cast up and vomit those bodies againe to bee enterred, which they had swallowed but newly before. And therefore it is, that this is the only Island which the Crocodiles wil not swim unto: for the very sinell and sent of these Tentyrites is able to drive them away, like as the Pselli with their favour put Serpents to flight. By report, this beast seeth but badly in the water: but be they once without, they are most quicke-fighted. All the foure Winter months they live in a cave, and eat nothing at all. Some are of opinion, that this creature alone groweth all his life: and surely a great time he liveth.

The same river Nilus bringeth fourth another beast called Hippopotamus, *i.* a River-horse. Taller hee is from the ground than the Crocodile: hee hath a cloven foot like a boeufe:

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the backe, maine, and haire of an horse: and he hath his neighing also. His muzzle or snout turneth up: his taile twineth like the bores, and his teeth likewise are crooked and bending downwards as the bores tuskes, but not so hurtfull: the skin or hide of his backe, unpenetrable [whereof are made targuets and head-peeces of doubtie prooffe, that no weapon will pierce] unlesse it be foked in water, or some liquor. He eateth down the standing corne in the field: and folke say, that he setteth downe beforehand where he will pasture and feed day by day: and when he setteth forward to any field for his releefe, he goeth alwaies backward, and his tracks are scene leading from thence, to the end, that against his return he should not be forelaied, nor followed by his footing.

CHAP. XXVI.

¶ *Who first shewed the River-horse and Crocodiles at Rome. Also the medicinal means found out by the said dumbe creatures.*

Marcus Scaurus was the first man, who in his plaies and games that hee set out by his office of Ædileship, made a shew of one Water-horse, and foure Crocodiles, swimming in a poole or mote made for the time during those solemnities.

The River-horse hath taught Physicians one devise, in that part of their profession which is called Chirurgerie. For he finding himselfe over-grosse and fat, by reason of his high feeding so continually, getteth forth of the water to the shore, having espied afore where the reeds and rushes have been newly cut: and where he seeth the sharpest cane and best pointed, hee setteth his bodie hard to it, for to pricke a certaine veine in one of his legges, and thus by letting himselfe bloud, maketh evacuation: whereby his bodie, otherwise enclining to diseases and maladies, is well eased of the superfluous humour: and when he hath thus done, he stoppeth the orifice again with mud, and so stancheth the bloud, and healeth up the wound.

CHAP. XXVII.

¶ *What Physicall hearbes certain creatures have shewed us, to wit, the Harts and Stags, the Lizards, Swallows, Tortises, the Weasell, the Storke, the Bore, the Snake, Dragon, Panther, Elephant, Beares, stocke Doves, house Doves, Cranes, and Ravens.*

The like devise to this, namely of clystres, we learned first of a foule in the same Ægypt, which is called Ibis (or the blacke Storke.) This bird having a crooked and hooked bill, useth it in steed of a syringe or pipe, to squirt water into that part, whereby it is most kind and holtsome to void the dounge and excrements of meat, and so purgeth and cleanseth her bodie. Neither have dumbe creatures directed us to these feats onely practised by the hand, which might serve for our use to the preservation of our health and cure of diseases. For the Harts first shewed us the vertue of the hearbe Dictamnus or Dittanie, to draw out arrowes forth of the bodie. Perceiving themselves shot with a shaft, they have recourse presently to that hearbe, and with eating thereof, it is driven out againe. Moreover, they also when they are stung with the Phalangium, a kind of spider, or some such venomous vermine, cure themselves with eating crai-fishes, or fresh-water crabbes.

There is a certaine hearbe called Calaminth, most soveraigne and singular against the biting of Serpents: wherewith the Lizards, whensoever they have fought with them, cure their wounds by applying it thereto.

Celendine [the greater] a most holesome hearbe for the ciefight, the Swallows taught us how to use. For with it they helpe their young ones, when their cies be sore, & put them to grieffe.

The land Tortoise by eating of a kind of Saverie or Marjoram, which they call *Cumila bubula*, armeth himselfe against poyson, when he should fight with Serpents.

The Weasell useth Rue as a preservative, when hee purposeth to hunt for Rats, in case hee should joine in fight with any of them.

The Storke feeling himselfe amisse, goeth to the hearbe Organ for remedie. And the Bore, when hee is sicke, is his owne Physician, by eating yvie and crab-fishes, such especially as the sea casteth up to shore.

The Snake by restinesse and lying still all Winter, hath a certaine membrane or filme growing

A ing over her whole bodie: but having recourse to Fennell, with the juice thereof she casteth that old coat that cloggeth her, and appeareth fresh, slicke, and young again. Now the manner of this her uncaſing, is this: ſhe beginneth firſt at the head, and turneth the ſkin over it, and thus ſhe is a whole day and a night a folding it backward, before the inſide of that membrane can bee turned outward, and ſo ſhe is cleane rid of it. Moreover, when by lying ſtill and keeping cloſe all the Winter time, her ſight is become dim and darke, ſhee rubbeth and ſcoureth her ſelfe with the ſaid hearbe Fennell, and therewith annointeth and comforteth her eies. But if the ſcales that are overgrowne her ſkin, be hard and ſtiſſe, not willing to part and be removed, ſhee maketh no more adoe, but ſcratcheth them with ſharpe juniper prickes.

B The Dragon finding a certaine loathing of meat, and overturning of her ſtomacke in the Spring time, cureth and helpeth the ſame, with the juice of the wild Lettuce.

The barbarous people when they hunt the Panthers, rub the gobbers of fleſh, which they lay as a bait for them, with Aconitum (a kind of poyſon-full hearb.) The beaſts have no ſooner touched the fleſh, but preſently their throat ſwelleth, and they are readie to bee ſtiſſed and choked: wherupon ſome men have called this venomous hearb Pardalianches, *i. Libard baine*, or choke Libard. But the wild beaſt hath a remedie againſt this, namely, the ordure and excrements of a man: yea, and at other times alſo, when he is not thus poyſoned, ſo eager he is thereof, that when the ſheepheards for the nonce have hanged them up aloft in ſome veſſell above their reach, although they leape up at them, hee is readie to faint with mounting on high, and ſtraining to get the ſame, and in the end killeth himſelfe therewith, and lieth dead on the ground. And yet otherwiſe he is too untoward for to be killed, and ſo long it is ere he will die, that when he is paunched, and his very guts come forth of his bellie, he will live ſtill, and fight.

C The Elephant if he chauce to let the [Lizard] Chameleon goe downe his throat among other hearbes or leaves, (which this Lizard alwaies is like unto in colour) hee goeth ſtreightwaies to the wild Olive, the onely remedie he hath of this poyſon.

Bears, when they have eaten Mandrage apples, lick up Piſmires to cure themſelves withall.

The Stag and Hind feeling themſelves poyſoned with ſome venomous weed among the graſſe where they paſture, goe by and by to the Artichoke, and therewith cure themſelves.

D The Stock-doves, the Iaies, Merles, Blackbirds, Oufels, recover their appetite to meat, which once in a yeare they looſe, with eating Bay-leaves that purge their ſtomacke. Partridges, Houſe-doves, Turtledoves, and all Pullein, as Hens, Cokes, and Capons, doe the like with Parietarie of the wall. Duckes, Geefe, and other water-foules purge with the hearbe Endive or Cichorie. Cranes and ſuch like helpe themſelves that way with the Marſh reed.

The Raven when he hath killed the Chameleon, and yet perceiving that hee is hurt and poyſoned by him, ſieth for remedie to the Lawrell, and with it repreſſeth and extinguiſheth the venom that he is infected withall.

CHAP. XXVIII.

*¶ The Prognostication of weather, taken by the observation of
dumbe creatures.*

E **M**oreover, the ſame univerſall Nature hath given a thouſand properties beſides unto beaſts: and namely, hath endued very many of them with the knowledge and obſervation of the aire above, giving us good meanes by them diſverſe waies, to fore-ſee what weather wee ſhall have, what winds, what raine, what tempeſts will follow: which to decipher in particular, it is not poſſible, no more than to diſcourſe throughly of their other qualities they have, reſpective to the ſocietie with every man. For they advertiſe and warne us beforehand of dangers to come, not onely by their fibres and bowels (about the ſkill and preſage whereof, the moſt part of the world is amuſed) but alſo by other manner of tokens and ſignifications. When an houſe is readie to tumble downe, the mice goe out of it before: and firſt of all, the ſpiders with their webs fall down. As for the flight of birds and their fore-tokening, called Augurie, there is an Art of it, and the knowledge thereof is reduced into a method, in ſo much as at Rome there was a colledge of Augures inſtituted: by which it may appeare in what account and regard that ſacerdotall dignitie and profeſſion was. In Thracia, which is a cold and frozen countrey, the Fox alſo will not paſſe over any river or poole that is frozen, before hee trie the thickneſſe of the yce
by

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by his eare, and otherwise it is a beast most quicke of hearing. And observed it is, that men never G
venture therupon, but when he goeth to releefe, or returneth from thence, and then he laith his
eare close to the yce, and guesseth thereby how thicke the water is frozen.

CHAP. XXXIX.

¶ *What citties and nations have been utterly destroyed by little beasts.*

Nothing is more certain and notorious than this, that much hurt and damage hath ben
known to come from small contemptible creatures, which otherwise are of no reckoning
and account. *M. Varro* writeth, That there was a towne in Spain undermined by Conicks:
and another likewise in Thessalie, by the Moldwarpes. In Fraunce, the inhabitants of one citie H
were driven out and forced to leave it, by Frogs. Also in Affricke the people were compelled by
Locusts to void their habitations: and out of Gyaros an Island, one of the Cyclades, the Island
ers were forced by Rats & Mice to flie away. Moreover, in Italie the citie Amyclæ was destroyed
by Serpents. In Æthiopia, on this side the Cynamolgi, there is a great countrey lieth wast and de-
sert, by reason that it was dispeopled sometime by Scorpions, and a kind of Pismires called Sol-
pugæ. And if it be true that *Theophrastus* reporteth, the Trieriens were chased by certaine worms
called Scolopndres. But now let us returne to other kinds of wild beasts.

CHAP. XXX.

¶ *Of the Hyena, Crocuta, Mantichora, Bievers, and Otters.*

As touching Hyænes, it is commonly beleaved, that they have two natures, and that every
second yeere they change their sexe, being this yeere males, and the next yeere females.
Howbeit, *Aristotle* denieth it. Their necke and the mane therewith, together with the
backe, are one entire bone without any joint at all, so as they cannot bend their necke without
turning the whole bodie about. Many strange matters are reported of this beast, and above all o-
ther, that hee will counterfet mans speech, and comming to the shepheards cottages, will call
one of them forth, whose name he hath learned, and when he hath him without, all to worrie and
teare him in peeces. Also it is said, that hee will vomit like a man, thereby to traine dogs to come
unto him, and then will devour them. Also, this beast alone of all others, will search for mens bo- K
dies within their graves and sepulchers, and rake them forth. The female is sildome taken. Hee
chaungeth his eies into a thousand diverse colours. Moreover, if a dog come within his shadow,
he presently looseth his barking, and is quite dumbe. Againe, by a kind of magicall charme or
enchantment, if he goe round about any other living creature but three times, it shall not have
the power to stirre a foot, and remoove out of the place. The Lionesses of Æthiopia, if they bee
covered with any of this kind, bring forth another beast called Leocrocuta, which likewise know-
eth how to counterfet the voice both of man, and of other beasts. He seeth continually with both
eies: hee hath one entire bone in steed of teeth in either jaw (and no gombs at all) wherewith he
cutteth, as with a knife. Now these bones, because they should not waxe dull and blunt with con-
tinuall grating one against the other, they are enclosed each of them within a case or sheath. E

Iuba reporteth, that the Mantichora also in Æthiopia resembleth mens language. Great store
of Hyenes be found in Affricke: which also yeeldeth a multitude of wild asses. And one of the
males is able to rule and lead a whole flocke of the female asses. This beast is so jealous, that they
looke narrowly to the females great with young: for so soone as they have foled, they bite off the
cods of the little ones that be males, and so gueld them. But contrariwise, the she asses when they
be big, seeke corners, and keepe out of their way, that they might bring forth their young secre-
tly without the knowledge of the Stallons: for desirous they are to have many males: so letche-
rous they be, and glad evermore to be covered.

The Bievers in Pontus gueld themselves, when they see how neere they are driven, and bee in
danger of the hunters: as knowing full well, that chased they bee for their genetoires: and these M
their stones, Physicians call Castoreum. And otherwise, this is a dangerous and terrible beast
with his teeth. For verily, hee will bite downe the trees growing by the river sides, as if they were
cut with an axe. Looke where he catcheth hold of a man once, he never leaveth nor letteth loose
untill hee have knapped the bone in sunder, and heard it cracke againe. Tailed hee is like a fish,
otherwise

A otherwise he resembleth the Otter. Both these beasts live in the water altogether, and cartie an haire softer than any plume or downe of feathers.

CHAP. XXXI.

Of Frogs, Sea-calves, and Star-Lisards called Stelliones.

THe venomous frogs and todes called Rubetæ, which live both on land, and also in the water, yeeld many good things medicinable. It is said, that their manner is to let goe and cast from them all that is good within them, receiving onely to themselves all the poyson: and when they have beene at their food, take the same up againe. The Sea-calfe likewise liveth both in the sea, and upon the land: and hath the same nature and qualitie that the beiver is, for hee casteth up his gall, which is good for many medicines: and so he doth his runnet in the maw, which is a singular remedie for the falling sicknesse: for well is he ware, that men seeke after him for these two things. *Theophrastus* writeth, That the Lisards called Stelliones, cast their old coat, like as snakes doe: but when they have so done, they eat it up againe, and so prevent men of the helpe thereby for the said falling evill. He reporteth besides, that their stings and bitings in Greece be venomous and deadly: but in Sicilie harmelesse.

CHAP. XXXII.

Of red and fallow Deere.

THe Bucke or Stag, albeit that he be the most gentle and mild beast in the world, yet is he as envious as the rest, & loth to part with that which is good for others. Howbeit, if he chance to bee overlaid with hounds, then gently of himselfe hee hath recourse to a man. Likewise, the Hinds when they are to calve, chuse rather some place neere to the paths and waies that are beaten with mans steps, than secret corners; for feare of other wild beasts. They begin to goe to rut after the rising of the starre Arcturus, which is much about the fift of September: they goe eight months: and otherwhiles bring two calves at once. Finding themselves that they are sped, they part companie with the Stags. But they againe seeing themselves forsaken, fall into a kind of rage for heat of lust, and dig pits in the ground where they lie hidden. Then begin their muzzles to looke blacke, and so continue, untill such time as some raine wash away that colour. The Hinds before they calve, purge themselves with the hearbe Sefelis or Siler-mountaine, whereby they have lesse paine in their bearing, and more speedie & easie deliverance. After they are lightened of their burden, they know where two hearbes be, which they have presently recourse unto, *Woke Robin*, and the foresaid Siler-mountaine. When they have eaten well thereof, they returne presently to their young. And (for what secret reason in Nature, God knowes) their first milke must have a tast and talang of those two hearbs. Their little ones they practife and exercise to use their legs from the very beginning, so soon as they be come into the world: teaching them even then how they should run away and flie. To high & steepe cragged rockes they bring them, and there shew them how to leape, and withall acquaint them with their dens and places of harborough. And now by this time, the Stags being past the heat of the rut, fall hard to their meat, and feed apace. But so soone as they find themselves to be growne very fat, they seek lurking places, and there abide, confessing as it were how heavie and unweldie they be for fatnesse, and how uncommodious it is unto them. At other times alway they use in their flight to make staies, and take their breath, & as they stand still, to look behind them. But when they espie once the hounds and hunters to be neere unto them, then they fall to running afresh. And this they doe for a pain that they have in their guts, which are so weake and tender, that with a small blow or stripe given unto them, they will burst within their bellies. When they perceive the hunt is up, and heare the hounds crie, they presently run, but ever downe the wind, to the end that the sent of their feet should passe away with them. They take great pleasure and delight in the sound of shepherds pipes, and their song withall. When they set up their eares, they are most quick of hearing: when they let them hang downe, they bee as deafe. Moreover, they are very simple and foolish creatures: amused, yea, and amased they will bee at every thing, and keepe a wondering at it: inso-much, as if an horse, a cow, or an heifer approach neere unto them, they will stand gazing at it, and never regard the hunters neere by: or if they happen to spie him, they will looke at
his

his verie bow, and sheive of arrowes, as at straunge and wonderous things. They passe the seas swimming by flockes and whole heards in a long row, each one resting his head upon the buttocks of his fellow next before him: and this they doe in course, so as the foremost retireth behind to the hindmost, by turnes one after another: and this is ordinarily observed by those sailers that passe from Cilicia to Cypres. And yet in their swimming they descrie no land by the eye, but only by their smelling have an aime thereat. The males of this kind are horned, and they (above all other living creatures) cast them everie yeere once, at a certaine time of the spring: and to that purpose a little before the very day of their mewing, they seek the most secret corners and most out of the way, in the whole forrest. When they are pollards, they keepe close hidden, as if they were disarmed: and all this they do, as if they envied that men should have good of any thing that they had. And in very truth, the right horn (they say) can never be found, as if it had some rare and singular vertue in Physicke. A straunge and marvellous thing, considering that in the parkes they change them every yeere, insomuch as it is thought verily, that they hide them within the earth. But burne whether of them ye will, the left as well as the right, this is certain, That the smell and perfume thereof driveth serpents away, and discovereth them that are subject to the fits of the falling disease. A man may also know their age by their heads, for every yeere they have one knag or braunch, more in their horns than before, untill they come to six: after which time, they come new ever alike; so as their age cannot be discerned any more by the head, but the marke is taken by their mouth and teeth: for as they grow in age, they have few or no teeth at all, ne yet grow the braunches out at the root, whereas all the while they were younger, they used to have them breake forth and standing out at the very fore-head. After they be guelded once, neither cast they their hornes which they had before, neither grow there any if they had none when they were libbed. At the first when they breake out againe, like they be to the glandules or kernels of drie skin, that new put forth: then grow they with tender stalkes, into certaine round and long knobs of the reed mace, covered all over with a certaine soft plume downe like velvet. So long as they be destitute of their hornes, and perceive their heads naked, they goe forth to releese by night; and as they grow bigger and bigger, they harden them in the hot sunne, estoons making proove of them against trees; and when they perceive once that they be tough and strong enough, then they goe abroad boldly. And certeinly some of them have been taken with green Ivie sticking fast and growing in their hornes, remaining there since time that they ran them (when they were but tender) against some trees, for triall whether they were good or no, and so chaunced to race the Ivie from the wood of the tree. You shall have them somtime white of colour, and such an one was the hind that *Q. Sertorius* had about, which he persuaded the people of Spaine to be his soothsayer, and to tell him of things to come. This kind of Deere maintaine fight with serpents, and are their mortall enemies: they will follow them to their verie holes, and there (by the strength of drawing and snuffing up their wind at the nostrils) force them out whether they will or no: and therefore there is not so good a thing againe to chase away serpents, as is the smoke and smell of an Harts horn burnt. But against their sting or biting, there is a singular remedie, with the runnet in the maw of a fawne or Hind-calf killed in the dams belly. It is generally held and confessed, that the Stagge or Hind live long: for an hundred yeer after *Alexander* the Great, some were taken with golden collars about their necks, overgrowne now with haire and growne within the skin: which collars, the said king had done upon them. This creature, of all diseases is not subject to the fever, but he is good to cure it. I have knowne great ladies and dames of state, use every morning to eat the venison of red Deere, and thereby to have lived to a great age and never had the ague: but it is thought this is a certaine remedie and never faileth, in case the stag be stricken starke dead at once with one wound and no more.

CHAP. XXXIII.

Of the shag-haired and bearded Stagge like to a Goat:
as also of the Chamaleon.

OF the same kind is the Goat hart, and differing onely in the beard and long shag about the shoulders, which they call *Tragelaphis*: and this breedeth no where but about the river *Phasis*. *Affricke* in a manner is the onely countrey that breedeth no stags and hinds: but contrari-

A contrariwise, it bringeth Chamæleons; although India hath them ordinarily in greater number. In shape and quantitie it is made like a Lifard, but that it standeth higher and streighter than the Lifards do, upon his legges. The sides, flankes, and bellie, meet together, as in fishes: it hath likewise sharpe prickles, bearing out upon the backe as they have: snouted it is, for the bignesse not unlike to a swine, with a very long taile thin and pointed at the end, winding round and entangled like to vipers: hooked clawes it hath, and goeth slow, as doth the tortoise: his bodie and skin is rough and skalie, as the crocodiles: his eyes standing hollow within his head, and those be exceeding great, one neere unto the other with a verie small portion betweene, of the same colour that the rest of the bodie is: he is alwaies open eyed, and never closeth them: hee looketh about him not by mooving the ball of his eye, but by turning the whole bodie thereof: hee gappeth evermore aloft into the aire, and is the onely creature alive that feedeth neither of meat nor drinke, but hath his nourishment of aire onely: about wild fig-trees hee is fell and daungerous, otherwise harmelesse. But his colour naturally is very straunge and wonderfull, for ever and anon he chaungeth it, as well in his eye, as taile and whole bodie besides: and looke what colour he toucheth next, the same alwaies he resembleth, unlesse it be red and white. When he is dead, he looketh pale and wan: very little flesh he hath in head and chawes, and about the joynt where his taile is grafted to his rumpe; but in all the bodie besides, none at all. All his blood is in his heart, and about his eyes: among other his bowels, he is without a splene. Hidden hee lyeth all winter long, as Lifards doe.

C CHAP. XXXIIII.
 ¶ *Of the Buffe, or Tarandus: the Lycan, and the Thos.*

IN Scythia there is a beast called Tarandus, which chaungeth likewise colour as the Chamæleon: and no other creature bearing haire doth the same, unlesse it be the Lycan of India, which (by report) hath a maned necke. As for the Thoes (which are a kind of wolves somewhat longer than the other common wolves, and shorter legged, quicke and swift in leaping, living altogether of the venison that they hunt and take, without doing any harme at all to men) they may be said, not so much to change their hew, as their habite and apparell: for all winter time they be shag-haired, but in summer bare and naked. The Tarandus is as bigge as an oxe, with an head not unlike to a stagges, but that it is greater, namely, carrying branched hornes: cloven hoofed, and his haire as deepe as is the Beares. The hide of his backe is so tough and hard, that thereof they make brest-plates. He taketh the colour of all trees, shrubs, plants, flowers, and places wherein he lieth when he retireth for feare; and therefore seldome is he caught: But when he list to looke like himselfe and be in his owne colour, he resembleth an Ass. To conclude, straunge it is that the bare bodie of a beast should alter into so many colours: but much more straunge it is and wonderfull, that the haire also should so change.

E CHAP. XXXV.
 ¶ *Of the Porkpen.*

THe Porkpens come out of India and Affricke: a kind of Vrchin or Hedgehog they be: armed with prickes they be both; but the Porkpen hath the longer sharpe pointed quilles, and those, when he stretcheth his skin, he sendeth and shooteth from him: when the hounds presseth hard upon him, hee flyeth from their mouthes, and then taketh vantage to launce at them somewhat farther off. In the winter he lyeth hidden, as the nature is of many beasts to doe, and the Beares above the rest.

F CHAP. XXXVI.
 ¶ *Of the Beares, and how they breed and bring forth their young.*

They ingender in the beginning of winter, not after the common manner of other four-footed beasts, but lying both along, clasping and embracing one another: then they goe apart into their dennes and caves, where the shee beare thirtie daies after is discharged of her burden, and bringeth forth commonly five whelpes at a time. At the first, they seeme to be a lympe

lump of white flesh without all forme, little bigger than rattons, without eyes, and wanting hair: onely there is some shew and apparance of claws that put forth. This rude lump, with licking they fashion by little and little into some shape: and nothing is more rare to be seen in the world, than a shee beare bringing foorth her young: and this is one cause that the male beares are not to be seene in 40 daies, nor the female for 4 moneths. If they have no holes and denes for the purpose, they build themselves cabbins of wood, gathering together a deale of boughes and bushes, which they couch and lay artificially together, to beare off any showre, so as no raine is able to enter; and those they strew upon the floore with as soft leaves as they can meet withall. For the first fourteen daies (after they have taken up their lodging in this manner) they sleepe so soundly, that they cannot possibly be wakened, if a man should lay on and wound them. In this drowynesse of theirs, they grow wondrous fat. This their grease and fat thus gotten, is it that is so medicinable, and good for those that shed their haire. These 14 dayes once past, they sit upon their rumpe or buttocks, and fall to sucking of their fore-feet, and this is all their food whereof they live for the time. Their young whelpes, when they are starke and stiffe for cold, they huggle in their bosome and keepe close to their warme breast, much like to birds that sit upon their eggs. A straunge and wonderfull thing it is to be told, and yet *Theophrastus* beleeveth it, That if a man take beares flesh during those daies, and seeth or bake the same, if it be set up and kept safe, it will grow neverthelesse. All this time they dung not, neither doth there appeare any token or excrement of meat that they have eaten: and very little water or aquositie is found within their bellie. As for blood, some few finall drops lie about the heart only, and none at all in the whole bodie besides. Now when spring is come, forth they goe out of their denne; but by that time, the males are exceeding overgrowne with fat: and the reason thereof cannot be readily rendred: for as we said before, they had no more but that fortnights sleepe to fat them withall. Being now gotten abroad, the first thing that they doe, is to devoure a certaine hearb named *Aron*, i. *Wake-robin*, and that they doe to open their guts, which otherwise were clunged and growne together: and for to prepare their mouthes and teeth again to eat, they whet and set the edge of them with the yong shoots and tendrons of the briers and brambles. Subject they are many times to dimnesse of sight: for which cause especially they seeke after hony-combes, that the bees might settle upon them, and with their stings make them bleed about the head, and by that meanes discharge them of that heavynesse which troubleth their eyes. The Lions are not so strong in the head, but beares be as weake and tender there: and therefore when they be chased hard by hunters and put to a plunge, ready to cast themselves headlong from a rocke, they cover and arme their heads with their fore-feet and pawes, as it were with hands, and so jumpe downe: yea and many times, when they are baited in the open shew-place, we have knowne them laid streaking for dead with one cuffe or box of the eare given them with a mans fist. In Spaine it is held for certaine, that in their braine there is a venomous qualitie; and if it be taken in drinke, driveth men into a kind of madnesse, so as they will rage as if they were beares: in token whereof, whensoever any of them be killed with baiting, they make sure woike and burn their heads all whole. When they list, they will go on their two hinder feet upright: they creepe downe from trees backward: when they fight with bulls, their manner is to hang with all their foure feet, about their head and hornes, and so with the very weight of their bodies wearie them. There is not a living creature more craftie and foolish withall, when it doth a shrewd turne. We find it recorded in the *Annals* of the Romanes, that when *M. Piso* and *M. Meſala* were Consuls, *Domitius Aenobarbus* an *Aedile Curule*, upon the 14 day before the Calends of October, exhibited 100 Numidian beares to be baited and chased in the great Cirque, and as many *Aethiopian* hunters. And I marveile much, that the chronicle nameth Numidian, since it is certein, that no beares come out of Africk.

CHAR. XXXVII.

Of the Rats of Pontus, and the Alpes: also of Vrchins and Hedgehogs.

THE Rats of Pontus, which be onely white, come not abroad all winter: they have a most fine and exquisite tast in their feeding; but I wonder how the Authours that have written this, should come to the knowledge of so much. Those of the Alpes likewise, *Marmot-tanes*, which are as bigge as Brockes or Badgers, keepe in, during winter: but they are provided

A of victuals before-hand which they gather together and carrie into their holes. And some say, when the male or female is loden with grasse and hearbs, as much as it can comprehend within all the four legges, it lieth upon the back with the said provision upon their bellies, and then commeth the other, and taketh hold by the taile with the mouth, and draweth the fellow into the earth: thus doe they one by the other in turnes: and hereupon it is, that all that time their backs are bare, and the hair worne off. Such like Marmoranes there be in Ægypt; & in the same manner they sit ordinarily upon their buttocks, and upon their two hinder feet they goe, using their fore-feet in stead of hands.

B Hedgehogs also make their provision before-hand of meat for winter, in this wise. They wal- low and roll themselves upon apples and such fruit lying under foot, and so catch them up with their prickles, and one more besides they take in their mouth, & so carrie them into hollow trees.

By stopping one or other of their holes, men know when the wind turneth, and is changed from North to South. When they perceive one hunting of them, they draw their mouth & feet close together, with all their belly part, where the skin hath a thin down & no pricks at all to do harme, and so roll themselves as round as a foot-ball, that neither dog nor man can come by any thing but their sharpe-pointed prickles. So soon as they see themselves past all hope to escape, they let their water go and pisse upon themselves. Now this urine of theirs hath a poisonous qualitie to rot their skin and prickles, for which they know well enough that they be chased and taken. And therefore it is a secret and a special pollicie, not to hunt them before they have let their urine go; and then their skin is verie good, for which chiefly they are hunted: otherwise it is naught ever after and so rotten, that it will not hang together, but fall in peeces: all the pricks shed off, as being putrified, yea although they should escape away from the dogs and live still: and this is the

C cause that they never bespisse and drench themselves with this pestilent excrement, but in extre- mitie and utter despaire: for they cannot abide themselves their owne urine, of so venomous a qualitie it is, and so hurtfull to their owne bodie; and doe what they can to spare themselves, at- tending the utmost time of extremitie, in so much as they are ready to be taken before they do it. When the Vrchin is caught alive, the devise to make him open again in length, is to besprinkle him with hot water; and then by hanging at one of their hin-feet without meat they die with fa- mine: otherwise it is not possible to kil them and save their case or skin. There be writers who bash not to say, That this kind of beast (were not those pricks) is good for nothing, and may well be

D missed of men: & that the soft fleece of wooll that sheep bear, but for these pricks were superfluous & to no purpose bestowed upon mankind: for with the rough skin of these Vrchins, are brui- shes and rubbers made to brush & make clean our garments. And in very truth, many have got- ten great gaine and profit by this commoditie and merchandise, and namely, with their craftie devie of monopolies, that all might passe through their hands only: notwithstanding there hath not ben any one disorder more repressed, and reformation sought by fundry edicts and acts of the Senate in that behalfe: every prince hath been continually troubled hereabout with grievous complaints out of all provinces.

Or rather in- stead of tazers that stealemeat use.

CHAP. XXXVIII.

Of the Leontophone, the Once, Badgers, and Squirrels.

E **T**WO other kinds there be of beasts, whose urine worketh straunge and wonderfull effects: The one is called Leontophonos, and he breedeth in no countrey but where there be lions: a little creature it is, but so venomous, that the lyon (king of beasts, before whome all others tremble) for all his might and puissance, dieth presently if hee tast never so little thereof. And therefore they that chase the lion, get all the Leontophones that they can come by, burne their bodies, and with the powder of them bestrew and season as it were the pieces of other flesh that they lay for a bait in the Forrest, and thus with the verie ashes (I say) of his enemy, kill him: and deadly and pernicious is it to the lion. No marveile therefore if the lion abhorre and hate him, for so soon as he espieth him, he crusheth him with his pawes, and so killeth him without setting tooth to his bodie. The Leontophone for his part againe, is as readie to bedrench him with his urine, knowing right well that his pisse is a verie poison to the Lion.

F In those countries where the Onces breed, their urine (after it is made) congealeth into a cer- tain ycie substance, and waxeth dry, & so it comes to be a certain precious stone like a carbuncle,

glittering and shining as red as fire, and called it is *Lyncurium*. And upon this occasion many have written, that Amber is engendred after the same manner. The Onces knowing thus much, for verie spight and envie, cover their urine with mould or earth, and this maketh it so much the sooner to harden and congeale.

The Grayes, Polcats, or Brocks, have a cast by themselves, when they be affraid of hunters: for they will draw in their breath so hard, that their skin beeing stretched and puffed up withall, they will avoid the biting of the hounds tooth, and checke the wounding of the hunter, so as neither the one nor the other can take hold of them.

The Squirils also foresee a tempest comming, and where the wind will blow: for looke in what corner the wind is like to stand, on that side they stop up the mouth of their holes, & make an overture on the other side against it. Moreover, a goodly broad bushy taile they have, wherewith they cover their whole bodie. Thus you see how some creatures provide victuals against winter, others battle and feed with sleepe only.

CHAP. XXXIX.

Of the Viper, land-winkles or Snailles, and Lizards.

Of all other serpents, it is said, that the Viper alone lieth hidden in the ground during winter, whereas the rest keepe within crannies and clifts of trees, or else in the hollow chinks of stones: and otherwise they are able to endure hunger a whole year, so they be kept from extreame cold. All the while during their retreat and lying close within, they sleep as if they were dead and deprived of their power to poison.

In like manner doe Perwinkles and Snailles; but not onely in the winter season, but in summer againe they lie still, cleaving so hard to rocks and stones, that although by force they be plucked off and turned with their bellies upward; yet they will not out of their shell. In the Baleare Ilands there be a kind of them called *Cavaticæ*, which never creep out of the holes within the ground, neither live they of any grasse or Greene hearb, but hang together like clusters of grapes. Another sort there is of them, but not so common, hiding themselves within the cover of their shell, sticking ever fast unto them: these lie alwaies under the ground, and were in times past digged up onely about the Alpes; along the maritime coasts: but now of late they be discovered in *Veliternum* also, where men begin to get them out of the earth. But the best of them all and most commendable, are those in the Iland *Astypelæa*.

As touching Lizards (deadly enemies to the Snailles or Winkles above-named) men say, they live not above sixe moneths. In Arabia, the Lizards bee a cubite in length: and in the mountaine *Nisa* of India, they bee foure and twentie foot long; some tawnie, some light red, and others blew of colour.

CHAP. XL.

Of Dogges.

Among those domesticall creatures that converse with us, there be many things worth the knowledge: and namely, as touching dogges (the most faithfull and trustie companions of all others to a man) and also horses. And in verie truth, I have heard it credibly reported, of a dogge, that in defence of his master, fought hard against theeves robbing by the high way side: and albeit he were sore wounded even to death, yet would he not abandon the dead bodie of his master, but drave away both wild-foule and savadge beast, from seizing of his carkasse. Also of another in *Epirus*, who in a great assembly of people knowing the man that had murdered his master, flew upon him with open mouth, barking and snapping at him so furiously, that he was readie to take him by the throat, untill hee at length confessed the fact that should cause the dog thus to fume and rage against him. There was a king of the *Garamants* exiled, and recovered his royall state againe by the meanes of 200 dogs that fought for him against all those that made resistance, and brought him home maugre his enemies. The *Colophonians* and *Castabaleans*, maintained certaine squadrons of massive dogges, for their warre-service: and those were put in the vaward to make the head and front of the battaile, and were never known to draw backe and refuse fight. These were their trustiest auxiliaries and aid-souldiers, and never so needie

A as to call for pay. In a battell when the Cimbrians were defeated and put all to the sword; their dogges defended the baggage, yea, and their houses (such as they were) carried ordinarily upon charriots. *Iasen* the Lycian had a dogge, who after his master was slaine, would never eat meat; but pined himselfe to death. *Duris* maketh mention of another dogge, which he named *Hircanus*, that so soone as the funerall fire of king *Lyftrachus* his master was set a burning, leapt into the flame. And so did another at the funerals of king *Hiero*. Moreover, *Phyisus* reporteth as strange a storie of king *Pyrrhus* his dogge: as also of another belonging to the tyrant *Gelo*. The Chronicles report of a dog that *Nicomedes* king of Numidia kept, which flew upon the queene *Consurgis* his wife, & all to mangled and worried her, for toying and dallying overwantonly with the king her husband. And to go no farther for examples, even with us here at Rome, *Volcatius* a noble gentleman (who taught *Cesilius* the civile law) as he returned home one evening late, riding upon an hackney from a village neere the citie, was assailed by a theefe upon the high way, but he had a dog with him that saved him out of his hands. *Celius* likewise, a Senatour of Rome, lying sick at Plaifance, chanced to be assailed by his enemies, wel appointed and armed; but they were not able to hurt and wound him, by reason of a dogge that he had about him, untill such time as they had killed the said dogge. But this passeth all, which happened in our time, and standeth upon record in the publicke registers, namely, in the yeere that *Appius Iunius* and *P. Silius* were Consuls, at what time as *T. Sabinus* and his servants were executed for an outrage committed upon the person of *Nero*, sonne of *Germanicus*: one of them that dyed had a dog which could not be kept from the prison dore, and when his master was throwne downe the staires (called *Scala Gemonia*) would not depart from his dead corps, but kept a most piteous howling and lamentation about it, in the sight of a great multitude of Romans that stood round about to see the execution and the manner of it: and when one of the companie threw the dogge a peece of meat, he streightwaies carried it to the mouth of his master lying dead. Moreover, when the carkasse was throwne into the river *Tiberis*, the same dog swam after, & made all the means he could to beare it up afloat that it should not sinke: and to the sight of this spectacle and fidelitie of the poore dogge to his master, a number of people ran forth by heapes out of the citie to the water side. They be the onely beasts of all others that know their masters; and let a stranger unknowne be come never so sodainly, they are ware of his comming, and will give warning. They alone know their owne names, and all those of the house by their speech. Be the way never so long, and the place from whence they came never so farre, they remember it and can goe thither againe. And surely, setting man aside, I know not what creature hath a better memorie. As furious and raging as they be otherwhiles, yet appeased they will be and quieted, by a man sitting down upon the ground. Certes, the longer we live, the more things we observe and marke still in these dogges. As for hunting, there is not a beast so subtle, so quicke, and so fine of sent, as is the hound: he hunteth and followeth the beast by the foot, training the hunter that leads him by the collar and leash, to the very place where the beast lieth. Having once gotten an eye of his game, how silent and secret are they notwithstanding? and yet how significant is their discoverie of the beast unto the hunter? first, with wagging their taile, and afterwards with their nose and snout, snuffing as they doe. And therefore it is no marveile, if when hounds or beagles be over old, wearie, and blind, men carrie them in their armes to hunt, for to wind the beast, and by the very sent of the nose to shew and declare where the beast is at harbour. The Indians take great pleasure to have their salt bitches to be lined with tygres: and for this purpose, when they goe proud, they couple and tie them together, and so leave them in the woods for the male tygres: howbeit they reare neither the first nor second litter of them, supposing that the dogs thus bred, will be too fierce and eger; but the third, they nourish and bring up. Semblably, thus do the Gaules by their dogges that are engendred of wolves: and in every chafe and Forrest there be whole flocks of them thus engendred, that have for their guide, leader, and captaine, one dogge or other: him they accompanie when they hunt; him they obey and are directed by: for surely, they keepe an order among themselves, of government and mastership. This is knowne for certain, that the dogges which be neere unto *Nilus*, lap of the river, running still and never stay while they are drinking, because they will give no vantage at all to be a prey unto the greedie *Crocodiles*. In the voyage that *Alexander* the Great made into India, the king of *Albania* gave him a dogge of an huge and extraordinarie bignesse. And *Alexander* taking great delight and contentment to see so goodly and so faire a dog, let loose unto him first *Bears*, afterwards

wild Bores; and last of all, fallow Deere. But this dog making no reckoning of all this game, lay still couchant, and never stirred nor made at them. This great Commaunder *Alexander*, a man of a mightie spirit and high mind, offended at the laziness and cowardise of so great a bodie, commaunded that he should be killed, and so he was. Newes hereof went presently to the king of Albanie. Whereupon he sent unto him a second dog, with this message, That he should not make triall of this too against such little beasts, but either set a Lion or an Elephant at him: saying moreover, that hee had in all but those two of that kind: and if hee were killed likewise, hee were like to have no more of that race and breed. *Alexander* made no stay, but presently put out a Lion, and immediately hee saw his backe broken, and all to rent and torne by the dog. Afterwards he commaunded to bring forth an Elephant, and in no sight tooke he greater pleasure, than in this. For the dog at the first with his long rough shagged haire, that overspread his whole bodie, came with full mouth, thundering (as it were) and barking terribly against the Elephant. Soone after he leapeth and flieth upon him, rising and mounting against the great beast, now of one side, then of another: maintaining combate right artificially, one while assailing, another while avoiding his enemy: and so nimbly he bestirreth him from side to side, that with continuall turning about too and fro, the Elephant grew giddie in the head, insomuch as he came tumbling downe, and made the ground to shake under him with his fall. Bitches breed and beare young every yeere lightly once: and the due time for them to be with whelpes, is when they are full a yeere old. They goe with young threescore daies. Their puppies come blind into the world: and the more milke they sucke, the later it is ere they receive their sight: but as it is never above twentie daies ere they see, so they open not their eyes under seven daies old. Some say, that if a bitch bring but one at a litter, it will see by nine daies: if twaine, it will be ten daies first: and the more puppies shee hath, the more daies it will be in that proportion ere they see. Moreover, that the bitch-whelp that commeth of the first litter, see strange bugs and goblins. The best of the whole litter is that whelp, that is last ere it begin to see: or else that which the bitch carrieth first into her kennill. The biting of mad dogs are most dangerous to a man, as we have said before, especially during the dog-daies, while the dog star *Syrius* is so hote: for they that are so biten, lightly are afraid of water, which is a deadly signe. To prevent therefore that dogs fall not mad, it is good for thirtie or fortie daies space, to mingle hens or pullins dung especially with their meat: againe, if they be growing into that rage, or tainted already, to give them *Ellebo*re with their meat.

CHAP. XLII.

¶ Against the biting of a mad Dog.

THE sure and soveraigne remedie for them that are biten with a mad dog, was revealed lately by way of Oracle: to wit, the root of a wild rose, called the sweet Brier or *Eglantine*. *Columella* writeth, That when a whelp is just fortie daies old, if his taile be biten off at the neathermost joint, & the sinew or string that commeth after, be likewise taken away, neither the taile will grow any more, nor the dog fall ever to be mad. I have my selfe observed, that among the prodigies it is reported, how a dog sometime spake, as also that a serpent barked, that yeere when *Tarquine* the proud was deposed and driven out of Rome.

CHAP. XLIII.

¶ Of Horses, and their nature.

THE same *Alexander* the Great, of whom erewhile wee spake, had a very strange and rare horse, whom men called *Bucephalus*, either for his crabbed and grim looke, or else of the marke or brand of a buls head, which was imprinted upon his shoulder. It is reported, that *Alexander* being but a child, seeing this faire horse, was in love with him, and bought him out of the breed and race of *Philonicus* the Pharfalian, and for him paid sixteene talents. He would suffer no man to sit him, nor come upon his backe, but *Alexander*; and namely, when hee had the kings saddle on, and was also trapped with roiall furniture: for otherwise hee would admit any whomsoever. The same horse was of a passing good and memorable service in the warres: and namely, being wounded upon a time at the assault of *Thebes*, he would not suffer *Alexander* to alight

A alight from his backe, and mount upon another. Many other strange and wonderfull things hee did: in regard whereof, when he was dead, the king solemnized his funerals most sumptuously; erected a tombe for him, and about it built a citie that bare his name, Bucephalia. *Cæsar* Dictator likewise had another horse, that would suffer no man to ride him but his maister: & the same horse had his forefeet resembling those of a man: and in that manner standeth hee pourtraied before the temple of *Venus*, Mother. Moreover, *Augustus Cæsar*, late Emperour of famous memorie, made a sumptuous tombe for an horse that he had, whereof *Germanicus Cæsar* compiled a poem. At Agrigentum there be scene Pyramides over many places where horses were entombed. *Juba* reporteth, That queene *Semiramis* loved a great horse that she had, so farre forth, that shee was content hee should doe his kind with her. The Scythians verily take a great pride and glorie much in the goodnesse of their horses and Cavallerie. A king of theirs happened in combat and single fight upon a challenge to bee slaine by hisemie, and when hee came to despoile him of his armes and roiall habite, the kings horse came upon him with such furie, flinging and laying about him with his heeles, and biting withall, that hee made an end of the conquerour-champion. There was another great horse hoodwinked because hee should cover a mare: but perceiving after that he was unhooded that he served as a stallion to his own dam that soled him, ran up to a steepe rocke with a downefall, and there for greefe cast himselfe downe and died. We find also in record, That in the territorie of *Reate* there was a mare killed and all to rent an horsekeeper upon the same occasion. For surely these beasts know their parentage, and those that are next to them in blood. And therefore wee see that the colts will in the flocke more willingly keepe companie and fort with their sisters of the former yeere, than with the mare their mother. Horses are so docible and apt to learne, that we find in histories, how in the armie of *Sybaritanes*, the whole troop of horsemen had their horses under them, and used to leape and daunce to certaine musick that they were wonted and accustomed unto. They have a fore-knowledge when battell is toward, they will mourne for the losse of their maisters: yea, and otherwhiles shed teares and weepe pitiously for love of them. When king *Nicomedes* was slaine, the horse for his owne saddle, would never eat meat after, but for very anguish died with famine. *Philarchus* reporteth, That king *Antiochus* having in battell slaine one *Centareus*, a brave horseman of the Gallogreeces or Galatians, became maister of his horse, and mounted upon him in triumphant wise: But the horse of him that lay dead in the place, and upon whom *Antiochus* was mounted, for very anger and indignation at this indignitie, passed neither for bitt nor bridle, so as he could not be ruled; and so ran furiously among the crags and rockes, where both horse and man came downe headlong, and perished both together. *Philistus* writeth, That *Dionysius* was forced to leave his horse sticking fast in a quave-mire, and got away: but the horse after hee had recovered himselfe, and was gotten forth, followed the tracts of his maister, with a swarme or cast of bees ferling in his mane: and this was the first preface of good fortune that induced *Denis* to usurpe the kingdome of Sicilie. Of what perceivance and understanding they be, it cannot be expressed: & that know those light horsemen full well that use to launce darts and javelines from horsebacke, by the hard service that they put their horses to; which they performe with great dexteritie & resolution in straining, winding, and turning their bodies nimbly every way. Nay, ye shall have of them to gather up darts and javelines from the ground, and reach them againe to the horseman. And commonly we see it to be an ordinarie matter with them in the great race or shew place, when they are set in their geires to draw the chariots, how they joy when they are encouraged and praised; giving no doubt a great prooffe, and confessing that they are desirous of glorie. At the Secular solemnities, exhibited by *Claudius Cæsar*, in the Circensian games, the horses with the white liverie, (notwithstanding their driver and governor, the charioter, was cast and flung to the ground even within the barres) wan the best price, & went away with the honour of that day. For of themselves they brake and bare downe whatsoever might empeach them of running the race throughout: they did all that ever was to bee done against their concurrents and adversaries of the contrarie side, as well as if a most expert chariot-man had beene over their backes to direct and instruct them. At the sight whereof, men were ashamed to see their skill and art to be overmatched & surmounted by horses. And to conclude, when they had performed their race, as much as by law of the game was required, they stood still at the very goale, and would no farther. A greater wonder and preface was this in old time, that in the Circensian games exhibited by the people, the horses after they had flung and cast their governour, ran directly up to the Capitoll, as well as if hee

The eighth Booke of

had stood still in his place, and conducted them; and there fetcht three turnes round about the temple of *Jupiter*. But the greatest of all was this which I shall now tell, That the horses of *Ratumenas*, who had woon the price in the horse-running at Veij, threw their maister down; & came from thence, even out of *Tuscane*, as far as to the foresaid Capitoll, carrying thither the Palme branch and chapelet of *Victorie* woon by *Ratumenas* their maister: of whom the gate *Ratumena* took afterwards the name at Rome. The Sarmatians minding to take a great journey, prepare their horses two daies before, and give them no meat at all: onely a little drink they allow them, and thus they will ride them gallop 150 miles an end, and never draw bridle. Horses live many of them 50 yeeres, but the mares not so long. In five years they come to their full growth, whereas stone horses grow one yeere longer. The making of good horses indeed, and their beautie, such as a man would chuse for the best, hath beene most elegantly and absolutely described by the Poët *Virgill*. And somewhat also have I written of that argument, in my booke which I lately put forth, as touching *Tournois* and shooting from horsebacke: and in those points required, and there set downe, I see all writers in manner to agree. But for horses that must bee trained to runne the race, some considerations are to be had and observed, different from horses of other use and service. For whereas to other affaires and employments they may be brought when they are two yeere old colts, and not upward; to the Lists they must not bee brought to enter into any maistries there, before they be full five yeares of age. The female in this kind goe eleven moneths compleat with yong, and in the twelfth they foale. Commonly the stallion and the mare are put together, when both of them are full two yeares old: and that about the Spring *Æquinocti*-all, that is to say, in mid-march: but if they be kept asunder untill they are full three yeares of age, they breed stronger colts. The Stallion is able to get colts untill he be three and thirtie yeares old: for commonly when they have served in the race, and run full twentie yeares, they are discharged from thence, & let goe abroad for to serve mares. And men say that they will hold to fortie yeares with a little helpe put to the forepart of his bodie, that he may bee lifted up handsomely to cover the mare. Few beasts besides are lesse able to engender and leape the female often, nor sooner have ynough of them. For which cause they be allowed some space between every time that they doe their kind. And in one yeare the most that the Stallion is able to doe that way, is to cover fiftene mares, and that is somewhat with the ofteneft. If ye would coole the courage, and quench the lust of a mare, share and clip her mane. And yet are mares sufficient to beare every yeare, untill they come to fortie. It is reported, that an horse hath threescore and fiftene yeares. Mares onely of all other females, are delivered of their foales, standing on their feet: but love them more than any other doe their young. These foales verily, by report, have growing on their forehead, when they bee newly come into the world, a little blacke thing of the bignesse of a fig, called *Hippomanes*, and it is thought to have an effectuall vertue to procure and win love. The dam hath not so soone foled, but she bites it off, and eats it her selfe: and if it chance that any bodie preventeth her of it, and catcheth it from her, shee will never let the foale sucke her. The very sinell and sent thereof, if it bee stollen away, will drive them into a fit of rage and madnesse. If peradventure a young foale loofe the damme, the other mares of the common heard that are milch nurces, give their teats to this poore orphan, and reare it up in common. They say that for three daies after they be newly foled, the young colts cannot lay their mouth to the ground, and touch it. Moreover, the hotter stomacked that an horse is, the deeper hee thrusteth his nose into the water as hee drinketh. The Scythians chuse rather to use their mares in warre-service than their stone-horses: the reason is this, that their staling is no hinderance to their pace in running their carriere, as it doth the horse, who must needs then stand still. In Portugall, along the river *Tagus*, and about *Lisbon*, certaine it is, that when the West wind bloweth, the mares set up their tailes, and turne them full against it, and so conceive that genitall aire in steed of naturall feed: in such sort, as they become great withall, and quicken in their time, and bring forth foales as swift as the wind, but they live not above three yeares. Out of the same Spaine, from the parts called *Gallicia* and *Asturia*, certaine ambling jennets or nags are bred, which wee call *Thieldones*: and others of lesse stature and proportion every way, named *Asturcones*. These horses have a pleasant pace by themselves differing from others. For albeit they bee put to their full pace, a man shall see them set one foot before another so defily and roundly in order by turnes, that it would doe one good to see it: and hereupon horse-breakers (maisters) have an art by cords to bring an horse to the like amble. A horse is subject to the same diseases in manner that a man is: and besides, to the turning

A of the bladder: like as all other beaſts that labour, either in draught or cariage.

CHAP. XLIII.

Of Aſſes.

Varro writeth, That *Q. Anius*, a Romane Senatour, bought an Aſſe which coſt him foure hundred thouſand Seſterces: a price in my conceit above the worth of any beaſt whatſoever: and yet (no doubt) hee was able to doe wondrous good ſervice in carrying burdens, plowing the ground, and principally in getting of mules. The chapmen that uſe to buy theſe Aſſes, have a ſpeciall regard to the place from whence they come, and where they bee bred. For in **B** Achaia or Greece, thoſe of Arcadia be in greateſt requeſt: and in Italie, thoſe of Reate. This creature of all things can worſt away with cold: which is the cauſe that none of them are bred in Pontus. Neither doe they engender as other ſuch like beaſts in the Spring *Æquinoctiall*, i. about mid-March: but in mid-June, about the time of the Sunne-ſteed, when daies be at the longeſt. Hee Aſſes, the more you ſpare them in their worke, the worſe they are for it. The females are at the leaſt thirtie moneths, or two yeares and halfe old before they bring any young: but three yeares is the ordinarie and due time indeed. They goe as long as mares, and juſt ſo many months, and after the ſame manner doe they ſole. But after they be covered, they muſt be forced to runne **C** ſeene to bring forth two at once. The ſhee Aſſe, when ſhee is about to ſole, ſeeketh ſome ſecret blind corner to hide her ſelfe, that ſhee might not bee ſeene of any man. Shee breeds all her life time, which commonly is untill ſhe be thirtie yeeres old. They love their young ſoles exceeding well: but as ill, or rather worſe, can they abide any water. To their little ones they will goe through fire; but if there be the leaſt brooke or rill betweene, they are ſo affraid of it, that they dare not once dip their feet therein. And verily drinke they will not, but of their accuſtomed fountains, within the paſtures where they uſe to goe: but they will be ſure to chuſe their way, and goe drie to their drinke, and not wet their hoove: neither will they goe over any bridges where the planks are not ſo cloſe drawn together and jointed, but that they may ſee the water through, under their feet; or the railes of each ſide ſo open, that the river is ſeene. A ſtrange nature they have by them- **D** ſelves. Thirſtie they are, but bee they never ſo drie, if you change their watering place (as in travelling upon their way) they muſt be forced to drinke with cudgels, or elſe unladen of their burdens. Whereſoever they bee ſtabled, they love to lie at large and have rounge ynough. For in their ſleepe they dreame, and have a thouſand fancies appearing to them: inſomuch, as they ſling about them with their heeles every way: now if they were not at libertie, and had void ſpace ynough, but ſhould beat againſt ſome hard thing in their way, they would ſoone be lame, & halt with all. They be very gainefull and profitable to their maſters, yeelding more commoditie than the revenues of good farmes. It is well knowne, that in Celtiberia a ſhee Aſſe ordinarily with very breeding may bee worth unto them 400000 Seſterces. For the ſoling and bringing forth of **E** Mules, the principall thing to be regarded in the ſhee Aſſe, is the haire about the eares and eyelids. For howſoever the whole bodie beſides bee of one and the ſame colour, yet ſhall the mules ſoled, have as many colours as were there, all over the ſkin. *Mecenas* was the firſt that at feaſts made a daintie diſh of young Aſſe ſoles, and preferred their fleſh in his time before the veniſon of wild Aſſes. But when he was dead and gone, they were not thought ſo good meat, nor accepted any whit. If an Aſſe be ſeene to die, looke ſoone after, that the whole race and kind of them will follow to the very laſt.

CHAP. XLIIII.

Of Mules.

Betweene the hee Aſſe and a Mare is a mule engendred, and ſoled in the twelfth moneth: a beaſt of exceeding ſtrength to beare out all labour and travell. For breeding of ſuch mules, they choſe Mares that are not under foure yeares old, nor above ten. Men ſay, that they will drive away one another in both kinds, and not accompanie together, unleſſe they taſted the milk and ſucked the dam when they were young, of that kind which they would cover. And for this purpoſe

purpose they use to steale away either the young Asses foles, and set them in the darke to the teats of the Mare, or els the young colts to sucke of the shee Asses. For there is a kind of Mule also that commeth of a stone horse and a female Asses: but of all others they be untoward and unruly, and so slow withall, that it is impossible to bring them to any good service: & much more (as all things els) if they be farre in age when they engender. If when a shee Asses hath taken the horse, and be sped, there come an Asses and cover her againe, she will cast her fruit untimely, and loose all: but it is not so if an horse cover her after an Asses. It is observed and found by experience, that seven daies after an Asses hath soled, is the best time to put the male unto her, and then soonest will she be sped: as also, that the hee Asses being wearie with travell, will better cover the females than otherwise, if they be restie. That Asses is held for barren, which is not covered, nor conceiveth, before she have cast her sucking or foles-teeth: whereby the age is knowne: as also she which standeth not to the first covering but looseth it. In old time they used to call those Hinuli, which were begotten betweene an horse and an Asses: and contrariwise Mules, such as were engendred of an Asses and a Mare. Moreover, this is observed, that if two beasts of divers kinds do engender, they bring forth one of a third sort, and resembling neither of the parents: also, that such begotten in this manner, what kind of creatures soever they bee, are themselves barren and fruitlesse, unable either to beare or beget young. And this is the cause that the shee mules never breed. Wee find verily in our Chronicles, that oftentimes Mules brought forth yong foles, but it was alwaies taken for a monstrous and prodigious signe. And yet *Theophrastus* saith, That in Cappadocia ordinarily they doe beare and bring foles: but they are a kind by themselves. Mules are broken of their flinging and wincing, if they use often to drinke wine. It is found written in many Greeke authors, That if an hee Mule cover a Mare, there is engendred that which the Latines call Hinus, that is to say, a little Mule. Betweene Mares and wild Asses made tame, are engendred a kind of Mules, very swift in running, and exceeding hard hoofed, lanke and slender of bodie, but fierce and courageous, and unnethe or hardly to be broken. But the Mule that commeth of a wild Asses and a female tame Asses, passeth all the rest. As for wild Asses, the very best and floure of them be in Phrygia and Lycaonia. In Affricke, the flesh of their foles is held for excellent good meate, and such they call Lalifiones. It appeareth in the Chronicles of Athens, that a Mule lived 80 yeares. And reported thus much there is of it, That when they built the temple, within the citadell thereof, this old Mule being for age able to doe nothing else, would yet accompanie other Mules that laboured and caried stones thither, and if any of them were readie to fall under their lode, would seeme to relieve and hold them up, and (as it were) encourage them to his power: infomuch as the people tooke so great delight and pleasure therein, that they made a decree, and tooke order that no corne-masters that bought and sold grain, should beat this Mule away from their ranging sives (when they cleansed or winnowed their corne) but that he might eat under them.

CHAP. XLV.

Of Bulls, Kine, and Oxen.

THE Boeufes of India are as high by report as Cammels, and foure foot broad they are betweene the hornes. In our part of the world, those that come out of Epirus, are most commended, and beare the greatest price above all others; and namely those, which they say are of the race and breed of king *Pyrrhus*, who that way was very curious. For this prince because hee would have a principall good breed, would not suffer the Bulls to come unto the Kine and season them, before they were both foure yeares old. Mightie big they were therefore, and so they continue of that kine unto this day. Howbeit, now when they be but heyfers of one year, or two yeares at the most (which is more tollerable) they are let goe to the fellow and breed. Bulls may well engender and serve kine when they bee foure yeare old: and one of them is able all the yeare long to goe with ten kine, and serve their turne. They say moreover, that a Bull, after hee hath leapt a cow, and done his kind, if he goe his way toward the right hand, he hath gotten an oxen calfe: but contrariwise, a cow calfe, if he take the left hand. Kine commonly take at their first seasoning: but if it chauce that they misse and stand not to it, the twentieth day after they seeke the fellow, and goe a bulling againe. In the tenth month they calve: and whatsoever falleth before that tearme, never proveth nor commeth to good. Some write, that they calve just upon the last day of the tenth month complete. Seldome bring they forth two calves at a time. Their seasoning time commonly

A commonly continueth thirtie daies, namely, from the rising of the Dolphin starre, unto the day before the Nones of Ianuarie. Howbeit, some there be that goe to felloe in Autumne. Certes, in those countries where the people live altogether of milk, they order the matter so, that their kine calve at all times, so as they are not without their food of fresh milke all the yeare long. Bulls willingly leape not above two kine at most in one day. Bœufes alone of al living creatures can grafe going backward: and verily among the Garamants they never feed otherwise. Kine live not above fifteene yeares at the utmost: Bulls and Oxen come to twentie. They be in their full strength when they are five yeares old. It is said, that they will grow fat, if they be bathed with hote water: or if a man slit their hide, and with a reed or pipe blow wind betweene the flesh and the skin, even into their entrailles. Kine, Bulls, and Oxen, are not to be despised as unkindly, although they looke but illfavouredly, and bee not so faire to the eie: for in the Alpes, the least of bodie are the best milch kine. And the best labouring Oxen are they which are yoked by the head, and not the necke. In Syria they have no dewlaps at all hanging under the neck, but bunches standing up on their backs in steed therof. They of Caria also, a countrey in Asia, are illfavoured to be seen, having between their necks & shoulders a tumor or swelling hanging over; besides, their horns are loose, and (as it were) out of joint: and yet by report they are passing good of deed, and labor most stoutly. Furthermore, it is generally held for certaine, that the black or white in this kind are simply the worst for worke, and condemned. Bulls have lesser and thinner hornes than either Kine or Oxen. The best time to bring the Oxe or the Bull to the yoke, and make him draw, is at three yeares of age: after, it is too late; and before, with the soonest. A yong Stere is soonest trained and taught to draw, if he be coupled in one yoke with another that hath bene wrought alreadye and beaten to his worke. For this beast is our companion, and labourer together with us, in earing and plowing the ground: and so highly regarded was the Oxe in old time of our forefathers, that we find it registred upon record, That a certaine Romane was judiciallye endited, accused, & condemned by the people of Rome, for that (to satisfie the mind of a wanton minion and caramite of his, who said he had not eaten any tripes all the while he was in the country) he killed an Oxe, although he was his owne: yea, and for this fact was banished, as if hee had slaine his Grangier and Bailife of his husbandrie. Bulls are knowne to bee of a good kind and courageous, by their fierce and grim countenance, for they alwaies looke crabbed and frowning: their eares are overgrowne with stiffe haire, and their hornes so standing, as if they were ever disposed and readie to fight. But all his threatening and menaces appeare in his forefeet; with them hee gives warning, and as he is more and more angrie, hee bestirreth himselfe now with the one foot, and then with another, in course and by turnes, stamping and pawing with them against the ground, raising and flinging the dust about him aloft into the aire: and of all other beasts, he alone after this manner enchaufeth himselfe, and giveth an edge unto his anger. I my selfe have seen them fight one with another for the maistrie: I have seene them, being turned and swong round about in their fall, caught up with the hornes of others, and yet rise againe and recover themselves: I have seene them lying along, to be raised aloft from the ground; and when they have run all amaine with full pace, galloping in their chariots, yet staid and stood still when they should, as if the charioters had caused them to rest. The Thessalians were they who devised with prauncing horse to ride gallop close to the Bulls head to take them by the horne, wryth their necks downe, and so kill them. The first that exhibited this pleasant shew unto the people at Rome, was *Caesar* Dictator. The Bull yeeldeth the principall and most sumptuous sacrifice of all other unto the gods, and therewith are they best pleased. This beast alone, of all those that are long tailed, when it first commeth into the world, hath not the taile of the full measure and perfect length, as others: but it groweth still, untill it reach downe to the very heeles, and touch the ground. And hereupon it is, that in chusing of calves to sacrifice with, those are allowed for good and sufficient, whose taile commeth downe to the joint of the haugh or gambrell: for if it be shorter, they will not be received and accepted of the gods. This also is noted by experience, that calves so little (that they bee brought on mens shoulders to the altars for to bee killed) lightly are not sufficient to appease the gods. Neither are they pacified and well pleased with a beast that is lame and maimed; nor with that which is not appropriat unto them, but to some other gods; ne yet with it that reculeth from the altar, and is loth to come to it. In the prodigies that wee read of auncient times, wee find very often that Kine and Oxen have spoke: upon the report of which straunge token, the Senate was ever wont to assemble in some open place abroad, and not to sit either in hall or chamber.

¶ Of the Bœufe or Oxe, named Apis.

IN Ægypt also they had an Oxe, which the people of that countrey adored and worshipped as a god, under the name of Apis. This beast was marked in this manner: with a white spot on his right side, like to the horns or tips of the new moone croissant; a knot or bunch under the tongue, which they called Cantharus: by their religion it was not lawfull to suffer him to live above a certain number of yeers; at the end of which tearme, they drowne him in a certain well or fountaine of their priests, and so shorten his life; and then with great sorrow fall to seeke another to substitute in his place: untill they find him, they mourne and waile, and in token of griefe and sorrow, they shave their heads. But long they never are before they meet with another: and when they have him, hee is by the priests brought to Memphis: where hee hath two temples; which they call Thalami, .i. bed-chambers: out of which, all the people of Ægypt, as from an oracle, are enforced truly of things to come. For if this oxe enter into the one of them, it is a good luckie signe; but if hee goe into the other, then it portendeth great misfortune and infortunitie. And these be generall prefaces to the whole nation. As for privat persons, he foretellet them of things to come, by the manner of taking meat at their hands who come to know what fortune they shall have. He turned away his head from the hand of *Germanicus Cæsar*, & would eat no meat when he offered it him; but he died for it, and that not long after. Hee is kept secret and close for the most part: but if at any time hee get forth and come abroad to be seene of the multitude of people, hee goeth with a guard of tipstaves to make way for him; and then a companie of pretie boyes goe chaunting before him canticles and songs, in his honour and praise: for it seemeth that he taketh heed to what they sing, and is well pleased and contented thus to be worshipped. Now these quiresters before said, presently fall into a kind of furious rage, and withall, are inspired with the gift of prophesie, and so fore-tell what will ensue. Once a yeere there is presented unto him, a cow, which hath markes likewise as hee hath, but differing from his: and alwaies upon what day this cow is found, the same day by report, it dieth. At Memphis, there is a place within Nilus, which the inhabitants name Phiola, because it is made in fashion of a pot or boll: and therein duely everie yeere the Ægyptians drowne two cups, one of silver, and another of gold, during seven daies, dedicated to solemnize the nativitie of their god *Apis*. And this is one thing to be wondered at, That in that seven-night space, there is not one that taketh hurt by Crocodiles: but let the eighth day come once, within six houres they returne to their former mischievous crueltie.

¶ The nature of sheepe, and their breeding.

SHEEPE likewise are in great request, both in regard that they serve as sacrifices to pacifie the gods, and also by reason that their fleece yeeldeth so profitable an use: for even as men are beholden to the bœufe for their principall food and nourishment which they labour for, so they must acknowledge, that they have their cloathing and coverture of their bodies from the poore sheepe. The ramme and ewe both, are fit for generation from two yeeres of age upward untill they come to nine, and some also untill they be ten yeers old. The lambes that they yeane first, are but little ones. They goe all generally to rut about the setting of Arcturus, that is to say, upon the third day before the Ides of May: and their heat lasteth unto the full of the Ægle star, namely, the tenth day before the Calends of August. They be with young 150 daies. If any take the ramme after that time, the fruit that they beare commeth to no good, but proove weake. And such lambes as fall after that season, they called in old time *Cordos*, .i. later lambes. Many men doe prefer these winter lambes before those that come in spring: the reason is, because it is much better they should be strong before the heat of summer and the long daies, than against the cold of winter and the shortest daies: and they thinke, that this creature onely taketh good by being yeaned in the mids of winter. It is kind and naturall for rammes to make no account of young hogrels, but to loath them; for they had rather follow after old ewes. Himselfe also is better when he is old, and more lustie to leape the ewes. To make them more mild and gentle, they use to

A bore his horne about the roor neere unto his eares. If his right cullion or stone be tied up, hee getteth ewe lambs; but if the left be taken up, hee getteth ramme lambs. If ewes be alone by themselves without the flocke when it thundreth, they cast their lambes. The onely remedie is to gather them together, that by companie and fellowship they may have helpe. They say, that if the North winds blow when they take the ramme, they will bring forth males; but if the South winds be up, females. Moreover, great regard there is had in this kind, to the mouthes of the rammes: for looke what colour the veines be under their tongue, of the same will the fleece be of the lambes, that is to say, of sundrie colours, in case the veines were divers coloured. Also the change of water and drinke maketh them to alter their hew. In summe, two principall kinds there be of sheepe, that is to say, the one reared within house, and the other abroad in the field:

B the first is the tenderer, but the other more pleasaunt meat and delicate in tast; for those within-house feed upon briars and brambles. The clothes and coverings made of the Arabicke wooll, are chiefe of all.

CHAP. XLVIII.

¶ *Divers kinds of wooll and clothes.*

The best wooll of all other, is that of Apulia: then, that which in Italie is named the Greeke sheepes wooll, but in other countries is named Italian. In the third ranke, the Milesian sheepe and their wooll, carrie the prize. The wooll of Apulia is of a short staple, and specially in request for cloakes and mantles, and nothing else. About Tarentum and Canusium, the richest of this kind are found: as also at Laodicea in Asia. As for whiteneffe, there is none better than that which groweth along the Po, namely, about Piemount and Lombardie: and yet never to this day, a pound of it hath exceeded the price of an hundred sesterces. In all places they use not to sheare sheepe: for the manner of plucking their fells continueth still in some countries. Sundrie sorts of colours there be in wooll, and so many, that we are not able to give severall names so much as to those that wee call Native, *i. growing upon the sheepes backe.* For blacke fleeces, Spaine is chiefe; Pollentia for white; and grey, the tract of Piemont neere to the Alpes: Asia for red hath no fellow, and such kind of wools are called Erythrææ. In Bœotia likewise, that is to say, in the kingdome of Granade and Andalusia, the same colour is to be found. Neere to Canusia, the sheepe be deepe yellow or tawnie: and about Tarentum, they are of a browne and dusky colour. Generally, all kind of wools newly thorne or plucked, unwashr and greasie still, be good and medicinable. About Istria and Liburnia, the sheepes fleece resembleth haire rather than wooll, nothing at all good for to make frized clothes with a high nap: but serveth onely for the artizan or workman in Portugall, whose artificiall weaving in net or scutcheon worke with squares, commendeth this wooll. The like wooll is common about Pissenæ in the province Narbonensis, *i. Languedoc* in Fraunce: and such is found in Ægypt: the cloth made thereof, after it is worne bare, is then died, and serveth new againe, and will weare still and last a mans life. The course rough wooll with the round great haire, hath been of auncient time highly commended and accounted of in tapestrie worke: for even *Homer* himselfe witnesseth, that they of the old world used the same much, and tooke great delight therein. But this tapestrie is set out with colours in Fraunce, after one sort, and among the Parthians after another. More-

E over, wooll of it selfe driven together into a felt without spinning or weaving, serveth to make garments with: and if vinegre be used in the working therof, such felts are of good prooffe to bere off the edge and point of the sword; yea and more than that, they will checke the force of the fire. And the last cleansing and refuse thereof (when it is taken out of the coppers and leads of those that have the fulling and dressing thereof) serveth for flock-worke and to stufte matreffes: an invention (as I suppose) which came first out of Fraunce: for surely these flockes and quilted matreffes, are at this day distinguished and knowne one from another by French names. But I am not able easily to set downe at what time first this workmanship began: for certein it is, that in old time men made them pallets and beds of straw, or else lay upon bare mattes, like as nowadayes

F souldiers in the campe make shift with hairie rugges. As for our mantles, frized deep both without and within, they were invented and came to be used first, no longer since than in my fathers dayes: as also these hairie counterpoints and carpets. For the studded cassockes that Senators and noble men of Rome doe weare, begin but now for to be woven after the manner of deepe frieze rugges. Wooll that is blacke, will take no other hew, nor bee dyed into any colour.

As

As touching the manner how to dye other wools, wee will speake in convenient place, namely, G when we shall treat of the purples and sea shell fishes, and of certain hearbes good for that purpose. *M. Varro* writeth, That within the temple of *Sanguis*, there continued unto the time that he wrote his booke, the wooll that ladie *Tanaquil*, otherwise named *Caia Caelia*, spun together with her distaffe and spindle: as also, within the chappell of Fortune, the very roiall robe or mantle of Estate, made with her owne hands after the manner of water-chamlot in wave worke, which *Servius Tullius* used to weare. And from hence came the fashion & custome at Rome, that when maidens were to be wedded, there attended upon them a distaffe, dressed and trimmed with kembed wooll, as also a spindle and yearne upon it. The said *Tanaquil* was the first that made the coat or cassocke woven right out all through, such as new beginners (namely, young souldiours, barristers, and fresh brides) put on under their white plaine gowns, without any guard of purple. H The waved water chamelot, was from the beginning esteemed the richest and bravest wearing. And from thence came the branched damaske in broad workes. *Fenestella* writeth, That in the latter time of *Augustus Caesar* they began at Rome to use their gownes of cloth shorne, as also with a curled nap. As for those robes which are called *Crebrae* and *Papaveratae*, wrought thicke with floure-worke, resembling poppies; or pressed even and smooth; they be of greater antiquitie: for even in the time of *Luclius* the Poet, *Torquatus* was noted and reprooved for wearing them. The long robes embroidered before, called *Prætextæ*, were devised first by the *Tulcanes*. The *Trabæ* were roiall robes, and I find that kings and princes onely ware them. In *Homers* time also they used garments embroidered with imagerie and floure-worke: & from thence came the triumphant robes. As for embroderie it selfe and needle worke, it was the *Phrygian* invention: I and hereupon embroderers in Latine bee called *Phrygiones*. And in the same Asia, king *Attalus* was the first that devised cloth of gold: and thence come such clothes to be called *Attalica*. In Babylon they used much to weave their cloth of divers colours, and this was a great wearing among them, and cloths so wrought were called *Babylonica*. To weave cloth of tiffue with twitted threads both in woofe and warpe, and the same of sundrie colours, was the invention of *Alexandria*, and such clothes and garments wer named *Polymita*. But Fraunce devised the scutchion, square, or lozenge damaske-worke. *Meclius Scipio*, among other challenges and imputations laid against *Capito*, reproched and accused him for this, That his hangings and furniture of his dining-chamber, being *Babylonian* worke or cloth of *Arras*, were sold for 800000 sesterces; and such like of late daies stood prince *Nero* in 400 hundred thousand sesterces, i. 40 millions. K The embroidered long robes of *Servius Tullius*, wherewith hee covered and arraid all over the image of *Fortuae*, by him dedicated, remained whole and found unto the end of *Seianus*. And a wonder it was, that they neither fell from the image, nor were moth-eaten in 560 yeeres. I have my selfe seene the sheepes fleeces upon their backs whiles they be alive, died with purple, with scarlet in grain, and the violet liquor of the fish *Murex*: by the means of certaine barks of a foot and a halfe long dipped in these colours, and so imprinted and set upon their fleeces as if riotous wantonnes and superstitie should force Natures worke, and make wooll to grow of that colour. As for the sheepe it selfe, she is knowne to be kindly enough by these markes, if she be short legged, and well woollled under the bellie; for such as were naked there and pilled, they condemned and held for naught, and those they called *Apicæ*. In Syria, sheepe have tailes a cubit long, and they beare most wooll there. To lb lambs before they be five moneths old, it is thought to be L with the soonest, and daungerous.

CHAP. XLIX.

Of a beast called *Musmon*.

There is in Spaine, but especially in the Isle *Corsica*, a kind of *Musmones*, not altogether unlike to sheepe, having a shag more like the haire of goats, than a fleece with sheepes wooll. That kind which is engendred betweene them and sheepe, they called in old time *Vmbri*. This beast hath a most tender head, and therefore in his pasture is to be forced to feed with his taile to the sunne. Of all living creatures, those that beare wooll are most foolish: for M take but one of them by the horne and lead him any whither, all the rest will follow, though otherwise they were affraid to go that way. The longest that they live in those parts, is 9 yeeres; howsoever in *Ætjopia* they come to 13. In which countrey, goates also live 11 yeeres, whereas in other

A other countries of the world, for the most part, they passe not eight. And both sorts, as well the one as the other, be sped with in foure leaping.

CHAP. L.

Of Goats, and their breeding.

G Oats bring forth foure kids otherwhiles; but that is very feldome. They goe with young five moneths as ewes do. Shee goats waxe barren with fatnesse. When they be come once to be three yeeres old, they are not so good to breed: ne yet when they are elder, and namely, being past foure yeeres of age. They begin at the seventh moneth, even whiles they sucke their dammes. And as well the bucke as the Doe are held the better for breed, if they be nott, and have no hornes. The first time that the shee goats are leaped, they stand not to it: the second leaping speedeth better, and so forward. They chuse willingly to take the bucke in the moneth of November, that they might bring kids in March following, when all shrubs put forth and begin to sprout and bud, for them to brouze. And this is sometime when they be a yeere old, but they never faile at two yeeres: yea and when they be full three, they are not utterly decayed and done, but are good still: for they beare 8 yeeres. Subject they be in cold weather, to cast their young and yeane untimely. The Doe, when she perceiveth her eies dimme and over-cast either with pin and web or cataract, pricketh them with the sharpe point of some bultush, and so letteth them blood: but the bucke goeth to the brier and doth the like. *Mutianus* reporteth, that he had occasion upon a time to marke the wit of this creature: It happened, that upon a narrow thin planke that lay for a bridge, that one goat met another comming both from divers parts: now by reason that the place was so narrow that they could not passe by, nor turne about, ne yet retire backwards bliadly, considering how long the planke was and so slender withall; moreover, the water that ran underneath ran with a swift streame, and threatned present death if they failed and went besides: *Mutianus* (I say) affirmeth, that he saw one of them to lye flat down, and the other to goe over his backe. As for the male goats, they are held for the best which are most camoise or snout nosed, have long eares, and the same slit in, with great store of shag haire about their shoulders. But the marke to know the kindest females is this, they have two lappets, locks, or plaits as it were of haire, hanging downe along their bodie on either side from their necke. They have not all of them hornes, but some are nott; but in those which are horned, a man may know their age by the number of the knots therein more or lesse: and in very truth, the nott shee goats are more free of milke. *Archelus* writeth, that they take their breath at the eares, and not at the nostrils: also that they be never cleere of the ague. And this haply is the cause, that they are hotter mouthed, and have a stronger breath than sheepe, and more egre in their rut. Men say moreover, that they see by night as well as by day: and therefore they that when evening is come, see nothing at all, recover their perfect sight again by eating ordinarily the liver of goats. In Cilicia and about the Syrtes, the people clad themselves with goats haire, for there they there them as sheepe. Furthermore it is said, that goats toward the sun-setting, cannot in their pasture see directly one another, but by turning taile to taile: as for other houres of the day, they keepe head to head, and range together with the rest of their fellows. They have all of them a tuft of haire like a beard hanging under their chin, which they call *Aruncus*. If a man take one of them by this beard and draw it forth of the flocke, all the rest will stand still gazing thereat, as if they were astonied: and so will they doe if any one of them chauce to bite of a certaine hearb. Their teeth kill trees. As for an olive tree, if they doe but lick it, they spoile it for ever bearing after: and for this cause they be not killed in sacrifice to *Minerva*.

CHAP. LI.

Of Swine, and their natures.

F SWine goe abrimming from the time that the Westerne wind *Favonius* beginneth to blow, untill the spring *Æquinoctiall*: and they take the bore when they be eight moneths old: yea and in some places at the fourth moneth of their age, and continue breeding unto the seventh yeere. They farrow commonly twice a yeere: they be with pigge foure moneths. One sow may bring at one farrow twentie pigges, but reare so many she cannot. *Nigidius* saith, that

those pigs which are farrowed ten daies under or ten daies over the shortest day of the yeer, when the sun entereth into Capricorn, have teeth immediatly. They stand lightly to the first brimming, but by reason that they are subject to cast their pigges, they had need to bee brimmed a second time. Howbeit the best way to prevent that they do not slip their young, is to keep the bore from them at their first grunting and seeking after him, nor to let them be brimmed before their ears hang downe. Bores are not good to brim swine after they be three yeeres old. Sowes when they be wearie for age that they cannot stand, take the bore lying along. That a sow should eat her owne pigs, it is no prodigious wonder. A pig is pure & good for sacrifice, five daies after it is farrowed; a lambe, when it hath been yeaned 8 daies; and a calfe, being 30 daies old. But *Cornucunus* saith, That all beasts for sacrifice which chew cud, are not pure and right for that purpose, untill they have tseeth. Swine having lost one eye, are not thought to live long after; otherwise they may continue untill they be fifteen yeeres old, yea and some to wrentie. But they grow to be wood and raging otherwhiles: and besides are subject to many maladies more, and most of all to the squinancie, and wen or swelling of the kernels in the necke. Will ye know that a swine is sicke or unsound, pluck a bristle from the back and it will be bloodie at the root: also he will carrie his neck at one side as he goeth. A sow, if shee be over-fat, soone wanteth milke; and at her first farrow bringeth fewest pigs. All the kind of them loveth to wallow in dirt and mire. They wrinkle their taile; wherein this also is observed, That they be more likely to appease the gods in sacrifice, that rather writh & turn their tailes to the right hand, than the left. Swine will be fat and well larded in fixtie daies; and the rather, if before you begin to franke them up, they be kept altogether from meat three daies. Of all other beasts, they are most brutish; insonmuch as there goeth a pleasant byword of them, and sitteth them well, *That their life is given them in stead of salt*. This is known for a truth, that when certaine theeves had stolne and driven away a companie of them, the swine heard having followed them to the water side (for by that time were the theeves embarked with them) cried aloud unto the swine, as his manner was: whereupon they knowing his voice, leaned all to one side of the vessell, turned it over, and sunke it, tooke the water, and so swam againe to land unto their keeper. Moreover, the hogges that use to lead and goe before the heard, are so well trained, that they will of themselves go to the swine-market place within the citie, and from thence home againe to their masters, without any guide to conduct them. The wild bores in this kind, have the wit to cover their tracks with mire, and for the nones to runne over marish ground where the prints of their footing will not be seene; yea and to be more light in running, to void their urine first. Sowes also are splayed as well as camels, but two daies before, they be kept from meat: then hang they them by the forelegs for to make incision into their matrice, and to take forth their stones: and by this means they will sooner grow to be fat. There is an Art also in cookerie, to make the liver of a sow, as also of a goose, more daintie (and it was the devise of *M. Apicius*) namely, to feed them with drie figges, and when they have eaten till they bee full, presently to give them mead or honyed wine to drinke, untill they die with beeing overcharged. There is not the flesh of any other living creature, that yeeldeth more store of dishes to the maintenance of gluttonie, than this; for fiftie fundrie sorts of tastes it affourdeth, whereas other have but one peece. From hence came so many edicts and proclamations published by the Censors, forbidding and prohibiting to serve up at any feast or supper, the belly and paps of a sow, the kernels about the necke, the brizen, the stones, the wombe, and the fore-part of the bores head: and yet for all that, *Publius* the Poët and maker of wanton songs, after that he was come to his freedome, never (by report) had supper without an hogges belly with the paps: who also to that dish gave the name, and called it *Summam*. Moreover, the flesh of wild bores came to be in great request and was much set by: in such sort, as *Cato* the Censor in his investive orations, challenged men for brawne. And yet when they made three kinds of meat of the wild bore, the loine was alwaies served up in the mids. The first Romane that brought to the table a whole bore at once, was *P. Servilius Rullus*, father of that *Rullus*, who in the time that *Cicero* was Consul, published the law *Agraria*, as touching the division of lands. See how little while agoe it is since these superfluities began, which now are taken up so ordinarily everie day. And yet the thing was noted and recorded in the *Annales*, as strange and rare; no doubt for this intent, To repress these inordinate enormities. One supper then or feast was taxed and reprooved therein at the beginning: but now, two and three bores at a time are served up whole and eaten together.

CHAP. LII.

Of Parkes for wild beasts.

THe first man of the long robe that devised parkes as well for these bores as other Deere and savage beasts, was *Fulvius Lippinus*, who in the territorie of *Tarquinijs*, began to keep and feed wild beasts for his game. And long it was not but others followed his steps, namely, *L. Lucullus* and *Q. Hortensius*. Sows of the wild kind bring forth pigges but once a yeere: and the bores in briming time are exceeding fierce and fell: then they fight one with another: they harden their sides rubbing them against the bodies of trees, and all to wallow themselves in the mire, and coat their backs with dirt. But they are not so raging then, but the sows in their farrowing are much worse, and lightly it is so in all other kind of beasts. Wild bores are not meet for generation before they be a yeere old. The wild bores of India have two bowing fangs or tuskes of a cubit length, growing out of their mouth, and as many out of their foreheads like calves hornes. The bristly haire of the wild sort, is like to brasse: but of others, blacke: In Arabia swine will not live.

CHAP. LIII.

Of beasts halfe savage.

THere is no creature engendred so soone with wild of the kind, as doth the swine: and in good sooth such hogges in old time they called *Hybrides*, as a man would say, halfe wild: in so much as this tearme by a translation, hath been attributed to mankind. For so was *C. Antonius*, colleague with *Cicero* in the Consulship, nicknamed. And not in swine onely, but also in all other living creatures, looke where there be any tame and domesticall, you may find also wild and savage of the same kind; seeing that even of wild men there be so many sorts in divers places, as we have before said. As for the goats kind, how many and how sundrie resemblances are to be found in them of other beasts? For among them you shall have the roe bucke, the shamois, the wild goat called the *Eveck*, wonderfull swift, albeit his head be loden with huge hornes like to sword scabberds: by these they hang and poise themselves from rockes, namely, when they mind to leape from one to another, for by swinging too and fro they skip and jump the more nimbly, and fetch a jerke out to what place they list, as it were forth of an engine. Of this kind, be the *Oryges*, the onely beasts (as some thinke) of all others, that are said to have their haire growing contrariwise and turning toward the head. To these belong the *Does*, and a kind of fallow Deere called *Pygargi*, as also those that are named *Strepsicerotes*, and many other not farre unlike. As for the former sort, they come out of the *Alpes*: these last rehearsed, are sent from other parts beyond-sea.

CHAP. LIIII.

Of Apes and Monkeys.

All the kind of these Apes approach neere of all beasts, to the resemblance of a mans shape: but they differ one from another in the taile. Marvellous craftie and subtle they be to beguile themselves: for by report, as they see hunters doe before them, they will imitate them in every point, even to besmeare themselves with glew and birdlime, and thoo their feet within grins and snares, and by that meanes are caught. *Musianus* saith, that he hath seene Apes play at chesse and tables; and that at first sight they could know nuts made of waxe from others. He affirmeth moreover, that when the moone is in the waine, the monkeys and marmosets (which in this kind have tailes) be sad and heavie, but the new moone they adore and joy at, which they testify by hopping and dauncing. As for the eclipse of sunne or moone, all other four footed beasts also doe greatly dread and feare. The free Apes of all sorts are wonderfuls fond of their little ones: and such as are made tame within-house, will carrie them in their armes all about so soone as they have brought them into the world, keepe a shewing of them to every bodie, and they take pleasure to have them dandled by others, as if thereby they rooke knowledge that folke joyed for their safe deliverance: but such a culling and hugging of them

they keepe, that in the end with very clasping and clipping they kill them many times. Apes that be headed and long snouted like dogs, and thereupon called *Cynocephali*, are of all other most curst, shrewd, & unhappie: like as the Marmozers and Monkiees called *Sphinges* & *Satyri*, are the gentlest & most familiar. As for those which they call *Callitriches*, they be clean of another form and shape all over in a manner. They have a beard on their visage, and the fore-part of their taile spreadeth broad. But this creature is said to live in no other climate but in *Æthiopia* where it breedeth.

CHAP. LV.

Of Hares and Connies.

OF Hares also there be many sorts. Vpon the Alpes and such high mountaines, they bee of colour white, so long as the snow lieth; and it is verily thought, that all Winter long they live with eating of snow: for surely, when it is thawed and melted, all the yeare after they be browne and reddish as before: and a creature it is otherwise bred in extreame and intollerable cold. Of the Hares kind are they also, which in Spaine they call *Connies*, which are exceeding fruitfull, and of wonderfull encrease: in such sort, that having devoured all the corne in the field before harvest in the *Balcare* Islands, they brought thereby a famine upon the people. There is a most daintie dish served up at the table, made of *Leverets* or *Rabbits*, either cut out of the dams bellies, or taken from them when they be suckers, without cleansing them at all of the garbage; and such the Latines call *Laurices*. It is knowne for certaine, the Islanders of *Majoricke* and *Minoricke* made meanes to the Emperour *Augustus Cesar* for a power of souldiours to destroy the infinite increase of *Connies* among them. *Ferrets* are in great account for chasing and hunting of these *Connies*. The manner is to put them into their earths, which within the ground have many waies and holes like mines, and thereupon these creatures are called *Cuniculi*: and when they are within, they so course the poore *Connies* from out of their earth, that they are soon taken above ground at the mouth of their holes. *Archelaus* writeth, That looke how many receptacles and waies of passage, the Hare hath for his dung and excrements, so many yeares old he is just. And verily, some have more than others. The same writer is of opinion, that every Hare is both male and female, and that any of them can breed without the Bucke. Certes herein Nature hath shewed her bountie and goodnesse, in that she hath given this creature (so good to eat, and so harmelesse otherwise) the gift of fertilitie and fruitfull wombe. The Hare, naturally exposed to be a prey and game for all men, is the onely creature, unlesse it be the *Connie* againe called *Dafipus*, which after it be once with young, conceiveth againe upon it: inso much, as at one time she hath some *Leverets* sucking of her, others in her bellie; and those not of the same forwardnesse, for some of them are covered with haire, others are naked without any downe; and there be againe of them, that as yet are not shapen at all, but without all forme. Moreover, men have assaid to make cloth of Hares and *Connies* haire: but in the hand they are not so soft, as is the furre upon the skin or case: neither will they last, by reason that the haire is short, and will soone shed.

CHAP. LVI.

Of beasts halfe tame.

AS for Hares, seldome be they made tame, and to come to hand: and yet justly they cannot be called simply wild. For many other such creatures there be besides, that neither are savage, no yet tame and gentle, but of a middle nature betweene both: As namely among flying foules in the aire, the *Swallow*: likewise the *Bee*: and among fishes, the *Dolphin* in the sea;

CHAP. LVII.

Of Mice and Rats, Dor-mice, Reere-mice, and Bats.

IN the ranke of those that be neither tame nor wild, many have ranged the *Mice* and *Rats* that haunt our houses. A creature this is of no small reckoning for presaging somewhat to a state, by some strange and prodigious tokens. By gnawing the silver shields and bucklers at *Lavinium*, they portended and fore-shewed the *Masian* warre. Vnto *Carbo* the lord Generall, by eating of his hose-garters and shoe-strings at *Clusium*, they prognosticated his death. Many sorts there

A there be of them in the countrey of Cyrene: some with a broad flat forehead, others with a sharp pointed: and there be of them seene to have sharpe prickles, like to urchins and hedgehogs. *Theophrastus* reporteth, That these vermine having dispeopled the Island Gyaros and driven away the inhabitants, gnawed & devoured every thing they could meet withall, even to their very yron. And surely it seemeth that it is their nature so to doe: for even among the Chalybes, they serve them so in eating their yron and steele within their very forges. Yea, and in gold mines they play the like part: and therefore when they be caught, their bellies be ript by the pioners in the mine, where they evermore find their stollen good againe. See what a delight this creature taketh in theeving. We read in the Chronicles, that whiles *Anniball* lay in siege before Casilinum, a rat was sold within the towne for two hundred Sesterces: the man who bought it at that price, lived; but the partie who sold it for greedinesse of mony, died for hunger. By the learning of the Soothsaiers, observed it is, that if there be store of white ones bred, it is a good signe, and presageth prosperitie. And in truth our stories are full of the like examples, and namely, that if rats be heard to crie or squeake in the time of ceremoniall taking the Auspices and signes of birds, all is marred, and that businesse cleane dasht. *Nigidius* saith, that rats lie close hidden all Winter like as Dor-mice. By the edicts of the Cenfors, and principally by an act of *M. Scaurus* in his Consulship, provided it was, and streight order taken, that no Rats, Mice, or Dor-mice should be served up to the table at their great suppers and feasts: like as all shell fish or foule fet out of forraine countries farre remote. Counted are Dor-mice betweene tame and wild: and verily he that first devised to keepe wild Bores in parkes, found the meanes also to nourish and feed these creatures in great tunnes, pipes, and driefats. In the experiment and triall whereof, this hath beene found and observed, That willingly these little creatures will not sort together, unlesse they were countrey-men (as it were) and bred in one and the same Forrest: and if it chaunce that there bee enermingled among them any strangers, namely, such as had either some river or mountrain between the places where they were bred, they kill one another with fighting. The young Dor-mice are exceeding kind and loving to their sires that begat them: for when they bee old and feeble, full tenderly they will feed and nourish them. They renue their age every yeare, by sleeping all Winter: for they lie by it close, snug all the while, and are not to be seene. But come the Summer once, they bee young and fresh againe. And thus the field Mice likewise take their rest, and doe the same.

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CHAP. LVIII.

What creatures live not but in certaine places.

A Wonderfull thing it is to see, that Nature hath not onely brought forth divers creatures in sundrie countries: but also in one region under the same climate, hath denied some of them to live in every quarter thereof. And namely in the Forrest of Moesia within Italic, these Dor-mice are found but onely in one part thereof. And in Lycia the wild goats, roebucks, and does, never passe the mountaine that confine upon the Syrians: no more than the wild Asses transmount that hill which devideth Cappadocia from Cilicia. Within Hellepont the Stags and Hinds never goe forth and enter into the marches of other countries: and those that bee about Arginussa passe not the mountaine Elatus: which may be knowne by this, that all upon that hill have their eares marked and slit. In the Island Poroselenium, the Weazels will not crosse over the high way. And about Lebadia in Boeotia, those moldwarpes or wants that are brought thither from other parts, will not abide the very soile, but sie from it; which neere by, in Orchomenus undermine & hollow all their corn fields: and such store there is of them, that I have seen all the hangings, carpets, counterpoints, and coverlets of chambers, made of their skins. See how men for no religion and feare of the gods, will bee kept from taking their pleasures and making their delights of these creatures, otherwise prodigious and portending things to come. The strange Hares that be brought into Ithaca, will not live there, but seeking to get away, are found dead about the very bankes of the sea side. In the Island Ebusus there bee no Connies at all: and yet in Spaine and the Baleare Islands there are so many, that they pester the whole countrey. The Frogs were ever in Cyrenæ naturally mute, and would not crie: but brought there were thither out of the continent, such as would crie in the water: and that whole kind still remaineth vocall. In the Island Seriphos you shall not yet heare a Frog to crie: let the same bee carried soorth to

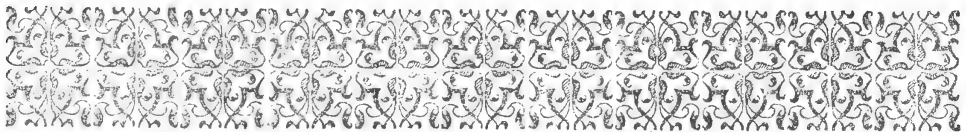
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other places, they will keepe a singing as well as the rest. And (by report) the like happeneth in a lake of Theſſalie named Sicendus. In Italie, the hardie ſhrewes are venomous in their biting: but paſſe over the Apennine once, there are no more ſuch to be found. In what countrey ſoever they be, let them goe over the tract of a cart wheele, they die preſently. In Olympus, a mountaine of Macedonie, there are no Wolves, ne yet in the Iſland Candie. And there verily are to bee found no Foxes nor Beares, and in one word, no hurtfull and noiſome beaſt, unleſſe it bee a kind of ſpider called Phalangium: whereof wee will ſpeake more in due time and place. And that which is more wonderfull, in the ſame Iſland there are no Stags and Hinds, ſave onely in the region and quarter of the Cydoniates. No wild Bores likewiſe, nor the foule called the Godwit or Attagene, ne yet Vrchins. To conclude, in Affricke yee ſhall find no wild Bores, no Stags and Hinds, no Roe-buckes and Does, ne yet Beares.

CHAP. LIX.

What creatures are hurtfull to ſtrangers.

Now, ſome living creatures there be that doe no harme at all to the inhabitants of the ſame countries, but kill all ſtrangers. And namely, certaine Serpents in Tirinthe, which are ſuppoſed to breed of themſelves out of the very earth. Semblably, in Syria there be Snakes, and eſpecially along the bankes of Euphrates, that will not touch the Syrians lying along aſleep: nay, if a man that leaneſh upon them bee ſtung or bitten by them, hee ſhall find no hurt or miſcheefe thereby. But to men of all other nations whatſoever, they are moſt ſpightfully bent: them they will with great greedineſſe eagerly aſſaile and flie upon, yea, and kill them with extreame paine and anguiſh. And therefore it is, that the Syrians deſtroy them not. Contrariwiſe, *Ariſtotele* reporteth, That in Latmos (a mountaine of Caria) the Scorpions will doe no harme to ſtraungers, marrie the inhabitants of the ſame countrey they will ſting to death. Now let us proceed to other living creatures beſides thoſe of the land, and diſcourſe of their fundrie ſorts and kinds.



THE NINTH BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECVNDVS.

CHAP. I.

The nature of water creatures.



Have thus ſhewed the nature of thoſe beaſts which live upon the land, and therein have ſome ſocietie and fellowſhip with men. And conſidering, that of all others beſides in the world, they that flie bee the leaſt, wee will firſt treat of thoſe fiſh that keepe in the ſea: not forgetting thoſe alſo, either in running freſh rivers or in ſtanding lakes.

CHAP. II.

What the reaſon is why the ſea ſhould breed the greateſt living creatures.

The waters bring forth more ſtore of living creatures, and the ſame greater than the land. The cauſe whereof is evident, even the exceſſive abundance of moiſture. As for the foules and birds, who live hanging (as it were) and hovering in the aire, their caſe is otherwiſe. Now

A in the sea, being so wide, so large and open, readie to receive from heaven above the generall seeds and causes of generation; being so soft & pliable, so proper & fit to yeeld nourishment and encrease; assisted also by Nature, which is never idle, but alwaies framing one new creature or other: no marvell it is if there are found so many strange and monstrous things as there be. For the seeds and universall elements of the world are so interlaced fundrie waies, and mingled one within another, partly by the blowing of the winds, and partly with the rolling and agation of the waves, inso much as it may truly bee said, according to the vulgar opinion, that whatsoever is engendred and bred in any part of the world besides, is to be found in the sea: and many more things in it, which no where els are to be seene. For there shall yee meet with fishes, resembling not onely the forme and shape of land creatures living, but also the figure and fashion of many things without

B life: there may one see bunches of grapes, swords, and sawes, represented; yea, and also cowcombers, which for colour, smell, and tast, resembleth those growing upon the earth. And therefore we need the lesse to wonder, if in so little shell fishes as are cockles, there be somewhat standing out like horse-heads.

CHAP. III.

¶ *Of the monstrous fishes in the Indian sea.*

THe Indian sea breedeth the most and the biggest fishes that are: among which, the Whales and Whirlepooles called Balænae, take up in length as much as foure acres or arpens of land: likewise the Pristes are two hundred cubites long: and no marvell, since Locusts are there to bee found of foure cubites in length: and yeeles within the river Ganges of thirtie foot in length. But these monstrous fishes in the sea, are most to be seene about the middest of Summer, and when the daies be at the longest with us. For then by the meanes of whirlwinds, storms, winds, and blustering tempests which come with violence downe from the mountaines and promontories, the seas are troubled from the very bottome, and turned upside downe: where upon the surging billowes thereof, raise these monsters out of the deepe, and roll them up to be seene. For in that manner so great a multitude of Tunnies were discovered and arose, that the whole armada of king *Alexander* the great, seeing them comming like to an armie of enemies in order of battell, was driven to range & make head against them, close united together: for otherwise, if they had failed scattering asunder, there had been no way to escape, but overturned they had ben; with such a force and sway came these Tunnies in a skull upon them. And verily, no voice, crie, hollaying and houting, no nor any blowes and raps affrighteth this kind of fish: onely at some cracke or crathing noise they be terrified: and never are they troubled and disquieted so much as when they perceive some huge thing readie to fall upon them.

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In the red sea there lieth a great demie Island named Cadara, so farre out into the sea, that it maketh a huge gulf under the wind, which king *Ptolomæus* was twelve daies and twelve nights a rowing through: for as much as there is no wind at all useth to blow there. In this creeke so close and quiet, there be fish and Whales grow to that bignesse, that for their very weight and unwellidiness of their bodie, they are not able to stirre. The Admirals and other captaines of the fleet

E of the foresaid *Alexander* the great, made report, That the Gedrosi, a people dwelling upon the river Arbis, use to make of such fishes chawes, the dores of their houses; also that they lay their bones overthwart from one side of the house to another, in steed of beames, joists, and rafters to beare up their floores and rouses: and that some of them were found to be fortie cubites long.

In those parts there be found in the sea certaine strange beasts like sheepe, which goe forth to land, feed upon the roots of plants and hearbes, and then returne againe into the sea. Others also which are headed like Horses, Asses; and Bulls: and those many times eat downe the standing corne upon the ground.

CHAP. IIIII.

¶ *Which be the greatest fishes in any coast of the Ocean sea.*

THe biggest and most monstrous creature in the Indish Ocean, are the Whales called Pristis and Balæna. In the French Ocean there is discovered a mightie fish called Physeter, [*i.e.* a Whirlepoole] rising up aloft out of the sea in manner of a columnne or pillar, higher than

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the very failles of the ships: and then he spouteth and casteth forth a mightie deale of water, as it were out of a conduit, ynough to drowne and sinke a ship. In the Ocean of Gades, betweene Portugall and Andalusia, there is a monstros fish to be scene like a mightie great tree, spreading abroad with so mightie armes, that in regard thereof onely, it is thought verily it never entred into the streights or narrow sea there by of Gibraltar. There shew themselves otherwhiles fishes made like two great wheelles, and therupon so they be called: framed distinctly with foure armes, representing as many spokes: and with their eies they seeme to cover close the naves from one side to the other, wherein the said spokes are fastened.

CHAP. V.

Of Tritons, Nereides, and sea-Elephants, and their formes.

IN the time that *Tiberius* was Emperour, there came unto him an Embassador from *Vlyssipon*, sent of purpose to make relation, That upon their sea coast there was discovered within a certain hole, a certain sea goblin, called Triton, sounding a shell like a Trumpet or Cornet: & that he was in forme and shape like those that are commonly painted for Tritons. And as for the Mermaids called Nereides, it is no fabulous tale that goeth of them: for looke how painters draw them, so they are indeed: only their bodie is rough and skaled all over, even in those parts wherein they resemble a woman. For such a Mermaid was scene and beheld plainly upon the same coast neere to the shore: and the inhabitants dwelling neer, heard it a farre off when it was a dying, to make pitteous mone, crying and chattering very heavily. Moreover, a lieutenant or governour under *Augustus Caesar* in Gaule, advertised him by his letters, That many of these Nereides or Mermaids were scene cast upon the sands, and lying dead. I am able to bring forth for mine authors divers knights of Rome, right worshipfull persons and of good credite, who testifie that in the coast of the Spanish Ocean neere unto Gades, they have scene a Mere-man, in every respect resembling a man as perfectly in all parts of the bodie as might bee. And they report moreover, that in the night seafon he would come out of the sea about their ships: but look upon what part soever he settled, he waied the same downe, and if he rested and continued there any long time, he would sinke it cleane. In the daies of *Tiberius* the Emperour, in a certain Island upon the coast of the province of Lions, the sea after an eb, left upon the bare sands three hundred sea-monsters and above, at one floc together, of a wonderfull varietie and bignesse, differing asunder. And there were no fewer found upon the coast of the Santones. And among the rest there were sea-Elephants and Rams, with teeth standing out; and hornes also, like to those of the land, but that they were white like as the foresaid teeth: over and besides, many Mermaids. *Turanus* hath reported, That a monster was driven and cast upon the coast of Gades, betweene the two hindmost finnes whereof in the taile, were sixteene cubites: it had 122 teeth, whereof the biggest were a span or nine inches in measure, and the least halfe a foot. *M. Scavrus* among other strange and wonderfull sights that he exhibited to the people of Rome, to doe them pleasure in his *Ædileship*, shewed openly the bones of that sea-monster, before which ladie *Andromeda* (by report) was cast to be devoured: which were brought to Rome from Ioppe, a towne in Iudæa: and they caried in length fortie foot: deeper were the ribs than any Indian Elephant is high, and the ridge-bone a foot and halfe thicke.

CHAP. VI.

Of the Balenes and Orca.

THESE monstrous Whales named Balænæ, otherwhiles come into our seas also. They say that in the coast of the Spanish Ocean by Gades, they are not seen before midwinter when the daies be shorrest: for at their set times they lie close in a certaine calme deepe and large creeke, which they chuse to cast their spawne in, and there delight above all places to breed. The Orca, other monstrous fishes, know this full well, and deadly enemies they bee unto the foresaid Whales. And verily, if I should pourtrait them, I can resemble them to nothing els but a mightie masse and lumpe of flesh without all fashion, armed with most terrible, sharpe, and cutting teeth. Well, these being ware that the Whales are there, breake into this secret by-creeke out of the way, seeke them out, and if they meet either with the young ones, or the dammes that have newly

- A** newly spawned, or yet great with spawne, they all to cut & hacke them with their trenchant teeth; yea, they run against them as it were a foist or ship of warre armed with sharpe brasen pikes in the beake-head. But contrariwise, the Balanes or VWhales aforesaid, that cannot wind and turne aside for defence, and much lesse make head and resist, so unweldie as they bee by reason of their owne weightie and heavie bodie, (and as then either big bellied, or else weakened lately with the paines of travell and calving their young ones) have no other meanes of helpe and succour but to shoot into the deepe, and gaine sea-roume to defend themselves from theemie. On the other side, the Orca labour (to cut them short of their purpose) to lie betweene them and home in their very way, and otherwhiles kill them unawares in the streights, or drive them upon the shelves and shallows, or else force them against the very rockes, and so bruse them.
- B** When these combates and fights are seene, the sea seemeth as if it were angry with it selfe: for albeit no winds are up, but all calme in that creeke and gulfe, yet ye shall have waves in that place where they encounter (with the blasts of their breath, and the blowes given by the assailant) so great, as no tempestuous whirlwinds whatsoever are not able to raise. In the haven of Ostia likewise there was discovered one of these Orcas, and the same assailed by *Claudius* the Emperour: It chanced to come as he was making the said harbour or pere, drawne and trained thither with the sweetnesse of certaine beafts hides that were brought out of Gaule, and were cast away and perished by the way. Of them for certaine daies shee had fed, and still following them, with the weight of her heavie bodie had made a furrow and channel (as it were) with her bellie in the bottome among the shelves: and by reason of the flowing of the sea shee was so invested and compassed in with the sands, that by no means possible she could turne about: but still while she goeth after these hides whereof she fed, she was by the billows of the sea cast ashore upon the shore, so as her backe was to be seene a great deale above the water, much like to the bottome or keele of a ship turned upside downe. Then the Emperour commaunded to draw great nets and cords with many folds along the mouth of the haven on every side behind the fish, himselfe accompanied with certaine Pretorian cohorts, for to shew a pleasant sight unto the people of Rome, came against this monstrous fish, and out of many hoies and barks the souldiours launced darts and javelines thicke. And one of them I saw my selfe sunke downe right with the abundance of water that this monstrous fish spouted and filled it withall. The Whales called Balenæ have a certaine mouth or great hole in their forehead, and therefore as they swim a fote aloft on the water, they
- D** send up on high (as it were) with a mightie strong breath a great quantitie of water when they list, like stormes of raine.

CHAP. VII.

Whether fish doe breath and sleepe, or no.

- A**LI writers are fully resolved in this, That the VWhales aforesaid, as well the Balenæ as the Orca, and some few other fishes bred and nourished in the sea, which among other inward bowels have lights, doe breath. For otherwise it were not possible, that either they or any other beaft, without lights or lungs should blow. And they that be of this opinion, suppose likewise, that no fishes having guils, do draw in and deliver their wind againe too and fro: nor many other kinds besides, although they want the foresaid guils. Among others, I see that *Aristotle* was of that mind, and by many profound and learned reasons persuaded and induced many more to hold the same. For mine owne part, if I should speake frankly what I thinke, I professe that I am not of their judgement. For why? Nature if she be so disposed, may give in steed of lights some other organs and instruments of breath: to this creature one, to that another: like as many other creatures have another kind of moist humor in lieu of blood. And who would marvell, that this vitall spirit should pierce within the waters, considering that hee seeth evidently how it riseth againe and is delivered from thence: also how the aire entreteth even into the earth, which is the grossest and hardest element of al others? As we may perceive by this good argument, That some creatures, which albeit they be alwaies covered within the ground, yet live and breath nevertheless, and namely, the Wants or Mold-warpes. Moreover, I have divers pregnant and effectuall reasons inducing me to beleieve, that all water-creatures doe breath each one after their maner, as Nature hath ordained. First and principally I have observed oftentimes by experience, That fishes evidently breath and pant for wind (after a sort) in the great heat of Summer: as also that
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they yawne and gape when the weather is calme and the sea still. And they themselves also who hold the contrarie, confesse plainly, That fishes doe sleepe. And if that be true, How, I pray you, can they sleepe if they take not their wind? Moreover, whence come those bubbles which continually are breathed forth from under the water? And what shall wee say to those shell-fishes which waxe and decay in substance of bodie, according to the effect of the moones encrease or decrease? But above all, fishes have hearing and smelling, and no doubt both these senses are performed and maintained by the benefit and matter of the aire: for what is smell and sent, but the verie aire, either infected with a bad, or perfumed with a good savour? Howbeit I leave everie man free to his owne opinion, as touching these points. But to returne againe to our purpose: this is certain, that neither the Whales called *Balænae*, nor the Dolphins, have any gills: and yet doe both these fishes breath at certaine pipes and conduits, as it were reaching downe into their lights: from the forehead, in the *Balænes*; and in the Dolphins, from the backe. Furthermore, the Sea-calves or Seales, which the Latines call *Phoca*, doe both breath and sleepe upon the drie land. So doe the sea Tortoises also, whereof we will write more anon.

CHAR. VIII.

Of Dolphins: being the swiftest of fishes

THe swiftest of all other living creatures whatsoever, and not of sea-fish only, is the Dolphin; quicker than the flying fowle, swifter than the arrow shot out of a bow. And but that this fish is mouthed farre beneath his snout, and in manner toward the mids of his belly, there were not a fish could escape from him, so light and nimble he is. But Nature in great providence fore-seeing so much, hath given these fishes some let and hinderance, for unlesse they turned upright much upon their backe, catch they can no other fish: and even therein appeareth most of all their wonderfull swiftnesse and agilitie. For when the Dolphins are driven for verie hunger to course and pursue other fishes downe into the bottome of the sea, and thereby are forced a long while to hold their breath, for to take their wind againe, they launce themselves aloft from under the water as if they were shot out of a bow; and with such a force they spring up againe, that many times they mount over the verie sailes and masts of ships. This is to be noted in them, that for the most part they sort themselves by couples like man & wife. They are with yong nine moneths, and in the tenth bring forth their little ones, and lightly in summer time; and otherwhiles they have two little dolphins at once. They suckle them at their teats, like as the Whales or the *Balænes* doe: yea and so long as their little ones are so yong that they be feeble, they carry them too and fro about them: nay when they are growne to be good bigge ones, yet they beare them companie still a long time, so kind and loving be they to their yong. Young Dolphins come very speedily to their growth, for in ten yeeres they are thought to have their full bignesse: but they live thirtie yeeres, as hath been knowne by the experience and triall in many of them, that had their taile cut for a marke when they were yong, and let go againe. They lie close everie yeere for the space of thirtie daies, about the rising of the Dog-starre; but it is straunge how they be hidden, for no man knoweth how: and in verie deed a wonder it were, if they could not breath under the water. Their manner is, to breake forth of the sea and come aland, and why they should so doe, it is not known: for presently as soon as they touch the dry ground, they die: and so much the sooner, for that their pipe or conduit above-said, incontinently closeth up and is stopped. Their tongue stirreth within their heads, contrarie to the nature of all other creatures living in the waters: the same is short and broad fashioned like unto that of a swine. Their voice resembleth the pittifull groning of a man: they are saddle-backed; and their snout is camoise and flat, turning up. And this is the cause that all of them (after a wonderfull sort) know the name *Simo*, and take great pleasure that men should so call them. The Dolphin is a creature that carrieth a loving affection not only unto man, but also to musicke: delighted he is with harmonie in song, but especially with the found of the water instrument, or such kind of pipes. Of a man he is nothing affraid, neither avoideth from him as a stranger; but of himselfe meeteth their ships, plaiceth and disporteth himselfe, and fetcheth a thousand frisks and gambols before them. Hee will swimme along by the marriners, as it were for a wager, who should make way most speedily; and alwaies out-goeth them, saile they with never so good a fore-wind.

In the daies of *Augustus Caesar* the Emperour, there was a Dolphin entred the gulfe or poole *Lucrinus*,

A Lucrinus, which loved wonderous well a certain boy, a poore mans sonne : who using to go every day to schoole from Baianum to Puteoli, was wont also about noone-tide to stay at the water side, and to call unto the Dolphin, *Simo, Simo*, and many times would give him fragments of bread, which of purpose hee ever brought with him, and by this meane allured the Dolphin to come ordinarily unto him at his call. [I would make scruple and bash to insert this tale in my storie, and to tell it out, but that *Mecenas Fabianus, Flavius Alsius*, and many others have set it downe for a truth in their Chronicles.] Well, in proceffe of time, at what houre soever of the day, this boy lured for him and called *Simo*, were the Dolphin never so close hidden in any secret and blind corner, out he would and come abroad, yea and skud amaine to this lad : and taking bread and other victuals at his hand, would gently offer him his backe to mount upon, and then

B downe went the sharpe pointed prickes of his finnes, which he would put up as it were within a sheath for fear of hurting the boy. Thus when he had him once on his back, he would carrie him over the broad arme of the sea as farre as Puteoli to schoole; and in like manner convey him backe againe home : and thus he continued for many yeeres together, so long as the child lived. But when the boy was false sicke and dead, yet the Dolphin gave not over his haunt, but usually came to the wonted place, & missing the lad, seemed to be heavie and mourne again, untill for verie griefe and sorrow (as it is doubtles to be presumed) he also was found dead upon the shore.

Another Dolphin there was not many yeeres since upon the coast of Affricke, neere to the cittie Hippo, called also Diarrhytus, which in like manner would take meat at a mans hand, suffer himselfe gently to be handled, play with them that swom and bathed in the sea, and carrie on his backe whosoever would get upon it. Now it fell out so, that *Flavianus* the Proconfull or lieutenant Generall in Affricke under the Romanes, perfumed and besmeared this Dolphin upon a time with a sweet ointment : but the fish (as it should seem) smelling this new and strange smell, fell to be drowfie and sleepeie, and hulled too and fro with the waves, as if it had beene halfe dead : and as though some injurie had been offered unto him, went his way and kept aloofe, and would not converse any more for certain moneths with men, as before-time. Howbeit in the end hee came again to Hippo, to the great wonder and astonishment of all that saw him. But the wrongs that some great persons and lords did unto the cittizens of Hippo, such I mean as used to come for to see this sight : and namely, the hard measure offered to those townsmen, who to their great cost gave them entertainment, caused the men of Hippo to kill the poore Dolphin.

D The like is reported in the citie Iassos, long before this time : for there was icene a Dolphin many a day to affect a certaine boy, so as he would come unto him wheresoever he chaunced to espy him. But whiles at one time above the rest he followed egerly after the lad going toward the towne, hee shot himselfe upon the drie sands before he was aware, and died forthwith. In regard hereof, *Alexander* the Great ordained that the said young boy should afterward be the chiefe priest and sacrificer to Neptune in Babylon: collecting by the singular fancie that this Dolphin cast unto him, That it was a great signe of the speciall love of that god of the sea unto him, and that he would be good and gracious to men for his sake.

Egesidemus writeth, that in the same Iassus there was another boy named *Hermias*, who having used likewise to ride upon a Dolphin over the sea, chaunced at the last in a sodaine storme to be over-whelmed with waves as hee fate upon his backe, and so died, and was brought backe dead by the Dolphin : who confessing as it were that hee was the cause of his death, would never retire againe into the sea, but launced himselfe upon the sands, and there died on the drie land.

The semblable happened at Naupaetum, by the report of *Theophrastus*. But there is no end of examples in this kind: for the Amphilochians and Tarentines testifie as much, as touching dolphins that have ben enamoured of little boies : which induceth me the rather to beleeveth the tale that goeth of *Arion*. This *Arion* being a notable musitian and plaier of the harpe, chaunced to fall into the hands of certain mariners in the ship wherein he was, who supposing that he had good store of money about him, which he had gotten with his instrument, were in hand to kill him and cast him over-board for the said money, and so to intercept all his gaines : he, seeing himselfe at their devotion and mercie, besought them in the best mannet that he could devise, to suffer him yet before he died, to play one fit of mirth with his harpe; which they graunted : (at his musicke and sound of harpe, a number of dolphins came flocking about him :) which done, they turned him over ship-board into the sea; where one of the dolphins tooke him upon his backe, and carried him safe to the bay of Tænarus.

The ninth Booke of

To conclude and knit up this matter: In Languedoc within the province of Narbon, and in the territorie of Nemausium, there is a standing poole or dead water called Laterra, wherein men and Dolphins together, use to fish: for at one certain time of the yeere, an infinite number of fishes called Mulletts, taking the vantage of the tide when the water doth ebbe, at certain narrow weares and passages with great force breake foorth of the said poole into the sea: and by reason of that violence, no nets can bee set and pitched against them strong enough to abide and beare their huge weight, and the streame of the water together, if so be men were not cunning and craftie to wait and espie their time to lay for them, and to entrap them. In like manner the Mulletts for their part, immediately make speed to recover the deepe, which they doe very soone by reason that the channell is neare at hand: and their onely hast is for this, to escape and passe that narrow place which affourdeth opportunitie to the fishers to stretch out and spread their nets. The fisher-men being ware thereof, and all the people besides (for the multitude knowing when fishing time is come, run thither, and the rather for to see the pleasant sport) crye as lowd as ever they can to the Dolphins for aid, and call *Simo, Simo*, to help to make an end of this their game and pastime of fishing. The Dolphins soon get the eare of their crye, and know what they would have; and the better, if the North-winds blow and carrie the sound unto them: for if it be a Southerne wind, it is later ere the voice bee heard, because it is against them. Howbeit, be the wind in what corner soever, the Dolphins resort thither flock-meale, sooner than a man would thinke, for to assist them in their fishing. And a wondrous pleasant sight it is to behold the squadrons as it were of those Dolphins, how quickly they take their places and be arraunged in battaile array even against the verie mouth of the said poole, where the Mulletts use to shoot into the sea: to see (I say) how from the sea, they oppose themselves and fight against them; & drive the Mulletts (once affrighted and skared) from the deep, upon the shelves. Then come the fishers and beset them with net and toile, which they beare up and fortifie with strong foikes: howbeit for all that, the Mulletts are so quicke and nimble, that a number of them whip over, get away, and escape the nets. But the Dolphins then are readie to receive them: who contenting themselves for the present to kill only, make foule worke and havocke among them; and put off the time of preying and feeding upon, untill they have ended the battaile and achieved the victorie. And now the skirmish is hote, for the Dolphins perceiving also the men at worke, are the more egre and courageous in fight, taking pleasure to bee enclosed within the nets, and so most valiantly charge upon the Mulletts: but for feare least the same should give occasion unto the enemies and provoke them to retire and flie backe; betweene the boats, the nets, and the men there swimming, they glide by so gently and easly, that it cannot be scene where they gat out. And albeir they take great delight in leaping, and have the cast of it, yet none assaieth to get forth, but where the nets lie under them: but no sooner are they out, but presently a man shall see brave pastime betweene them, as they scuffle and skirmish as it were under the rampier. And so the conflict being ended and all the fishing sport done, the Dolphins fall to spoile and eat those which they killed in the first shooke and encounter. But after this service perfourmed, the Dolphins retire not presently into the deepe againe, from whence they were called, but stay untill the morrow, as if they knew verie well that they had so carried themselves, as that they deserved a better reward than one daies refectiō and victuals: and therefore contented they are not and satisfied, unlesse to their fish they have some sops and crummes of bread given them soaked in wine, and that their bellies full, *Mutianus* maketh mention of the semblable manner of fishing, in the gulfe of Iaffos: but herein is the difference, for that the Dolphins come of their owne accord without calling, take their part of the bootie at the fishers hands: and every boat hath a Dolphin attending upon it as a companion, although it be in the night season and at torch light.

Over and besides, the Dolphins have a kind of common-wealth and publick societie among themselves: for it chaunced upon a time, that a king of Caria had taken a Dolphin, and kept him fast as a prisoner within the harbor: whereupon a mightie multitude of other Dolphins resorted thither, and by certaine signs of sorrow and mourning that they made, evident to be perceived and understood, seemed to crave pardon and mercie for the prisoner: and never gave over untill the king had given commaundement that he should be enlarged and let go. Also the little ones are evermore accompanied with some one of the bigger sort, as a guide to guard and keep him. To conclude, they have been seen to carrie one of their fellowes when he is dead, into some place of securitie, that he should not be devoured and torne of other sea-monsters.

A

CHAP. IX.

¶ Of Porpaises.

THe Porpaises, which the Latines call *Fursiones*, are made like the Dolphins: howbeit they differ, in that they have a more sad and heaue countenance: for they are nothing to game-some, playfull, and wanton, as be the Dolphins: but especially they are snouted like dogges when they snarle, grin, and are readie to doe a shiewd turne.

B

CHAP. X.

¶ Of sea Tortoises, and how they are taken.

THere be found Tortoises in the Indian sea so great, that one only shell of them is sufficient for the rouse of a dwelling house. And among the Islands principally in the red sea, they use Tortoise shells ordinarily for boats and wherries upon the water.

Many waies the fisher-men have to catch them; but especially in this manner: They use in the mornings when the weather is calme and still, to flote aloft upon the water, with their backs to be seene all over: and then they take such pleasure in breathing freely and at libertie, that they forget themselves altogether: in somuch as their shell in this time is so hardened and baked with

C

the sunne, that when they would they cannot dive and sinke under the water againe, but are forced against their wills to flote above, and by that meanes are exposed as a prey unto the fisher-men. Some say that they goe forth in the night to land for to feed, where, with eating greedily, they be wearie; so that in the morning, when they are returned againe, they fall soone asleepe above the water, and keepe such a snorting and routing in their sleepe, that they bewray where they be, and so are easily taken: and yet there must be three men about every one of them: and when they have swom unto the Tortoise, two of them turne him upon his backe, the third casts a cord or halter about him, as he lyeth with his belly upward, and then is he haled by many more together, to the land. In the Phoenician sea, they make no great ado to take them; for why, at a certaine time of the yeere they resort of themselves by great multitudes in sculls up into the river Eleutherius.

D

The Tortoise hath no teeth, but the sides and brimmes of his neb or becke, are sharpe and keene: whereof the upper part or chaw shutteth close upon the nether, like to the lid of a boxe. In the sea they live of muscles, cockles, and such small shell-fishes, for their mouthes are so hard that they be able to crush and breake stones therewith. Their manner is to go aland, where among the grasse they lay egges as bigge as birds egges, to the number commonly of an hundred. When they have so done, they hide them within the earth in some little hole or gutter, sure enough from any place where the water commeth, they cover them with mould, beat it hard downe with their breast, and so pat it smooth, and in the night time sit upon them: they couvie a whole yeere before they hatch. Some say, that the looking wistly upon their egges with their eyes serveth in stead of sitting. The female flieth from the male, and will not abide to engender, untill such time as he prieke her behind and sticke somewhat in her taile for running away from him so fast.

E

The Troglodites have among them certaine Tortoises, with broad hornes like the pegges in a Lute or Harpe, and the same will wagge and stirre so, as in swimming they helpe themselves therewith, and are guided and directed by them. And this kind of Tortoise is called *Celtium*: of exceeding great bignesse, but rare to be found and hard to come by: for their exceeding sharpe prickles like rockes, among which they keepe, fright the *Chelonophagi* (who delight to feed upon them) that they dare not search after them. And the Troglodites, unto whome these Tortoises use to swimme, adore them as holy and sacred things.

F

There be also land Tortoises (called thereupon in the workes that are made of them in pannell-wise, *Chersinæ*) found in the deserts and wildernesse of Affrick, and principally in that part which is drie and full of sands: and they are thought to live upon nothing els but the moist dew. And in very truth, no other living creature there breedeth besides them.

CHAP. XI.

¶ *Who first devised the cleaving of Tortoise shells into thin plates like pannell.*

THe first man that invented the cutting of Tortoise shells into thin plates, therewith to feele beds, tables, cupboards, and presses, was *Carbilinus Pollio*, a man verie ingenious and inventive of such toies, serving to roiot and superfluous expence.

CHAP. XII.

¶ *A division of water beasts into their severall kinds.*

THe creatures that breed and live in the water, bee not all covered and clad alike: for some have a skin over them, and the same hairie, as the Seales and Water-horses. Others have but a bare skin, as the Dolphins. There be againe that have a shell like a barke, as the Tortoises: and in others, the shell is as hard as the flint, and such be the oysters, muscles, cockles, and winkles. Some be covered with crusts or hard pills, as the locusts: others have besides them, sharpe prickes, as the Vrchins. Some be skaled, as fishes: others are rough-coated, as the Soles, and with their skins folke use to polish and smooth wood and yvorie. Some have a tender and soft skin, as Lampreys: others none at all, as the Pourcuttle or Pourcontrell.

CHAP. XIII.

¶ *Of the Sea-calfe, or Seale.*

THe great Whales, called *Pristis* and *Balæna*, bring forth their young alive, and perfect living creatures: likewise all those that are covered with haire, as the Sea-calfe or Seale. She calveth on the drie land as other cattraile: and whensoever she calveth, she gleaneth afterwards as kine doe. The female is tied and lined to the male, like as bitches to dogges: shee never bringeth more than two at once; and she giveth milke at her duges and paps, to her young. Shee bringeth them to the sea not before they be twelve daies old, and then shee traineth and acquainteth them to swimme and keepe the water ordinarily. These Seales be hardly killed, unlesse a man dash out their braines. In their sleepe, they seeme to low or blea, and thereupon they be called Sea-calves. Docible they be and apt to learn whatsoever is taught them. They will salute folke with a kind of countenance and regard: also with a voice such as it is, resembling a certain rude and rumbling noise. If a man call them by their name, they will turn againe, and in their language answer. There is no living creature sleepeth more soundly than they. The finnes which they use to swimme withall in the sea, serve their turns in stead of feet to go upon, when they be on land. Their skinned, after they be flaid from their bodies, retaine still a proprietie and nature of the seas; for ever as the water doth ebbe, they are more rugged, and the haire or bristles stand up. Moreover, their right finnes or legs are thought to have a power and vertue to prouoke sleepe, if they be laid under ones beds head.

CHAP. XIII.

¶ *Of fishes that be without haire, how they breed, and how many sorts there be of them.*

OF such creatures as want haire, two onely there be that bring forth their young with life: and namely, the Dolphin and the Viper. Of fishes, properly so called, there be 74 kinds: besides those that have rough crustie skins, which I count not; whereof there be 30 sorts. Of every one of them in particular, we will speake else-where, and at another time: for now wee are to treat of the natures of the chiefe and principall.

CHAP. XV.

¶ *Of the names and natures of many fishes.*

THe Tunies are exceeding great fishes: we have scene some of them to weigh fifteen talents, and the taile to be two cubits broad and a span. In some fresh rivers also, there be fish found full

A full as bigge: and namely, the river-Whale called Silurus, in Nilus; the Lax, in the Rhene; the Attilus, in the Po. This fish groweth so fat with ease and lying still, that otherwhiles it weigheth a thousand pounds: and being taken with a great hooke fastened and linked to a chaine, cannot be drawne forth of the river but with certaine yokes of oxen. And yet as big as he is, there is one little fish in comparison of him called Clupea, that killeth him: for upon a marvellous desire that he hath to a certaine veine that he hath within his jawes, he biteth it in sunder with his teeth, and so dispatcheth the fore-named great fish Attilus.

As for the Silurus, a cut-throat hee is wheresoever hee goeth, a great devourer, and maketh foule worke: for no living creatures come amisse unto him, he setteth upon all indifferently. The very horses oftentimes as they swim, he devoureth, and specially in Moenus, a river of Germanie neere to Lisboa or Erlisbornis.

B Moreover, in the river Donow, there is taken the Mario, a fish much like to a Russe or Porpois. Also in the river Borysthenes, there is found a fish by report, exceeding great, with no chine nor bone at all betweene; and yet the meat thereof is passing sweet and pleasant.

Within Ganges, a river of India, there be fishes snouted and tailed as Dolphins, 15 cubits long, which they call Platanista. And *Statius Sebosus* reporteth as strange a thing besides, namely, that in the said river there be certaine wormes or serpents with two finnes of a side, sixtie cubits long, of colour blew, and of that hew take their name [and be called Cyonocides]. He saith moreover, that they be so strong, that when the Elephants come into the river for drinke, they catch fast hold with their teeth by their trunkes or muzzles, and maugre their hearts force them downe under the water; of such power and force they are.

C The male Tunies have no finnes under their bellies. In the spring time they goe out of the great [Mediterranean] sea, and by whole flotes and troupes enter into Pontus; for in no other sea doe they bring forth their young. Their young fish, which accompanie their dams (when they are lightned of their burden) into the sea again in the autumn, are called Cordyle. Afterwards, they begin to call them Pelamides, and in Latine *Limosæ*, of the mud wherein they are kept: and when they be above one yeere old, then they be Tunies indeed, and so called. These Tunies are cut into peeces, whereof the nape of the necke, the bellie, and the flesh about the canell bone of the throat, are most commendable for meat: but these parcels onely when they be fresh and new killed, and yet then will they rise in a mans stomacke, and make him belch fower. The other parts being full of good meat and oleous withall, are laid in salt, and so put up in barrels and kept. **D** And these peeces of the Tunie thus condite and powdered, are called Melandtya, cut in slices like to oke shingles for all the world. The woorst peeces of all others, be those that are next the taile, because they are not fat: but the best is that which is toward the throat: howsoever in other fishes the taile-peece is in greatest request, as being most stirred and exercised. As for the young Tunies called Pelamides, they are divided & cut into parcels, that be named Apolecti: but when they be cut peece-meale into certaine squares, those peeces are named Cybia.

All kind of fishes grow exceeding soone to their bignesse, and especially in the sea Pontus: the reason is, because a number of rivers bring fresh water into it, and in some sort make it sweet: and namely in it, there is one called Amia, which groweth so fast and so evidently, that a man may perceive how it waxeth from day to day. These fishes, together with the old Tunies and the young, called Pelamides, enter in great flotes and skalls into the sea Pontus, for the sweet food that they there find: and every companie of them hath their severall leaders and captaines: and before them all, the Maquerels lead the way; which, while they be in the water, have a colour of brimstone; but without, like they be to the rest. The Maquerels serve the market well in Spaine, and furnish the fish-shambles: namely, when as the Tunies repaire not into their seas. As for the sea Pontus, there enter into it few or no ravénours that haunt and devoure fishes, unlesse it be the Seales and little Dolphins. The old Tunies, when they come into it, chuse the right side (upon the coast of Asia) but goe forth at the left. And this is the reason thereof, as it is thought, For that they see better with their right eye; and yet the sight of either of them is very good. **E** Within the channell of the Thracian Bosphorus, by which Propontis joyneth to the sea Euxinus, in the very streight of the Firth that divideth Asia from Europe, neere to Chalcedon upon the coast of Asia, there standeth a rocke, exceeding white and bright withall, which is so transparent and shining from the very bottom of the sea to the top of the water, that the Tunies (affrighted at the sodaine sight thereof) to avoid it, goe alwaies amaine in whole flotes, toward the cape

overagainſt Bizantium, which cape thereupon beareth the name of Auricorum. And therefore it is, that the Bizantines make great gaine by fiſhing for them: whereas the Chalcedonians have a great miſſe of that commoditie, and yet the arme of the ſea or frith betweene them, is not paſt halfe a mile, or a mile at the moſt, over. Now they ever wait for the North wind, that (together with the tide) they might with more eaſe paſſe out of Pontus. Howbeit, the onely taking of them at Bizantium, is when they returne againe into Pontus. In Winter the Tunnies ſtirre not nor raunge abroad: but looke, whereſoever they are then found to bee, there they take up their Winter harbour, and make their abode untill the Spring Æquinoctiall about mid March. Many a time they will accompanie the ſhips that ſaile thereby with full wind, and it is a wonderfull pleaſant ſight for the ſailers to ſee them from the ſterne, how for certaine houres together, and for the ſpace of ſome miles, they will follow and attend upon the poupe, be the wind never ſo good, nay, although they ſtrike at them with the trout ſpeare ſundrie times, or launce at them ſome three-tined inſtrument, yet wil they not be chaſed away, nor ſkared. Theſe Tunnies that thus wait upon the ſhips under ſaile, ſome call Pompili. Many of them paſſe the Summer time in Propontis, and never enter into Pontus. Soles likewiſe uſe the ſame manner, and yet yee ſhall have many Turbotſ there. Neither ſhall a man find the Cuttil there, although there be good ſtore of Sea cuts or Calamaries. Moreover, of Stone fiſhes, ſuch as live among rocks, the ſea Thrush, the ſea Merle, and the purple ſhell-fiſhes are not to be found, where Oysters notwithstanding are in great abundance. For all ſuch Winter in the Ægæan ſea, called now Archipelago. Of them that enter into the ſea Pontus, there is none ſtaieſt there, but goeth forth againe, ſave onely the ſhell-fiſh called the Saredame or Trichia: for I thinke it good, in ſuch diverſitie of fiſhes names, ſeeing that one and the ſelfeſame fiſh is in many countries called diverſly, to uſe the Greeke name for the moſt of them. Theſe fiſh, I ſay, alone goe up the river Iſter, and out of it they paſſe againe by certaine iſſues and conduits under the ground, and ſo deſcend into the Adriatick ſea: and evermore a man ſhall ſee this kind of fiſh comming downe thither, but never mounting up againe out of that ſea. The right fiſhing for the Tunnies, and the onely taking of them is from the riſing of the ſtarre *Vergilia, to the ſetting of Arcturus. All the Winter time beſides they lie hidden in the deepe, at the bottome of pits and gulſes within the ſea, unleſſe they come forth to take their pleaſure in ſome warme ſeaſon, or otherwhiles when the Moon is at the full. They grow ſometime ſo fat, that their ſkins will not hold, but they are readie to cleave and burſt withall. The longeſt time that they live is two yeares and not above. Moreover, there is a little creature or vermine, made ſomewhat like a Scorpion, and as big as a Spider, which uſually will ſet her ſharp ſting under the fin both of the Tunnie, and alſo of the ſword-fiſh (which many times is bigger than the Dolphin) and put them to ſuch paine, that to avoid them, they oftentimes are driven to launce themſelves, and ſkip into the very ſhips. Which propertie they have alſo at other times, for fear of the violence of other fiſhes: and moſt of all, the Mullers have this caſt with them; and this they doe with ſuch exceeding ſwifneſſe and agilitie, that they will ſling themſelves otherwhiles croſſe over the ſhips.

* I. In the beginning of May.

CHAP. XVI.

Of preſages and foretokenings by fiſhes, and of their diverſitie.

Nature willing to endue this Element alſo of the water with ſome Auguries, hath given to fiſhes likewiſe a kind of preſcience and fore-knowledge of things to come. And verily during the Sicilian war, as *Augustus Caſar* walked along the ſhore upon the ſands, there was a certaine fiſh leapt forth of the ſea, and light at his very feet. The Soothſaiers and Wiſards upon this occurrent, being fought unto, gavethis conſtruction thereof, and preſaged therby, That they who at that time were lords of the ſea, and held it in ſubjection, ſhould be ranged under the obedience of *Caſar*, and at his devotion. And yet at that preſent it is thought and ſaid, That god *Nep-tune* had adopted *Sex. Pompeius* for his ſon, ſo fortunate he was, and ſuch exploits had he atcheevd upon the ſea:

The female kind of fiſhes are commonly bigger than the males. And there are ſome ſorts of them, whereof there be no males at all, but all females, as the Erythini and the Chani. For they be taken alwaies ſpawners, and full of eggs.

Fiſhes that bee ſkaled, for the moſt part ſwim in troupes, and ſort together. The beſt fiſhing is before the ſunne be up: for then fiſhes ſee leaſt or not at all. For if the nights be cleare and moon-ſhine

A shine, they see as well by night as day. Moreover, they say that it is good fishing twice in one and the same hole: for commonly upon the second cast, the draught is better than the first. Fishes love passing well to tast oyle: they joy also and like well in soft and gentle shewers, and therewith they will feed and become fat. And good reason there is of it: for why? we see by experience that canes and reedes, although they breed in meeres and standing waters, yet they grow not to the purpose without raine. Moreover, it is observed, that fish keeping evermore in one dead poole and never removed, will die wheresoever it be, unlesse there fall raine water to refresh them. All fishes feele the cold of a sharpe and hard Winter, but those especially, who are thought to have a stone in their head, as the Pikes, the Chromes, Sciænæ, & Pagri. If it be a bitter season in winter, many of them are taken up blind. And therefore during those cold moneths, they luke hidden in holes, and within rockes, like as we have said, certaine land creatures doe. But above all others the Lobstars called Hippuri, and the Coracini, cannot abide extremitie of cold, and therefore be never caught in winter, unlesse it be at certain times when they come forth of their holes, which they keepe duly, and never stirre but then. In like sort, the Lamproie, the Orphe, the Conger, Perches and all stone-fishes that love rocks and gravell. Men say verily, that the crampe-fish, the Plaice, and the Sole lie hidden all Winter time in the ground, that is to say, in certaine crevices and chinks which they make in the bottome of the sea. Contrariwise, some againe be as impatient of heat, and can as ill away with hote weather: and therefore about Midsummer for 60 daies they lie hidden and are not to be seene: as the sea-fish Glaucus, the Cod, and the Gilthead. Of river-fishes, the Silurus or Sturgeon in the beginning of the dog daies is blasted and stricken with a planet: at other times also in a thunder and lightening he is smitten, so as therewith he is astonied and lieth for dead. And some thinke that the like accident befallerh to the sea Breame Cyprinus. And verily, all quarters of the sea throughout, feele the rising of the dog-starre: but most of all the influence and power thereof is to be seene in the streight of Bosphorus. For then may a man perceive ordinarily the reites of the sea, and the fishes floe aloft, and the sea so troubled, that every thing is cast up from the bottome to the upper part of the water.

CHAP. XVII.

Of the Mullet and other fishes: and that the same in all places are not of like request.

D **T**He Mulletts have a naturall ridiculous qualitie by themselves, to be laughed at: for when they be afraid to be caught, they will hide their head, and then they thinke they bee sure ynough, weening that all their bodie is likewise hidden. These Mulletts nevertheless are so letcherous, that in the season when they use to engender, in the coasts of Phœnicie and Languedoc, if they take a milter out of their stewes or pooles where they use to keepe them, and draw a long string or line through the mouth and guls, and so tie it fast, and then put him into the sea, holding the other end of the line still in their hands, if they pull him againe unto them, they shal have a number of spawners or females follow him hard at taile to the banke side. Semblably, if a man doe the same with the female in spawning time, hee shal have as many milers follow after her. And in this manner they take an infinite number of Mulletts.

E In old time our auncestours set more store by the Sturgeon, and it carried the name above all other fishes. He is the only fish that hath the skales growing toward the head: hee swims against the streame. But now adades there is no such reckoning and account made of him: whereat I marvel much, considering he is so hard and seldome to be found. Some call him Elops. Afterwards, *Cornelius Nepos*, and *Laberius* the Poet and maker of merie rimes have written, that the sea Pikes and the Cods gat away all the credit from the Sturgeon, and were of greatest request. As for the Pikes afore said, the best and most commendable of all others be they which are called Lanati, as a man would say Cotton Pikes, for the whitenesse and tendernesse of their flesh. Of Cods there be two sorts, Callariæ, or Hadocks, which be the lesse: and Bacchi, which are never taken but in the deepe, and therefore they are preferred before the former. But the Pikes that are caught in the river be better than all others. The fish called Scarus now carieth the price and praise of all others, and this fish alone is said to chew cud, to live of grasse and weeds, and not to prey upon other fishes. In the Carpathian sea great store of them is found: and by their good will they never passe the cape or promontorie Lectos in Troas. In the daies of *Tiberius Claudius* the Emperour,

Optatus his freed man (who sometime had been a slave of his) and then Admirall and Lieutenant generall of a fleet under him, brought them first out of that sea, and with them stored the whole coast of our seas betweene Ostia and Campania. Order was taken by streight inhibitions for the first five yeares, to kill none that were put into those seas, but if any were taken, that they should be cast in againe. In proceffe of time many of them came to be found and taken up all along the coast of Italie, whereas before, they were not to be had in those parts. See how gluttonie, and the desire to please a daintie tooth, hath devised means forsooth to sow fish, and to transplant them as it were, so to store the sea with strange breed: so that now we need no more to marvell, that forraine birds and foules, set out of farre countries have their aeries at Rome, and breed there. Next to these fishes abovenamed the table is served with a kind of Lamprels or Elepouts like to sea Lampreis, which are bred in certaine lakes about the Alpes, and namely, in that of Rhœtia called Brigantinus: and a strange thing it is, that they should be so like in proportion to those of the sea. Of all other fishes of any good account, the Barble is next, both in request, and also in plentie. Great in quantitie they are not: for hardly shall you find any of them weigh above two pound, neither will they feed and grow in stewes and ponds. They are bred onely in the Northren sea: and never shall you see them in the coast of the West Ocean. Moreover, of this fish there be sundrie sorts. And they live all of Reites and Seawds, of Oysters, of the fat mud, and of the flesh of other fishes. They have all of them two beards, as it were, hanging downe evidently from their nether jaw. The worst of all this kind, is that which is called Lutarius. And this fish hath another named Sargus, that willingly evermore beareth him companie: for whiles hee is rooting into the mud (whereof hee taketh his name) then commeth the Sargus, and devourerth the food that is raised therewith. Neither are the Barbels much accepted that keepe neare the shore, and in the river within land. But the best simply are those that tast like unto the shell-fish Conchylium. *Fenestella* gave them the name Mulli, of certaine moyles or fine shoes, which in colour they doe resemble. They cast spawne thrice in one year at the least: for so often their yong Frie is seene. Our great belligods say, that a Barble when hee is dying, changeth his hue, and turneth into an hundred colours: the prooffe and experience whereof may be seene if he be put into a glasse: for through it, it is a pretie sport to see how he altereth and changeth his skales being readie to die, one while into a pale and wan colour, otherwhiles into a reddish hue, one after another for many times together. *M. Apicius* (who was a man of all others most inventive and wonderfull for his wittie devises to maintaine riot and excessse) thought it was a singular way to stifle and kill these Barbels in a certaine Pickle, called the Romane Allies sauce, (see how even such a thing as that, hath found a surname forsooth and a proper addition.) And he also went about to provoke men to devise a certaine manger or broth made of their livers, like to that dripping or gravie called Alec, that commeth of fishes when they pine and corrupt. For surely it is more easie for me to say who set men a worke that way first, than to set downe who woon the best game in the end, and was the greatest glutton. *Asturius Celer*, a man of great calling and high place, who sometime had been Consull, shewed his prodigalitic in this fish, and it was when *C. Caligula* was Emperour: for he gave for one Barbell eight thousand Sesterces. Certes, the consideration hereof ravisheth my mind, and carrieth it away to behold and wonder at those, who in their reproofes of gluttonie and gourmandise, complained, that a cook carried a greater price in the market than a good horse of service. For now adayes a cook will cost as much as the charge of a triumph: and one fish as deere as a cook. And to conclude, no man is better esteemed and regarded more, than he that hath the most cunning cast to wast the goods, and consume the substance of his lord and maister.

CHAP. XVIII.

Of the Barbell, the fish *Coracinus*; Stock fish, and Salmon.

L *Jovinus Mutianus* reporteth, That in the red sea there was taken a Barbell that weighed four-score pounds. Oh, what a price would he have borne among our gluttons here with us! what would he have cost our prodigall spendthrifts, if hee had been taken upon our coasts neare Rome? Moreover, this is the nature of fish, that some are cheefe in one place, and some in another. As for example, the *Coracinus* in Egypt carrieth the name for the best fish. At Gades in Spaine, the Doree or Goldfish, called Zeus and Faber. About the Isle Ebusus, the Stock-fish is much

A much called for; whereas in other places it is counted but a base, muddie, and filthie fish: and which no where els they know how to seeth perfectly, unlesse it be first well beaten with cudgels. In the countrey of Aquitaine or Guienne in Fraunce, the river Salmon passeth all other sea Salmones whatsoever.

Of fish, some have many folds of gills: some single, others double. At these gills they deliver againe and put forth the water that they take in at the mouth. You may know when fish bee old by their hard skales: and yet all fishes are not skaled alike. There be two lakes in Italie at the foot of the Alpes, named Larius and Verbanus, wherein fishes are to be seene every yeere at the rising of the starre Vergiliae, thicke of skales, and the same sharpe pointed, like to the tongues of buckles, wherewith horsemen or men of armes doe fasten their greives: and never els but about that month doe they appeare.

CHAP. XIX.

Of the fish Exocætus.

The Arcadians make wonderous great account of their Exocætus; so called, for that he goeth abroad and taketh up his lodging on the drie land for to sleepe. This fish (by report) about the coast Clitorius, hath a kind of voice, and yet is without gills. And of some hee is named Adonis. But besides him, the sea Tortoises also, (called Mures Marini) the Polypes and Lampreis use to goe forth to land. Moreover, in the rivers of India there is one certain fish doth so, but it leapeth backe againe into the water. For whereas many other fishes doe passe out of the sea into rivers and lakes, there is great and evident reason thereof, namely, for that they are in more safetic there, both to cast their spawne under the wind where the water is not so rough, and full of waves: and also to bring forth their little ones, because there be no great fishes to devour them. That these dumbe creatures should have the sence hereof, thus to know these causes, and observe duly their times, is very strange and wonderfull, if a man would sound the depth thereof: but more hee would marvell to consider how few men there bee that know which is the best season for fishing, namely, whiles the sunne passeth through the signe Pisces.

CHAP. XX.

A division of fishes, according to the forme and shape of their bodies.

Of sea-fishes some be plaine and flat, as Byrts or Turbots, Solds, Plaice, and Flounders. And these differ from the Turbots only in the making of their bodie. For in a Turbot the right side turneth upward, and in a Plaice the left. Others againe be long and round as the Lamprey and the Congre. And hereupon it is, that they have a difference in their fins, which Nature hath given to fish in steed of feet. None have above foure, some have twaine, some three, others none at all. Onely in the lake Fucinus there is a fish, which in swimming useth eight finnes. All that be long and slipperie as Yeeles and Congres, have ordinarily two in all, and no more. Lampreies have none to swim with, ne yet perfect gills: all of this kind wind and wriggle with their bodies within the water, and so erch forward, like as Serpents doe upon the earth. They creep also when they are upon drie land: and therefore such live longer than the rest out of the water. Also of the foresaid flat fishes some have no finnes, as the pussen or forke-fish: for their breadth serveth them sufficiently to beare them up, and to swim. And among those that are counted soft, the Pourcuttall hath no fins, for his feet standeth him in steed of fins to swim withall.

CHAP. XXI.

Of Yeeles.

Yeeles live eight yeeres. And if the North wind blow, they abide alive without water fixe daies, but not so long in a Southerne wind. But yet in Winter time they may not endure to be in a little water, nor if it be thicke and muddie: whereupon, about the rising of the starre Virgiliae they bee commonly taken, for that the rivers about that time use to bee troubled. Their feeding most commonly is in the night. Of all fish, they alone (if they be dead) flote not above the water.

CHAP. XXII.

☞ *The manner of taking them in the lake Benacus.*

THere is a lake in Italie called Benacus, within the territorie of Verona, through which the river Mincius runneth. At the issue wherof every yeare about the moneth of October, when the Autumne starre Arcturus ariseth, whereby (as it evidently appeareth) the lake is troubled as it were with a Winter storme and tempest, a man shall see rolling among the waves a wonderfull number of these yeels wound and entangled one within another: insomuch, as in the leapeweales & weerenets devised for the nonce to catch them in this river, there be found sometime, a thousand of them wrapped together in one great ball.

CHAP. XXIII.

☞ *Of the Lamprey.*

THe Lamprey spawneth at all times of the yeare, whereas all other Fishes are delivered of their young at one certaine season or other. The eggs or spawn grow to a great passe exceeding soone. If they chance to slip out of the water to the drie land, the common sort is of opinion, that they engender with Serpents. The male or milter of this kind, *Aristotle* calleth Myrus. And herein is the difference: that the spawner properly called Muræna, is of fundrie colours, and spotted, and withall but weake: but the Mylter or the Myrus is of one hue, and withall very strong, having teeth standing without his mouth. In the North parts of France all the Lampreis have in their right jaw seven spots, resembling the seven starres about the North pole, called *Charlemaines* waine. They bee of a yellow colour, and glitter like gold, so long as the Lampreis be alive: but with their life they vanish away and be no more seen, after they be dead. *Vedius Pollio*, a gentleman of Rome by calling, and one of the great favorites and followers of *Augustus Caesar*, devised experiments of crueltie by the means of this creature. For he caused certain slaves condemned to die, to be put into the stewes where these Lampreies or Murænes were kept, to be eaten and devoured of them: not for that there were not wild beasts upon the land for this feat, but because he tooke pleasure to behold a man, torne and pluckt in peeces all at once: which pleasant sight he could not see by any other beasts upon the land. It is said, that if they tast vinegre of all things, they become enraged and mad. They have a very thin & tender skin: contrariwise yeeles have as thicke and tough: and *Verrius* writeth, That boies under seventeen years of age, were wont to be swinged and whipped with yeeles skins, and therefore they were freed from all other mulct and punishment.

CHAP. XXIII.

☞ *Of flat and broad fishes.*

OF flat and broad fishes, there is another sort, which in lieu of a chine or backe bone have a gristle. As the Ray or Skait, the Puffin like unto it, the Maids or Thornebacke, and the Crampfish: moreover, those which the Greekes have termed by the names of their sea Cow, their Dog-fish, their Ægle and Frog of the sea. In this ranke are to be raunged the Squalli also, albeit they are not so flat and broad. All this kind in generall, *Aristotle* hath called in Greeke Selache, and he was the first that gave them that name: wee in Latine cannot distinguish them, unlesse we call them all Cartilaginea, that is to say, Gristly fish. But all the sort of them that devour flesh are such: and their manner is to feed lying backward, like as wee observed in the Dolphins. And whereas other fishes cast spawn, which resemble knots of eggs; these gristly fishes only, as also those great ones which we call Cete, & Whales, bring forth their young alive: and yet I must except the one kind of them which they call Rana, & the sea Frogs.

CHAP. XXV.

☞ *Of Echeneis, [i. the stay-ship.]*

THere is a very little fish, keeping ordinarily about rockes named Echeneis. It is thought that if it settle and sticke to the Keele of a ship under water, it goeth the slower by that meanes: whereupon

A whereupon it was so called: and for that cause also it hath but a bad name in matters of love, for enchanting as it were both men and women, and bereaving them of their heat & affection that way: as also in law cases, for delay of issues and judiciall trials. But both these imputations and flanders, it recompenseth againe with one good vertue and commendable qualitie that it hath: For in women great with child, if it be applied outwardly, it staie the dangerous fluxe of the wombe, and holdeth the child unto the full time of birth. Howbeit, it is not allowed for meat to bee eaten. *Aristotle* thinketh, that it hath a number of feet, the finnes stand so thicke one by another.

As for the shell-fish *Murex*, *Mutianus* saith it is broader than the Purple, having a moutli neither rough nor round, ne yet with a becke pointed cornered wise, but plaine and even, having a shell, which on both sides windeth and turneth inward. These Fishes chaunced upon a time to cleave fast unto a ship, bringing messengers from *Periander*, with commission to gueld all the noblemens sonnes in *Gnidos*, and staied it a long time, notwithstanding it was under faile and had a strong gale of a fore-wind at the poupe. And hereupon it is, that these shell-fishes for that good service, are honoured with great reverence in the temple of *Venus*, among the *Gnidians*.

But to returne againe unto our Stay-ship *Echeneis*, *Trebius Niger* saith it is a foot long, and five fingers thick, and that oftentimes it staie a ship. And moreover, as he saith, it hath this vertue, being kept in salt, to draw up gold that is fallen into a pit or well being never so deepe, if it be let downe, and come to touch it.

C CHAP. XXVI.

☞ *The changeable nature of Fishes.*

THe Cackarels change their colour: for these fishes being white all Winter time, they waxe blacke when Summer commeth. Likewise, the Mole or Lepo called *Phycis*, doth alter her hue: for howsoever all the yeare besides it be white, in the Spring it is speckled. This is the onely Fish that buildeth upon the reites and mosse of the sea, and laie the eggs, or spawneth in her nest. The sea Swallow flieth: and it resembleth in all points the bird so called, The sea Kite doth the same.

D CHAP. XXVII.

☞ *Of the fish called the Lanterne, and the sea Dragon.*

THere is a Fish commeth ordinarily above the water, called *Lucerna*, for the resemblance which it hath of a light or lanterne. For it lilleth forth the tongue out of the mouth, which seemeth to flame and burne like fire, and in calme and still nights giveth light and shineth. There is another Fish that putteth forth hornes above the water in the sea, almost a foot and a halfe long, which thereupon tooke the name *Cornuta*. Againe, the sea Dragon if he be caught and let goe upon the sand, worketh himselfe an hollow trough with his snout incontinently, with wonderfull celeritie.

E CHAP. XXVIII.

☞ *Of bloudlesse fishes.*

Some Fishes there be which want bloud: whereof wee now will speake. Of them are three sorts. First, those which bee called Soft: secondly such as be covered with thin crusts: and in the last place, they that are enclosed within hard shels. Of the first sort, which be counted soft, are reckoned the sea Cut or *Calamarie*, the *Cuttle*, the *Polype*, & the rest of that sort. These have their head betweene their feet and the bellie, and every one of them have eight feet. As for the *Cuttill* and the *Calamarie*, have two feet apeece longer than the rest, and the same rough, wherewith they convey and reach meat to their mouths: and with those they stay themselves as it were with anchor hold against the surging waves: the rest of their feet bee small like haire, and with them they hunt and catch their prey.

CHAP. XXIX.

Of the Calamarie, Cuttles, Polypes, and Boat-fishes
called Nautili.

Also the Calamarie launceth himselfe out of the water, as if hee were an arrow: and even so doth little Scalops. The male of the Cuttles kind, are spotted with sundry colours more darke and blackish, yea and more firme and steadie, than the female. If the female be smitten with a Trout-speare, or such like three-forked weapon, they will come to aid and succor her, but shee againe is not so kind to them: for if the male be stricken, shee will not stand to it, but runneth away. But both of them, the one as well as the other, if they perceive that they be taken in such streights that they cannot escape, shed from them a certaine blacke humour like to inke, and when the water therewith is troubled and made duskyish, therein they hide themselves, and are no more seene.

Of Polypes or Pourcontrels, there be sundrie kinds. They that keepe neere to the shoare are bigger than those that haunt the deepe. All of them help themselves with their finnes and armes, like as we doe with feet and hands: as for their taile, which is sharpe and two-forked, it serveth them in the act of generation. These Pourcontrels have a pipe in their back, by the help wherof they swim all over the seas; and if they can shift, one while to the right side, and another while to the left. They swim awrie or side-long with their head above, which is verie hard, and as it were puffed up, so long as they be alive. Moreover, they have certaine hollow concavities dispersed within their claws or armes like to ventoses or cupping glasses, whereby they will sicke too, and cleave fast, as it were by sucking, to any thing; which they claspe and hold so fast (lying upward with their bellies) that it cannot be plucked from them. They never settle so low as the bottome of the water: and the greater they be, the lesse strong they are to claspe or hold any thing. Of all soft fishes, they only goe out of the water to drie land, especially into some rough place; for they cannot abide those that are plain and even. They live upon shell-fishes, and with their hairs or strings that they have, they will twine about their shells and cracke them in peeces: and therefore a man may know where they lie and make their abode, by a number of shells that lie before their nest. And albeit otherwise it be a very brutish and senselesse creature, so foolish withall, that it will swim and come to a mans hand; yet it seemeth after a sort to be wittie and wise, and keeping of house and maintaining a family: for all that they can take, they carrie home to their nest. When they have eaten the meat of the fishes, they throw the emptie shells out of doores, and lie as it were in ambuskado behind, to watch and catch fishes that swim thither. They change their colour often times, and resemble the place where they be, and especially when they be afraid. That they gnaw and eat their owne claws and armes, is a meere untruth; for they be the Congres that doe them that shrewd turne: but true it is, that they will grow againe, like as the taile of snakes, adders, and lizards. But among the greatest wonders of Nature, is that fish, which of some is called Nautilus, of others Pompilos. This fish, for to come aloft above the water, turneth upon his backe, and raiseth or heaveth himselfe up by little and little: and to the end he might swim with more ease, as disburdened of a sinke, he dischargeth all the water within him at a pipe. After this, turning up his two foremost claws or armes, hee displaieth and stretcheth out betweene them, a membrane or skin of a wonderfull thinnesse: this serveth him in stead of a saile in the aire above water: with the rest of his armes or claws, he roweth and laboureth under water; and with his taile in the mids, hee directeth his course, and steereth as it were with an helme. Thus holdeth he on and maketh way in the sea, with a faire shew of a foist or galley under saile. Now if he be afraid of any thing in the way, hee makes no more adoe but draweth in water to ballast his bodie, and so plungeth himselfe downe and sinketh to the bottome.

CHAP. XXX.

Of the many-foot fish called Ozana; of the Nauplius, and
Locusts of the sea, or Lobster.

OF the Polypus or Pourcontrell kind with many feet, is the Ozana, so called of the strong savour of their heads, for which cause especially, the Lampreys follow in chafe after him.

A As for the Many-feet or Pourcuttels, they lie hidden for two moneths together: and above two yeers they live not. They die alwaies of a consumption or Phthysick: the female sooner than the males, and ordinarily after that they have brought forth their young frie. I cannot overpasse but record the reports of *Trebius Niger*, one of the traine and retinue of *L. Lucullus* Proconsull in Boetia, which he upon his knowledge delivered as touching these Many-feet fishes called Polypi: namely, That they are most desirous and greedie of cockles, muscles, and such like shell-fishes: and they againe on the contrarie side, so soone as they feele themselves touched of the Polypes, shut their shels hard, and therewith cut asunder their claws or armes that were gotten within: and thus fall they to feed upon those, who sought to make a prey of them. [Now in very truth these shell-fishes, all of them see not at all, neither have they any other sense, but tasting of their meat, and feeling of their drinke.] These Polypi fore-seeing all this, lie in wait to spie when the said cockles, &c. gape wide open, and put in a little stone betweene the shells, but yet beside the flesh and bodie of the fish, for feare least if it touched and felt it, she would cast it forth againe: thus they theeve, and without all daunger and in securitie get out the fleshie substance of the meat to devoure it: the poore cockles draw their shells together for to claspe them betweene (as is above-said) but all in vaine, for by reason of a wedge betweene, they will not meet close nor come neere together. See how subtle and craftie in this point these creatures be, which otherwise are most fortish and senselesse. Moreover, the said *Trebius Niger* affirmeth, that there is not any other beast nor fish in the sea more dangerous to doe a man a mischief within the water, than is this Pourcuttle or Many-feet Polypus: for if he chauce to light upon any of these divers under the water, or any that have suffered shipwracke and are cast away, hee assailes them in this manner: He carcheth fast hold of them with his claws or armes, as if he would wrestle with them, and with the hollow concavities and noukes betweene, keepeth a sucking of them; and so long he sucketh and soketh their bloud (as it were cupping-glasses set to their bodies in divers places) that in the end he draweth them drie. But the onely remedie is this; to turne them upon their back, and then they are soon done and their strength gone: for let them lie so, they stretch out themselves abroad, and have not the power to claspe or comprehend any thing. And verily all living creatures in the sea love the smell of them exceeding well, which is the cause that fishers besmeare and annoint their nets with them, to draw and allure fishes thither.

D The rest which mine author hath related as touching this fish, may seeme rather monstrous lies and incredible, than otherwise: for he affirmed, that at Carteia there was one of these Polypi, which used commonly to go forth of the sea, and enter into some of their open cesterns and vaults among their ponds and stewes, wherein they kept great sea-fishes, and otherwhiles would rob them of their salt-fish, and so go his waies againe: which hee practised so long, that in the end he gat himselfe the anger and displeasure of the masters and keepers of the said ponds and cesterns, with his continuall and immeasurable filching: wherupon they staked up the place and empalled it round about, to stop all passage thither. But this thiefe gave not over his accustomed haunt for all that, but made meanes by a certaine tree to clamber over and get to the fore-said salt fish; and never could he be taken in the manner nor discovered, but that the dogges by their quicke sent found him out and bayed at him: for as he returned one night toward the sea, they assailed and set upon him on all sides, and therewith raised the fore-said keepers, who were affrighted at this so sodaine an alarme, but more at the straunge sight which they saw. For first and foremost this Polype fish was of an unmeasurable and incredible bignesse: and besides, hee was besmeared and beraied all over with the brine and pickle of the fore-said salt-fish, which made him both hideous to see to, and also to stinke withall most strongly. Who would ever have looked for a Polype there, or taken knowledge of him by such markes as these? Surely they thought no other, but that they had to deale and encounter with some monster: for with his terrible blowing and breathing that he kept, he drave away the dogges, and otherwhiles with the ends of his long stringed winding feet, he would lash and whip them; somtimes with his stronger claws like arms he rapped and knocked them well and surely, as it were with clubs. In summe, he made such good shift for himselfe, that hardly and with much adoe they could kill him, albeit he received many a wound by trout-speares which they launced at him. Well, in the end his head was brought and shewed to *Lucullus* for a wonder, and as bigge it was as a good round hoghead or barrell that would take and containe 15 Amphores: and his beards (for so *Trebius* tearmed his claws and long-stringed feet) carried such a thickness and bulke with them, that hardly a man could fathom

one of them about with both his armes, such knockers they were, knobbed and knotted like clubs, and withall 30 foot long. The concavities within them, and hollow vessels like great bassons, would hold four or five gallons apeece: and his teeth were answerable in proportion to the bignes of his bodie. The rest was saved for a wonder to be seen, and waighed 700 pound weight. This author of mine *Trebius* affirmeth, that Cuttels also and Calamaries have been cast upon that shore, full as bigge. Indeed in our sea there be Calamaries taken of five cubits long, and Cuttels of twaine, in length: and these live not above two years.

Mutianus reporteth, that himselfe saw in Propontis another kind of fish, carrying as it were a ship of his owne, and making saile with it like to some galley: and a shell-fish it was, fashioned with a keele like to a barge or barke, with a poupe embowed and turned up: yea and armed as it were in the proe with a three-forked pike. Within which lay hidden (as he saith) another living creature called Nauplius, resembling a Cuttle-fish; and for no other reason in the world, but to make sport and play with it for companie. Now the manner of this pastime and sailing was in two sorts: for if it were a calme sea and the winds downe, the Nauplius afore-said that went as a passenger in this shell, would put downe his feet into the water like oars, and row therewith; but if a gale of wind were aloft, he would stretch the same alength and make them serve instead of an helme to steere withall; and then the Coquill or shell-fish would spread and display it selfe like sailes, to gather wind: so as the one of them tooke a pleasure to carrie, in manner of the vessell; the other had his delight to labour as a mariner, and to direct withall like to a pilot. Thus these two fishes (otherwise senselesse and blockish) take their pleasure together, unlesse peradventure it fall out unhappily (for certain it is that such a sight as this presageth no good to sailers) that men marre their sport, and either part them asunder, or force them to sinke under water.

The Lobsters (being of that kind which wanteth blood) have a tender and brittle crust to cover and defend them. For five moneths they lie hidden. The Crabs likewise, who at the same time keepe close and secret: and both of them in the beginning of every spring cast their old coats or shells as snakes do their skins, and take them that be new and fresh. All others of this kind swim within the water: but the Lobsters flote aloft, and creepe as it were upon the water. So long as they are secure of any feare and daunger, they go directly streight, letting downe their horns at length along their sides, which naturally by themselves have a round point or bob at the end: but if they be in any feare, up goe those hornes straight, and then they creepe byes and go side-long. With these hornes they oftentimes maintaine battaile one with another. Of all creatures, this onely hath a tender and soft kind of flesh, which in the seething will not hang together, unlesse it be sodden alive in scalding water, and then it will be stiffe and callous as brawne.

CHAP. XXXI.

Of Sea-crabs, Vrchins of the sea, and great Vrchins called Echinometra.

AS for the Lobsters, they love rockes and stonie places: but Crabs delight in soft and delicate places. In winter, they seeke after the warme or sun-shine shore: but when summer is come, they retire into the coole and deepe holes in the shade. All the sort of them take harme and paine by winter: in autumnne and spring, they battle and waxe fat; and especially when the moon is at the full: because that planet is comfortable in the night time, and with her warme light mitigateth the cold of the night. Of these Crab-fishes, there be many kinds: to wit, Lobsters, Creyfishes of the sea, Crabs of Barbarie called Majæ, Grampels, Grits or Pungiers, Crabs of Heraclea, yellow river Creyfishes, and divers others of more base account. As for the Lobsters they differ from the rest in taile. In Phoenicia, there is a kind of Crabs called Hippæe, or rather Hippæis (that is to say, Horses or Horsemen) which are so swift, that it is impossible to overtake them. Crabs live long: eight clees or feet they have apeece, all crooked and hooked: the female hath the fore-clee double, the male but single. Moreover, two of their legs or arms are forked and toothed like pincers. The upper part of these fore claws doth stir: the nether part mooveth not. The right legge in them all is bigger than the left. When they come in skulls all together (as somtimes they doe) they are not able to passe one by another the streights of the sea Pontus about Constantinople, whereupon they are forced to returne backe and fetch a compassse about, and the beaten way with their tracks may be seene. The least of all these kind of Crabs, is called

A called * Pinnotheres, and for his smalnesse, most subject and exposed to take wrong. But as subtle and craftie he is, as he is little: for his manner is to shrowd and hide himselfe within the shells of emptie oysters: and ever as he groweth bigger and bigger, to goe into those that be wider. Crabs when they be affraid, will recule backward as fast as they went forward. They will fight one with another, and then yee shall see them jurre and butt with their hornes like rammes. Singular good they are against the biting and stinging of serpents. It is reported, that whiles the sunne is in the signe Cancer, the bodies within of dead Crabs that lie with the water upon the drie land, will turne to be Scorpions. Of the same sort that the Crabs be, are the Vrchins of the sea called Echini; and these, in stead of feet, have certain pointed prickles. Their manner of going, is to roll themselves, and tumble round: and therefore many times shall ye find them with their prickles worne. And of this sort be they that are called Echinometra. The longest prickles they have of all others, and the least shells or cases wherein they are. Neither are they all of the same colour of glasse: for about Torone they are found to be white, and have small prickles. They have all of them five egges when they lay, but they are bitter. Their mouths stand in the mids of their bodies, bending downward to the earth. It is said, that they have a fore-sight and knowledge beforehand, of a sea tempest: for by reason that they are so round, and therefore soon whirled and carried here and there, they fall then to labour and gather stones, wherewith they charge and peise their bodies as with ballast, that they may abide more stedfast, for that they are not willing to weare their prickles with rolling and turning over and over: which when the mariners and sailers perceived once, then presently they cast many ankers, and stay their ships.

* Or, Pinnae
tetes.

C CHAP. XXXII.

Of Winkles, and sea-Snailes.

IN the same ranke are to be reckoned the Winkles, as well of the land as the water. When they put themselves out of their shells, they thrust out two hornes that they have, and they will plucke them in againe when they list. Eies have they none to see withall; and therefore these little hornes serve them in good stead, to sound as it were and trie the way as they go.

CHAP. XXXIII.

Of Scallops: of the greatest Winkle called Murex, and other kinds of shell-fishes.

THe great Scallops in the sea, are counted of the same race: which lie hidden also in the time as well of great heat as cold. They have certaine nailes as it were, shining like fire in the night season: yea in their very mouthes that be eating of them. As for the Pourcelanes or Murices, they have a stronger skaled shell; as also all the kind of Winkles great & small. Wherein a man may see the wonderfull varietie of Nature in this play and pastime of hers, giving them so many and sundrie colours, with such diversitie of formes and figures: for of them ye shall have flat and plaine, hollow, long, horned like the moone croissant, full round, halfe round, and cut as it were just through the mids, bow backt and rising up, smooth, rough, toothed and indented like a saw, ridged and chamfired betweene, wrinkling and winding upward to the top like caltraps, bearing out sharpe points in the edges, without-forth broad and spread at large, within-forth rolled in plaits. Moreover, there be other distinct shapes besides all these: some bee striped and raied with long streakes, others crested and blasing with a bush of long haire: some againe crisped and curled, others made like an hollow gutter or pipe: some fashioned as it were a combe, others waving with plaits one above another tile-wise; others framed in the manner of a net or lattise: some are wrought crooked and byas, others spread out directly in length. A man shall see of them, those that are made thicke and mossie thrust together and compact, others stretched forth at large: yee shall have of them wrapt and lapt one within another. And to conclude, ye shall find them run round into a short fast knot, and all their sides united together in one: some flat and plaine, good to give a clap; others turning inward crooked like a cornet, made as it were to sound and wind withall. Of all these sorts, the Pourcelanes or Venus Winkles, swimme above the water, and with their concavities and hollow part which they set into the weather, helpe themselves in stead of sailes, and so gathering wind, saile as it were aloft

upon the sea. The manner of the Scalops is to skip, and otherwhiles they will leape forth of the water. They also can find the meanes to make a boat of themselves, and so flote above and saile handfomely. G

CHAP. XXXIII.

¶ *The riches of the Sea.*

BVt what meane I all this while to stand upon these small trifling matters, when as in very truth the overthrow of all honestie, the ruine of good manners, and in lieu thereof all ryot and superfluitie, proceedeth from these shell-fishes, and from nothing so much? For now the world is growne to this passe, that there is nothing in it whatsoever, so chargeable to mankind, nothing so hurtfull and dangerous, as is the very Sea, and that so many waies: namely, in furnishing the table with such varietie of dishes, in pleasing and contenting the tast with so many daintie and delicate fishes: and those carrie the highest price, that be gotten with the greatest hazard and daunger of those that take them: otherwife they be of no regard and value to speake of. H

CHAP. XXXV.

¶ *Of Pearles: how, and where they be found.*

Howbeit all that before-named is nothing in comparison to the Purples, precious Coquils, and Pearls that come from thence. It was not sufficient belike to bring the seas into the kitchin, to let them down the throat into the belly, unlesse men and women both carried them about in their hands and eares, upon their head, and all over their bodie. And yet what societie and affinitie is there betweene the sea and apparell? what proportion betweene the waves and surging billowes thereof, and wooll? For surely this Element naturally receiveth us not into her bosome, unlesse we be starke naked. And set the case that there were so great good fellowship with it, and our bellies; How commeth our backe and sides to be acquainted with it? But we were not contented to feed with the perill of so many men, unlesse we be clad and arraigned also therewith. Oh the folly of us men! See how there is nothing that goeth to the pampering and trimming of this our carcasse, of so great price and account, that is not bought with the utmost hazard, and costeth not the venture of a mans life! But now to the purpose. The richest merchandise of all, and the most soveraigne commoditie throughout the whole world, are these Pearles. The Indian Ocean is chiefe for sending them: and yet to come by them, wee must goe and search amongst those huge and terrible monsters of the sea, which we have spoken of before. Wee must passe over so many seas, and saile into farre countries so remote, and come into those parts where the heat of the sunne is so excessive and extreame: and when all is done, wee may perhaps misse of them: for even the Indians themselves are glad to seeke among the Ilands for them; and when they have done all they can, meet with very few. The greatest plentie of them is to be found in the coast of Taprobane and Toidis, as hath been said before in our Cosmographic and description of the world: and likewise about Perimula, a promontorie and citie of India. But the most perfect and exquisite of all others, be they that are gotten about Arabia, within the Persian gulfes of the red sea. This shell-fish which is the mother of Pearle, differeth not much in the manner of breeding and generation, from the oysters: for when the season of the yeere requireth that they should engender, they seeme to yawne and gape, and so doe open wide; and then (by report) they conceive a certaine moist dew as seed, wherewith they swell and grow bigge; and when time commeth, labour to be delivered hereof: and the fruit of these shell-fishes are the pearles, better or worse, great or small, according to the qualitie and quantitie of the dew which they received. For if the dew were pure and cleare which went into them, then are the pearles white, faire, and orient: if grosse and troubled, the pearles likewise are dimme, foule, and duskilsh; pale (I say) they are, if the weather were close, darke, and threatening raine in the time of their conception. Whereby no doubt it is apparent and plaine, that they participate more of the aire and skie, than of the water and the sea; for according as the morning is faire, so are they cleere: otherwise, if it were mistie and cloudie, they also will be thicke and muddie in colour. If they may have their full time and season to feed, the pearles also will thrive and grow bigge: but if in the time it chauce to lighten, then they close their shells together, and for want of nourishment I
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fishmes it

A rishment are kept hungrie and fasting, and so the pearles keepe at a stay and prosper not accordingly. But if it thunder withall, then sodainly they shut hard at once, and breed onely those excrescences which be called Phylemata, like unto bladders puffed up and hooved with wind, and no corporall substance at all: and these are the abortive & untimely fruits of these shell-fishes. Now those that have their full perfection, and be found and good indeed, have many folds and skins wherein they be lapt, not unproperly as it may be thought, a thicke, hard, and callous rind of the bodie, which they that be skilfull doe pill and cleanse from them. Certes, I cannot chuse but wonder how they should so greatly be affected with the aire, and joy so much therein: for with the same they wax red, and loose their native whitnesse, and beautie, even as the bodie of a man or woman that is caught and burnt with the sunne. And therefore those shells that keepe in the

B maine sea, and lie deeper than that the sun-beames can pierce unto them, keepe the finest and most delicate pearles. And yet they, as orient as they be, waxe yellow with age, become riveled, and looke dead without any lively vigor: so as that commendable orient lustre (so much sought for of our great lords and costly dames) continueth but in their youth, and decaieth with yeeres. When they be old, they will proove thicke and grosse in the very shells, and sticke fast unto their sides, so as they cannot be parted from them, unlesse they be filed asunder. These have no more but one faire face, and on that side are round, for the backe part is flat and plaine; and hereupon such are called Tympania, as one would say, Bell pearles. We see daily of these shells which serve as boxes to carrie sweet perfumes and precious ointments, and most commendable they are for this gift, That in them there be pearles of this sort naturally growing together like twins.

C The pearle is soft and tender so long as it is in the water, take it forth once and presently it hardeneth. As touching the shell that is the mother of Pearle, as soone as it perceiveth and feeleth a mans hand within it, by and by she shutteth, and by that meanes hideth and covereth her riches within: for well woteth she that therefore she is sought for. But let the fisher looke well to his fingers, for if she catch his hand betweene, off it goeth: so trenchant and sharpe an edge she carrieth, that is able to cut it quite a two. And verily this is a just punishment for the theefe, and none more: albeit shee be furnished and armed with other meanes of revenge. For they keepe for the most part about craggie rockes, and are there found: and if they be in the deepe, accompanied lightly they are with curst Sea-dogs. And yet all this will not serve to skare men away from fishing after them: for why? our dames and gentlewomen must have their eares behanged with them, there is no remedie. Some say, that these mother-pearles have their kings and captaines, as Bees have: that as they have their swarmes led by a master Bee, so everie troupe and companie of these, have one speciall great and old one to conduct it; and such commonly have a singular dexteritie and woonderfull gift to prevent and avoid all daungers. These they be that the dyvers after pearles are most carefull to come by: for if they be once caught, the rest scatter asunder and be soone taken up within the nets. When they be thus gotten, it is said that they be put up into earthen pots and well covered with salt: and when the salt hath eaten and consumed all the flesh within, then certaine kernels that were within their bodies (and those be the verie pearles) fall downe and settle to the bottome of those pots. There is no doubt but with much use they will weare, yea and chaunge colour through negligence, if they be not well looked unto. Their chiefe reputation consisteth in these five properties, namely, if they be orient white, great, round, smooth, and weightie. Qualities I may tell you, not easily to be found all in one: inso much as it is impossible to find two perfectly sorted together in all these points. And hereupon it is, that our dainties and delicates here at Rome, have devised this name for them, and call them Vniones; as a man would say, Singular, and by themselves alone. For surely the Greekes have no such tearmes for them, neither know they how to call them: nor yet the Barbarians, who found them first out, otherwise than Margaritæ. In the very whitnesse it selfe, there is a great difference among them. That which is found in the red sea, is the clearer and more orient. As for the Indian pearle, it resembleth the skales and plates of the stone called Specularis; howsoever otherwise it passeth all others in greatnesse. The most commendation

F that they have is in their colour, namely, if they may be truly called Exaluminati, *i.* orient and cleare as Alum. They that be goodly great ones, are commendable in their degree. As for those that are long and pointed upward, growing downward broader and broader like a peare, or after the manner of Alabastr boxes, full and round in the bottome, they be called Elenchi. Our dames take a great pride in a braverie, to have these not only hang dangling at their fingers,

but also two or three of them together pendant at their eares. And names they have forsooth newly devised for them, when they serve their turne in this their wanton excesse and superfluitie of riot: for when they knocke one against another as they hang at their eares or fingers, they call them *Crotalia*, & *Cymbals*: as if they tooke delight to heare the found of their pearles rattling together. Now adaies also it is growne to this passe, that meane women and poore mens wives affect to weare them, because they would be thought rich: and a by-word it is among them, That a fair pearle at a womans eare is as good in the street where she goeth as an huisher to make way, for that every one will give such the place. Nay, our gentlewomen are come now to weare them upon their feet, and not at their shoe latches onely, but also upon their startops and fine buskins, which they garnish all over with pearle. For it will not suffice nor serve their turne to carie pearles about them, but they must tread upon pearles, goe among pearles, and walke as it were on a pavement of pearles.

Pearles were wont to be found in our seas of Italie, but they were small and ruddie, in certaine little shell fishes which they call *Myæ*: but more plentie of such were taken up in the streights of *Bosphorus* neere *Constantinople*. Howbeit, in *Acarnania* there is a little *Cochle* called *Pinna*, [*i. a Nacre*,] which engendreth such. Wherby it may appeare, that there be more than one sort of Mother-pearles. For king *Inba* likewise hath left in writing, that in *Arabia* there is a kind of shell-fish like unto a *Scallop*, save that it is not chamfred, but thick and rough like unto a sea *Vrcheon*, which beareth Pearls within the very flesh of the fish, like unto haile stones. But now adaies there be no such mother-pearles come to our coasts. Neither be there found in *Acarnania* any of value and reputation. For why they are all in manner without proportion, neither round nor weightie, and of a marble colour. They rather about the cape of *Aethiopia* are better, and yet they be but little ones: like as they also which are taken in the coasts of *Mauritania*. *Alexander Polyhistor*, and *Sudmes*, are of opinion that they will age, and in the end loose their colour. That they be solide and not hollow within, is evident by this, that with no fall they will breake. But they bee not alwaies found in the middest of the flesh within the mother-pearles, but here & there, sometime in one place, and sometime in another. Verily I have seene of them about the brim and edges of the shell, as if they were readie to goe forth: and in some foure, in others five together. Vnto this day few of them have beene knowne to weigh above halfe an ounce and one scriptule. In ^{England.} *Brittaine* it is certaine that some do grow; but they bee small, dim of colour, and nothing orient. For *Julius Caesar* (late Emperour of famous memorie) doth not dissimule, that the cuirace or breast-plate which hee dedicated to *Venus* Mother within her temple, was made of English pearles.

I my selfe have seene *Lollia Paulina* (late wife, and after widdow, to *Caius Caligula* the emperor) when shee was dressed and set out, not in stately wise, nor of purpose for some great solemnitie, but only when shee was to goe unto a wedding supper, or rather to a feast when the assurance was made, and great persons they were not that made the said feast: I have seen her, I say, so beset and bedeckt all over with *Emeralds* and pearles, disposed in rewes, rankes, and courses one by another: round about the attire of her head, her cawle, her borders, her perruke of hair, her bongrace and chaplet; at her eares pendant, about her neck in a carcanet, upon her wrest in bracelets, & on her fingers in rings; that she glittered & shone againe like the sun as she went. The value of these ornaments, she esteemed and rated at ⁴⁰⁰ hundred thousand *Sestertij*: and offered openly to prove it out of hand by her books of accounts and reckonings. Yet were not these jewels the gifts and presents of the prodigall prince her husband, but the goods and ornaments from her owne house, fallen unto her by way of inheritance from her grandfather, which hee had gotten together even by the robbing and spoiling of whole provinces. See what the issue and end was of those extortions and outrageous exactions of his: this was it, That *M. Lollius* slandered and defamed for receiving bribes and presents of the kings in the East; and being out of favor with *C. Caesar*, sonne of *Augustus*, and having lost his amitie; dranke a cup of poyson, and prevented his judiciall triall: that forsooth his neece *Lollia*, all to be hanged with jewels of 400 hundred thousand *Sestertij*, should bee seene glittering, and looked at of every man by candlelight all a supper time.

If a man would now of the one side reckon what great treasure either *Curius* or *Fabricius* carried in the pompe of their triumphs; let him cast a proffer and imagine what their shewes were, what their service at the table was: and on the other side, make an estimate of *Lollia*, one only woman

A man, the dowagier of an Emperour, in what glorie she sitteth at the bourd; would not he wish rather, that they had been pulled out of their chariots, and never triumphed, than that by their victories the state of Rome should have growne to this wastfull excesse and intollerable pride? And yet this is not the greatest example that can be produced of excessive riot and prodigalitie.

Two onely Pearles there were together, the fairest and richest that ever have bene knowne in the world: and those possessed at one time by *Cleopatra* the last queene of *Ægypt*; which came into her hands by the means of the great kings of the East, and were left unto her by descent. This princeesse, when *M. Antonius* had strained himselfe to doe her all the pleasure hee possibly could, and had feasted her day by day most sumptuously, & spared for no cost: in the heighth of her pride and wanton braverie (as being a noble curtezan, and a queene withall) began to debase the expence and provision of *Antonie*, and made no reckoning of all his costly fare. When he thereat demaunded againe how it was possible to goe beyond this magnificence of his: she answered againe, that she would spend upon him in one supper * 100 hundred thousand Sestertij. *Antonie*,

B who would needs know how that might bee (for hee thought it was impossible) laid a great wager with her about it, and she bound it againe, and made it good. The morrow after, when this was to be tried, and the wager either to bee won or lost, *Cleopatra* made *Antonie* a supper (because she would not make default, and let the day appointed to passe) which was sumptuous and roiall ynough: howbeit, there was no extraordinarie service seene upon the bourd: whereat *Antonius* laughed her to scorne, and by way of mockerie required to see a bill with the account of the particulars. She againe said, that whatsoever had been served up already, was but the overplus above the rate and proportion in question, affirming still, that shee would yet in that supper make up the full summe that shee was feazed at: yea, her selfe alone would eat above that reckoning, and her owne supper should cost * 600 hundred thousand Sestertij: and with that commaunded the second service to bee brought in. The servitours that waited at her trencher (as they had in charge before) set before her one onely crewet of sharpe vineger, the strength whereof is able to resolve pearles. Now she had at her eares hanging those two most precious pearles, the singular and onely jewels of the world, and even Natures wonder. As *Antonie* looked wistly upon her, and expected what shee would doe, sheeooke one of them from her eare, steeped it in the vineger, and so soon as it was liquefied, dranke it off. And as she was about to do the like by the other, *L. Plancius* the judge of that wager, laid fast hold upon it with his hand, and pronounced withall,

* 10 Millions.

C That *Antonie* had lost the wager. Whereat the man fell into a passion of anger. There was an end of one pearle: but the fame of the fellow thereof may goe with it: for after that this brave queen the winner of so great a wager, was taken prisoner and deprived of her roiall estate, that other pearle was cut in twaine, that in memoriall of that one halfe supper of theirs, it should remaine unto posteritie, hanging at both the eares of *Venus* at Rome, in the temple Pantheon. And yet as prodigall as these were, they shall not goe away with the prize in this kind, but shall loose the name of the cheefe and principall, in superfluitie of expence. For long before their time, *Clodius* the sonne of *Aesope* the Tragedian Poet, the only heire of his father, who died exceeding wealthie, practised the semblable in two pearles of great price: so that *Antonie* needeth not to bee over proud of his Triumvirate, seeing that hee hath to match him in all his magnificence, one little better than a stage-plaier: who upon no wager at all laid, (and that was more princely, and done like a king) but only in a braverie, and to know what tast pearles had, mortified them in vinegre, and drunke them up. And finding them to content his palat wonderous well, because hee would not have all the pleasure by himselfe, and know the goodnesse thereof alone, he gave to every guest at his table one pearle apeece to drinke in like manner.

* 60 Millions.

D *Fenestella* writeth, that after Alexandria was conquered and brought under obedience to the Romans, Pearles were rife at Rome, and commonly used of every man: also, that about the troublesome time of *Sylla* they began first to be in request: and those were but small ones, and of no price. Howbeit, he is grossely deceived, and in a great error. For *Ælius Stilo* doth report in his Chronicle, that in the time of the warre against *Jugurtha*, the faire and goodly great Pearles began to be named *Vniones*.

E These Pearles (to say a truth) are of the nature (in a manner) of an inheritance to descend by perpetuitie. They follow commonly in right the next heires. When they passe in sale, they goe with warrantize, in as solemne manner as a good lordship.

As for the rich Purples, and the precious Conchyles, every coast is full of them. And yet to

that exceſſe and prodigalitie we are now growne, and our wanton riot (the mother of all inordinate and waſfull expence) hath made them well neere as deere as Pearles. G

CHAP. XXXVI.

¶ The nature of purple fiſhes, and the Murex or Burret.

Purples live ordinarily ſeven yeares. They lie hidden for thirtie daies ſpace about the dog daies, like as the Murices or Burrets doe. They meet together by troupes in the ſpring, and with rubbing one againſt another, they gather and yeeld a certaine clammy ſubſtance and moiſture in manner of waxe. The Murices doe the like. But that beautifull colour, ſo much in requeſt for dying of fine cloth, the Purples have in the miſt of their neck and jawes. And nothing elſe it is, but a little thin liquor within a white veine: and that is it which maketh that rich, freſh, and bright colour of deepe red purple roſes. As for all the reſt of this fiſh, it yeeldeth nothing. H
 Fiſhers ſtrive to take them alive, for when they die, they caſt up and ſhed that precious teinture and juice, together with their life. Now the Tyrians, when they light upon any great Purples, they take the fleſh out of their ſhells, for to get the bloud out of the ſaid veine: but the leſſer, they preſſe and grind in certaine milles, and ſo gather that rich humour which iſſueth from them. The beſt purple colour in Aſia is this, thus gotten at Tyros. But in Affricke, within the Iſland Meninx, and the coaſt of the Ocean by Getulia. And in Europe, that of Laconica. This is that glorious colour, ſo full of ſtate and majeſtie, that the Roman Licitors with their rods, halberds, and axes, make way for: this is it that graceth and ſetteth out the children of princes and noblemen: this maketh the diſtinction betweene a knight and conſellor of ſtate: this is called for and put on when they offer ſacrifice to pacifie the gods: this giveth a luſtre to all ſorts of garments: and to conclude, our great Generals of the field, and victorious captaines in their triumphs weare this purple in their mantels, enterlaced and embrodered with gold among. No marvell therefore if Purples be ſo much ſought for: and men are to be held excuſed, if they runne a madding after Purples. But how ſhould the other ſhell-fiſhes called Conchylia, be ſo deere and high priſed, conſidering the teinture of them carrieth ſo ſtrong and ſtinking a favor, ſo ſullen and melancholie a colour, enclining to a blew or watchet, and reſembling rather the angrie and raging ſea in a tempeſt? But to come unto the particular deſcription. The Purple hath a tongue of a finger long, pointed in the end ſo ſharpe, and ſo hard withall, that it is able to bore an hole and pierce into other ſhell-fiſhes, and thereby ſhe feeds and gets her living. In freſh water they will die all, or if they be plunged and throwne in any river: otherwiſe, after they be taken, they will continue alive fiftie daies, even with that viſcous and ſlimie humor of their owne. All ſhell-fiſh in generall grow apace in a very ſmall time: but Purples ſooner of all others: for in one yeare they will come to their full bigneſſe. Now, if I ſhould lay a ſtraw here, and proceed no further in this diſcourſe of Purples and ſuch like, ſurely our luxurious and riotous ſpendthrifts would thinke they had great wrong, and were defrauded of their right: they might I ſay complaine of me, and condemne me of idleneſſe and negligence. Therefore I care not much to put my head within the diers ſhops and work-houſes: that like as every man for the neceſſitie of this life, knoweth how the price of corne goeth; even ſo our fine folke and brave dainties, who take ſuch pleaſure and delight in theſe colours, may bee perfect what is the reaſon of this their onely life. In the firſt place, theſe ſhell-fiſhes that ſerve either for purple colours, or other lighter dies of the Conchylia, are all one in matter: the difference onely is in temperature more or leſſe. And indeed, reduced they may all bee into two principall ſorts. For the leſſe ſhell called Buccinum, faſhioned like unto that horne or cornet, wherewith they uſe to wind and ſound, whereupon it tooke that name, hath a round backe, and is cut like a ſaw in the edges. The other is named Purpura, ſhooteth out a long becke like a guttur, and within the one ſide it doth writh and turne hollow in forme of a pipe, out of which the fiſh putteth forth a tongue. Moreover, this Purple is beſtudded (as it were) even as far as to the ſharpe top or turbant thereof round about with ſharpe knobs pointed, lightly ſeven in number: which the ſea-cornet Buccinum hath not. But this is common to both, that looke how many roundles they have like tendrils claſping about them, ſo many yeares old they bee. As for the Cornet Buccinum, it ſticketh alwaies to great ſtones and rockes, and therefore is ever found and gathered about them. I
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CHAP. XXXVII.

How many sorts there be of Purples.

Purples have another name, and be called Pelagiæ, as one would say, Fishes of the deepe sea. But in truth there be many sorts of them, & those differing either in place where they keepe, or in food whereof they live. The first Lutense, i. muddie, because it is nourished of the corrupt and rotten mud: a second Algenſe (the worst of all) feeding upon reites or sea weeds named Alga: the third, Tæniense, (better than the former twaine) for that it is gathered and taken up about the brimmes and borders of the sea, called for the resemblance of fillets or lifts in a cloth, **Tæniæ**. And yet this kind yeeldeth but a light colour, and nothing deepe. There be of them also which they tearme Calculosæ, of the sea gravell, which is wonderous good for all these kind of wilkes and shell fishes. And last of all, which simply bee the very best, the Purples Dialeræ, that is to say, wandering too and fro, chaunging their pasture, and feeding in sundrie soiles of the sea, [the muddie, the weedie, and the gravelly.] Now these Purples are taken with small nets, and thin wrought, cast into the deepe. Within which, for a bait to bite at, there must be certaine winckles and cockles, that will shut and open, and be readie to snap, such as we see these limpins be, called Mituli. Halfe dead they should be first, that being new put into the sea againe, and desirous to revive and live, they might gape for water: and then the Purples make at them with their pointed tongue, which they thrust out to annoy them: but the other feeling themselves pricked therewith, presently shut their shels together, and bite hard. Thus the Purples for their greedinesse are caught and taken up, hanging by their tongues.

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CHAP. XXXVIII.

The fishing time for Purples.

The best time to take Purples, is after the dog star is risen, and before the Spring. For, when they have made that viscous muscilage in manner of waxe, their juice and humor for colour is overliquid, thin, and waterish. And yet the purple diers know not so much, nor take heed thereof, whereas indeed the skill thereof is a speciall point of their art, and wherein lieth all in all. Well, when they are caught, as is above said, they take forth that veine before mentioned: and they lay it in salt, or else they doe not well: with this proportion ordinarily, namely, to every hundred weight of the Purple liquour, a Sestier or pint and halfe of salt. Full three daies and no more it must thus lie soking in powder. For the sifter that the colour is, so much is it counted richer and better. This done, they seeth it in leads, and to every Amphore, (which containeth about eight wine gallons) they put one hundred pound and a halfe just, of the colour so prepared. Boile it ought with a soft and gentle fire, and therefore the tunnell or mouth of the furnace must be a good way off from the lead and chawdron. During which time, the workemen that tend the lead, must estoones skim off and cleanse away the fleshie substance, which cannot chuse but sticke to the veines which containeth the juice or liquor of purple before said. And thus they continue ten daies, by which time ordinarily the lead or vessell will shew the liquour cleere, as if it were sufficiently boile. And to make a triall thereof, they dip into it a fleece of wooll well rensed and washt out of one water into another: and untill such time, that they see it give a perfect die, they still plie the fire, and give it a higher seething. That which staineth red is nothing so rich as that which giveth the deepe and sad blackish colour. When it is come to the perfection, they let the wooll lie to take the liquor five houres: then they have it forth, to use, and card it, and put it in againe, untill it hath drunke up all the colour, as much as it will. Now this is to be observed, that the sea corner Buccinum maketh no good colour of it selfe: for their die will shed and loose the lustre. And therefore usually they joine to it the sea Purple Pelagium, which maketh too deepe and browne a colour: unto which it giveth a fresh and lively teinture, as it were in graine, and so maketh that sad purple which they desire. Thus by mixing and medling the force of both together, they mend one another, while the lightnesse or sadnesse of the one doth quicken and raise, or else dorr and take downe the colour of the other. To the dying of a pound of wooll, they use this proportion of two hundred Buccina or sea Cornets, joined with a hundred and eleven Pelagian Purples. And so commeth that rich Amethyst or purple violet colour, so highly commended

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mended above all other. But the Tyrians make their deepe red purple, by dipping the wooll first in the liquor of the Pelagian purples onely, whiles it is not thoroughly boiled to the heighth, but as it were greene yet and unripe; and thereof they let it take what it can drinke. Soone after they change it into another caudron or lead, where the colour of the sea Cornets alone is boiled. And then is it thought to have a most commendable and excellent die, when it is as deepe a red as bloud that is cold and ferled, blackish at the first sight, but looke betweene you and the light, it carieth a bright and shining lustre. And hereupon it is, that *Homer* calleth bloud, Purple. G

CHAP. XXXIX.

¶ *When they began at Rome to weare Purple first.*

Find in Chronicles, that Purple hath ben used in Rome time out of mind. Howbeit, king *Romulus* never ware it but in his roiall habite or mantell of estate, called *Trabea*. And well known it is, *Tullus Hostilius* was the first Romane king, who after he had subdued the Tufcanes, put on the long purple robe named *Pretexta*, and the cassock broched and studded with scarlet in broad guards. *Nepos Cornelius* who died in the daies of *Augustus Caesar* the Emperour, When (quoth he) I was a yong man, the light violet purple was rife and in great request, and a pound of it was sold for a *hundred deniers: and not long after the Tarentine red purple or skarlet was much called for, and of the same price. But after it, came the fine double died purple of Tyros, called *Dibapha*: and a man could not buy a pound of it for a *thousand deniers, which was the price of ten pound of the other. *P. Lentulus Spinther* in his *Ædileship* of the chaire, first ware a long robe embrodered with it, and was checked and blamed therefore. But now adaies (quoth *Nepos*) what is he that will not hang his parlour and dining chamber therewith, and have carpets, cushins, and cup-bord clothes thereof? And it is no longer agoe when *Spinther* was *Ædile*, than in the seven hundreth year after the foundation of Rome, even when *Cicero* was *Consull*. This purple in those daies was called *Dibapha*, i. twice died: and that was counted a matter of great cost, & very stately withall and magnificent. But now yee shall have no purple cloths at all of any reckoning, but they have their double die. As for the cloth died with the purple of the shell-fish *Conchyliæ*, the manner of making the colour, and dying in all respects is the same, save that there be no sea Cornets used thereto. Moreover, the juice or liquor for that colour, is tempered with water in steed of the filthie pisse and urine of a man, altogether used in the other: and therein is sodden but the halfe proportion of colours to the foresaid tinctures. And thus is made that light pale stammell so highly commended, for being short of the deepe rich colour: and the lesse while that the wooll was suffered to drinke the fill, the more bright and fresh it seemeth. H

CHAP. XL.

¶ *The prices of wooll, died with these colours.*

AS for these colours, they are valued deerer or cheaper, according to the coasts where these fishes are gotten more or lesse. Howbeit, it was never knowne that in any place, a pound of the right purple wooll, died with the Pelagian colour, or of the colour it selfe, was more worth than *five hundred Sesterces: nor a pound of the Cornets purple cost above one hundred. I would they knew so much that pay so deere for these wares by retale here at home, and cannot have them, but at an excessive rate. But here is not all, neither is this an end of expence that way, for one still draweth on another: and men have a delight to spend and lay on still one thing after another: to make mixtures and mixtures again, and so to sophisticate the sophistications of Nature: as namely to paint and die their feelings, even the very embowed rouses and arches in building: to mixe and temper gold and silver together, therewith to make an artificiall metall *Electrum*: and by adding brasse or copper thereto, to have another metall, counterfeiting the *Corinthian vessels*. I

CHAP. XLI.

¶ *The manner of dying the Amethyst, Violet, or Purple, the Chrymsen and Scarlet in graine, and the light Stammell or Lustie-gallant.*

IT would not suffice our prodigall spendthrifts to rob the precious stone *Amethyst* of his name, and to applie it to a colour: but when they had a perfect *Amethyst* die, they must have it to be drunken K

A drunken againe with the Tyrian purple, that they might have a superfluous and double name compounded of both (Tyriamethystus) correspondent to their two-fold cost and duple superfluitie. Moreover, after they have accomplished fully the colour of the Conchylium, they are not content untill they have a second die in the Tyrian purple lead. It should seeme, that these double dies and compounded colours, came first from the error and repentance of the workeman when his hand missed: and so was forced to change and alter that which hee had done before, and utterly misliked. And hereof forsooth is come now a prettie cunning and art thereof: & the monstrous spirits of our wastfull persons are growne to wish and desire that, which was a fault amended first: and seeing the two-fold way of a double charge and expence troden before them by the diers, have found the meanes to lay colour upon colour, and to overcast and strike a rich die with a weaker, so that it might be called a more pleasant and delicate colour. Nay it will not serve their turne to mingle the abovesaid tinctures of sea-fishes, but they must also doe the like by the die of land-colours: for when a wooll or cloth hath taken a crimson or skarlet in graine, it must be died again in the Tyrian purple, to make (I would not els) the light, red, and fresh Lustie-gallant.

Alluding to the word Amethyst, which resisteth drunkenness.

B As touching the Graine, serving to this tincture, it is red, and commeth out of Galatia, (as we shall shew in our storie of earthly plants) or else about Emerita in Portugall, & that of all other is of most account. But to knit up in one word these noble colours, note this, That when this Graine is but of one yeares age, it maketh but a weake tincture; but after foure years, the strength thereof is gone. So that neither young nor old it is of any great vertue. Thus I have sufficiently and at large treated of those meanes which men and women both, so highly esteeme, and thinke to make most for their state and honourable port, and setting out of themselves in the best maner.

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CHAP. XLII.

Of the Nacre, and his guide or keeper, Pinnoter: and the perceivance of fishes.

THe Nacre also called Pinnæ, is of the kind of shell-fishes. It is alwaies found and caught in muddie places, but never without a companion, which they call Pinnoter or Pinnophylax. And it is no other but a little shrimpe, or in some places, the smallest crabbe; which beareth the Nacre companie, and waiteth upon him for to get some victuals. The nature of the Nacre is to gape wide, and sheweth unto the little fishes her feeble bodie, without any eie at all. They come leaping by and by close unto her: and seeing they have good leave, grow so hardie and bold, as to skip into her shell and fill it full. The shrimpe lying in spiall, seeing this good time and oportunitie, giveth token thereof to the Nacre secretly with a little pinch. She hath no sooner this signall, but shee shuts her mouth, and whatsoever was within, crusheth and killeth it presently: and then shee devides the bootie with the little crab or shrimpe, her sentinell and companion. I marvell therefore so much the more at them who are of opinion, that fishes and beasts in the water have no sence. Why, the very Crampe-fish *Tarped*, knoweth her owne force & power, and being her selfe not benumbed, is able to astonish others. She lieth hidden over head and cares within the mud unseene, readie to catch those fishes, which as they swim over her, be taken with a nummednesse, as if they were dead. There is no meat in delicate tendernesse, preferred before the liver of this fish. Also the fish called the *sea Frog, (and of others, the sea Fisher) is as craftie everie whit as the other: It puddereth in the mud, and troubleth the water, that it might not be seene: and when the little feely fishes come skipping about her, then she puts out her little hornes or Barbils which shee hath bearing forth under her eies, and by little and little tilth and tolleth them so neere, that she can easly seaze upon them. In like manner, the Skate and the Turbot lie secret under the mud, putting out their finnes, which stirre and crawl as if it were some little wormes; and all to draw them neare, that she might entrap them. Even so dooth the Ray fish or Thorn-backe. As for the Puffen or Fork-fish, hee lieth in await like a theefe in a corner, readie to strike the fishes that passe by with a sharpe rod or pricke that hee hath, which is his weapon. In conclusion, that this fish is very subtil and craftie, this is a good prooffe, That being of all others most heavie and slow, they are found to have in their bellie the Mullers, which of all others be the swiftest in swimming.

*Diable de Mer.

¶ Of the Scolopendres, the sea Foxes, and the Glanis.

THese Scolopendres of the sea, are like to those long earewigs of the land, which they call Centipedes, or many-feet. The maner of this fish is this, when she hath swallowed an hooke, to cast up all her guts within, untill she hath discharged her selfe of the said hooke, and then she supbeth them in againe. But the sea Foxes in the like danger have this cast with them, namely to gather in and let it goe downe into the throat more and more still of the line, untill he come to the weakest part thereof, which he may easily fret and gnaw asunder. The Glanis is more sly and warie than they both: for his propertie is to bite at the backe of the hooke, and not to gobble it up whole, but nibble away all the bait, and leave the hooke bare.

¶ Of the Ram-fish.

THIS fish is a very strong theefe at sea, and makes foule worke where he commeth: for one while he squatteth close under the shade of bigge ships that ride at anker in the bay, where he lieth in ambush to wait when any man for his pleasure would swim and bath himselfe, that so he might surpriseth them: otherwhiles he putteth out his nose above the water, to spie any small fisher boats comming, & then he swimmeth close to them, overturneth and sinketh them.

¶ Of those that have a third or middle nature, and are neither living creatures nor yet Plants: also of the sea Nettle-fishes, and Sponges.

I Verily for my part am of opinion, that those which properly are neither beasts nor plants, but of a third nature betweene or compounded of both (the sea-Nettles I meane, and Sponges) have yet a kind of sense with them. As for those Nettles, there be of them that in the night range too and fro, and likewise change their colour. Leaves they carrie of a fleshie substance, and of flesh they feed. Their qualitie is to raise an itching smart, like for all the world to the weed on the land so called. His manner is, when he would prey, to gather in his bodie as close, streight, and stiffe, as possibly may be. He spieth not so soone a silly little fish swimming before him, but hee spreadeth and displaieth those leaves of his like wings; with them he claspeth the poore fish, and so devoureth it. At other times, he lieth as if he had no life at all in him, suffering himselfe to be tossed and cast too and fro among the weeds, with the waves of the sea: and looke what fish soever he toucheth as he is thus floting, hee setteth a smart itch upon them, and whiles they scratch and rub themselves against the rocks for this itch, he setteth upon them and eateth them. In the night season, he laieth for sea Vrchins and Scalops. When he feeleth ones hand to touch him, he chaungeth colour, and draweth himselfe in close together on a heap: and no sooner toucheth he one, but the place will itch, sting, and be readie to blister: make not good hast to catch him quickly, he is hidden out of hand and gone. It is thought verily, that his mouth lyeth in his roor, and that hee voideth his excrements at a small pipe or issue above, where those fleshie leaves are.

Of Sponges, we find three sorts: the first thicke, exceeding hard, and rough; and this is called Tragos: a second, not all so thick, and somewhat softer; and that is named Manon: the third is fine and yet compact, wherewith they make sponges to cleanse and scoure withall, and this is tearmed Achilleum. They grow all upon rocks: and are fed with wilkes or shell-fish, with naked fish and mud. That they are not senselesse, appeareth hereby, for that when they feele that one would plucke them away, they draw in and retire backe hard, so as with greater difficultie they are pulled from the rocke. The like doe they when they be beaten upon with waves. That they live upon some food, it is manifest by the litle coquill and muscle shells that be found within them. And some say, that about Torone they continue still alive after they be plucked from the rocks: and that of the roots which are left behind, they grow againe. Moreover, upon those rocks from whence they be pulled, there is to be seen as it were some blood sticking; and especially in those of Affricke, which breed among the Syrtes. The Manæ, which otherwise be the least, become very great and most soft withall, about Lycia. But they be more delicate which are nourished in
the

- A the deepe gulfes, where leaft wind or none is stirring. The rough kind, are in Hellespont: and the fine and maffie, about the cape Malea. In fun-shine places they will corrupt and putrifie; and therefore the best are in the deepe gulfes and creeks, not exposed to the fun. They be of the same duske and blackish colour when they live, as they are afterwards being foked and full of moisture. They cleave to rockes neither by any one part, nor yet entire and whole all over: for there are betweene, certaine void pipes foure or five commonly, by which they are supposed to receive their food and nourishment. There be more of these pipes and concavities, but above they are grown together hard and not hollow. A certaine pellicle or thin skin a man may perceive them to have at their roots. For certein it is knowne, that they live long. The worst kind of them all, be those that are called Aplyfia, because unneeth they may be separated, nor cleaned and made cleane;
- B they are so foule: for great pipes they have: thicke they are besides throughout, and very maffie.

CHAP. XLVI.

¶ Of Hound-fishes, or Sea-dogs:

- T**He dyvers that use to plunge downe into the sea, are annoyed very much with a number of Sea-hounds that come about them, and put them in great jeopardie. And they say, that these fishes have a certain dim cloud or thin web, growing and hanging over their heads, resembling broad, flat, and gristly fishes, which clingeth them hard, and hindreth them from retiring backe and giving way. For which cause the said dyvers (as themselves say) carrie downe
- C with them certaine sharpe prickes or goads fastened to long poles: for unlesse they be proked at and pricked with them, they will not turne their backe; by reason (as I suppose) of a mist before their eyes, or rather of some feare and amazednes that they be in. For I never heard of any man that found the like cloud or mist (for this tearme they give unto that unhappie thing whatever it be) in the ranuge of living creatures. But yet much adoe they have and hard hold with these Hound-fishes notwithstanding: for they lay at their bellies and groines, at their heeles, and snap at everie part of their bodies that they can perceive to be white. The onely way and remedie is to make head directly affront them, and to begin with them first, and so to terrifie them: for they are not so terrible to a man, but they are as fraid of him againe. Thus within the deepe they are indifferently even matched: but when the dyvers mount up and rise againe above water,
- D then there is some ods betweene, and the man hath the disadvantage, and is in more daunger; by reason that whiles he laboureth to get out of the water, he faileth of means to encounter with the beast, against the streame and sources of the water. And therefore his onely recourse is, to have helpe and aid from his fellowes in the ship: for having a cord tied at one end about his shoulders, he shaketh it with his left hand, to give signe in what daunger hee is, whiles he maintaineth fight with the right, by taking into it the puncheon with the sharp point before said; and so at the other end they draw him to them: and they need otherwise to pull and hale him but softly: mary when he is neere once to the ship, unlesse they give him a sodaine jerke and snatch him up quickly, they may be sure to see him worried and devoured before their face: yea and when they are at the point to be plucked up, and even now readie to goe abourd, they are many times caught away out of their fellowes hands, if they bestirre not themselves the better, and put their owne good will to the helpe of them within the ship; namely, by plucking up their legges and gathering their bodies nimbly together round as it were in a ball. Well may some from ship-bourde proke at the dogges aforesaid with forkes; others thrust at them with Trout speares and such like weapons, and all never the neare: so craftie and cautelous is this foule beast, to get under the very bellie of the barke, and so maintaine combat in safetie. And therefore all the care that these fishers have, is to provide for this mischiefe, and to lie in wait for to entrap these fell, unhappy, and shrewd monsters.

CHAP. XLVII.

¶ Of those fishes that lie within a stonie and hard flintie shell: also of those that have no sense: and of other nastie and filthy creatures.

THe greatest securitie that fishers and dyvers have of safetie, is when they see the broad flat gristly fishes; for certaine it is, that they be never in any place, where hurtfull and noisome

beasts

beasts doe haunt : which is the cause that these dyvers which ducke and plunge for sponges, G
call those fishes Sacred.

We must needs confesse, that fishes within stone shells, have small or no sense, as namely oysters. Many are of the nature of very Plants, to wit, those that they call Holothuria: also Pulmones, resembling the lungs of a beast: and Star-fishes, made in forme of starres (such stars I mean as it pleaseth the painter to draw.) In summe, what is there not bred within the sea? Even the verie fleas that skip so merrily in summer time within victualling houses and Innes, and bite so shrowdly: as also lice that love best to lie close under the haire of our heads, are there engendred and to be found: for many a time the fishers twitch up their hookes, and see a number of these skippers and creepers settled thicke about their baits which they laid for fishes. And this vermin is thought to trouble the poore fishes in their sleep by night within the sea, as well as us on land. H
Last of all, some fishes there be, which of themselves are given to breed fleas and lice, among which the Chalcis, a kind of Turbot, is one.

CHAP. XLVIII.

Of venomous Sea-fishes.

MOREOVER, the sea is not without her deadly poisons: for the Sea hare, which keepeth in the Indish sea, is so venomous, that the very touching of him is pestiferous; and presently causeth vomiting and over-turning of the stomacke, not without great daunger. They which be found in our sea, seeme to be a peece or lumpe of flesh without all forme and fashion, I
in colour onely resembling the land Hare. But with the Indians they be full as big, and resemble their Hare, onely it is more stiffe and hard. And verily they cannot possibly be taken there alive. The dragon or spider of the sea, is as dangerous and mischievous a creature as the other: and with the pricks that sticke forth of his chine and back-bone, he doth much hurt. But in no place is there any more detestable and pernicious, than is the pike, that standeth out upon the taile of Trigonius, which we in Latine call *Pastinaca*, i. the Puffin or Forkfish of the sea; the which pike is five inches long. So venomous it is, that if it be stricken into the root of a tree, it killeth it: it is able to pierce a good cuirace or jacke of buffe, or such like, as if it were an arrow shot or a dart launced: but besides the force and power that it hath that way answerable to yron and steele, the wound that it maketh, is therewith poisoned. K

CHAP. XLIX.

Of fishes diseases.

WE doe not here or read, that all sorts of fishes in generall be subject to maladies and diseases, as other beasts, and even those that are wild and savage. But that this or that fish in every kind may be sicke, it appeareth evidently, that some of them mislike and come to be carion leane; whereas others of the same sort, be taken, not only in good plight but exceeding fat.

CHAP. L.

The wonderfull manner of their generation.

IN what sort fishes doe engender, if I should not in this place shew, but put it off further, I should doe great wrong to mankind, who desire to know it, as much as they wonder how it should be. In one word, fishes engender by the friction and rubbing of their bellies one against another: which they performe with such celeritic, that no eye is so quicke as to note and observe it. Dolphins, and other great Whales, have no other way but that, many they are longer somewhat about their businesse. The spawner, when the time serveth for generation, followeth after the male, and never linneth pecking and jobbing at his bellie with her muzzle. Semblably M
a little before spawning time, the milters follow after the female, only for that they would eat their spawne when they have cast it. But this is to be noted moreover, that the foresaid mixture and engendering of theirs is not sufficient for to accomplish generation, unlesse when their egges be laid or spawne cast, both male and female take it between them and keepe a turning of it, thereby

A to breath a lively spirit into it, and as it were besprinkle it with a vitall dew, as it floteth upon the water. But turne they it and tosse it, breath they upon it as much as they will, yet all those little eggs of their spawne doe not hit and come to prooffe: for if they did, all seas and lakes, and all rivers and pooles would be so pestered full with fishes, that a man should see nothing els: for there is not one of these females, but at once conceiveth an infinite number in her bellie.

CHAP. LI.

More as touching the generation of fishes, and which they be that doe spawne
in manner of eggs.

B **T**He spawne or eggs of fishes in the sea, doe grow unto perfection, some of them exceeding soone, as that of the Lampreies: others are later ere they doe so. All flat and broad fishes, such namely as have no tails and sharp prickes to hinder (as have the Thornback, Skate, and Tortoises) when they engender, leape one another. The many-foot Pour cuttels in this action fasten one of their winding claws to the nose of the female. The Cuttels and Calamaries doe the feat with their tongues or pipes rather thrust into their mouths, clasping one another with their armes, and swimming one contrary to the other: and as they conceive at the mouth, so they deliver their fruit againe at the mouth. This only is the difference, that the free Calamaries in this businesse, beare their heads downward to the earth. As for those that are soft crusted, they doe it backward as dogs. Thus the Lobsters and Shrimpes engender. Crabs at the mouth. Frogs leape one another: the male with the forefeet claspeth the arme pits of the female, and with the hindfeet the hanches. That which is engendered and brought forth, is as it were some little mites of blackish flesh, which they call Tadpoles or Polwigs, shewing no good forme, but that they have some shew of eies onely, and a taile. Some few daies after, their feet are framed, and then parteth their taile in twaine, which serveth for the feet behind. And a strange thing it is of them: after they have lived some sixe moneths, they resolve into a slime or mud, no man seeth how: and afterward with the first raines in the Spring, returne againe to their former state, as they were first shapen, no man knoweth after what sort, by a secret and unknowne way incomprehensible; notwithstanding it falleth out ordinarily so every yeare. As for the Limpins, Muskles, and Scallops, they breed of themselves in the mud and sands of the sea. Those which are of an harder coat, as the Pourcelanes and Purples, of a certaine viscous and slimie substance like a muscilong. As for that little frie, resembling small gnats and flies of the sea, they come of a certaine putrifaction and sowerneesse of the water: as the Apuræ, which are the groundlings and Smies, of the some of the sea set in an heat & chafed after some good sbewer. They that are covered with a stonie shel, as Oysters, breed of the rotten and putrified slime and mud of the sea: or of the some that hath stood long about ships or stakes and posts set fast in the water, and especially if they be of Holme wood. Howbeit, it hath been found of late in Oyster pits, that there passeth from them in freed of Sperme a certain whitish humor like milke. As for Yeeles, they rub themselves against rocks and stones, and those scrapings (as it were) which are fretted from them, in time come to take life and prove snigs, and no other generation have they. Fishes of diverse kinds engender not one with another, unlessse it bee the Skate and the Raifish: and of them there commeth a fish, which in the forepart resembleth a Ray, and in Greeke hath a name compounded of both [Rhinobatos.] Other fishes there be that breed indifferently on land and sea, according to the warm season of the yeare. In spring time Scallops, Snailles, and Horseleeches doe engender, and by the same warmth quicken and come to life; but in Autumne they turne to nothing. The Pike and Sardane breed twice a yeer, like as all stone-fishes. The Barbels thrice, as also a kind of Turbit called Chalcis, [i. the Shad:] the Carpe six times: the Scorpenes and Sargit twice, namely, in Spring and Autumne. Of flat broad fishes, the Skate onely twice in the yeer, to wit, in the Autumne; & at the setting or occultation of the star *Vergilia*. The greatest number of fishes engender for three months April, May, and June. The Cods or Stockfishes in Autumne. The Sargi, Crampfishes, & Squalli, about the equinoctiall. Soft skinned fishes in the Spring: and the Cuttell in every month. The spawne of this fish, which hangeth together like a cluster of grapes, by the meanes of a certaine blacke glew or viscositie like ynke, the Miltter dooth blow and breath upon before it can be good, for otherwise it commeth to no prooffe. The Pour-cuttles engender in Winter, and in the Spring, and then bring foorth a spawne crisped and curled (as it were) like the wreathing

branches and tendrils of a vine branch; and that in such plenty, that when they are killed they are not able to receive and containe the multitude of their egges in the concavities or ventricles of their head and belly, which they bare when they were great. They hatch them in fiftie daies, but many of them prove addle and never come to good, there is such a number of them. The Lobsters and the rest with thin shells, lay egge after egge, and sit upon them in that manner. The female Pourcuttle, one while sitteth over her egges, another while she covereth the craniall or gutter where she hath laid them, with her claws and arms enfolded crosse one over another lattise-wise. The Cuttle laieth also upon the drie land among the reeds, or els wheresoever shee can find any sea-weeds or reits to grow, and by the fiftieth day hatcheth. The Calamaries lay egges in the deepe, which hang close and thicke together, as the Cuttles doe. The Purples, Burrets, and such like, doe lay in the spring. The sea Vrchins are with egge every full moone in the winter time: and the winkles or cockles are bred in the winter likewise. The Crampfish is found to have fourescore young at once within her, and hatcheth her tender and soft egges within her bodie, thifting them from one place of the wombe to another. In like manner doe all they which are called Cartilagineus, or gristly. By which it commeth to passe, that fish alone both conceive with egge, and yet bring forth a living creature. The male sheath-fish or river-whale *Silurus*, of all others onely is so kind as to keepe and looke to the egges of the female after they be laid, many times for fiftie daies after, for feare they should be devoured of others. Other females hatch in three daies, if the male touch them. The Horne-beakes or Needle-fishes *Belonæ*, are the onely fishes which have within them so great egges that their wombe cleaveth and openeth when they should lay them: but after that they be discharged of them, it groweth together and uniteth againe. A thing usuall (as they say) in Blind-wormes. The fish called *Mus Marinus*, diggeth a gutter or ditch within the ground, and there laieth her egges, and the same she covereth over with earth, and so lets them alone for thirtie daies, then she commeth and openeth the place againe, findeth her egges hatched, and leadeth her little ones to the water.

CHAP. LII.

Of fishes wombes.

The shell-fishes *Erythini* and *Chanæ*, have their wombs or matrices. As for that fish which in Greeke is called *Trochos* [*i. the top*] is thought to get it selfe with young. The fric of all water creatures, at the first, see not.

CHAP. LIII.

Of the exceeding long life of fishes.

It is not long since that we heard of one fishes memorable example, which proved the long life of fishes. There is a faire house of retreat and pleasure called *Pausilupum*, in Campaine not far from Naples; where (as *Annius Seneca* writeth) there died a fish in the fish-pooles of *Cæsar*, threescore yeeres after that it had been put in by *Pollio Vedius*: and there remained two more of that age and of the same kind, which lived still. And since we are come to make mention of fish-ponds, me thinkes I should doe well to write somewhat more thereof, before I give over this discourse of fishes and water creatures.

CHAP. LIIII.

Of Oyster-pits, and who first devised them.

The first that invented stews and pits to keepe oysters in, was *Sergius Orata*, who made such about his house in *Bajanum*, in the daies of *L. Crassus* that famous oratour, before the *Martians* warre. And this the man did not for his belly and to maintain gourmandise, but of a covetous mind for verie gaine. And by this and such wittie devises, hee gathered great revenues: for he it was that invented the hanging baines and pooles to bath in aloft upon the top of an house: and thus when hee had set out his manour house for the better sale, hee would make good merchandise of them, and sell them againe for commoditie and gaine. Hee was the first man that brought the *Lucline* Oysters into name and credit for their excellent tast. For so it is, that

A that the same kinds of fishes, in one place are better than in another. As the Pikes in the river Tiberis, which are taken betweene the two bridges: the Turbot of Ravenna: the Lamprey in Sicilie: the Elops at Rhodes, and so forth of other sorts of fishes: for I doe not meane heere to make a bill of all the daintie fish to serve the kitchin. There was no talke then of English oysters, when *Orata* brought those of the Lucrine lake into request, for as yet the British coasts were not ours, which indeed have the best oysters of all other. But afterwards it was thought it would quit the cost and pay for the paines, to fetch oysters from the furthest part of Italie, even as farre as Brundisum. And because there should grow no quarrell nor controversie arise, whether these or the former had the more delicate and pleasant tast, it was of late devised that the hungrie oysters (which in the long carriage from Brundise were almost famished) should be fed with the rest in the Lucrine lake, and so tast alike. In those very daies, but somwhat before *Orata*, *Licinus Murena* devised pooles and stewes for to keepe and feed other fishes: whose example noble men followed and did the like after them, namely, *Philip* and *Hortensius*. *Lucullus* cut through a mountaine neere unto Naples for this purpose, namely, to let in an arme of the sea into his fish-pools: the doing whereof cost him more money, than the house it selfe which he there had built. Hereupon *Pompey* the Great gave him the name of Romane *Xerxes*, in his long robe. The fishes of that poole of his, after his death, were sold for thirtie hundred thousand Sesterces, *i.* three millions of Sesterces.

CHAP. LV.

¶ Who invented the stewes for Lampreys.

C *Aius Hirtius* was the man by himselfe, that before all others devised a pond to keep Lampreys in. He it was that lent *Cesar* Dictatour for to furnish his feasts and great suppers during the time of his triumph, 600 Lampreys, to be paid againe by weight and tale in the same kind: for sell them hee would not right out for any money, nor exchange them for other commodities. A house he had for his pleasure in the countrey, and but a very lirtle one, yet the ponds and fishes about it sold the house for foure millions of Sesterces. In proesse of time folke grew to have a love and cast a fancie to some one severall fish above the rest. For the excellent Oratour *Hortensius* had an house at Bauli, upon the side that lyeth to Baiae, and a fish-pond to it belonging: and he took such an affection to one Lamprey in that poole, that when it was dead (by report) he could not hold but weepe for love of it. Within the same poole belonging to the said house, *Antonia* the wife of *Drusus* (unto whome they fell by inheritance) had so great a liking to another Lamprey, that she could find in her heart to decke it, and to hang a paire of golden earrings about the guils thereof. And surely for the noveltie of this straunge sight, and the name that went thereot, many folke had a desire to see Bauli, and for nothing else.

CHAP. LVI.

¶ The stewes of Winkles, and who first was the deviser.

E *Volius Hirpinus* was the first inventor of warrens as it were for Winkles, which hee caused to be made within the territoric of *Tarquinij*, a little before the civile warre with *Pompey* the Great. And those had their distinct partitions, for sundrie sorts of them: that the white, which came from the parts about Reate, should be kept apart by themselves: the Illyrian (and those were chiefe for greatnesse) alone by their selves: the Africanes (which were most fruitfull) in one severall: and the Solitanes (simply the best of all the rest) in another. Nay, more than that, he had a devise in his head to feed them fat, namely, with a certaine past made of cuite and wheate meale, and many other such like: to the end forsooth, that the gluttons table might be served plentifully with home-fed and franked great Winkles also. And in time, men grew to take such a pride and glorie in this artificiall feat, and namely, in striving who should have the biggest, that in the end one of their shells ordinarily would containe * fourescore measures called Quadrants, if *M. Varro* say true, who is mine author.

* 3 wine gallons and three quarts: for Quadrans is 3 Cyathi, *i.* the 4 part of Sextarius, & Sextarius is a wine pint & a halfe, or 18 ounces.

CHAP. LVII.

¶ Of Land fishes.

Theophrastus also telleth strange wonders of certain kinds of fishes, which are about Babylon, where there be many places subject to the innundations of Euphrates and other rivers, and wherein the water standeth, after that the rivers are returned within their bankes: in which the fish remaine in certaine holes and caves. Some of them (saith he) use to issue forth a land for food and releefe, going upon their finnes in lieu of feet, and wagging their tailes ever as they go. And if any chase them, or come to take them, they will retire backe into their ditches aforesaid, and there make head and stand against them. They are headed like to the *sea Frog, made in other parts as Gudgeons, and guiled in manner of other fishes. Moreover, that about Heraclea and Cromna, and namely neare the river Lycus, and in many other quarters of the kindome of Pontus, there is one kind above the rest that ever haunteth rivers sides, and the utmost edges of the water: making her selfe holes under the bankes, and within the land wherein shee liveth, yea, even when the bankes are drie, and the rivers gathered into narrow channels. By reason whereof they are digged forth of the earth: and as they say that find them, alive they bee, as may appeare by moving and stirring of their bodies. Neere unto the abovesaid Heraclea and the river Lycus, when it is fallen and the water ebbe, there be fishes breed of the egges and spawne left upon the mud and sand, who in seeking for their food, doe stirre and pant with their little guils: which they use to doe when they want no water, but even then when as the river is full. Which is the reason also that yceles live a long time after they be taken foorth of the water. Hee affirmeth moreover, that the eggs of fishes lying upon the drie land, will come to their maturitie and perfection, and namely those of the Tortoises. Also, that in the same countrey of Pontus, there bee taken fishes upon the yce, and gudgeons especially, which shew not that they bee alive, but by their stirring and leaping when they come to be foddren in hote caudrons. Hereof may some reason yet be rendered, although the thing be straunge and wonderfull. The same authour avoucheth, that in Paphlagonia there be digged out of the ground certaine land fishes that be excellent good meat, and most delicate: but they be found in drie places remote from the river, and whither no waters flow, whereby they are forced to make the deeper trenches for to come by them. Himselfe marvelleth how they should engender without the helpe of moisture. Howbeit, hee supposeth that there is a certaine minerrall and naturall force therein, such as wee see to sweat out in pits, for as much as diverse of them have fishes found within them. Whatsoever it is, surely lesse wonderfull this is, considering how the Moldwarpes live (a creature naturally keeping under the ground) unlesse haply we would say that fishes were of the same nature that earth wormes be of.

CHAP. LVIII.

¶ Of the Mice of Nilus.

But the innundation of Nilus cleareth all these matters: the overflowing whereof is so admirable, and so farre passeth all other wonders, that we may beleeve these things. For when as this river falleth and returneth againe into his channell, a man may find upon the mud yong Mice halfe made, proceeding from the generative vertue of water and earth together: having one part of their bodie living already, but the rest as yet mishapen, and no better than the verie earth.

CHAP. LIX.

¶ Of the fish Anthias, and how hee is taken.

Ithinke it not meet to conceale that, which I perceive many doe beleeve and hold, as touching the fish Anthias. We have in our Cosmographie made mention of the Islands Cheltonia in Asia, situate in a sea full of rocks under the promontorie of Taurus; among which are found great store of these fishes: and much fishing there is for them, but they are suddainely taken, and ever after one sort. For when the time serveth, there goeth forth a fisher in a small boat or barge, for certaine daies together, a pretie way into the sea, clad alwaies in apparell of one and the same colour, at one houre, and to the same place still, where he casteth forth a bait for the fish. But the

fish

A fish Anthias is so craftie and warie, that whatsoever is throwne forth, hee suspecteth it evermore, that it is a meanes to surprise him. He feareth therefore, and distrusteth: and as he feareth, so is he as warie: untill at length, after much practise & often using this devise of flinging meat into one place, one above the rest groweth so hardie and bold, as to bite at it, for now by this time hee is growne acquainted with the manner thereof, and secure. The fisher takes good marke of this one fish, making sure reckoning that he will bring more thither, and be the means that he shall speed his hand in the end. And that is no hard matter for him to doe, because for certaine daies together, that fish and none but he, dare adventure to come alone unto the bait. At length this hardie captaine meets with some other companions, and by little and little he cometh every day better accompanied than other, untill in the end he brings with him infinite troupes and squadrons together, so as now the eldest of them all (as craftie as they bee) being so well used to know the fisher, that they will snatch meat out of his hands. Then he espying his time, putteth forth an hook with the bait, somewhat beyond his fingers ends, flieth and seizeth upon them more truly, then catcheth them, and speedily with a quick and nimble hand whippeth them out of the water within the shadow of the ship, for feare least the rest should perceive, and giveth them one after another to his companion within; who ever as they be snatcht up, latcheth them in a course twillie or covering, and keepes them sure ynough from either strugling or squeaking, that they should not drive the rest away. The speciall thing that helpeth this game and pretie sport, is to know the captaine from the rest, who brought his fellowes to this feast, and to take heed in any hand that he be not twitcht up and caught. And therefore the fisher spareth him, that he may flie and goe to some other flocke, for to traine them to the like banket. Thus you see the manner of fishing for these Anthiax. Now it is reported moreover, that one fisher upon a time (of spightfull mind to doe his fellow a shrewd turne) laid wait for the said captaine fish, the leader of the rest (for he was verie well knowne from all others,) and so caught him: but when the foresaid fisher espied him in the marker to be sold, and knew it was he: taking himselfe misused & wronged, brought his action of the case against the other, and sued him for the dammage, and in the end condemned him. *Mutianus* saith moreover, That the plaintife was awarded to have for recompence, ten pounds of the defendant. The same fishes, if they chauce to see one of their fellowes caught with an hooke, by report, with their sharpe finnes which they have upon their backe like sawes, cut the line in twaine: for he that hangeth at it, will of purpose stretch it out streight, that it may bee cut asunder more easily. But the Sargots have another trick for that: for he that finds himselfe taken, fretteth the line in twaine, whereto the hooke hangeth, against a hard rocke.

CHAP. LX.

Of the sea fishes called Starres.

Ver and besides all these, I see that some deep clearks and great Philosophers have made a wonder at the Starre in the sea. And verily it is no other than a very little fish, made like a starre (as we see it painted.) A soft flesh it hath within: but without-forth an hard brawnie skin. Men say it is so fierie hote, that whatsoever it toucheth in the sea, it burneth: and looke what meat it receiveth, it makes a hand with it, and digesteth it presently. What prooffe there is hereof, and how men should come to the knowledge and experience of thus much, I cannot readily set downe. I would thinke that rather more memorable and worthie to bee recorded, whereof wee have daily experience.

CHAP. LXI.

Of the Dactyli, and their wonderfull qualities.

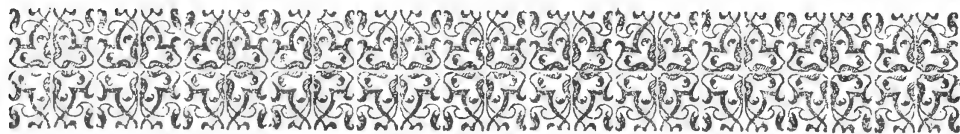
Of the shell fish kind are the Dactyli, so called of the likenesse of mens nailes, which they resemble. The nature of this fish is to shine by themselves in the dark night, when all other light is taken away. The more moisture they have within them, the more light they give: inso much as they shine in mens mouths as they be chawing of them: they shine in their hands: upon the floore on their garments, if any drops of their fattie liquor chauce to fall by: so as it appeareth, that doubtlesse it is the very juice and humour of the fish which is of that nature, which we doe so wonder at in the whole bodie.

CHAP. LXII.

¶ Of the enmitie and amitie which is betweene fishes and other water beasts.

Such concord there is in some, and such discord in others, as it is wonderfull. The Mullet and the sea-Pike hate one another, and bee ever at deadly warre: likewise, the Congre and the Lamprey: infomuch as they gnaw off one anothers taile. The Lobster is so afraid of the Polype or Pourcuttell, that if he spie him neere, he evermore dieth for very woe. The Lobsters are readie to scratch and teare the *Congre: the Congres againe doe as much for the Polype: *Nigidius* writeth, That the sea-Pike biteth off the Mullets taile: and yet the same fishes in certaine H
fer months are good friends, and agree well ynough. Hee saith moreover, that those Mullets live all, notwithstanding their tailes be so curtold. On the other side, there be examples of freindship among fishes, besides those, of whose societie and fellowship I have alreadie written: and namely, betweene the great Whale Balæna, and the little Musculus. For whereas the Whale afore said hath no use of his eies (by reason of the heavie weight of his eie-browes that cover them) the other swimmeth before him, serveth him in steed of eies and lights, to shew when hee is neere the shelves and shallows, wherein he may be soone grounded, so big and huge he is.

Thus much of Fish. Hence forward will we write of Foules.



THE TENTH BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECUNDVS.

CHAP. I.

¶ The nature of Birds and Foules.



If followeth now that wee should discourse of the nature of Foules. And first to begin with Ostriches. They are the greatest of all other foules, and in manner of the nature of foure footed beasts: (namely, those in Affricke and Æthyopia) for higher they bee than a man sitting on horsebacke is from the ground: and as they bee taller than the man, so are they swifter on foot than the very horse. For to this end onely hath Nature given them wings, even to helpe and set them forward in their running; for otherwise, neither flie they in the aire, ne yet so much as rise and mount from the ground. Cloven houfes they have like red deere, and with them they fight; for good they be to catch up stones withall, & with their legs they whurle them back as they run away, against those that chafe them. A wonder this is in their nature, that whatsoever they eat (and great devourers they bee of all things, without difference and choise) they concoct and digest it. But the veriest fooles they be of all others. For as high as the rest of their bodie is, yet if they thrust their head and necke once into any shrub or bush, and get it hidden, they thinke M
then they are safe ynough, and that no man seeth them. Now two things they doe affoord, in recompence of mens paines that they take in hunting and chasing them: to wit, their eggs, which are so big, that some use them for vessels in the house: and their feathers so faire, that they serve for pennaches to adorne and set out the crests and morions of souldiors in the warres.

A

CHAP. II.

Of the Phoenix.

THe birds of Æthiopia and India, are for the most part of diverse colours, and such as a man is hardly able to decipher and describe. But the Phoenix of Arabia passeth all others. Howbeit, I cannot tell what to make of him: and first of all, whether it be a tale or no, that there is never but one of them in the whole world, and the same not commonly seen. By report he is as big as an Ægle: for colour, as yellow & bright as gold; (namely, all about the neck;) the rest of the bodie a deepered purple: the taile azure blew, intermingled with feathers among, of rose cormation colour: and the head bravely adorned with a crest and pennache finely wrought; having a tuft and plume thereupon, right faire and goodly to be seene. *Manilius*, the noble Roman Senatour, right excellently well seene in the best kind of learning and litterature, and yet never taught by any, was the first man of the long Robe, who wrote of this bird at large, & most exquisitely. Hee reporteth, that never man was knowne to see him feeding: that in Arabia hee is held a sacred bird, dedicated unto the Sunne: that hee liveth 660 yeares: and when hee groweth old, and begins to decay, he builds himselfe a nest with the twigs and branches of the Canell or Cinamon, and Frankincense trees: and when he hath filled it with all sort of sweet Aromaticall spices, yeeldeth up his life thereupon. He saith moreover, that of his bones & marrow there breedeth at first as it were a little worme: which afterwards proveth to bee a pretie bird. And the first thing that this yong new Phoenix doth, is to performe the obsequies of the former Phoenix late deceased: to translate and carie away his whole nest into the citie of the Sunne neere Panchæa, and to bestow it full devoutly there upon the altar. The same *Manilius* affirmeth, that the revolution of the great yeare so much spoken of, agreeth just with the life of this bird: in which yeare the starres returne againe to their first points, and give signification of times and seasons, as at the beginning: and withall, that this yeare should begin at high noone, that very day when the Sunne entreteth the signe *Aries*. And by his saying, the yeare of that revolution was by him shewed, when *P. Licinius* and *M. Cornelius* were Consuls. *Cornelius Valerianus* writeth, That while *Q. Plautius* and *Sex. Papinius* were Consuls, the Phoenix flew into Ægypt. Brought he was hither also to Rome in the time that *Claudius Cesar* was Censor, to wit, in the eight hundred yeare from the foundation of Rome: and shewed openly to bee seene in a full hall and generall assembly of the people, as appeareth upon the publicke records: howbeit, no man ever made any doubt, but he was a counterfeit Phoenix, and no better.

CHAP. III.

Of Ægles.

Ofall the birds which we know, the Ægles carie the price both for honour and strength. Six kinds there be of them. The first, named of the Greekes **Melenaetos*, and in Latine, *Valeria*: the least it is of all others, and strongest withall, blacke also of colour: In all the whole race of the Ægles, she alone nourisheth her young birds: for the rest (as wee shall hereafter declare) doe bear them away: she onely crieth not, nor keepeth a grumbling and huzzing as others doe: and evermore converseth upon the mountaines. Of the second sort is **Pygargus*. It keepeth about townes and plaines, and hath a whitish taile. The third is *Morphnos*, which *Homer* calleth also *Percnos*: some name it *Plancus* and **Anataria*: and she is for bignesse and strength, of a second degree: loving to live about lakes and meeres. Ladie *Phæmonæ*, who was supposed & said to be the daughter of *Apollo*, hath reported, that this Ægle is toothed: otherwise mute, as not having any tongue: also, that of all others she is the blackest, and hath the longest taile. With her accordeth *Boethus* likewise. Subtile shee is and wittie: for when shee hath seized upon Tortoises, and caught them up with her talons, she throweth them downe from aloft to breake their shels. And it was the fortune of the Poët *Æschylus* to die by such a meanes. For when hee was foretold by wisards out of their learning, that it was his destinie to die upon such a day by some thing falling upon his head: hee thinking to prevent that, got him forth that day into a great open plaine, far from house or tree, presuming upon the securitie of the cleare and open skie. Howbeit, an Ægle let fall a Tortoise, which light upon his head, dashed out his braines, and laid him asleepe for ever.

Of

* The Saker as some thinke.

* A kind of Faulcon.

* For killing of duckes and mallards.

*The mountaine Storke.

Of the fourth kind is *Pernopterus*, the same that **Oripelargus*, fashioned like to a Geire or Vulture: it hath least wings, a bodie bigger than the rest: but a very coward, fearefull and of a bastard and craven kind, for a raven will beat her. Besides, she hath a greedie and hungrie worm alwaies in her gorge and craw, and never is content, but whining and grumbling. Of all Ægles she onely carieth away with her the dead prey, & feedeth thereupon in the aire: whereas others have no sooner killed, but they prey over them in the place. This bastard buzzard kind maketh that the fifth, (which is the roiall Ægle) & is called in Greek *Gnesios*, as one would say, true and kindly, as descended from the gentle and right aire of Ægles. This Ægle roiall, is of a middle bignesse, and of a reddish colour, a rare bird to bee seene. There remaineth now the sixt and last sort, and that is **Haliartos*. This Ægle hath the quickest and clearest eie of all others, soaring & mounting on high: when she spieth a fish in the sea, downe she comes with a power, plungeth into the water, and breaking the force thereof with her breast, quickly she catcheth up the fish, and is gone. That Ægle which wee named in the third place, haunth lakes, fennes, and standing waters for to prey upon water-foule: who, to shift from her, are driven otherwhile to dive under the water: but she presseth so hard upon them, that they be wearied and astonied in the end, and then she catcheth them up, and carieth them away. A worthie sport it is to see the manner of their skuffling: whiles the fillie river-bird maketh means to gaine the banke side for refuge, (especially if it be wel growne with thicke reeds) and the Ægle for her part drives her from thence with the clap and stroke of the wing: whiles, I say, as the Ægle striketh, and therewith plungeth her selfe downe into the water, the poore foule that swimmeth underneath, seeing the shadow of the Ægle hovering about the banke side, riseth up againe in another place, far ynough off from the Ægle, & where she imagined that she should be least looked for. Which is the cause that these wild-foule of the water, commonly swim in flocks. For when they are many together, they are not much troubled and annoied, by reason that with fluttering their pinnions, with dashing and flapping the water with their wings, they dazle the sight of their enemy. Oftentimes also the very Ægles, not able to weld the prey that they have seized upon, are together with it drawne under the water, and so drowned. Now as touching the *Haliartos*, or the Osprey, she onely before that her little ones be feathered, will beat and strike them with her wings, and thereby force them to looke full against the Sunne beames. Now, if shee see any one of them to winke, or their eies to water at the raies of the Sunne, shee turnes it with the head forward out of the nest, as a bastard and not right, nor none of hers: but bringeth up and cherisheth that, whose eie will abide the light of the Sunne as she looketh directly upon him. Moreover, these Orfraies or Ospreies are not thought to be a feverall kind of Ægles by themselves, but to be mungrels, and engendred of divers sorts. And their young Ospraies be counted a kind of Ossifragi: from them come the lesser Geires, they againe breed the greater, which engender not at all. Some reckon yet another kind of Ægle, which they call *Barbatæ*; and the Tuscanes, *Ossifrage*.

*The precious stone Æcites.

But of the six kinds before rehearsed; the three first, and the sixt, have in their nest a stone found named **Æcites*, which some call *Gagates*, and it is therein engendred. This stone is medicinable and singular good for many diseases: and if it bee put into the fire, it will never a whit consume. Now this stone (as they say) is also with child. For if a man shake it, he shall heare another to rattle and sound within, as it were in the bellie or wombe of it. But that vertue medicinable above-said, is not in these stones, if they be not stollen out of the very nest from the aire. Build they doe and make their nests upon rockes and trees. Three eggs commonly they lay: whereof two onely they use to hatch: howbeit, sometimes they have been seene to have three young ones. But lightly one of them they turne out of the nest, because they would not bee troubled with feeding and nourishing it. And verily, Nature hath well provided, that at such a time the old Ægles should not be able to purvey sufficient for meat: for otherwise, if they should reare their birds, they were ynough to destroy the young breed of deere and wild beasts in a whole countrey, that there should be no venison nor game at all for gentlemen. Moreover, by the same providence of Nature, all that while their tallons or clees hooke and turne inward very much: also for very hunger their feathers waxe grey and white, so as they have good cause not to abide their young. But when they have cast them off, the Ossifrages which are neere of kin unto them, are readie to take them and bring them up with their owne birds. But the old Ægles their dammes, not content therewith, persecute them still when they are growne to bee big ones, beating and chasing them away farre off, as their very concurrents, and who would entercommune with them, and rob them of their

A their prey. And were it not so, certainly one airie of *Ægles* needeth the reach of a whole countrey to furnish them with venison sufficient to their full. They have therefore their severall coasts and walkes, and without those limits and usuall haunts they raven not. When they have seized of any prey, they carie it not away presently, but first lay it downe, peruse and peise the weight thereof, and then away they flie with it amaine, but not before. They die not for age, nor upon any sickness, but of very famine, by reason that the upper beake of their bill is so farre overgrowne, and turneth inward so much, that they are not able to open it for to feed themselves. Their manner is ordinarily to go to their businesse (namely, to flie and seek their prey) after noon. For all the forenoone they are perched up, and be idle and doe nothing, waiting the time when men be not stirring abroad, but about their markets within the cities and townes, or otherwise busie in their civile affaires. The quils or feathers of *Ægles* laid among those of other fowles, will devour and consume them. Men say, that of all flying fowles the *Ægle* onely is not smitten nor killed with lightening: whereupon folke are wont to say, that she serveth *Jupiter* in place of his squire or armour-bearer.

CHAP. IIII.

¶ *When the Ægles began to be the ensignes and standards of Romane legions: and what fowles they be that war with Ægles.*

C *Aius Marius* in his second Consulship ordained, that the Legions of Romane souldiors onely, should have the *Ægle* for their standard, and no other ensigne. For beforetime the *Ægle* marched formost indeed, but in a ranke of foure others, to wit, of *Wolves, Minotaures, Horses, and Bores, which were borne each one before their owne severall squadrons and companies. Not many yeates past, the standard of the *Ægle* alone began to be advanced into the field to battell: and the rest of the ensignes were left behind in the campe. But *Marius* rejected them altogether, and had no use of them at all. And ever since this is observed ordinarily, that there was no standing campe or leaguer wintered at any time, without a paire of *Ægle* standards.

*Names of
Ensignes.

D Of *Ægles*, the first and second kind prey not onely upon the lesse foure footed beasts, but also mainaine battell with the red Deere, even the Stag and the Hind. The manner of the *Ægle* is, after she hath wallowed in the dust and gathered a deale thereof among her feathers, to settle upon the hornes of the Deere before said, to shake the same off into his eies, to flap and beat him about the face with his wings, untill she drive him among the rockes, and there force him to fall downe from thence headlong, and so to breake his necke. Moreover, the *Ægle* hath not ynough of this one enemy, but she must warre with the Dragon also: howbeit, the fight betweene them is more sharpe and eager: yea, and putteth her to much more daunger, albeit otherwhiles they combate in the aire. The Dragon of a naturall spight and greedie desire to doe mischief to the *Ægle*, watcheth evermore where the airie is, for to destroy the egges, and so the race of the *Ægles*. The *Ægle* againe, wheresoever she can set an eie upon him, catcheth him up and carieth him away: but the serpent with his taile windeth about his wings, and so entangleth and tieth them fast, that downe they fall both of them together.

CHAP. V.

¶ *A strange and wonderfull accident of an Ægle.*

E T Here happened a marvellous example about the citie *Sestos*, of an *Ægle*: for which in those parts there goeth a great name of an *Ægle*, and highly is she honored there. A young maiden had brought up a young *Ægle* by hand: the *Ægle* againe to requite her kindnesse, would first when she was but little, flie abroad a birding, and ever bring part of that shee had gotten unto her said nurse. In proesse of time, being growne bigger and stronger, would set upon wild beasts also in the forrest, and furnish her yong mistresse continually with store of venison. At length it fortuneth that the damosell died: and when her funerall fire was set a burning, the *Ægle* flew into the mids of it, and there was consumed into ashes with the corps of the said virgine. For which cause, and in memorfall hereof, the inhabitants of *Sestos*, and the parts there adjoining, erected in that very place a stately monument, such as they call *Heroium*, dedicated in the name of *Jupiter* and the virgine, for that the *Ægle* is a bird consecrated unto that god.

CHAP.

CHAP. VI.

Of Vultures, or Geires.

THe blacke Vultures are the best of that kind. No man ever could meet with their nests: whereupon some have thought (but untruly) that they flie unto us out of another world, even from the Antipodes, who are opposite unto us. But the truth is, they build in the highest rockes that they can find: and their young ones have many times been seene, two together and no more. *Vmbrius*, who was counted the most skilfull Aruspex of our age, saith, That usually they lay three egges; whereof they take one of them to sacre and blesse (as it were) the other egges and the nest: and then soone after they cast it away. Also that the manner of the Geires is to fore-see a carnage, and to flie two or three dayes before unto the place where there will be any carions or dead carcaffes.

CHAP. VII.

Of the Sangualis, and Immussulus.

AS touching the Sangualis and the Immussulus, our Augurs at Rome are in a great doubt and make much question, what they should be. Some are of opinion, that the Immussulus is the chicke of the Vulture: and the Sangualis, likewise the young Ossifraga. *Massurius* saith, that the Sangualis and Ossifraga be both one: and as for the Immussulus, it is the young bird of the Ægle, before it come to have a white taile. Some have affirmed confidently, that after the death of *Mutius* the Augure, there was never any of them seene at Rome: but I rather am of this mind (and me thinks it soundeth more like a truth, such is the supine negligence and carelesnesse of men in all things else) that no marveile it is if they know them not, although they see them.

CHAP. VIII.

Of Hawkes.

WEe find in Faulconrie, sixteen kinds of Hawkes or fowles that prey. Of which, the *Circos* (which is lame and limpeth of one legge) was held in auncient time for the luckiest Augurie, in case of weddings, and of cattell. Also the Hawke called *Triorches* (of three stones or cullions that it hath) is reputed a bird of good presage: and in Augurie, lady *Pheonoe* hath given unto it the honour of the best simply and most fortunate. The Romanes call it *Buteo*, *i.* a Buzzard. And there is a worshipfull house & familie in Rome of that surname; by occasion that a Buzzard settled and perched upon the Admirall ship where *Fabius* himselfe (one of that house) was, presaging a boon-voyage and happie successe, according as it fell out indeed. As for the Hawke which the Greekes name *Æfalo*, *i.* the Merlin, thee alone is ever seene at all times of the yeere: whereas the rest are gone when winter commeth. In general, Hawkes are divided into sundrie and distinct kinds, by their greedinesse more or lesse, and their manner in chase and preying: for some there be that never seize on a foule but upon the ground: others againe never assaile any birds, but when they spie them flying about some tree. There be also, that take a bird perched and sitting on high: and yee shall have of them, that overtake them as they flie in the wide and open aire. The doves therefore and pigeons, knowing the danger of flying aloft, so soone as they espie them, either light upon the ground and settle, or else flie neere the earth; and thus helpe themselves in taking a contrarie course to the hawkes nature, for to avoid their talons. There is in the Ocean of Affricke an Iland called *Cerne*, wherein all the hawkes of the coasts of the *Massyli*, build upon the very ground, and there breed: and being so accustomed to those countries, ye shall not find an aire of them elsewhere. In a part of *Thracia*, somewhat higher in the countrey beyond *Amphipolis*, men and hawkes joine in fellowship and catch birds together: for the men drive the woods, beat the bushes and reeds to spring the foule; then the hawkes flying over their heads, seize upon them, and either strike or bear them to the ground fit for their hands. On the other side, the hawkers and foulers when they have caught the foule, divide the bootie with the hawkes: and by report, they let such birds flie againe at libertie aloft into

A into the aire, and then are the hawkes readie to catch them for themselves. Moreover, when the time is of hawking, they will by their manner of crie and flying together, give signe to the faulconers that there is good game abroad, and so draw them forth to hawking for to take the opportunitie. It is said, that the wolves doe the like, about the lake Mœotis: for unlesse they may have their part with the fishers, they will rend and teare their nets, when they find them stretched forth. Faulcons or Hawkes willingly eat not the heart of any bird. There is an hawke called Cymindis, which preyeth in the night: sildome is she seene in the woods, and by day-light seeth little or nothing. There is deadly warre betweene it and the Ægle; and oftentimes they be both taken, entangled one with the other.

CHAP. IX.

Of the Cuckow, which usually is killed by birds of her owne kind:

A Stouching the Cuckow, it seemeth that he commeth of some hawke changed into his shape at one certaine time of the yeere: for then those other hawkes are not to be seene, unlesse some very few daies. Hee sheweth himselfe also but for a small season in summer time, and afterwards appeareth no more. It is the only hawke that hath no talons hooked downward, neither is he headed as other hawkes, nor like unto them, but in colour: and for bill, he resembleth rather the dove. Nay more than that, the hawke will prey upon him and devour him, if haply they be seene both together: and it is the onely bird of all other that is killed by those of the owne kind. He altereth his voice also. In the spring, he commeth abroad, and by the beginning of the dog-daies, hideth himselfe. These lay alwaies in other birds nests, and most of all in the Stock-doves, commonly one egge and no more (which no other bird doth besides) and seldome twaine. The reason why they would have other birds to sit upon their egges and hatch them, is because they know how all birds hate them: for even the verie little birds are readie to warre with them: for feare therefore that the whole race of them should be utterly destroyed by the furie of others of the same kind, they make no nest of their owne (being otherwise timorous and fearfull naturally of themselves) and so are forced by this craftie shift to avoid the daunger. The Titling therefore that sitteth, being thus deceived, hatcheth the egge and bringeth up the chicke of another bird. And this young Cuckow being greedie by kind, beguiling the other

D young birds and intercepting the meat from them, groweth hereby fat and faire-liking: whereby it cometh into speciall grace and favor with the dam of the rest, and nource to it. She joieth to see so goodly a bird toward: and wonders at her selfe that she hath hatched and reared so trim a chicke. The rest, which are her owne indeed, she sets no store by, as if they were changelings: but in regard of that one, counteth them all bastards and misbegotten: yea, and suffereth them to be eaten and devoured of the other even before her face: and this she doth so long, untill the young cuckow being once fledge and readie to flie abroad, is so bold as to seize upon the old Titling, and to eat her up that hatched her. And by that time there is not another bird againe for goodnesse and sweetnesse of meat, comparable to the young Cuckow.

CHAP. X.

Of Gledes, Kites, or Puttocks.

THe Kites or Gledes are of the same kind of Hawkes or birds of prey, onely they bee greater. This hath been noted & observed in them: that being a most ravenous bird, and ever more hungrie, yet were they never knowne to snatch any viands ordained at funerall feasts for the dead, out of the platters; ne yet the flesh of beasts slaine in sacrifice, from off the altar of *Jupiter* in Olympia. Nay, it was never seene that a Puttocke would catch flesh out of their hands that served at such feasts: but if it did, a great presage it was of some doleful & heavie misfortune which should fall upon the whole towne, that made these solemn sacrifices. These Gledes or Puttocks, seeme by the winding and turning of their tailes to & fro as they flie, to have taught pilots the skil of steering, and the use of the helme. See how Nature hath shewed that in the aire above, which is so necessary in the deep sea beneath! Kites likewise are not commonly seen abroad in the dead time of winter: yet go they not away for all together before the Swallowes. Moreover, it is said, that after the Sunsteeds, alwaies in summer time, they be troubled with the gout in their feet.

CHAP. XI.

§ A generall division of Fowles.

THe first and principall difference and distinction in birds, is taken from their feet: for they have either hooked tallons, as Hawkes; or round long clawes, as Hennes; or else they be broad, flat, and whole-footed, as Geese and all the sort in manner of water-foule. Those that have hooked tallons, for the most part feed upon flesh and nothing else.

CHAP. XII.

§ Of unluckie birds, and namely, the Crow, Raven, and Scritch-owle.

THe Crow liveth not altogether of carion, for the Rooke eateth of other food. The Crows and Rookes have a cast by themselves: for when they meet with a hard nut which they are not able to cracke, nor breake their shales with their bills, they will flie aloft and fling it against some rock or tyle-house once or twice, yea & many times together, untill it be so crushed and bruised, that they may easily breake it quite, and then they eat up the kernell. These birds all of them keepe much prating and are full of chat; which most men take for an unluckie signe and presage of ill fortune: although some there be who thinke otherwise, that it is a good bird, and highly esteeme of her. Observed it is, that from the going down or occultation of the starre Arcturus, unto the comming of the Swallow, the Crow is not to be seene else-where but about the groves and temples of *Minerva* (and that is but very sildome) and namely, neere to Athens. Moreover, this bird only feedeth her young cadwes for a good while after they are able to flie. Shee is most unluckie at breeding time and cooving, that is to say, after the Sunsteed in summer. All other birds, which be as it were of the same race, drive their young ones out of the nest when they be once fledge, and put them to it, forcing them to flie abroad: like as the Ravens also, who likewise feed not on flesh only: and they likewise when they perceive their young once to be strong, chase and drive them away farre off. Therefore about little villages and hamlets, there commonly be not above two paire of them at once. And about Cranon verily in Thessalie, yee shall never see above one paire of them: for the old ones give place unto the yong, and fly away. There are some divers and different properties in this bird, and that before-named: for the Ravens engender before the Sunsteed, and for sixtie daies are somewhat ill at ease, and troubled with a kind of drought or thirstines especially, untill such time as the figges be ripe in Autumne: and then from that time forward, the Crow beginneth to be diseased and sick. Ravens for the most part lay five egges: and the common sort are of opinion, that they conceive and engender at the bill, or lay their egges by it: and therefore if women great with child chauce to eat a Ravens egge, they shall be delivered of their children at the mouth: and generally shall have hard labour, if such an egge be but brought into the house where such great bellied women be. *Aristotle* denieth this and saith, that the Ravens conceive by the mouth, no more than the Egyptian Ibis: and he affirmeth, that it is nothing else but a wantonneffe which they have in billing and kissing one another, which we see them to doe oftentimes, like as the Doves and Pigeons also. The Ravens of all other fowles, seeme to have a knowledge of their owne significations in presages and fore-tokens: for when the mercenarie hired souldiers of Media were all massacred under a colour of entertainment and hospitalitie, the Ravens flew all away out of Peloponnesus and the region of Attica. The worst token of ill luck that they give, is when in their crying they seeme to swallow in their voice as though they were choked.

The night-birds have also crooked tallons, as the Owles, Scritch-owle, and Howlets. All these see but badly in the day time. The Scritch-owle betokeneth alwaies some heavie newes, and is most execrable and accursed, and namely, in the presages of publicke affaires: he keepeth ever in deserts; and loveth not onely such unpeopled places, but also that are horrible and hard of access. In summe, he is the verie monster of the night, neither crying nor singing out cleere, but uttering a certaine heavie grone of dolefull moning. And therefore if he be seene to flie either within citties, or otherwise abroad in any place, it is not for good, but prognosticateth some fearful misfortune. Howbeit I my selfe know, that hee hath sitten upon many houses of privat men, and

A and yet no deadly accident followed thereupon. He never flieth directly at ease, as he would himselfe, but evermore sidelong and byas, as if he were carried away with the wind or somewhat else. There fortun'd one of them to enter the very secret sanctuarie within the Capitoll at Rome, in that yeere when as *Sext. Papellio Ister* and *L. Pedanius* were Consuls: whereupon at the Nones of March, the citie of Rome that yeere made generall processions to appease the wrath of the gods, and was solemnly purged by sacrifices.

CHAP. XIII.

¶ Of the bird *Incendiaria*.

B **T**His fire-bird *Incendiaria* is likewise unluckie, and as our Chronicles and Annales do witness, in regard of her the citie of Rome many a time hath made solemne supplications to pacifie the gods, and to avert their displeasure, by her portended: as for example, when *L. Cassius* and *C. Marius* were Consuls: in that very yeere when by occasion of a Scritch-owle seene, the citie likewise was purged by sacrifice, as is abovesaid, and the people fell to their prayers and devotions. But what bird this should be, neither doe I know, nor yet find in any writer. Some give this interpretation of *Incendiaria*, to be any bird whatsoever, which hath been seene carrying fire either from altar or chappell of the gods. Others call this bird *Spinturnix*. But hitherto I have not met with the man who would say directly unto me, That he knew what bird this should be.

CHAP. XIII.

¶ Of the bird *Clivina*, or *Cluina*.

C **L**ikewise the bird named in old time *Clivina*, or *Cluina*, which some call *Clamatoria*, and which *Labeo* describeth by the name of *Prohibitoria*, I see is as little knowne as the other. *Nigidius* also maketh mention of a bird called *Subis*, which useth to squash *Ægles* egges.

CHAP. XV.

¶ Of other unknowne birds.

D **I**N the *Augures* bookes which the *Tuscans* have composed, there be many birds described and set out in their colours, which have not been seene some hundreds of yeeres past. And I muse and marvaile much, that they should be now extinct and the race of them cleane gone, considering that the kind of those fowles is not lost, but continueth still in great abundance, which men eat daily at their tables, and consume so ordinarily.

CHAP. XVI.

¶ Of night flying birds.

E **O**fstrangers and forrein writers, *Hylas* is thought to have written best and most learnedly as touching *Auguries* and the nature of Birds. He reporteth in his booke, that the *Howlet*, *Scritch-owle*, the *Spight* that pecketh holes in trees, the *Trogone*, and the *Chough* or *Crow*, when they be hatched come forth of their shells with their tails first: and that by reason of their heads so heavie, the egges are turned with the wrong end downward, and so the hinder part of the bodie lieth next under the hen or the dam, to sit upon and cherish with the heat of her bodie.

CHAP. XVII.

¶ Of *Owles*, or *Howlets*.

F **I**T is a pretie sight to see the wit and dexteritie of these *Howlets*, when they fight with other birds: for when they are overlaid and beset with a multitude of them, they lie upon their backs and with their feet make shift to resist them: for gathering themselves into a narrow compass, there is nothing in a manner to be seene of them, save only their bill and talons, and those cover the whole bodie. The *Falcon* (by a secret instinct and societie of nature) seeing the poor *Howlet* thus distressed, commeth to succour and taketh equal part with him, and so endeth the fray.

fray. *Nigidius* writeth, that Howlers for sixtie daies in wintet, keepe close and remaine in covert, G
and that they chaunge their voice into nine tunes.

CHAP. XVIII.

¶ *Of the Spight, or Woodpecker.*

SOME little birds there are also that have hooked clees, as the Spights, which are knowne by the name of *Martius*, and be therefore called *Pici Martij*. These are of great account in Auspices, and presage good. They that job and pecke holes in trees, and will climbe upright like cats, are of this race. As for them, they will rampe up with their bellies to the tree, bending backward: and when they peck with their bills against the barke, they know by the sound thereof that there be wormes within for them to feed upon. These birds alone of all others feed and nourish their young ones in cranies and chinkes of trees. And if it chance that a shepheard or some such doe pin or wedge up their holes, it is thought commonly that they will unstop the same againe by the meanes of a certaine hearb, which no sooner they touch the stopple with, but it will out. *Trebius* writeth, that let a man drive a spike and great naile, or else a wedge and pin of wood, as hard as ever he will into that tree wherein this bird hath a nest, and incontinently as she percheth and setleth upon the tree, it will presently flie out with such a force, that the tree will give a cracke again therewith. Throughout all Latium, these birds beare the name for effectuall signification of good or bad fortune, by reason of that *King or Prince who gave them that name. And one presage of theirs above the rest, I cannot passe over: It fortun'd that one of them light upon the head of *L. Tubero* L. chiefe Iustice of the citie of Rome, as he was sitting upon the judgement seat in the open face of the court ministring justice, and there rested so gently, that it suffered him to take it with his hand. The Soothsayer beeing asked his advise in this case, answered out of his booke, That if the bird were let goe, it would portend the ruine and overthrow of the whole state and Empire; but if it were killed, it denounced the death of the foresaid Pretour or L. chiefe Iustice then in place. But the Pretour *Tubero* immediatly upon this answer, plucked the bird in peeces. It was not long after, but the presage of this bird took effect indeed, and was fulfilled in his person. Moreover, there be of this kind many that feed upon mast, acorns, nuts, apples, and such like fruits: but they be such as live in manner upon flesh onely. And yet I must except the Kite, for that propertie in him, is noted to be in all Augurie an unluckie signe and presage of, some heave and deadly misfortune. K

CHAP. XIX.

¶ *Of birds that have hooked talons, and round long claws like fingers.*

WHAT fowles soever have crooked claws, sort not together in flockes, but prey each one apart for it selfe. And lightly all such flie aloft, unlesse it be the night-birds before said; and the greater sort especially. They are all of them great winged, little bodied, and heave in their gate upon the ground. Seldome or never they sit and perch upon a rock: for why? their nailes bowing and hooking inward, will not give them leave. It remaineth now that we speak of the second kind and rankes of birds; which also is divided into two sorts: to wit, *Oscines* that sing, and *Alites* that flie onely. For the singing of the one, and the bignes of the other, maketh the difference and distinction betweene them. These therefore that are greater bodied, wee will by order treat first of. L

CHAP. XX.

¶ *Of Peacockes: and who was the first that killed them for the table.*

THE Peacocke farre surpasseth all the rest in this kind, as well for beautie, as also for the wit and understanding that he hath; but principally for the pride and glorie that hee taketh in himselfe. For perceiving at any time that he is praised and well liked, he spreadeth his taile round, shewing and setting out his colours to the most, which shine againe like precious stones: and namely, when he turneth them against the sunne (as his manner is) for so hee giveth them a more radiant and glittering lustre. And for the same purpose also with his taile, representing fish shells,

A shells, hee giveth a certaine shadow to the rest of his feathers, which seeme the brighter when they be a little shadowed: and withall he setteth all those eyes of his feathers together in a ranke, and gathereth them round, knowing full well, that he is the more looked on for them; and therein he taketh no small joy and pleasure. On the other side, when he hath lost this taile (which usually he mouleth everie yeere when trees shed their leaves) untill such time that trees blossome new and his taile be growne againe, he hath no delight to come abroad, but as if hee were ashamed or mourned, seeketh cornets to hide himselfe in. The Peacocke ordinarily liveth 25 yeeres. At three yeeres of age he beginneth to put forth that varietie of colours in his feathers. Authiors who have written of him, say that he is not onely a proud and vainglorious creature, but also as malicious and spitefull, as the Goose is bashfull and modest: for so have some of them observed these properties and qualities in these birds. But I for my part like not to make such similitudes.

B The first that killed Peacockes for to be served up as a dish at the table, was *Hortensius* that great Oratour, in his solemne feast which he made when he was consecrated high Priest. And *M. Aufidius Lurco* devised first to feed them fat: by which invention of his, he might dispend by yeerely revenue * 60000 Sesterces. And this was about the time of the last Pirats warre.

* 468 lib. 15 lb.

CHAP. XXI.

¶ Of Cocks: how they be cut and made Capons. Also of a dunghill-cock that spake.

C NExt to Peacocks, these birds about our house which are our sentinels by night, and whom Nature hath created to breake men of their sleepe, to awaken and call them up to their worke, have also a sense and understanding of glorie: they love (I say) to be praised, and are proud in their kind. Moreover, they are Astronomers, and know the course of the starres: they devide the day by their crowing, from three houres to three houres: when the sunne goeth to rest, they go to roost: and like sentinels that keepe the reliefe of the fourth watch in the camp; they call men up to their carefull labour and travaile: they will not suffer the sunne to rise and steale upon us, but they give us warning beforehand: by their crowing, they tell us that the day is comming: and they foretell their crowing likewise, by clapping their sides with their wings. They are commaunders and rulers of their owne kind, be they Hens, or other Cocks; and in what house soever they be, they will be masters and kings over them. This soveraigntie is gotten by plaine fight one with another; as if they knew, that naturally they had spurs (as weapons) given them about their heeles, to trie the quarrell: and many times the combat is so sharpe and hot, that they kill one another ere they give over. But if one of them happen to be conqueror, presently upon victorie hee croweth, and himselfe foundeth the triumph. Hee that is beaten, makes no words, nor croweth at all, but hideth his head in silence; and yet nevertheles it goeth against his stomach to yeeld the gantler and give the bucklers: hardly can he brook to be under another. And not only these cocks of game, but the very common sort of the dunghill, are as proud and high minded: ye shall see them to march stately, carrying their neck bolt upright, with a combe on their head like the crest of a souldiers helmer. And there is not a bird besides himselfe, that so often looketh aloft to the sun and the skie: and then up goeth the taile withall, which he beareth on high, turning backward again on the top like a hook. And hereupon it is, that marching thus proudly as they doe, the very Lions (which of all wild beasts be most courageous) stand in feare and awe of them, and will not abide the sight of them.

E Now of these Cocks, some of them are made for nothing els but war and fighting, and never are they well but in quarrels, brawls, and fraies; and these be cocks of the kind: and the countries from whence they come, are grown into name and be much renowned for their breed: as namely, Rhodus and Tenagra, in the first and highest degree. In a second ranke and place, be those of Melos and Chalcis. Vnto these birds (for their worth and dignitie) the purple robe at Rome, and all magistrates of state, disdain not to give honour. These be they that by their *tripudium solistimum*, [*i.* their heartie feeding] observed by the pullitiers, shew good successe. These rule our great rulers every day: and there is not a mightie L. & state of Rome, that dare open or shut the dore of his house, before he knoweth the good pleasure of these fowls: and that which more is, the soveraigne magistrate in his majestie of the Romane Empire, with the regal ensigns of rods and axes caried before him, neither setteth forward nor reculeth backe, without direction from these birds: they give order to whole armies to advance forth to battell: they again command them to

stay and keepe within the campe. These were they that gave the signall, and foretold the issue of all those famous foughten fields, whereby wee have achieved all our victories throughout the whole world: and in one word, these birds commaund those great commaunders of all nations upon the earth: as acceptable to the gods in sacrifice with their smal fibres and filaments of their inwards, as the greatest and fattest oxen that are killed for sacrifice. Over and besides, their crowing out of order, too soone before their houre, or too late, and namely in the evening, portendeth also and presageth somewhat by it selfe. For well knowne it is, that by their crowing at one time all night long, they fore-signified unto the Bœotians, that noble victorie of theirs achieved over the Lacedæmonians. For this interpretation and conjecture was given thereupon of a fortunate day, because that bird never croweth if he be beaten and overcome. If they be once carved and made capons, they crow no more. And this feat is practised upon them two manner of waies: namely, either by burning their loynes toward their kidneys with a red hot yron, or else by cauterizing their legges beneath, and their spures, and then presently applying a plaister unto the exulcerate and blistered place, made of potters white clay or chalkie earth. And beeing thus served, they will sooner feed and besat. At Pergamus, everie yeere there is a solemne shew exhibited openly to the people, of Cock-fighting, as if sword-fencers were brought within the lists to fight at utterance. We find in record among our Annales, that within the territorie of Ariminum, in that yeare when *Marcus Lepidus* and *Quintus Catulus* were Consuls, there was a dunghill-cocke did speake: and it was about a ferme-house in the countrey belonging unto one *Galerius*. But this happened never but once, for ought that I could ever heare or learne.

CHAP. XXII.

Of Geese: and who first eat the Goose liver. Also of the lease of a Goose of Comagena.

THe Goose likewise is very vigilant and watchfull. Witnesse the Capitoll of Rome, which by the meanes of Geese was defended and saved: whereas at the same time, through the default of dogs, (who should have given warning) all had like to have been lost. And therefore the first thing that the Censors doe by vertue of their office, is to take order for the Geese of the Capitoll, and to appoint some one man of purpose to see unto them that they have meat ynough. Moreover, they are said to be given much to love: For at Argos there was a Goose that was wonderously enamoured of a faire boy named *Olenus*: as also of a Damosell, whose name was *Glauce*, who used to play on the Lute before king *Ptolomeus*: and by report at the same time a Ram made court unto the said wench, and was in love with her. It may be credibly thought also, that this creature hath some sparkes (as it were) of reason, understanding, and learning. For *Lacydes* the Philosopher had one of them about him, which would never leave him night nor day, neither in the open street abroad, nor in private house at home: but would follow him even to his close and secret baines where he used to bath. But our countrymen and citizens of Rome (believe me) are wiser now adaies: who know forsooth how to make a daintie dish of their liver. For in those Geese that are kept up and crammed fat in coupe, the liver groweth to bee exceeding great: and when it is taken forth of the bellie, it waxeth bigger still, if it be steeped in milke and sweet mead together. Good cause therefore it is, that there be some question and controversie about the first inventor of this great good and singular commoditie to mankind: whether it were *Scipio Metellus*, a man who lately was called to be Consull, or *M. Sestius* who in those daies was by his birth a gentleman of Rome. But to leave that still undecided, this is for certaine knowne, that *Messalinus Cotta*, sonne to that *Messala* the Orator, found out the secret to broile and frie the flat broad feet of geese, and together with cockes combes to make a favorie dish of meat thereof betweene two platters. For surely I for my part will give every man his due and right: and will not defraud them of their singular praise and honour who have been benefactors to the kitchen, and proceeded maisters in cookerie. A marvellous thing of these birds, that a flocke of them should come all the way bare foot, from *Terwin and Torney in France as farre as to Rome. Their order was, who had the conduct of them in this large voyage, to bring those forward that were wearie and lagged behind, into the vaward and forefront: and so the rest by a certaine thick united squadron, (which naturally they make when they go together) drive the others before them. A second commo-

A commoditie that Geese yeeld, (especially those that be white) is their plume and downe. For in some places their soft feathers are pluckt twice a yeare: and yet they carie feathers again, and be as well covered with plume as before: and evermore the neerer to the skin and flesh, the softer is the downe. But of all other, the finest and best is that which is brought out of Germanie. The Geese there, be all white; but lesse of bodie than from other parts: and there they be called Ganzæ. And in truth, a pound of such feathers bee worth *five deniers. Hereupon it is, that so many complaints are made of Colonels and Captaines over companies of auxiliarie souldiours for their disorders. For whereas they should keepe them together in a standing *corps de guard*, to watch and ward night and day: they license many times whole bands to straggle abroad, to hunt and chase Geese for their feathers and downe. And now forsooth the world is growne to be so delicate and daintie, that not onely our fine smooth dames, but also our men, cannot take their repose and sleepe without this ware, but complaine of a paine in their neckes & heads, unlesse they may lay them upon bolsters and pillowes of goose feathers, and their soft downe.

* 3 fl. s. d. ob.

Now, to that part of Syria called Comagena, we are beholden for another proper invention of theirs. They take me the lease and greafe of Geese and Cinamon together, which they put into a brazen pot, and cover it all over with good store of snow, wherein they let it lie in steepe, well infused in this cold humor, to use in that notable composition and sweet ointment, which of that country is called Comagenum.

Of the Geese kind are the Birganders named Chelanopes: and (than which there is not a daintier dish knowne in England) the Chenerotes, lesse than wild Geese.

C As for the Fesant Busters, they have a trim shining brightnesse that becommeth and graceeth them exceeding well in their perfect and absolute blacke hew: and their cie-browes painted red as it were with deepe Scarlet.

Another kind there is of them, bigger than Vultures, but in feather and colour much resembling them. And there is not a Foule (setting the Ostrich aside) that poiseeth and weigheth more heauior than they. For they grow to that bignes, that a man can hardly lift them from the ground. These breed in the Alpes and the North countries. If they bee mued up and kept in a pen, they loose their pleasant tast, and are no good meat: nay, they grow so fullen and selfe-willed, that they will die with holding their breath. Next to these are those which in Spaine they call the Slow-birds, and in Greece Otides: but their meat is naught: for the marrow within their bones, if it be

D let run out, hath such a stinking sinell, that a man cannot abide it, but shall be readie to vomite.

CHAP. XXIII.

Of Cranes, Storkes, Swans, Quails, the Gloitis, and strange birds of other countries.

THe nation of the pretie Pigmies enjoy a truce and cessation from armes, every yeare (as we have said before) when the Cranes, who use to wage warre with them, be once departed and come into our countries. And verily, if a man consider well how far it is from hence to the Levant sea, it is a mightie great journey that they take, and their flight exceeding long. They put not themselves in their journey, nor set forward without a counsell called before, and a generall consent. They flie aloft, because they would have a better prospect to see before them: and for this purpose a captain they chuse to conduct them, whom the rest follow. In the rereward behind there be certaine of them set and disposed to give signall by their manner of crie, for to raunge orderly in rankes, and keepe close together in array: and this they doe by turnes each one in his course. They maintaine a set watch all the night long, and have their sentinels. These stand upon one foot, and hold a little stone within the other, which by falling from it, if they should chauce to sleepe, might awaken them, and reprove them for their negligencie. Whiles these watch, all the rest sleepe, couching their heads under their wings: and one while they rest upon the one foot, and otherwhiles they shift to the other. The captain beareth up his head aloft into the aire,

F and giveth signall to the rest what is to be done. These Cranes if they be made tame and gentle, are very playfull and wanton birds: and they will one by one dance (as it were) and run the round with their long shankes staulking full untowardly. This is for certain known, that when they mind to take a flight over the sea Pontus, they will flie directly at the first to the narrow streights of the said sea, lying betwene the two capes Criu-Metophon and Carambis, and then presently they

ballaife themselves with stones in their feet, and sand in their throats, that they flie more steadie and endure the wind. When they be halfe way over, down they sling those stones: but when they are come to the continent, the sand also they disgorge out of their craw. G

Cornelius Nepos, who died in the daies of *Augustus Caesar* Emperour, in that chapter where he wrote, That a little before his time men began to feed and cram Blackbirds and Thrushes in coupes, saith moreover, That in his daies Storkes were holden for a better dish at the board than Cranes. And yet see, how in our age now, no man will touch a Storke if it bee set before him upon the board: but every one is readie to reach unto the Crane, and no dish is in more request. From whence these Storkes should come, or whether they goe againe, is not yet knowne. No doubt, from farre remote countries they visite us, and in the same manner as the Cranes do: onely this is the difference, that the Cranes are our guests in Winter, and the Storkes in Summer. H When they bee minded to depart out of our coasts, they assemble all together in one certaine place appointed: there is not one left out nor absent of their owne kind, unlesse it bee some that are not at libertie, but captive or in bondage. Thus (as if it had been published before by proclamation) they rise all in one entire companie, and away they flie. And albeit well knowne it might be afore, that they were upon their remove and departure, yet was there never any man (watched he never so well) that could perceive them in their flight: neither doe wee at any time see when they are comming to us, before wee know that they bee already come. The reason is, because they doe the one and the other alwaies by night. And notwithstanding that they flie too and fro from place to place, and make but one flight of it, yet are they supposed never to have arrived at any coast but in the night. There is a place in the open plaines and champion countrey of Asia, called *Pithonos-Come*: where (by report) they assemble all together, and being met, keepe a jangling one with another: but in the end, looke which of them lagged behind and came tardie, him they reare in peeces, and then they depart. This also hath been noted, that after the Ides of August they be not lightly seene there. I

Some affirme constantly, that Storkes have no tongues. But so highly regarded they are for slaying of Serpents, that in *Thessalie* it is accounted a capitall crime to kill a Storke, and by law he is punished as a Felon in the case of manslaughter.

After the same manner wild Geese and Swans do sort together, when they be passengers from countrey to countrey: but all these are seene when they flie. They make way forcibly in a pointed squadron, like as it were the stemme of a foist at sea, armed with a sharpe beakehead (for by this meanes they breake and cut the aire better, than if they drave it before with a streight, even, and square front.) And thus wedge-wise by little and little they spread broader and broader behind, and beare a great length betwixt with them: by which meanes also they gather more wind to heave them up and set them forward. In this their flight they rest their heads upon the former: and ever as any one that leadeth the way is wearie with bearing his head, hee retireth behind to ease himselfe upon him that flieth next before. Storkes keepe one nest still from yeare to yeare, and never change: and of this kind nature they are, that the young will keepe and feed their parents when they be old, as they themselves were by them nourished in the beginning. K

Some say that the Swans sing lamentably a little before their death, but untruly, I suppose: for experience in many hath shewed the contrarie. Howbeit, these foules use to eat and devour one another. L

But since wee are entred into this discourse of those foules that make voiages by whole flocks over sea and land to see straunge countries, I cannot put off to speake of lesser birds also, which are of the like nature. For those beforenamed may seeme in some sort to bee induced to such great travell, so big they are of bodie, and so strong withall. As touching Quails therefore, they alwaies come before the Cranes depart. A little bird it is, and whiles she is among us here, mounteth not aloft in the aire, but rather flieth below neere the ground. The manner of their flying is like the former, in troupes: but not without some daunger of the sailers when they approach neer to land. For oftentimes they settle in great number upon their sailes, and there perch; which they doe evermore in the night, and with their poise beare downe barkes and small vessels, and finally sinke them. These Quails have their set gifts, to wit, ordinarie resting and baiting places. When the Southwind bloweth, they never flie: for why? it is a moist, heavie, and cloggie wind, and that they know well ynough. And yet they willingly chuse a gale whensoever they flie, by reason that their bodies are too weightie (in comparison of their wings) to beare them M

- A them up: and besides, their strength is but small. And hereupon it is, that as they flie, they seeme by their manner of crie to complaine, as though they flew with paine. Commonly therefore they chuse a Northerne wind to flie with: and they have one mightie great Quaille called *Ortygometra*, to lead the way and conduct them, as their captaine. The foremost of them, as hee approacheth neere to land, paith toll for the rest unto the hawke, who presently for his welcome preieth upon him. Whensoever at any time they are upon their remoove and departure out of these parts, they perswade other birds to beare them companie: and by their inducements, there goe in their traine the *Glottis*, **Otis*, and the *Cychramus*. As for the *Glottis*, he putteth forth a long tongue, whereupon he hath that name. This bird is very forward at the first setting out (as being desirous to be a traveller, to see farre countries, and to change the aire:) and the first daies
- B journey he undertaketh with pleasure: but soone finding the tediousnesse and paines in flying, he repents that ever he enterprised the voiage. To go backe againe without companie, he is ashamed: and to come lag behind he is as loth: howbeit, for that day he holdeth out so so, and never goeth farther: for at the next resting place that they come unto, hee faire leaveth the companie and stajeth there; where lightly he meeteth with such another as himselfe, who the yeare before was left behind. And thus they doe from time to time, yeere by yeere. As for the *Cychramus*, he is more staied and resolute to endure the travell: he maketh hast and hath an earnest longing to come into those parts which he so much desireth: and therefore in the night season he is as good as a trumpet to awake the rest, & put them in mind of their journey. The *Otis* is a bird lesse than the Like-Owle, bigger than the Howlet, having two plumed eares standing up aloft, whereupon he tooke that name *Otis* in Greeke. But in Latine some have called him *Asio*. This bird besides,
- C hath certain qualities by her selfe, and is skilfull to counterfet and make gestures like a flattering parasite: she can foot it, turne and trip, mount and capre, as if she were a professed dauncer. Easie she is to be taken like as the Howlet, for whiles she is amused and looking wistly upon one that goeth about her, another commeth behind and soone catcheth her. But to returne unto our Quailles aforesaid. If a contrarie wind should chaunce to arise and begin to drive against them, and hinder their flight: to prevent this inconvenience, they be well provided. For they flie well ballasted either with small weightie stones within their feet, or else with sand stuffed in their craw. The seed or graine of the white Elebore (a very poyson) they love passing well, and it is their best meat. But hereupon it is, that they are not served up as a dish to the table. Moreover, they are wont to come and flaver at the mouth, by reason of the falling sicknesse, unto which they only of all other creatures, but man againe, are subject.

CHAP. XXIII.

Of Swallowes, Ousles or Merles, Thrushes, Stares or Sterlings, Turtles, and Stockdoves.

- T He Swallows likewise (the birds, alone of all those that have ^{not} crooked claws, which feed upon flesh) are gone from us all Winter time. Howbeit, they depart not far off, but seeke onely the Sunne-shine nowkes, betweene hills neere at hand, and follow the warmth. Where many times they are found naked, and without feathers altogether, as if they had moulted. It is said, that they will never build their neasts under any house in Thebes: because that cittie had bene many times forced and taken by the enemy. Neither in Bizia, a cittie of Thrace, by reason of those detestable parts practised by *Tareus* there. *Cacina* of Volaterra, a gentleman of Rome by calling (Governour and maister of the coaches and coach-horses that used to run for the prize and best game) was wont to bring with him into the cittie, a number of these Swallowes, which he had gotten in diverse places where hee came, out of his friends houses where in they were bred. And when the horses which he had in charge obtained at any time victorie in the race, hee would take the birds, and paint them with that colour which betokened victorie, and so with that liverie (as it were) let them flie to his friends, for to carrie tidings unto them of the good successe which hee had obtained: knowing right well, that every one would home to the same neast from whence they came. And thus in small space could hee enforme his comforts and well-willers of his good speed. Also *Fabius Pictor* reporteth in his *Annales*, That when a fort (which the Romane garison held) was besieged by the Ligustines; there was a shee Swallow newly taken out of her neast within that fort, from her little ones as she sat over them, and brought

brought unto him with this watch-word, That by a linnen thred tied to her foot in steed of a letter, hee should advertise them within the fort, by so many knots tied in the said thred, as there would daies passe before aid could come from him unto them, to the end that they also might be readie upon that day to fallie forth. G

Oufles, Throttles, Blackbirds, and Stares, after the same manner depart aside from us, but goe not farre. Howbeit, these cast not their feathers, nor lie altogether hidden: but are seene oftentimes in places, from whence they fetch meat to serve them in the Winter. And therefore it is, that Black birds are common in Germanie, and especially in Winter time.

The Turtle more properly and truly is said to hide her selfe, and to shed her plume and moult. Stock-doves likewise depart from us, but whether they goe, no man knoweth.

As touching Sterlings, it is the propertie of the whole kind of them to flie by troupes, and in their flight to gather round into a ring or ball, whiles every one of them hath a desire to bee in the midst. H

Of all birds, the Swallow alone flieth bias, and windeth in and out in his flight: hee is most swift of wing, and flieth with ease: and therefore not so readie to bee surpris'd and taken by other birds. To conclude, he never feedeth but flying, and so doth no other bird besides.

CHAP. XXV.

¶ *What birds continue with us all the yeare long: which be halfe yeares birds, and which be but for three months.*

Great difference there is in the seasons and times of birds. Some abide the whole yeare, as house-Doves: others halfe the yeare, as Swallows: and some againe but a quarter, as Blackbirds and Turtle doves. And there be againe that are gone so soone as they have hatched and trained their young abroad into the open aire. Such bee the Hu-holes, and Houpes, [or Lapwings as some thinke.] I

CHAP. XXVI.

¶ *Strange stories of birds.*

Writers there bee who affirme, That every yeare certaine birds come flying out of Æthyopia to Ilium, and there, about the tombe or sepulchre of Memnon, skirmish and fight a battell. For which cause men call them Memnonides. And Crenutius avoucheth upon his owne knowledge, That every fift yeare the same birds doe the like in Æthyopia, even before the roiall palace sometime of the said king Memnon. K

Sensibly, the birds named Maleagrides, doe fight a field in Bœotia. Now are these Meleagrides a kind of Turkey-cockes, and hens of Affricke, having a bunch on their backe, and bespotted with feathers of sundrie colours. Of all strange birds, comming out of forraine parts, these are last received and admitted to serve the table, by reason of a certaine harsh and unpleasent strong tast that they have. But it is the monument and tombe of Meleager which hath given them that name and credite which they have.

CHAP. XXVII.

¶ *Of birds surnamed Seleucides.*

The birds called Seleucides, come to succour the inhabitants of the mountaine Casius, against the Locusts. For when they make great wast in their corne and other fruits, Iupiter at the instant praier and supplications of the people, sendeth these foules among them to destroy the said Locusts. But from whence they come, or whether they goe againe, no man knoweth: for never are they seene but upon this occasion, namely, when there is such need of their helpe. L

CHAP. XXVIII.

¶ *Of the bird Ibis.*

The Egyptians likewise have recourse in their praier and invocations to their birds named Ibis, what time as they be troubled and annoied with serpents comming among them. And M

A in like case the Eleans seeke unto their god *Myiagros*, for to be rid of a multitude of flies which pe-
 ster them so, that they breed a pestilence among them. But looke upon what day they find that
 Idoll appeared and pacified by their sacrifice, all the flies die forthwith.

CHAP. XXXIX.

¶ *What birds they be, which will not abide some places : also which be they that change
 colour and voice : and then of the Nightingale.*

B Vt that which wee should have said when wee wrote of the departure and going aside of
 birds : the Howlets also are reported to lie hidden some few daies. Moreover, this is knowne
 for a truth, That in the Island Candie there be none at all of them: and in case that any one
 be thither brought, it will die there. A wonderfull thing, that Nature should make difference of
 birds and other creatures in that respect. But sure it is, she hath not brought forth all creatures in
 all places, but hath priviledged this countrey more than that : and denied that to one which she
 hath given unto another. And thus hath shee dealt not onely by fruits of the earth, trees, and
 plants, but also by living creatures. That in some parts this or that should not grow or breed, is a
 thing commonly seene & knowne: but, that those things should die so soon as they are brought
 thither, is very straunge and wonderfull. What should that bee which is so contrarie unto one
 kind and no more, as that it will not suffer it to live? What envie is this of Nature, thus to hin-
 der the breeding or life of any creature? or why should birds be restrained within any limits and
 bounds in the whole earth? And yet see! In all the Island of Rhodes a man shall not find one Ai-
 rie of *Ægles*. In that tract of Italic beyond the Po, and neere unto the Alpes, there is a lake which
 they call there *Larius*; the place about it is right pleasant and delectable, enriched with goodly
 trees that beare fruit, and faire fields for pasturage : and yet a man shall never see any Storke to
 come thither, no nor within eight miles of it. And yet in the neighbor quarters of the **Insubri-*
 ans neere adjoining, ye shall have infinite and innumerable flocks and flights of choughes and **Lumbardie.*
 jack dawes : the veriest theeves, nay the onely theeves of all other birds, especially for silver and
 gold, that it is a wonderto see what means they will make to steale and filch it. Men say that in the
 territorie of Tarentum there be no wood-pecks or tree-jobbers. It is but of late daies, since that
 from the mountaine Apennine toward the cittie of Rome there have been seene Pyannets with
 long tails, partie coloured and flecked; whereupon they bee called *Varia*: and yet such are not
 common, but very geason to be found. Their propertie is to be bald every year, what time as men
 sow rapes or navewes. The Partridges in the territorie of Attica, flie not over into the marches
 of Bœotia. And there is not a bird within the compasse of the sea Pontus, and namely, in the
 Island wherein *Achilles* was buried, that will passe beyond the temple consecrated unto him. In
 the territorie of Fidenæ neere to Rome, Storkes build no neasts, neither shall a man find a yong
 Storke there. But into the parts about *Volaterræ*, there is not a yeare but one shall see a world of
 Stockdoves flying from beyond sea. At Rome yee shall not have a flie or dog that will enter in-
 to the chappell of *Hercules* standing in the beast-market. In a word, I could alleadge many such
 like examples; which of purpose I passe over, because I would not be tedious in my discourfes :
 seeing that *Theophrastus* reporteth, how all the Doves, Peacockes, and Ravens which are in Asia,
 have been brought thither from other parts: like as all the Frogs in Cyrenaica, which doe crie,
 whereas their owne be mute all.

E As for singing birds, this is another strange and wonderous thing observed in them. For at
 certaine times of the year they change their colour in feathers, and alter their voice in singing:
 and that in such sort, as of a suddaine a man would say they were other birds. A thing that happene-
 th not to the great foules abovesaid, save only unto Cranes: for they with age waxe black. And
 to begin with the Merle or Blackbird, which naturally is blacke, he turneth to be reddish. In sum-
 mer he singeth cleare and tunably, in winter he stutteth and stammereth: but about the sun-stead
 in December, hee is mute and dumbe altogether. After they bee once, a yeare old, I meane the
 cockes or males onely of that kind, their bills turne to be white like yvorie. The Throstles or Ma-
 visses all Summer be painted about the necke with sundry colours, but in Winter they be all of
 a colour.

F The Nightingale for fifteene daies and nights together, never giveth over but chaunteth
 continually, namely, at that time as the trees begin to put out their leaves thicke. And surely
 this

this bird is not to be set in the last place of those that deserve admiration: for is it not a woonder that so lowd and cleere a voice should come from so little a bodie? Is it not as straunge that shee should hold her wind so long; and continue with it as shee doth? Moreover, shee alone in her song keepeth time and measure truely; shee riseth and falleth in her note just with the rules of musicke and perfect harmonic: for one while, in one entire breath she draweth out her tune at length treatable; another while shee quavereth; and goeth away as fast in her running points: sometime she maketh stops and short cuts in her notes, another time shee gathereth in her wind and singeth descant between the plaine song: she fetcheth her breath againe, and then you shall have her in her catches and divisions: anon all on a sodaine, before a man would think it, she drowneeth her voice, that one can scarce heare her: now and then she seemeth to record to her selfe; and then shee breaketh out to sing voluntarie. In summe, she varieth and altereth her voice to all keys: one while, full of her largs, longs, briefes, semibriefes, and minims; another while in her crotchets, quavers, semiquavers, and double semiquavers: for at one time you shall heare her voice full and lowd, another time as low; and anon shrill and on high: thicke and short when she list; drawne out at leisure againe when she is disposed: and then (if shee be so pleased) she riseth & mounteth up aloft, as it were with a wind-organ. Thus she altereth from one to another, and singeth all parts, the Treble, the Meane, and the Base. To conclude, there is not a pipe or instrument againe in the world (devised with all the Art and cunning of man so exquisitely as possibly might be) that can affourd more musicke than this pretie bird doth out of that little throat of hers. So as no doubt there was fore-signified most excellent and melodious musicke, by an excellent preface of a nightingale which settled upon the mouth of *Stesichorus* the Poët, and there sung full sweetly: who afterwards proved to be one of the most rare and admirable musitians that ever was. And that no man should make a doubt that there is great Art and cunning herein, doe but marke, how there is not one Nightingale but hath many notes and tunes. Againe, all of them have not the same, but every one a speciall kind of musick by her selfe: nay, they strive who can do best, and one laboureth to excel another in varietie of song and long continuance: yea and evident it is, that they contend in good earnest with all their will and power: for oftentimes she that hath the worse and is not able to hold out with another, dieth for it, and sooner giveth she up her vitall breath, than giveth over her song. Ye shall have the young Nightingales studie and meditate how to sing, by themselves: yee shall have them listen attentively to the old birds when they sing, and to take our lessons as it were from them, whom they would seem to imitate staffe by staffe. The scholler, when shee hath given good eare unto her mistresse, presently rehearseth what she hath heard; and both of them keep silence for a time in their turnes. A man shall evidently perceive when the young bird hath learned well, and when againe it must be taught how to correct and amend wherein it did amisse: yea and how the teacher will seeme to reprove and find a fault. No marveile therefore if one of these Nightingales carrie the price (in the market) of a bondslave; yea and a higher too, than a man might in old time have bought a good page and harnesse-bearer. I my selfe have knowne one of them (many it was white, which was a rare thing and not commonly scene) to have been sold for 6000 Sesterces, for to be given as a present unto the Empreffe *Agrippina*, wife of *Claudius Caesar* late Emperour of Rome. And now of late we have known many of them taught to begin to sing, only when a man would have them: and keepe there responds in course after others, in good concent and harmonic. As also there have been found men, who by a devise of a reed or cane had out of the water, put crosse overthwart their mouth, and by putting their tongue into an hole made of purpose in it, and blowing withall, could counterfeit the Nightingale so perfectly, that one might not discern and distinguish the one from the other. Well, these little Nightingales, so great chaunters as they be, so cunning and full of their conceits, after fifteen daies begin to abate and flake their musicke; yet so, as a man cannot say, they were either wearie, or satisfied with singing: for soone after, when the weather groweth hotter, their voice is cleane altered: for neither are they musicall and tuneable in their measures with varietie as before, but onely sing plaine-song and keepe them to one tune. And more than so, they change their colour in proesse of time: and last of all, when winter comes, be no more seene. Tongued they are not like other birds, with a thin tip before. They begin to breed with the first, in the prime of the spring, and commonly lay six egges.

The Gnat-snapper, *Ficedula*, a bird somewhat like unto the Nightingale, doth otherwise: for at one time, it chaungeth both colour, forme, and song. They have not that name *Ficedula* properly

A perly but in the Autumne, as one would say, figge-feeders: for when that season is once past, they be called Melancoryphi, *i.* Black-heads.

In like sort, the bird which is named Erithacus, [*i.* Robin, or Redbreast] in winter; the same is Phoenicurus, [*i.* Red-taile] all summer long.

The Houpe or Vpupa (as *Æschylus* the Poët saith) chaungeth also her hew, voice, and shape. This is a *nastie and filthie bird otherwise, both in the manner of feeding, and also in nestling; but a goodly faire crest or combe it hath, that will easily fold and be plaited: for one while shee will draw it in, another while set it stiffe upright along the head.

* For as *Avif.* reporteth, it nestleth in mans dung.

B As for the bird Oenanthe, it also for certaine daies lyeth close and unseen; and namely, when the Dog-starre ariseth, it is hidden: but after the occultation thereof, commeth abroad & sheweth her selfe: a straunge thing, that in those daies it should doe both. Last of all, the * Witwall or Lariot, which is all over yellow, being not seen all winter time, appeareth about the sunsteeds.

* Chlorion.

CHAP. XXX.

Of the Merles.

A Bout Cyllene in Arcadia, and no where els, ye shall find white Merles or Oufles. And Ibis, about Pelusium onely in Ægypt, is blacke; in all places else of Ægypt, white.

CHAP. XXXI.

The kind of birds breeding and hatching.

A Ll singing birds, save onely those that are excepted before, lightly breed not nor lay their egges before the spring Æquinoctiall in mid-March, or after the Autumnnall, in mid-September. And those that they hatch before the summer Sunstead, [*i.* mid-Iune] hardly come to any perfection: but after that time, they doe well enough and live.

CHAP. XXXII.

Of the Halcyones, or Kings-fishers: and the daies good for navigation which they shew. Of the Sea-guls and Cormorants.

A Nd in this regard especially, namely for breeding after the summer Sunstead, the Halcyones are of great name and much marked. The very seas, and they that faile thereupon, know well when they sit and breed. This very bird so notable, is little bigger than a sparrow: for the more part of her pennage, blew, intermingled yet among with white and purple feathers, having a thin small neck and long withall. There is a second kind of them breeding about the sea side, differing both in quantitie and also in voice; for it singeth not as the former do which are lesser: for they haunt rivers, and sing among the flagges and reeds. It is a very great chaunce to see one of these Halcyones, and never are they seene but about the setting of the starre *Virgilix*, [*i.* the Brood-hen:] or else neere mid-summer or mid-winter: for otherwhiles they will flie about a ship, but soone are they gone againe and hidden. They lay and sit about mid-winter when daies be shortest: and the time whiles they are broodie, is called the Halcyon daies: for during that season, the sea is calme and navigable, especially in the coast of Sicilie. In other ports also the sea is not so boisterous, but more quiet than at other times: but surely the Sicilian sea is very gentle, both in the streights and also in the open Ocean. Now about seven daies before mid-winter, that is to say, in the beginning of December, they build; and within as many after, they have hatched. Their nests are wonderously made, in fashion of a round bal: the mouth or entrie thereof standeth somewhat out, and is very narrow, much like unto great sponges. A man cannot cut and pierce their nest, with sword or hatchet; but break they wil with some strong knocke, like as the drie some of the sea: and no man could ever find of what they be made. Some think they are framed of the sharpe pointed prickes of some fishes, for of fish these birds live. They come up also into fresh rivers within-land: and there doe lay ordinarily five egges.

As touching the Guls or Sea-cobs, they build in rockes: and the Cormorants both in them, and also in trees. They usually lay foure egges apeece. The Guls in summer time, but the Cormorants in the beginning of the spring.

¶ *The industrie and wit of birds in building their nests. Of the Swallow, the Argatilis, Cinnamologi, and Partridges.*

THe Architecture and building of the Halcyones nest, hath put me in mind of other birds dexteritie in that behalfe: and surely in no one thing is the wit of fillie birds more admirable. The Swallows frame their nests of clay and earth, but they strengthen and make them fast with straw. In case at any time they cannot meet with soft and tough clay, for want thereof they drench and wet their feathers with good store of water, and then bestrew them over with dust. Now when they have made and trimmed their bare nest, they floore it in the bottom within, and dresse it all over with downe feathers or fine floxe, as well to keepe their egges warme, as also that their young birds should lie soft. In feeding of their little ones, they keepe a very good order and even hand, giving them their pittance and allowance by course one after another. Notable is their care in keeping them neat and cleane; for ever as they meut, they turne the excrements out of the nest: but be they once growne to any strength and bignesse, they teach them to turne about and lay their tailes without.

Another kind there is of Swallowes, that keepe in the countrey villages and the fields, which seldome nestle under mens houses: and they likewise build of the same matter as the former do, namely, of clay and straw, but after another fashion: for their nests are made turning all upward, with the hole or mouth that leadeth unto it, stretched out in length streight and narrow, but the capacitie within is verie large; in such sort, as it is a wonder to see how provident and skilful they should be to frame them in this manner, so handsome and convenient to cover their yong ones; so soft againe, for their couch and bed. In the mouth of Nilus neare Heraclea in Ægypt, there is a mightie banke or causey raised onely of a continuall ranke and course of Swallowes nests, piled one upon and by another thicke, for the length almost of halfe a quarter of a mile; which is so firme and strong, that being opposed against the inundations of Nilus, it is able to breake the force of that river when it swelleth, and is it selfe inexpugnable: a peece of work that no man is able to turne his hand unto. In the same Ægypt neere unto the town Coptos, there is an lland consecrated unto the goddesse *Isis*, which every yeere these Swallowes doe rampier and fortifie, for feare least the same Nilus should eat the bankes thereof and breake over into it. In the beginning of the spring, for three nights together, they bring to the cape of that lland, straw, chaffe, and such like stuffe, to strengthen the front thereof: and for the time, they plie their businesse so hard, that for certaine it is knowne, many of them have died with taking such paines and moiling about this worke. And verily every yeere they goe as daily to this taske againe, as the spring is sure to come about: and they faile not, no more than souldiers that by vertue of their militaric oth and obligation, goe forth to service and warfare.

A third sort there is of these Swallowes or Martinets, which hollow the bankes of rivers, and so nestle within between. The young birds of these Martins, if they be burnt into ashes, are a singular and soveraign remedie for the deadly squinancie, and helpe many other diseases of mans bodie. These build not at all: but if they perceive that the river Nilus when it swelleth, will rise as high as their holes, they are gone many daies before.

There be certaine birds of the kind of Parra, which of drie mosse make a nest, resembling so perfectly a round ball, that unneth or hardly a man can see which way they should goe in. And another there is called Argatilis, which contriveth her nest after the same forme, but it is of hurds and flaxe.

There is a kind of Woodpecker, maketh a nest in manner of a cup or goblet, and hangeth it at a twig upon the uppermost boughes and branches of a tree, that no four-footed beast should reach it. And as for the birds called Galguli, men say for a truth, that they take their sleepe hanging all by their legges to some branch, thinking by that means they are in more safetic. True it is indeed and commonly knowne, that all these birds in great forecast and providence, chuse some crosse boughes instead of rafters, to support and beare up their nests; and then to save them from the raine, either vault them over with an arched rooffe, or else cover them close and thicke with leaves.

A bird there is in Arabia called Cinnamologus, which with the twigs and branches of the
Cinamon

A Cinamon tree buildeth her nest. The inhabitants of that countrey being ware thereof, shake the same downe by shooting arrowes headed with lead, for to make a commoditie thereby. In Scythia, there is a bird of the bignesse of an Otis, which commonly layeth two egges, & when they are lapped within a hares skin, alwaies hangeth them upon the top of tree boughes. The Pyannets, when they perceive (by a watching eye that they have) that a man hath spied their nest, presently build in another place, and remoove their egges thither. Now for those birds which have no hooked nailes, how they should translate their egges from one place to another, considering their feet are not made to claspe them, it is a wonderfull thing, and reported after a straunge manner: for they lay a sticke over two egges, and soulder it fast to them with a certaine viscositie which commeth forth of their owne guts when they meure: which done, they put their necks under the sticke betweene both egges, which hanging equally poised of either side, they carrie easly whither they would.

No lesse industrious are they that make their nests in the ground, as beeing not able to flie into the aire by reason of their weightie bodies. Among which, there is one called Merops, that useth to feed her parents, lying hidden within the earth. The inside of her feathers in the wing is pale, the outside blew; and yet those above about their necke, are somewhat red. She maketh her nest in an hole six foot deepe within the ground. Againe, the Partridges doe so fortifie and empale their nests with thornes and twigges of shrubs and bushes, that they be sufficiently fenced against the invasion of wild beasts. They cover their egges with a soft carpet or hilling as it were of fine dust: neither doe they sit where they laid them first, nor yet in a place which they suspect

C to bee much frequented with resort of passengers, but convey them to some other place. The hennes verily of this kind, hide themselves from their males the cockes; for so leacherous they be and given to intemperate lust, that they would squath their egges, because they should not be amused and occupied about sitting. Then, for want of the females, the males goe together by the eares: and (as they say) he that is overcome, suffereth himselfe to be troden like an hen. *Trogus* verily reporteth the very same of the Quales; yea and of dunghill cockes otherwhiles. Hee saith moreover, that tame Partridges use to tread the wild: also that those which are new taken or beaten, be troden of others indifferently one with another. This libidinous heat of theirs is such, and maketh them so quarrellsome, that oftentimes they are taken by the meanes. For when the Fouler commeth with his pipe or call (resembling the female) to allure and traîne them forth, out goeth the captaine of the whole flocke directly against him: and when he is caught, another followeth after, and so the rest one after another, one by one. In like manner, they use to take the females, at what time as they seeke the male to tread them: for then, soorth they go against the Foulers chanterell or watch which ealleth them out, that with their quarrelling and brawling which they make, they might chace and drive it away. In summe, there is not to bee found in any other living creature, the like againe for lust and lecherie in the act of generation.

D If the hens doe but stand directy over against the cocks, the very wind and aire that passeth from them, will cause them to conceive as well as if they were troden. For so hot they be in that season, that they gape again for aire, and hang the tongue out of their heads. And if the males do but flie over them, with the very breath and aire that commeth from them, they will be ready to conceive: yea and many times, if they doe but heare their call. And that which more is, so leacherous they are, that setting aside the naturall affection and love to their yong covie, when they are broodie, (and in which regard they steale from the cock, & sit apart in some secreter and blind corner) yet if they hear once the Foulers chanterell comming toward the male, and that he doth call, presently they will leave the nest and suffer the eggs to chill, and for very jealousy crie again and call back the males, and offer themselves to be troden, for feare they would goe to others. Nay more than that, their furie and rage that way many times is such, that otherwhiles in this blind fit and fearful lust, not knowing where they are nor what they doe, they will light and settle upon the verie head of the Fouler. Also, if he chauce to approach the nest of the brood-hen, she will run forth and be about his feet, she will counterfeit that shee is verie heavie and cannot scarce goe, that she is weake and enfeeblished: and either in her running, or short flight that shee taketh, she will catch a fall, and make semblance as if she had broken a legge or a wing: then will she run out againe another way, and when he is readie to take her up, yet will she shift away and escape, and so put him besides his hope. And all this doth she to amuse the Fouler after her, untill she have trained him a contrarie way from the covey. Now by that time that shee is past that

fear, and freed of the motherly care she had of her young ones, then will shee get into the furrow of some land, lie along on her backe, catch a clot of earth up with her feet, and therewith hide her whole bodie, and so save both her selfe and her couvey. To conclude, Partridges (by report) live sixteene yeeres.

CHAP. XXXIII.

Of House-doves.

NExt after Partridges, the nature of Doves would be considered, since that they have in a manner the same qualities in that respect: howbeit, they bee passing chaste, and neither male nor female change their make, but keepe together one true unto the other. They live (I say) as coupled by the bond of marriage: never play they false one by the other, but keep home still, and never visit the holes of others. They abandon not their owne nests, unlesse they be in state of single life or widdowhead by the death of their fellow. The females are verie meeke and patient: they will endure and abide their emperious males, notwithstanding otherwhiles they be very churlish unto them, offering them wrong and hard measure; so jealous be they of the hennes, and suspicious, though without any cause and occasion given: for passing chaste and continent by nature they are. Then shall ye heare the cocks grumble in the throat, quarrell and complaine, and all to rate the hens: then shall ye see them pecke and job at them cruelly with their beakes; and yet soone after, by way of satisfaction and to make amends againe for their curst usage, they will fall to billing and kissing them lovingly, they will make court unto them and woo them kindly, they will turne round about many times together by way of flatterie, and as it were by prayers seeke unto them for their love. As well the male as the female be carefull of their young pigeons, and love them alike: nay ye shall have the cocke oftentimes to rebuke, yea chastise the hen, if she keepe not the nest well; or having been abroad, for comming no sooner home againe to her young. And yet, kind they be to them, when they are about to build, lay, and sit. A man shall see how readie they be, to helpe, to comfort and minister unto them in this case. So soone as the egges be hatched, yee shall see them at the very first, spit into the mouthes of the young Pigeons salt brackish earth, which they have gathered in their throat, thereby to prepare their appetite to meat, and to season their stomacks against the time that they should eat. Doves and Turtles have this propertie, in their drinking not to hold up their bills between-whiles, and draw their necks backe, but to take a large draught at once, as horses and kine doe.

CHAP. XXXV.

Of Stockdoves.

Some authors we have, who affirme that Stockdoves live ordinarily thirtie yeeres, and some untill they be fortie yeeres old. In which time, they find no infirmitie nor discommoditie at all but only this, That their claws be overgrowne, which is a signe of their age: howbeit they may be pared without danger. They have all of them one and the same manner of tune in their singing; and commonly they make three rests in their song, besides the fa-burden in the end, which is a kind of grone. All winter they be silent: in spring, they are lowd enough, and the woods resound with them. *Nigidius* is of opinion, that if a man call unto a Stockdove within-house as she is sitting upon her eggs, she will leave her nest, and come at the call. They doe lay after midsummer. These doves and Turtles live eight yeeres.

CHAP. XXXVI.

Of Sparrowes.

Contrariwise, the Sparrow is but short lived, howbeit as leacherous as the best. The cocke Sparrow (by report) liveth but one yeare: the reason why men so thinke, is, because in the spring, there is not one of them found with a blacke bill, and yet in summer before, it becometh to be blacke. The Hens live somewhat longer. But to come againe to Doves, it is generally held, that they have a certaine sense and feeling of glorie: and a man would verily thinke, that they have a knowledge of their gay feathers, and how they are changeably coloured as a man looketh

A looketh upon them and as they stand. Moreover, they seem to take a pride in their flying, whiles they keepe a clapping of their wings and cutting of the aire every way, as if they had a pleasure to be flying abroad. In which braverie of theirs, whiles they flap with their wings and keepe a glorious noise (which cannot be without the beating of their verie pinions together) they are exposed to the Faulcon and other hawkes, as prisoners fast bound and tied: for otherwise if they would flie at libertie and ease, without keeping such adoe with their clapping, they were much more swift of wing, than the verie hawkes that prey upon them. But the hawke like a verie theefe, lieth hidden among the boughes and branches of trees, marketh the Dove how hee fetcheth his flight and taketh his pleasure in the aire; and when he seeth his time (in all this glorie of his and the mids of his braverie) seizeth upon him and carieth him away.

B

CHAP. XXXVII.

Of the Kestrell.

TO prevent this daunger therefore, the Doves need to have with them the bird which is called Tinnunculus, *i.* a Kestrell, or Stannell: for she defendeth them, and (by a certaine naturall power that she hath) skareth and terrifieth all other hawkes: insomuch, as they cannot abide either to see her, or to heare her crie. Whereupon Doves above all others, love these birds. And (as men say) pigeons will not leave their owne dovecote to flie unto another, if in the foure corners thereof there be entered foure Kestrells above said, in foure new earthen pots well nealed, and never used before. But others have used meanes to keepe pigeons in their dovehouse (for otherwise they be birds that love to be raunging and wandring abroad) namely, by slitting and cutting the joynts of their wings with some thin sharpe peece of gold: for if you do not so, their wounds will fester and be dangerous. And in verie truth, these birds be soone seduced and trained away from their owne homes: and they have a cast with them to flatter and entise one another: they take a great delight to inveagle others, and to steale away some pigeons from their owne flockes, and evermore to come home better accompanied than they went soorth. Moreover, Doves have served for posts and courriers betweene, and been employed in great affaires: and namely, at the siege of Modena, *Decimus Brutus* sent out of the towne letters tyed to their feet, as farre as to the campe where the Consuls lay, and thereby acquainted them with newes, and in what estate they were within. What good then did the rampier and trench which *Antoninus* cast before the towne? To what purpose served the streight siege, the narrow watch and ward that he kept? Wherefore served the river Po betweene, where all passages are stopped up as it were with net and toile, so long as *Brutus* had his posts to fly in the aire over all their heads? To be short, many men are growne now to cast a speciall affection and love to these birds: they build turrets above the tops of their houses for dovecotes. Nay they are come to this passe, that they can reckon up their pedigree and race, yea they can tell the verie places from whence this or that pigeon first came. And indeed one old example they follow of *L. Axius* a gentleman sometime of Rome, who before the civill warre with *Pompey*, sold every paire of pigeons for * foure hundred deniers, as *M. Varro* doth report. True it is, that there goeth a great name * 12. lib. 10. 52. of certaine countries where some of these pigeons are bred: for Campanie is voiced to yeeld the greatest and fairest bodied of all other places. To conclude, their manner of flying induceth and traineth me to thinke and write of the flight of other foules.

E

CHAP. XXXVIII.

Of the gate and flight of birds.

All other living creatures have one certaine manner of marching and going, according to their severall kind, unto which they keepe and alter not. Birds onely varie their course, whether they goe upon the ground or flie in the aire. Some walke their stations, as Crows and Choughs: others hop and skip, as Sparrows and Oufels: some run, as Partridges, Woodcocks, and Soxtes: others again cast out their feet before them, staulke and jet as they go, as Storks and Cranes. Now for flying, some spread their wings broad, stirring or shaking them but now & then,

hanging and hovering with them all the while [as Kites:] others againe plie them as fast; but the G ends only of their wings, or the utmost feathers are seen to move [as the Chaffinch.] Ye shall have some birds to stretch out their whole wings and sides, mooving them as they flie [as Ravens,] and others a man shall see in their flight to keepe them in, for the most part close [as the Woodpeckers.] Some of them are knowne to give one or two claps with their wings at first, and then glide smoothly away, as if they were caried and borne up with the aire [as Linnets,] and others are seene (as if they kept still the aire within their wings) to shoot up aloft & mount on high, to flie streight forward, and to fall down againe flat [as Swallowes.] Ye would think and say that some were hurled out of a mans hand with violence [as the Partridge,] and others againe to fall down plumb from on high [as Larkes,] or els to leape and jumpe [as the Quailes.] Duckes, Mallards, and such like, H spring presently from the ground up aloft, and suddainly mount into the skie, even out of the very water: which is the cause, that if they chance to fall into those pits wherein we take wild beasts, they alone will make good shift to get forth and escape. The Geires or Vulturs, and for the most part all weightie and heave foules, cannot take their flight and flie, unlesse they fetch their run and biere before, or els rise from some steepe place with the vantage. And such are directed in the aire by their tails. Some looke about them every way, others bend and turne their neckes in flying: and some flie with their prey within their tallons, and eat it as they flie. Most birds crie and sing as they flie, yet some there bee contrariwise, that in their flight are ever silent. In one word, some flying carie their breasts and bellies halfe upright: others againe bear them as much downward. Some flie sidelong and bias: others directly forward, and follow their bills: & last of all there be that bend backward as they flie, or els bolt upright. In such sort, that if a man saw them all together, I he would take them, not to bee one kind of creature, so divers and different are they in their motions.

CHAP. XXXIX.

¶ Of Martinets.

Martinets, which the Greekes call Apodes (because they have little or no use of their feet) and others, Cypseli; are very good of wing, and flie most of all others without rest. And in very truth, a kind of Swallowes they be. They build in rocks and stonie cliffes. And these be they and no other, that are seene evermore in the sea: for bee the ships never so remote from the land, saile they never so fast and farre off, yee shall have these Martinets alwaies flying about them. K All kinds else of Swallowes and other birds, do sometime light, settle, and perch: these never rest, but when they bee in their neast. For either they seeme to hang, or else lie along: and a number of shifts and devises by themselves they have besides, and namely when they feed.

CHAP. XL.

¶ Of the bird Caprimulgus, and the Shovelar.

The Caprimulgi (so called of milking goats) are like the bigger kind of Owfels. They bee night-theeves; for all the day long they see not. Their manner is to come into the sheepe-herds coats and goat-pens, and to the goats udders presently they goe, and suck the milke L at their teats. And looke what udder is so milked, it giveth no more milke, but misliketh and falleth away afterwards, and the goats become blind withall.

There be other birds named Plateæ, ⁊ Shovelars. Their manner is to flie at those foule that use to dive under the water for fish: and so long will they pecke and bite them by the heads, untill they let go their hold of the fish they have gotten, and so they wring it perforce from them. This bird when his bellie is full of shell fishes that he hath greedily devoured, and hath by the naturall heat of his craw and gorge in some sort concocted them, casteth all up againe: and at leasure picke- M keth out the meat, and eateth it againe, leaving the shels behind.

CHAP. XLI.

¶ The naturall wit of some birds.

The Hens of cuntry houses have a certaine ceremonious religion. When they have laid an egge, they fall a trembling and quaking, and all to shake themselves. They turne about also

A also, as in proceſſion, to be purified, and with ſome feſtue or ſuch like thing, they keepe a ceremonie of hallowing, as well themſelves as their eggs.

CHAP. XLII.

☞ *Of the Linnet, Poppinjay or Parrat, and other birds that can ſpeake.*

THe Linnets be in manner the leaſt birds of all others: howbeit they be very docible. Doe they will whatſoever they are taught and bidden, not onely in their voice, but alſo with their feet and bills, as if they were hands. In the territorie about Arelate, there is a bird called Taurus (becauſe it looweth like a Bull or Cow, for otherwiſe a ſmall bird it is.) There is another alſo named Anthus, which likewiſe reſembleth the neighing of horſes: and if haply by the approach of horſes they be driven from their graſſe whereof they feed, they will ſeeme to neigh; and flying unto them, chaſe them away, and ſo be revenged of them again. But above all other birds of the aire, the Parrats paſſe; for counterfeiting a mans voice: inſomuch, as they will ſeeme to parle and prate our very ſpeech. This foule commeth out of the Indies, where they call it Sittace. It is all the bodie over greene, onely it hath a collar about the necke of vermilion red, different from the reſt of her feathers. The Parrat can ſkill to ſalute Emperours, and bid *good morrow: yea, and to pronounce what words ſhe heareth. She loveth wine well, and when ſhe hath drunke freely, is very pleaſant, pleaſfull, and wanton. She hath an head as hard as is her beake. When ſhe learnes to ſpeake, ſhe muſt be beaten about the head with a rod of yron: for otherwiſe ſhee careth for no blowes. When ſhee taketh her flight downe from any place, ſhee lighteth upon her bill, and reſteth thereupon, and by that meanes favoureth her feet, which by nature are but weak and feeble, and ſo carieth her owne weight more lightly.

There is a certaine Pie, of nothing ſo great reckoning and account as the Parrot, becauſe ſhe is not farre ſet, but here-by neere at hand: howbeit, ſhee pronounceth that which is taught her more plainely and diſtinctly than the other. Theſe take a love to the words that they ſpeake: for they not onely learne them as a leſſon, but they learne them with a delight & pleaſure. Inſomuch that a man ſhall find them ſtudying thereupon, and conning the ſaid leſſon: and by their careful thinking upon that which they learne, they ſhew plainely how mindfull and intentive they bee thereto. It is for certaine knowne, that they have died for very anger and greefe that they could not learne to pronounce ſome hard words: as alſo, that unleſſe they heare the ſame words repeated often unto them, their memorie is ſo ſhittle, they will ſoone forget the ſame againe. If they miſſe a word, and have loſt it, they will ſeek to call it a gaine to remembrance; and if they fortune to heare the ſame word in the meane time, they will wonderfully joy thereat. As for their beautie, it is not ordinarie, althoug it be not very lovely. But ſurely amiable ynough they are in this, that they can ſo well reſemble mans ſpeech. It is ſaid, that none of their kind are good to bee made ſchollers, but ſuch onely as feed upon maſt: and among them, thoſe that have five toes to their feet. But even theſe alſo are not fit for that purpoſe, after the firſt two years of their age. And their tongue is broader than ordinarie: like as they bee all that counterfeit mans voice, each one in their kind: althoug it be in manner generall to all birds whatſoever to be broad tongued. *Agrippina* the Empreſſe, wiſe to *Claudius Caſar*, had a Blackbird or a Throttle, at what time as I compiled this booke, which could counterfeit mans ſpeech; a thing never ſeene nor knowne before. The two *Caſars* alſo, the young princes (to wit, *Germanicus* and *Drusus*) had one Stare, and ſundry Nightingales, taught to parle Greeke and Latine. Moreover, they would ſtudie upon their leſſons, and meditate all day long: and from day to day come out with new words ſtill, yea, and were able to continue a long ſpeech and diſcourſe. Now for to teach them the better, theſe birds muſt be in a ſecret place apart by themſelves, where they can heare no other voice: and one is to ſit over them, who muſt repeat often that which hee would have them to learne, yea, and pleaſe them alſo with giving them ſuch meat as they beſt love.

CHAP. XLIII.

☞ *The underſtanding and wit that Ravens have.*

LEt us not defraud the Ravens alſo of their due praife in this behalfe, conſidering, that the whole people of Rome hath teſtified the ſame not onely by taking knowledge, but alſo by a publicke revenge and exemplarie puniſhment. And thus ſtood the caſe. In the daies of *Tiberius*

berius the Emperour, there was a yong Raven hatched in a nest upon the church of *Castor* and *Pollux*, which, to make a triall how he could flie, tooke his first flight into a shoemakers shop just overagainst the said church. The maister of the shop was well ynough content to receive this bird, as commended to him from so sacred a place, and in that regard set great store by it. This Raven in short time being acquainted to mans speech, began to speake, & every morning would flie up to the top of the *Rostrum* or publicke pulpit for Orations, where, turning to the open *Forum* and market place, he would salute and bid Good morrow to *Tiberius Casar*, and after him, to *Germanicus* and *Drusus* the young princes, both *Casars*, every one by their names: and anon the people of Rome also that passed by. And when hee had so done, afterwards would flie againe to the shoemakers shop aforesaid. This dutie practised he and continued for many years together, to the great wonder and admiration of all men. Now it fell out so, that another shoemaker, who had taken the next corviners shop unto him, either upon a malicious envie that hee occupied so neere him, or some suddaine spleene and passion of choller (as he would seeme to plead for his excuse) for that the Raven chanced to meute a little, and set some spot upon a paire of his shoes, killed the said Raven. Whereat the people tooke such indignation, that they rising in an uprore, first drove him out of that street, and made that quarter of the cittie too hote for him: and not long after murdered him for it. But contrariwise, the carkasse of the dead Raven was solemnely enterred, and the funerals performed with all ceremoniall obsequies that could bee devised. For the corps of this bird was bestowed in a coffin, couch, or bed, and the same bedecked with chaplets and guirlands of fresh floures of all sorts, carried upon the shoulders of two blacke Mores, with minstrels before, sounding the haut-boies, and playing on the fife, as farre as to the funerall fire; which was piled and made in the right hand of the causey *Appia*, two miles without the cittie, in a certain plaine or open field called *Rediculi*. So highly reputed the people of Rome that readie wit and apt disposition in a bird, as they thought it a sufficient cause to ordaine a sumptuous buriall therefore: yea, and to revenge the death thereof, by murdering a cittizen of Rome in that citie, wherein many a brave man and noble person died, and no man ever solemnized their funerals: in that citie I say which afforded not one man to revenge the unworthie death of that renowned *Scipio Aemilianus*, after he had woon both *Carthage* and *Numantia*. This happened the fifth day before the *Calends* of *Aprill*, in the yeare when *M. Servilius* and *C. Cestius* were *Consuls* of *Rome*. Moreover, even at this very present, when I wrate this historie, I saw my selfe a Crow belonging to a certaine knight of *Rome*, who brought him out of the realme of *Grenado* in *Spaine*, which was a very strange and admirable bird, not onely for the exceeding black colour of his feathers, but also for that he could pronounce and expresse so perfectly many words and sentences together, and learned still new lessons every day more than other. It is not long since that there went a great bruit and fame of a notable hunter in *Erizena* a countrey of *Asia*, whose name was *Craterus Monoceros*: that used to hunt by the meanes and helpe of Ravens. His manner was to carrie with him these Ravens into the Forrest, perching upon his shoulders and his hunting hornes: and these would seeke out and put up other wild ones, and bring them to him. Thus by custome & use he brought his hunting to this good passe, that when he returned homeward out of the Forrest, the wild as well as the tame would accompanie him. Some have thought it worth the setting downe upon record, how there was a Raven scene in time of a great drought when water was hard to come by, for to cast stones into the bucket belonging to a sepulchre, wherein there was some raine water remaining toward the bottome, but so deepe, that hee could not reach unto it: and being afraid to go downe into it, by heaping up many stones, he brought the water to rise so high, as he might drinke sufficient with ease.

CHAP. XLIIII.

Of *Diomedes* his birds.

NEither will I overpasse the birds called *Diomedæ*, which king *Iuba* nameth *Cataractæ*. M
Toothed they are, as hee saith; and they have eies as red and bright as the fire: otherwise their feathers be all white. Who also affirmeth, that they evermore have two captains, the one for to lead the vaward, and the other for the rereguard. With their bills they dig little trenches and gutters in the ground: over which from side to side they lay stickes across like hurdles, very arti-

A artificially, and then cover the same over with the earth that they cast forth before: under which they breed. Every one of these trenches hath two dores: the one regarding the East, at which they goe forth to their meat: and the other looking into the West, by which they come in again after their returne. Whensoever these birds would meute, they flie ever full into the wind, because they would not file themselves. Found they be in one place of the world, and but in one: namely in a certaine Island, ennobled, as we have written before, for the tombe and temple of *Diomedes*, and it lieth upon the coast of Apulia. These birds are like unto the white Sea-mewes with a black cop. Their manner is to crie with open mouth uncessantly at any strangers that come aland, save onely Grecians, upon whom they will seeme to fawne and make signes of love and amitie, in all flattering wise. A wonderfull thing that they should discern one from another, and give such friendly welcome to them, as descended from the race of *Diomedes*. Their manner is every day to charge their throat and wings full of water, and all to drench therewith the said temple of *Diomedes*, in signe of purification. And hereupon arose the fabulous tale, That the companions of *Diomedes* were turned into these birds.

CHAP. XLV.

¶ *What birds are not apt to learne, and will not be taught.*

AND now that we are in this discourse of wit and capacitie, I must not omit to note, That of birds, the Swallow; and of land beasts the Mousse and the Rat, are very untoward and cannot be brought to learne. Whereas we see great Elephants readie to doe whatsoever they are commanded: the furious Lions brought to draw under the yoke: the Seales within the sea, and so many sorts of fishes grow to be tame and gentle.

CHAP. XLVI.

¶ *The manner of birds in their drinking.*

BIRDS drinke sucking, and those which have long necks, make staies between, and every while hold up their bill from the water, as if they would poure the water downe their throat. The bird *Porphyrio* alone seemeth to bite the water as he drinketh. And this bird hath this propertie by himselfe, to dip and wet all his meat ever and anon in water, and then with his foot in lieu of an hand, to reach it unto his bill. The best of this kind are in *Comagene*. Their bills and long shankes that they have, be red.

CHAP. XLVII.

¶ *Of the foule Himantipus, the Onocrotali, and other strange foules.*

LIKE in that respect unto the *Porphyrio*, is the *Himantipus*: a bird farre lesse in bodie, but full as long legged, and stalking as high. They are bred in *Aegypt*: and goe upon three toes to a foot. Their most feeding is upon flies. In *Italie* they will not live many daies. All great and hevie foules live of seeds and corne. They that flie on high prey upon flesh. Among water-foules, the *Cormorants* use to devour that which other birds either disgorge or meute. The *Onocrotali* much resemble *Swans*, and surely they might bee thought the very same and no other, but that they have within their throat another kind of gizzer besides their craw: in which, these foules being unfatiable, bestow all that ever they can get; whereby it is of a wonderfull great capacitie, and will receive very much. Now when they have done their ravening, & filled this poke, soone after they convey it from thence by little and little into their mouth, and there chew the cud, untill after it bee well prepared, they swallow it downe into the verie craw and bellie indeed. These foules are to bee found in the parts of *Picardie* and *Normandie* in *Fraunce*, lying upon the North Ocean. In *Hercinia*, a forrest of *Germanie*, wee have heard that there bee strange kinds of birds, with feathers shining like fire in the night season. In other respects, I have nothing to say of them worth the writing, save onely they are of some name, for beeing farre fetched,

¶ *The names and natures of many birds.*

OF water-foules, the Phalerides are thought in Seleucia of the Parthians, and also in Asia, to be the daintiest. Likewise, the Fesant Hens of Colchis, which have two eares (as it were) consisting of feathers, which they will set up and lay downe as they list. The Ginnie or Turkey Hens, in a part of Affricke called Numidia be in great request, as also throughout all Italie nowadaies. *Apicius*, the most roiorous glutton & bellie-god of his time, taught men first, that the tongue of Phoenicopterus, was a most sweet and delicate peece of meat. The Moore-hen of Ionia is much commended and in high estimation. This bird so soone as she is taken prisoner, looseth her voice, and is mute: for otherwise she is vocall and lowd ynough: and in old time was reputed a rare and singular bird. But now there be caught of them in Fraunce and Spaine, yea, and among the Alpes: where also the Plungeons or bald-Ravens bee, which heretofore were thought proper & peculiar unto the Baleare Ilands: like as the Pyrrhocorax [i. the red Raven] with the yellow bill, was supposed to breed onely among the Alpes; and with it the Lagopus, a daintie bird and most pleasant in the dish. And this name it tooke in Greeke, because it is rough-footed and haired like the Hares foot: otherwise all over white, and as big as a Pigeon. Have her out of the ground, under which she breedeth, you shall hardly get her to feed: neither will she be made tame, live she never so long: kill her once, the bodie presently will rot and putrifie. There is another besides of that name, and differeth from Quailes onely in bignesse, for it is greater than the Quaille: and with a yellow sauce of saffron it is a most delicate peece of meat. *M. Egna-tius Calvinus* governour of the parts about the Alpes, reporteth, that hee hath seene there the Ibis, a bird proper to the land of Ægypt.

¶ *Of new birds, and such as are holden for fabulous.*

DVring the civile warres betweene *Otho* and *Vitellius*, and namely, about the time of the journey or battell at Bebricum, beyond the Po: there were these new-birds (for so they be called still at this day) brought into Italie. Like they be to Thrushes or Mavisses, somewhat lesse than Housedoves, pleasant in the eating. The Baleare Ilands sends us another Porphyrio, better than that *beforenamed. Where the Buzards also, a kind of Hawke, are held for excellent meat, and served up at the table. Likewise the *Vipio*, for so they call the lesse kind of Crane. As for the foules called *Pegasi*, headed like horses; and the Griffons, which are supposed to have long eares, and a hooked bill, I take them to bee meere fables: and yet they say, that the *Pegasi* should be in Scythia, and the Griffons in Æthyopia. Moreover, I thinke the same of the *Tragopanades*, which many men affirme to bee greater than the Ægle; having crooked hornes like a Ram on either side of the head, of the colour of yron, and the head onely red. As touching the birds *Syrenes*, I will never beleve there be any such, let *Diono* the father of *Clitarchus* that renowned writer, say what he will: who avoucheth for a truth, that they be in India: and that with their singing they will bring folke asleepe, and then sie upon them and teare them in peeces. He that will give credite to these fables, may even as well beleve that dragons forsooth taught *Melampus* by licking his eares, how to understand the language of birds when they chaunt and sing upon trees, or crie and chirpe in the aire: likewise the tales that *Democritus* telleth, who nameth certain birds, of whose bloud mingled together, and suffered to corrupt, there is engendered a serpent, which whosoever eateth, shall know what birds say one to another in their speech: and namely, the strange things that hee telleth of the Larke above the rest. For verily without these fabulous lies, mens heads be occupied ynough, and too much to, about the Auguries onely and presages of birds; that they have no need to busie and trouble their braines about these toies. *Hemer* maketh mention of certaine birds called *Scopes*: but I cannot conceive those Satyricall gesticulations of theirs like Antikes when they are perched, which so many men talke of: neither doe I thinke otherwise, but that these birds are out of knowledge nowadaies. And therefore better it is farre to write of those which we know.

A

CHAP. L.

¶ Who first devised to cram Hens. Who invented Mues and Coupes to keepe foule in.

They of the Island Delos began the cramming of Hens and Pullein first. And from them arose that detestable gourmandise and gluttonie to eat Hens and Capons so fat and enterlarded with their owne greafe. Among the old statutes ordained for to repress inordinate feasts, I find in one act made by *C. Fannius*, a Consull of Rome, eleven yeares before the third Punicke warre, an expresse prohibition & restraint, That no man should have his table served with any foule, unlesse it were one Hen, and no more, and the same a runner onely, and not fed up and crammed fat. The branch of this one statute was afterwards taken forth and inserted in all other acts provided in that behalfe, & went currant through all. Howbeit, for all the law so well set down, there was a starting hole found to delude and escape the meaning therof, namely, to feed Cockes and Capons also with a past foked in milk & mead together, for to make their flesh more tender, delicate, and of sweeter tast: for that the letter of the statute reached no farther than to Hens or Pullets. As for the Hens, they onely bee thought good and well ynough crammed, which are fat about the necke, and have their skin plump and soft there. Howbeit, afterwards our fine cookes began to looke unto their hind-parts about the rumpe, and chuse them thereby. And that they should make a greater shew in the platter, they slit them along the chine, and lay their legs out at large, that they might take up the whole dresser board. The Parthians also have taught our cooks their own fashions. And yet for all this fine dressing and setting out of meat, there is nothing that pleaseth and contenteth the tooth of man in all respects; whiles one loveth nothing but the leg, another liketh and praiseth the white brawne alone, about the breast bone. The first that devised a Barron and Mue to keepe foule, was *M. Lenius Strabo*, a gentleman of Rome, who made such an one at Brindis, where he had enclosed birds of all kinds. And by his example we began to keep foules within narrow coupes and cages as prisoners, to which creatures Nature had allowed the wide aire for their scope and habitation.

B

C

CHAP. LI.

¶ Of *Æsopos* proud platter.

But in the relation and report of this argument, notorious above all the rest in our memorie is that platter of *Clodius Æsopus*, the plaier of Tragedies, which was esteemed worth * sixe hundred Sestertia. In this one charger he served up at the board all kind of birds that either could sing or say after a man: and they cost him sixe hundred Sesterces apeece. And surely it was no delight and pleasure that he sought herein to content the tooth, but only that he would have the name to eat the resemblers of mans voice: without any consideration and regard that hee had of all that great riches and revenues of his owne, which himselfe had gotten by his tongue, and by counterfeiting the speech of others. A father verily worthie such a son, who, as we said before, devoured those precious pearles. And to speake a truth, it is hard to judge whether of them twaine plaied the beast more, the father or the sonne. But that it seemeth lesse pride and prodigalitie to swallow downe the throat the greatest riches of Nature, than to chew and eat at a supper mens tongues, that is to say, those birds that could pronounce our language.

* 7,600,000 Sestertij, 150,000 deniers.

E

CHAP. LII.

¶ The engendring of birds: and what foure-footed beasts lay egges as well as they.

The generation of birds seemeth alwaies to bee after one and the same manner. And yet therein is to be found some straunge and extraordinarie worke. Like as there be four footed beasts knowne also to have egges, namely, the Chamæleons, Lizards, and such as we named among Serpents. Of foules, those that have hooked claws and tallons, are but barren that way, and lay few egges. Only the Kestrell laieth foure at a time. And verily Nature hath well provided in all the kind of foules, That the mightier should be lesse fruitful than the weaker and those that flie from the other. The Ostriches, Hens, Partridges, and Linnets, are great laiers. As touching

F

ching the manner of their engendring, it is perfourmed two waies: for either the female cou- G
cheth downe, as doe our hens; or else stand up on their feet, as doe the cranes. Of eggs, some be
white, as those of Doves and Partridges; others, be pale and yellowish, as those of water-foule:
some be spotted, as those of the Turkie-hens: others againe red; and such eggs Feafants lay, and
Kestrels.

All birds egges within the shell, are of two colours. In water-foules, the yolke is more than
the white, and the same is more wan and duskish than in others. The egges of fishes are of one
colour, and therein is no white at all. Birds egges are brittle shelled, by reason of their heat. Ser-
pents egges are more tough because of cold: but they of fishes are more soft and tender, for that
they be so liquid. Those of fishes and such creatures as live in water, have round egges ordinari- H
ly: others be long and pointed at one end in the top. Birds lay their egges with the rounder end
comming forward: their shell is soft whiles they be warme and a laying, but presently they har-
den by peecemeale as they come forth. *Horatius Flaccus* is of opinion, that the longer the egge
* is, the better tast it hath. The rounder egge prooves to be the hen commonly, the rest will be
* cockes. There is found in the * top or sharper end of an egge within the shell, a certaine round
knot resembling a drop or a navill, rising above the rest, which they call a Kinning.

* Orrather, in
the crown and
broader end,
as our wives
say.

CHAP. LIII.

28 The engendring of egges: the sitting of birds, and their manner
of generation.

SOME birds there be, that tread all times of the yeare; and lay eggs but only two moneths in
mid winter: and of those, pullers lay more than old hennes, but they be lesse, especially the
first and last of one laiter. So fruitfull they be, that some of them will lay threescore eggs ere
they give over: some, everie day; others, twice in one day: and some will over-lay, untill they be
so wearie and feeble withall, that they will never lay more, but die withall. The little short legged
grig hens, called *Hadrianæ* (that came from *Hadria*) are counted best. Doves lay and couvey ten
times in the yeare, some of them eleven: and in *Ægypt* there are found that give not over in the
twelvemonth, even at mid-winter in December. Swallows, Oufels, Quoists or Ringdoves, and
Turtles, lay and sit twice in the yeare: other birds ordinarily but once. Thrushes and Blackbirds
build their nests of mud and clay, in trees and bushes one by another, so neere as if they were
linked together: and lightly they engender in some corner out of the way. After the hen is tro- K
den, within ten daies commonly the eggs knit within her bellie, are come to perfection and rea-
die to be laid. Howbeit if hens have some wrong done unto them, or if a man chance to pluck
a feather or quill from a pigeon at that time, or doe them some such injurie, it will bee longer
ere they lay.

All egges have within them in the mids of the yolke, a certaine drop as it were of blood,
which some thinke to be the heart of the chicken, imagining that, to bee the first that in everie
bodie is formed & made: and certainly a man shall see it within the very egge to pant and leape.
As for the chick, it taketh the corporall substance, and the bodie of it is made of the white wa- L
rith liquor in the egge: the yellow yolke serveth for nourishment: whiles the chick is unhatched
and within the egge, the head is bigger than all the bodie besides: and the eies that be compact
and thrust together, be more than the verie head. As the chick within groweth bigger, the white
turneth into the mids, and is enclosed within the yolke. By the twentieth day (if the eggs be stirred)
ye shall heare the chicke to peepe within the verie shell: from that time forward, it beginneth
to plume and gather feathers: and in this manner lieth it within the shell, The head resting up-
on the right foot, and the same head under the right wing: and so the yolke by little and little
decreaseth and faileth. All birds are hatched with the feet forward, contrarie to other creatures.
Some hens there be, that lay all their eggs with two yolkes; and of them be hatched two chickens
otherwhiles, as *Cornelius Celsus* writeth: but the one of them is bigger than the other. Howbeit,
others say, it is impossible that of one egge should come two chickens. Moreover, it is held for a M
rule, that there should not be put under a brood-hen above 25 eggs at one time to sit upon. After
the midwinter, hens begin to lay and sit. The best brood is before the spring *Æquinoctiall*. Those
that be hatched after midsummer, never come to their full and kind bignesse: and evermore the
later the lesser.

CHAP. LIIII.

☞ *The infirmities and impediments incident to Brood-hens,
and the remedies.*

THe best egges that can be put under hens when they sit, are those that were laid ten daies before at the utmost: for neither old eggs, nor yet verie new laid, be good for that purpose. After that the hen hath sitten foure daies, take an eg from under her, hold it in one hand by the narrow end, and look between you and the light with the other over it; if it be clear through and of one colour, it is supposed to be naught and will never proove a chicke, and therefore put another in place therof. Another experiment there is by water: The addle egge will flote above, as emptie; the sound and good, will sinke to the bottome: and such therefore beeing full, are to be set under the hen. When ye would try whether an egge be good or bad in this case, our countrey wives say, you must not shake them in any hand, for if the vitall veines and parts be broken and blended together, they will never proove. Moreover, this must alwaies be looked unto, that yee begin to set an hen after the change of the moone: for if you set her in the waine, the egges will be addle and never come to be chickens. The warmer that the weather is, the sooner will she hatch: and therefore it falleth out, that in summer ye shall have her abroad with her brood upon the nineteenth day; in winter many times it will be 25 daies first. If it thunder while she is broodie, the egges will proove addle: yea and if the hen chauce but to heare an hawke crie, they will be marred. The remedie against thunder, is to put an iron naile under the straw of the hens nest, or else some earth newly turned up with the plough. Over and besides, there be some eggs that will come to be birds without sitting of the hen, even by the worke of Nature onely, as a man may see the experience in the dunghils of *Ægypt*. There goeth a pretie jest of a notable drunkard of *Syracusa*, whose manner was when he went into the tavernne to drinke, for to lay certaine egges in the earth, and cover them with mould: and hee would not rise nor give over bibbing, untiil they were hatched. To conclude, a man or woman may hatch egges with the very heat onely of their bodie.

CHAP. LV.

☞ *The Auguries and Presages of Egges.*

Livia *Augusta* the Empreffe, wife sometime of *Nero*, when she was conceived by him, and went with that child [who afterwards proved to be *Tyberius Cesar*,] beeing very desirous (like a young fine ladie as she was) to have a jolly boy, practised this girlish experiment to foreknow what she should have in the end: Shee tooke an egge, and ever carried it about her in her warme bosome, and if at any time she had occasion to lay it away, she would convey it closely out of her owne warme lap unto her nourses, for feare it should chill. And verily this presage proved true: the egge became a cock-chicken, and she was delivered of a sonne. And hereof (it may well be) came the devise of late, to lay eggs in some warme place, and to make a soft fire underneath of small straw or light chaffe to give a kind of moderate heat; but evermore the eggs must be turned with a man or womans hand, both night and day; and so at the set time, they looked for chickens and had them. It is reported besides of a certaine poultier, who had a secret by himselfe, wherby he could tell surely and never misse, which egge would be a cock-chicken, which a hen: also of many hens that hee kept, which was every hens egge if he did but see it. We have heard moreover, that when a brood-hen chanced to die, the cockes that used to tread her, were seen to go about with the chickens one after another by turnes, and to doe every thing like to the very hen indeed that hatched them: and all that while to forbear once to crow. But above all it is a sport alone, to see the manner of an hen that hath sitten upon ducks egges and hatched them, how at the first she will wonder to have a teeme of ducklings about her, and not acknowledge them for her owne: but soone after, she will clucke and call this doubtfull brood to her, verie carefully and diligently: but at the last, when shee perceiveth them (according to their kind) to take the water and swim, how she will mourne and lament about the fish-pooles, that it would pitie ones heart to see them what mone they will make.

CHAP. LVI.

¶ Which be the best Hens.

A Man shall know a good and kindly hen by her comb, when it is streight and upright: otherwhiles also double crested: also by the pinion feathers blacke, the upper plume reddish. Such a hen will be red also about the head and bill; and have an odde toe to her feet: yea and sometime that odde one to lie crosse overthwart the other foure. In case of sacrifices and religious use, they are not thought good nor allowable, which have becke and feet, yellow. For divine service and secret mysteries celebrated in covert to the goddesse *Ops*, the black are allowed for good. There is also a dwarfish kind of *hens, that are extraordinarie little, and yet fruitfull, (a thing not seene in any other kind of foule) they lay and misse not, but sildome sit they on any eggs: and if they doe, it is hurtfull for them.

* Crig. hens.

CHAP. LVII.

¶ The maladies that hens be subiect unto, and the remedies.

That which troubleth all the kind of them, is a certaine distillation of a phlegmaticke humour, which causeth the pip; and most of all between harvest time and vintage. The cure is, to keepe them hungrie and long fasting: also to let them lie or perch in a smokie place, especially where the fume is made of bay leaves, and the hearb Savine. It is good moreover, to draw a little quill or feather through their nostrils acrosse; and to remoove or shift it every day. As for their meat, let it be some cloves of garlicke shred among their corn, or else let their meat be well infused and steeped in water, wherein an owle hath washed and bathed her selfe; or else sodden with the seed of Brionie, or the wild white vine: besides such other medicines as are daily in use.

CHAP. LVIII.

¶ The manner how foules doe conceive, and what number of young ones they commonly doe hatch.

Doves have this propertie by themselves, to bill one another and kisse before they tread. They doe lay for the most part two egges. Thus Nature hath disposed, that some should breed often, and few: others, should hatch many together at once. The Ringdoves or Quoists, and Turtles, ordinarily doe lay three egges; and lightly they sit and hatch but twice a yeere: and that is, if their first brood came not to perfection, but miscarried and was not reared up. And albeit they lay three egges, yet they never hatch but twaine: the third that is addle, they call in Latine *Vrium*. The female Ringdove sitteth ever from noon untill the next morning; the male maketh up the rest of the day. House-doves breed evermore one cocke pigeon, and another hen. The male is hatched to day, and the female to morrow. In that kind they sit both, the cocke all day, and the hen by night: and usually upon the twentieth day they hatch. They lay within five daies after they be troden. And in summer time verily, yee shall have them in the space of two moneths bring three paire of pigeons; for then they use to hatch by the 18 day: and presently they conceive againe. So that a man shall oftentimes find new-laid egges even among the yong pigeons: and otherwhiles it is seene, that whiles some are readie to flie, others peep newly out of their shell. And these young birds, within five moneths will laie themselves. Now the nature of these hen-doves is (if they want a cocke) to tread one another, and hereof they come to laie barren egges, whereof nothing will be engendred: and such the Greekes call *Hypenemia*, *id est*, wind-egges.

CHAP. LIX.

¶ Of the Peacocks, and Geese.

The Pea-hen falleth to laie and breed after she is three yeeres old. In the first yeere, she begins with one or two egges: the yeere following, she riseth to foure or five: in the rest, she reacheth to twelve and no more. When she laieth, her manner is to rest two or three daies between everie egge. And thrice a yeere she doth keepe this order, namely, if her egges be taken from

A from her, and put under hens for to be sitten upon: for why, the Peacockes will breake them if they can meet with them, because they cannot misse and spare the Peahens companie whiles they are broodie and sitting: which is the cause that they are wont to lay by night, or in some secret corner out of the way, and that from an high place where they perch: and then, unlesse there be good heed taken that the egges be latched in some soft bed underneath, they are soone broken. One Peacocke is sufficient to goe with five wives: for when there is but twaine [the villaine is so leacherous] with overmuch treading he hindereth their laying, and marreth the knot of egges which is engendred within them. The Peahen doth hatch in 28 daies, or in thirtie at the farthest.

B Ganders and Geese engender together in the very water. Geese lay ordinarily in the spring: or if they were troden about mid-winter, then ye shall have them lay after the winter Sunsteed, some fortie daies or very neere. They have usually two laiters in the yeere, namely, if hens hatched their former egges. The most that they hatch at one sitting, is sixteen; and the fewest, seven. If a man steale their egges from them, they lay still, and never give over till they be ready to burst with laying. No birds egges but their own will they hatch. The most profitable way, is to set them upon nine or eleven. The females onely sit, and that for the space of thirtie daies, unlesse it be warme weather, and then they will have done by 25. If one of their gossings be stung never so little with a nettle, it will die of it. Their owne greedie feeding also is their bane; for one while they will eat untill they burst againe, another whiles kill themselves with straining their owne selves: for if they chaunce to catch hold of a root with their bill, they will bite and pull so hard for to have it, that many times they breake their own necks withall, before they leave their hold.

C Against the stinging of nettles, the remedie is, that so soone as they be hatched, there be some nettle roots laid under their nest of straw.

CHAP. LX.

¶ *Of Herons and Bittours: and the best way to keepe egges long.*

OF Herons be three sorts, * Leucon, * Asterias, and * Pellon. These last engender with much paine and difficultie. And as for the males verily, they crie againe for anguish, and the blood starts out of their eyes in the act of treading. And with as much adoe and trouble doe the females lay, after they be knit with egge. The Ægle and the most part of greater fowls, sit thirtie daies: whereas the lesse continue but twentic, as the Kite and the Hawke. The Kite usually hatcherh but one at a time, and never above three: but that kind which is called Ægolos, sometimes foure. The Raven also now and then, five: and those coove as many daies. While the female Crow sitteth, the male feedeth her. The Piot, ordinarily bringeth fourth nine Pianets: the fig-pecker Melancoryphus, above twentic, but evermore an odde one: and there is not a bird that goeth therein above her. Lo how Nature is willing to multiply the race of little birds! The young Swallowes are at the first, blind, and so are all such as are hatched many in number.

D Wind-eggs, which we call Hyphenemia, come either by the mutuall treading of hens one another, by an imaginarie conceit of the male, or els by dust. And such eggs not only Doves do bring, but house Hens also, Partridges, Peahens, Geese, and Brants, or the female Barganders. Now these eggs are barren as one would say, and never proove birds, lesse than others, not so pleasant in tast, and besides more moist. Some are of opinion, that the wind will engender them: for which cause also they are called Zephyria [i. West-wind-eggs:] and verily such eggs are seen only in spring, when that wind bloweth. Addle egges, which some called Cynofura, are they that chill upon the nest, when the hen is gone and giveth over sitting. Egges steeped in strong vinegre will come to be so soft, that they will passe and be drawne through the ring of a mans finger. The best way to keepe eggs, is in bean-meale or floure; and during winter, in chaffe; but for summer time, in bran. It is thought, if they lie in salt, their substance will wast and consume to nothing within the shell.

* A Criell, or
dwarfie Heron.
* A Bittor.
* A carion
Heron.

CHAP. LXI.

¶ *What bird alone bringeth forth a living creature, and feedeth it with milke.*

THe Reremouse or Bat, alone of all creatures that flie, bringeth forth young alive: and none but she of that kind hath wings made of pannicles or thin skins. She is the onely bird that suckleth

suckleth her little ones with her paps, and giveth them milke: and those she will carrie about her two at once, embracing them as she flieth. It is said also, that she hath no more but one joint of the haunch, without any in the knee or feet; & that they take greatest delight to feed upon gnats.

CHAP. LXII.

¶ *Of Vipers: their manner of generation and bringing forth young: and what land beasts doe lay egges.*

Moreover, among creatures of the land, Serpents lay egges: whereof as yet we have not written. As they engender together, they clip and embrace, and so entangled they be and enraptured one about the other, that a man who saw them, would thinke they were one serpent with two heads. In the very act of generation, the male thrusteth his head into the mouth of the female; which she (for the pleasure and delectation that she taketh) gnaweth and biteth off. No land creature els but shee hath egges within her bellie, of one colour and soft, like as fishes have. Now after three daies they be quick, and then come forth as they be hatched; but no more than one at once everie day: and twentie commonly she hath. When she is delivered of the first, the rest (impatient of so long delay) eat through the sides of their dam, and kill her. As for other serpents, they lay their egges linked and chained together, and so sit upon them on the land: but they hatch them not untill the yeere following. The Crocodiles sit by turnes, the male as well as the female. But I thinke it good to treat also of the generation of other land creatures.

CHAP. LXIII.

¶ *The generation of living creatures upon the land.*

Of all living creatures two-footed, a woman only bringeth forth her young quicke. Men and women both, and none but they, repent at first the losse of their maidenhead. A very presage (no doubt) of a life to ensue full of trouble and miserie, that thus should begin with repentance. All other creatures have their set times and certaine seasons in the yeare when they engender, as hath been shewed before: but all is one with us, and no houre of day or night comes amisse. Other creatures know when they have enough, and rest satisfied: we only are insatiable that way, and cannot see to make an end. The Empresse *Messalina*, wife of *Claudius Caesar*, thinking it the onely victorie for a Ladie and Queene to excell in this feat, chose the most gallant curtisan and commonest strumpet in all Rome, to trie masteries and to contend with for the best game: and in verie truth, she woon the prize: for in the space of 24 houres she outwent her [a beastly thing to be written] no fewer than 25 times. As for men, they have devised in the practise of this filthy act, even to abuse some parts against kind: and women (unnaturall as they be) haue the cast to destroy within them the unripe and untimely fruit of their owne bodie. Certes in this behalfe, how much worse and hurtfull be we, than the wild & savage beasts of the field? *Hesiodus* writeth, that men are more given to lust in winter, than in summer; and women contrariwise: Elephants, Camels, Tiges, Onces, Rhinoceros, Lyons, Hares, Cunnies, and generally all beasts which have their genitall parts from-ward, turne taile to taile to the female in the act of generation. As for Camels, they go into the desert, or at leastwise seeke some corner, when they would engender: and daungerous it is for one to take them in the manner. They continue in this action one whole day together: and so doe none els that are whole hoofed. In foure-footed beasts, the males are set into the heat of lust by senting and smelling. Dogs and Bitches, Seales, and Wolves, likewise turne away, and in the mids of the action bee tied one to the other, even against their wills and cannot helpe it. The females of the most of these before-named, begin to ride the males first, for to provoke their lust: but of the rest, the males leape the females at the first. Beares (as we said before) lie along both, as man and woman. Hedgehogs stand both upright and claspe one another when they engender. The hee-Cat standeth on his feet, and the shee lieth under him. Foxes lie upon their sides, and so the bitch embraceth the male Fox. Kine and Hinds cannot well endure the violence of the Bulls and the Stags in this busines, and therefore they are ever going when they doe engender. Stags go from one Hind to another, and then come againe to the first; and this doe they in course. Lizards, as all other creeping creatures that have no feet, wind one about another as they engender. The greater that any beasts be, the lesse fruitfull

A fruitfull they are of their bodie. Elephants, Camels, and Horses, get but one at once, neither do the females beare any more at a time: whereas the Goldfinch or Linner, a verie little bird, bringeth forth a dozen commonly at once. Such as bring most, are least while in breeding. The greater that any creature is, the longer time it requireth to be formed in the mothers wombe. And such as live long, be longer also ere they have their perfection and come abroad into the world. The growing age is not meet for generation. Beasts that are whole houfed, never bring but one at a time: such as be cloven footed in twaine, may also have twins. But as many as have their feet parted and divided into many toes, are fit to beare many at ones. And whereas all the former rehearsed, bring forth perfect creatures with all parts, some have their young ones imperfect and but halfe made: in which number Lionesses, she Beares, bitch Foxes, are to be reckoned: but specially the shee Beares, whose whelpes are more unshapen than the rest: and a rare thing it is to see them a whelping. Howbeit such females when they are delivered of them, with their licking do chafe and heat them, and so by little and little bring them to some forme and fashion by this meanes. Such for the most part beare foure whelpes. As for Bitches, Wolves, Panthers, and Thoes, kindle their young before they can see.

Of Dogges and Bitches there be many kinds. They of * Laconia, as well the male as the female, be apt to engender after they be eight moneths old. They be with whelp three score daies and three, ordinarily. As for other Bitches, they goe proud at fixe moneths, and may be lined. They be all the sort of them, sped at the first lining. Bitches that goe assaut and take the dog before the full time, namely when they be verie young, such bring a litter that will be longer ere they see: neither go they: but all the whelpes will not be blind so many daies. Dogs commonly when they be halfe yeere old, are thought to lift up their leg when they pisse; and that is a signe they are come to their full strength and perfection: but bitches all that time pisse sitting upon their buttocks. They have twelve whelpes when they bring most, but ye shall see them commonly with a litter of fixe or five: and sometime they come with just one, but that is thought to be a prodigious signe; as also if the whelpes be all Dogges, or all Bitches. The first usually that they whelp, be Dogs; for the rest, they be one with another, a Dog and a Bitch: namely, if they were lined in the due season, and at the just moneth. And commonly they go proud fixe moneths after their former litter. The Bitches of Laconia ordinarily bring eight at a time. The Dogs of this race have a propertie with them, that the more they be travailed, the more lustie and fresh they are, yea and the hotter after salt-bitches. They live ten yeares, and the Bitches twelve. Of other kinds, ye shall have them continue fifteen yeares, yea and otherwhiles twentie: but they engender not so long, but give over commonly at twelve.

C Cats and Rats of Inde, called Ichneumoncs, in all other respects follow the nature of Dogs, save that they live but six yeares. Conies kindle everie moneth, and albeit they be bagged, yet will they take the bucke againe, and conceive upon it; like as the Hares also will doe the same: for as soone as ever they have kindled, they go to bucke and are presently sped: and say that the Leverets or Rabbits lie sucking at them, yet will they be with yong. When they be newkindled, they cannot see.

D Elephants (as wee have already said) never bring but one at once, and that commonly is as bigge as a Calfe a quarter old. Camels goe a whole yeare. After they be three yeares old, they are sufficient for to engender: and commonly they come in the spring: and it is a yeare after before they be covered againe. As for Mares, if there be three daies betwene, or but one, after they have foled; it is thought they may verie well be covered againe; yea and they are brought perforce to the stallion for this purpose. It is supposed also, that the shee Assc within seven daies after, will soonest conceive. It is a rule, to share and clip a Mares maine, before shee will abide the covering of an Assc, so vile and base a beast: for so long as the haire of her maine is well growne, shee is so proud and glorious, that shee will not abide the Assc to come neare her. So soone as they be covered and sped, they run full into the South or the North wind, according as they be conceived either with male or female: a thing that no other beast besides, doth. And then, suddainly they change their colour; for their haire will be redder, or at leastwise fuller and deeper, what colour soever it be. By which signe it is knowne they are with sole, and then they will admit no stallions unto them, would they never so faine. And say, that some of them have soles running by their sides, they will doe their deed at worke neverthelesse: nay when they be with sole, they will labour as well as they did before: in so much, as many

* Resembling our English mastives.

times they steale a foling, before their maister beware that they are with sole. We have read in Chronicles, that *Echecratides* the Theſſalian had a Mare, which even then when ſhee was gone farre with ſole, woon the beſt game in the Olympian race. They that have fought more narrowly into the ſecrets of Nature, ſay, That ſtone-Horſes, Dogs, and Bores, deſire the females in a morning: but Mares, Birches, and Soves make meanes to the male after noone. Mares that are kept within houſe at racke and manger with hay and provender, deſire to be covered threeſcore daies before thoſe that goe abroad in the heard. Swine alone of all creatures when they be brimming, froth and ſome at the mouth. And as for the Bore, if he heare the grunting of a Sow that ſeekes to be brimmed, unleſſe he may come to her, will forſake his meat, untill he be leane and poore: and ſhe againe will be ſo farre enraged, that ſhe will be readie to run upon a man and all to teare him, eſpecially if his cloths be white. But this rage and woodneſſe of hers is affuaged and allaid, onely with bathing her ſhare behind with vineger. Some thinke there be certaine meats will provoke beaſts to fleſhly luſt, namely, Onions given in meat to a beaſt; like as Rocket to a man or woman. Moreover, it is ſuppoſed, that whatſoever is made tame, which by kind was wild, the ſame will not breed, as Geefe and Ganders. In like manner, wild Swine and red Deere, if they be tamed; or if they doe, it is very long firſt: and ſuch onely as were brought to hand even from the time that they were very young. Finally, this one thing is ſtraunge and wonderfull, that all foure-footed beaſts, ſave onely the Mare and the Sow, if they find themſelves to be with yong, drive the male from them. But the Connie and the Hare alone will conceive againe when they be gone with young.

CHAP. LXIII.

¶ *The varietie in living creatures, as touching their comming into the world.*

WHatſoever have quicke creatures within them, bring the ſame forth with the head forward. For when the time is come, the young thing turneth about a little before, which otherwiſe lay ſtreight out at length in the bellie. Fourefooted beaſts, whiles their dams goe with them, lie with their legs ſtretched along, cloſe unto their owne bellies. An infant whiles it is in the mothers wombe, gathereth round into a ball, and hath his noſe lying juſt betweene his two knees. As for falſe conceptions or Moone-calves (whereof wee ſpake before) ſome thinke they are engendred of the womans ſeed onely: namely, when ſhee is not conceived by a man, but by her ſelfe: and hereupon it is, that the ſaid conception hath no vitall nor animall life, becauſe it procedeth not of the conjunction of male and female both. True it is, that it is endued with a certaine vegetative power, to bee nourished and to grow, like as wee ſee in trees and other plants.

CHAP. LXV.

¶ *The breed of Mice and Rats.*

OF all creatures that bring forth their young perfect, Swine onely farrow one Pig and two Pigs at a time, yea, and ſometimes a number of them. Alſo they alone contrarie to the nature of all thoſe that either be whole hoofed, or cloven footed in twaine, bring a number of young ones at one farrow. But above all, Mice and Rats for fruitfulneſſe doe paſſe. And therefore I cannot put off the diſcourſe of them any longer: and yet therein I muſt follow *Ariſtotele* for mine author, and the report withall of the ſouldiours that ſerved under *Alexander* the great. It is ſaid that they engender by licking, without any other kind of copulation: and that one of them hath brought fixe ſcore at a time: alſo that in *Persia* there have been young Mice found with young, even in the bellie of the old dam. And ſome are of opinion, that they will bee bagged, if they taſt but of a little ſalt. Why ſhould wee then wonder any more how ſuch multitudes of field-Mice and Rats ſhould come to devour whole fields of corne? Howbeit, the reaſon is not yet knowne, how ſuch numbers of them ſhould all of a ſuddaine conſume away and come to nothing. For neither bee they found lying dead above ground, neither can any man come forth and ſay, that hee hath turned up any one with his ſpade as hee digged in the Winter. The countrey of *Troas* is exceedingly given to breed great ſtore of them, in ſomuch, as they have forced alreadie the inhabitants to abandon the place and depart. Men ſay, that the ſeaſon proper and

A and agreeable for their breeding in such abundance, is a great drought: also, that when they are toward their end, there be little wormes breeding in their heads that kill them. The Mice and Rats of Ægypt have hard haire and prickie, like to Hedgehogs. They goe also upright on their hinderfeet, and walke like as if they were two-footed: after the manner of those in the Alpes. Moreover, if beasts of diverse kinds doe engender together, they may well breed young betweene them, in case they doe agree and jumpe in the time, that the females of both should go with young. It is commonly thought and beleevd, that among foure-footed beasts the Lizard hath egges within her, and delivereth them at her mouth, but *Aristotle* denieth it flatly. Howbeit, they sit not upon them when they have so done, as being forgetfull where they laid them, so little or no memorie at all have they. And therefore the young Lizards of themselves breake forth out of the shell.

CHAP. LXVI.

¶ *Of a Serpent engendred of the marrow of a mans backe bone.*

I Have heard many a man say, that the marrow of a mans backe bone will breed to a Snake. And well it may so be: for surely there be many secrets in Nature to us unknowne, and much may come of hidden causes, as we may see even among foure footed beasts.

CHAP. LXVII.

¶ *Of the Salamander.*

AS for example: the Salamander made in fashion of a Lizard, marked with spots like to starres, never comes abroad and sheweth it selfe but in great showers; for in faire weather he is not seene. He is of so cold a complexion, that if hee doe but touch the fire, hee will quench it as presently, as if yce were put into it. The Salamander casteth up at the mouth a certaine venomous matter like unto milke: let it but once touch any bare part of a man or womans bodie, all the haire will fall off: and the part so touched will change the colour of the skin to the white morpheu.

CHAP. LXVIII.

¶ *Of those that breed of others which never were engendred. Also of those that being engendred, yet breed not.*

Some creatures there be that breed of those that never were engendred themselves; and yet not according to those naturall meanes as others which we have shewed before: and such also as either the Summer or Spring, or some certaine season of the yeare doe breed. Among which, some engender not at all, as the Salamanders: * for there is no distinction of sex in them no more than in Yeeles, and in all those which neither lay eggs, ne yet bring forth any living creature. Oysters likewise and all such creatures as cleave fast either to rocks or to the shelves, are neither male nor female. As for such as come of themselves, if there be seen in them any distinction of male and female, something verily they engender betweene them: but an unperfect creature it is, and not resembling them: neither doth that generation breed ought any more, as wee see the flies that doe engender certaine little wormes. The experience hereof is better to be observed in those creatures which bee called Insects: whose nature is hard to be expressed, and yet I have appointed a severall treatise for them apart. Wherefore I will go forward in the discourse begun alreadie, and namely, as touching the sence and understanding of the fore-named creatures, and then proceed to the rest.

* Which is found untrue by experience.

CHAP. LXIX.

¶ *The outward senses of living creatures.*

MAn excelleth all other creatures, first in the sence of feeling, and then of tasting: In the rest, many beatts goe beyond him. For the Ægles have a clearer sight; the Geires a finer smell; and the Moldwarpes, notwithstanding they be covered over with earth (so

heavie, so thicke, and deafe an element as it is) yet their eare is farre better than ours. Moreover, albeit the voice of all them that speake above ground doe ascend upward still from them, yet hear they when they talke: yea, and if a man chaunce to speake of them, some hold, that they understand their speech, and thereupon doe flie from them. A man, who at first lacketh his hearing, wanteth also the use of his tongue: neither are there any deafe borne, but the same likewise bee dumbe. A man would not thinke, neither is it likely, that the Oysters in the sea doe heare: and yet upon any noife and sound, their manner is to sinke downe to the bottome. And therefore when as men doe fish for them in the sea, they are as silent as they may be.

CHAP. LXX.

¶ *A discourse, That fishes both heare, and also smell.*

Fishes verily have no eares, ne yet any holes to serve for hearing: and yet plaine it is, that they doe heare. Which we may daily see in certaine fish-ponds and stewes where fishes bee kept: for when those that have the charge of them make a noise with clapping of their hands: as wild as they bee otherwise, they shall have them come by great flocks to take their meate that is throwne into them: and this are they wonted to doe daily. And that which more is, in *Casars* fish-pooles a man may see whole skuls of fishes to repaire at their call: yea, and some will sever themselves from the rest of their companie, and come alone to hand, when they be named. Hereupon it is, that the Mullet, sea-Pike, Stockfish, and Chronius, are thought to heare best of all others, and therefore live very ebbe among the shelves and shallowes. That fishes have the sence of smelling, it is manifest. For they are not all taken, nor yet delighted with one kind of bait: and this is observed, that before they bite they will smell to it. Some also there bee that lie in holes under rockes: and no sooner hath the fisher besmeared and annointed the mouth and sides of the said rockes in the very entrance to their holes, but he shall see them come foorth (as it were) to avoid the sent of their owne carion. Let them lie in the very deepe, yet will they resort to certaine odors and smells, namely, to the Cuttill burnt and the Polype, which for that purpose they use to put into their nests. And verily they cannot abide the smell of the sinke and pumpe of a ship: neither will they come neere unto it: but above all things, they may not away with the bloud of fish. The Pourcuttill hardly or not at all can be pulled from the rockes, so fast cleaveth he: howbeit, come neere unto him with the hearbe Marjarum or Saverie, he will presently leape from the rock and away, for to avoid the sent thereof. Purples also bee caught by the meanes of some stinking bait. And for other creatures, who doubteth but they have a perfect smelling? Serpents are chafed away with the sinell and perfume of the Harts horne; but above all, with the odour of Styrax. And Pisinires are killed with the very fume of Origan, Quicke lime or Brimstone. Gnats love all foure things, and willingly will thither: but to any sweet meates they come not neare.

CHAP. LXXI.

¶ *That the sence of feeling is common to all living creatures.*

There is not a living creature throughout the world, but hath the sence of feeling, although it have none els. For even oysters and the earth-wormes, if a man touch them, doe evidently feele. I would thinke also that there is none but tasteth as well as feeleth. For what should the reason els be, that some desire to tast this, and others that? And verily here is seene above all, the singular workmanship of Nature, in the frame of their bodies, and the members thereof. Some yee shall have to seize upon their prey with their teeth; others snatch it with their talions and claws. Some pecke and pluck it with their hooked bills; others pudder into their food with their broad nebs. Some with the sharpe point of their beakes worke holes into their meate; others lie sucking at it: some licke; others sup in: to conclude, some chew; others swallow and devour whole as it is. And as touching their feet, there is no lesse varietie in the use thereof: in snatching and carrying away; in tearing and plucking a peeces; in holding fast, and in crushing their prey. Some yee shall have to hang by their feet, and others never lin scraping and scratching the earth.

A

CHAP. LXXII.

⌘ *What creatures live of poyson, and what of earth.*

Roe Buckes and Does, yea, and Quails (as wee have said before) will feed fat with poysons, and yet they are the most meeke and gentle creatures living. Serpents have a great desire and love to egges: wherein the subtiltie of Dragons, is worthie to bee considered. For either they swallow them downe whole (if their throat will receive them) and after they bee within their bodie, breake and squeeze them in peeces with rolling and winding themselves round together, and then cast up the shels againe: or if they bee but young ones yet, and not so strong as to gobble up whole egges, then they will wind about an egge with their taile by little and little, and bind it so hard, that they will cut off the crowne of it, as it were with a knife, and then sup of the rest which they claspe and hold fast betweene. In like manner deale they with birds. For swallow they will them whole down the gullet, and afterwards straine and struggle so with themselves, untill they disgorge againe the feathers and bones that were in their bellies.

B

Scorpions feed upon earth. And Serpents againe, if they may come handsomely to wine, will make meanes to drinke their fill of it, howsoever otherwise they have but little need of anie drinke. They eat no meat at all, or very little, when they be kept close within any thing: like as the Spiders also, which otherwise naturally live by sucking. And therefore you shall not lightly see anie venomous creature to die either of hunger or thirst. For neither have they store of heat, nor

Cplentie of bloud, ne yet of sweat: all which naturally provoke a stomacke, and give an edge to appetite. And among these venomous creatures, thole be evermore daungerous which have eaten some of their owne kind, before they bite or sting. Apes, Monkees, and Marmosets bestow and treasure up the meat that is given them, or that they can come by, within their cheekes, as in a store house. And when they bee hungrie, they get the same forth by little and little with their hands, and so fall to chew it. Thus practise they in making their provision, for to serve them from day to day, and from one houre to another: which Pismires usually doe from yeare to yeare.

C

CHAP. LXXIII.

⌘ *The meat and drinke of some creatures.*

D

Ofall living creatures that have many toes in their feet, the Hare alone feedeth upon grasse and greene corne in the blade. As for those that bee whole hoofed, they live both of the blade, and also of the fruit thereof. Also of such as bee cloven footed, Swine will eat all kind of food, yea, and live of verie roots. It is the propertie of whole hoofed beasts alone, to wallow and turne over and over. All that have teeth endented in like sawes, be naturally devourers of flesh. Beares will feed of corne, bruse trees, eat grapes, live of apples and other fruits, feed upon bees, creiffishes, and pismires. Wolves (as we said before) if they be verie hungrie, eat earth. Sheep feed the better and grow fat, if they may drinke: and therefore salt is verie good for them, because it maketh them thiristie. Draught beasts, and such as are used to carriage, albeit they live of corne and grasse, yet according to their drinking they doe feed. Besides those mentioned heretofore, of wild beasts the red and fallow Deere both, doe chew cud when they be made tame and fed by hand: but all chuse rather in so doing, to lie than to stand, and in winter more than summer, for seven months ordinarily. The Rats and Mice in the countrie of Pontus, namely, Hermins, & such like after the same manner doe chew cud and goe over their meat againe. What beasts soever are toothed like saw teeth, lap as they drinke. So do also our common Mice and Rats, although they be of another kind, and are not so toothed. They that have broad teeth, plaine, and uniforme, as horses and kine, drinke supping and taking their full draught. Beares in their drinking do neither the one nor the other, but bite at the water and so let it downe. In Affricke the more part of wild beasts drinke not all Summer long, for want of raine water: which is the cause that the Rats and

EMice of Ginnie which be taken, if they drinke afterwards upon so long disuse, die therewith. In the deserts of Affricke, where there is no water ever to bee had, there is engendred a certaine wild goat named Oryx, which as by the nature of the place it wanteth drinke, so it hath in her bodie a soveraine and singular remedie against drought and thirst. Which the common theeves & robbers by the high way side in Getulia, knowing well ynough, endure a long time with the helpe

thereof

F

thereof without drinke : for they use to stanch and quench their owne thirst, with a certain moist hole some liquor found in the bladders of the said beast. In the same Affricke the Leopards lie in await among the thickets of trees, hidden within the braunches ; and so seize upon them that passe by, and make spoile even from the place where foules use to perch. As for Cats, marke I pray you how silent they be, how soft they tread when they steale upon the silie birds : how secret lie they in espiall for the poore little Mice to leape upon them. Their owne doung and excrements they will rake up and hide in the earth, knowing full well, that the smell thereof will bewray where they are.

CHAP. LXXIII.

What beasts accord together, and which they bee that disagree one from another.

BESIDES these outward fences abovenamed, evident it is also, that brute beasts have other instincts of Nature. For they entertaine friendship and enmitie one with another (which cannot possibly be without affection and passion) over and besides those other warres and amities which wee have observed in their severall places. Swans and *Ægles* jarre and warre one with another : so doth the Raven and the *Witwall* or *Loriot*, which seeke after one anothers egges in the night. Likewise the Raven and Kite : for the Raven evermore is readie to catch the Kites meat from him. Crowes and Owles are at mortall feaud one with another. The roiall *Ægle* hateth the *Wren*, and why ? because (if we may beleve it) he is named *Regulus*, [*i. the petie-king.*] Howlets also cannot agree with other little birds. Againe, foules make warre with four-footed beasts. The *Wweafell* and the *Crow* be at deadly debate. The *Turtle* with the *Creckit* (*Pyralis*) that liveth about the fire. The *Ichneumons* with *Waspes* : the *Phalangia* with other *Spiders*. And among water-foules, *Duckes* and *Drakes* with the *sea-Guls*. The *Seamewes* with the *Buzzard* *Triorchis*. As for the field *Rats* or *Mice*, and the *dwarfe-Herons*, they seeke to prey one upon the others little ones. The bird *Ægithus*, (the least in manner of all others) waiteth the *Assè* a shrewd turne ; for when he rubbeth himselfe against the bushes to scratch where it itcheth, hee therewith breaketh and overthroweth her neast : and therefore this silie bird is so much afraid of the *Assè*, that if she heare him but bray, she is readie to throw the egges out of the neast, and those that bee already hatched, will for verie feare fall downe : Then in revenge of this wrong, she will flie upon him, and with her bill pecke where the skin is off and raw with rubbing, yea, and make holes even to the verie bone. Moreover, *Foxes* and the *Yeeles* of *Nilus* cannot abide one another, but are in continuall warre. So be *Wwezils* and *Swine*. There is an unhappie bird called *Æsalon*, and but little withall : yet will she squash and breake the *Ravens* egges. And when shee hath young ones, they be much troubled and annoied with the *Foxes* : she againe to be quit with them, will all to pinch & nip both the *Fox* and her cubs. The *Ravens* seeing that, come to aid (as it were) against a common enemy. The *Goldfinch* liveth among bushes and thornes, and therefore shee also hateth the *Assè*, because he eateth up the floures that grow thereupon. The bird *Ægithus*, so farre hateth another called *Anthus*, that men are verily perswaded the blood of them both will not mingle together : and hereupon it is, that the sorcerers and witches have brought it into an ill name. The *Thoos* and the *Lions* doe foulely jarre and disagree. In summe, the least creatures as well as the biggest, quarell and fight one with another. *Rats* and field *Mice* cannot abide to come neare a tree that is full of *Ant-neests*. The *Spider* espying a *Serpent* lying along under the shade of a tree where shee spinneeth, slideth downe upon a fine thred to the head of the *Serpent*, and stingeth him so deepe into the brain, that he falleth a hissing and grinding his teeth : he keepeth a winding and turning about, but hath not the power to breake the thred that hangeth above, ne yet to flie from the *Spider* : infomuch, as the *Serpent* lieth there dead in the place. Contrariwise, *Peacocks* and *House-doves* be as friendly one to another : so be the *Turtles* and *Popinjaies*, the *Merles* and *Turtles* likewise. The *Crow* and the lesse *Bittours* also : for they joine and band together against the common enemy the *Foxe*. Likewise, the bird *Harpe* and the *Kite* against the *Buzzard*. What will yee say ? be there not tokens of affection even in *Serpents*, the cruellest and fellest creatures of all others in the world ? I have written already of the report or tale that goeth in *Arcadia* of a man, whose life was saved by a *Dragon* (that was brought up by him) so soone as ever he knew him by his voice. As for the *Aspis*, *Philarchus* telleth a strange historie of it.

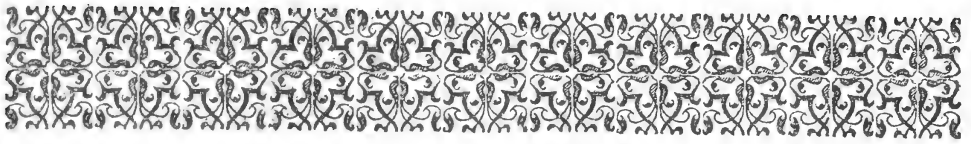
A it. For hee writeth, that in Ægypt there was an Aspis used ordinarily to come to the table of a certaine Ægyptian, and there took meat at his hand: which Serpent afterwards had yong ones, whereof one chaunced to sting a sonne of the maister of the house, that he died of it. Now when the dam (the old Aspis) came accordingly at the accustomed houre of repast for victuals, and perceived the deed committed by her little one; not only killed it in satisfaction of the former fact, but also forbare the house, and was never knowne to repaire thither againe.

CHAP. LXXV.

¶ The sleepe of living creatures.

B **T**He question, Whether living creatures sleepe or no? is not very difficult, but soone decided. For plaine it is, that of land creatures, all that winke and close their eies doe sleepe. As for those in the water, that they also sleepe (though but a little) even they are of opinion who otherwise make doubt of the rest. And this they doe not collect and gather by their eies (for lids they have none to shut) but because they are seene to lie so still and quiet, as fast and sound asleepe, stirring no part, but a little wagging their tails, and seeming to start and bee affright at any suddaine noise made in the water. As for the Tunnies, wee may avouch more confidently of their repose: for they come of purpose to sleepe under the bankes or rockes. And flat broad fishes lie so still sleeping among the shelves, that oftentimes a man may take them up with his hand. The Dolphins and Whales be heard to rout and snort again, they sleepe so soundly. Moreover, as touching Insects, no man need to doubt that they sleepe, so quietly doe they lie & make no noise: nay, if you bring a candle or other light, and set it even before their eies, you shall not have them to awake nor move. An infant after it is borne, sleepeth for certaine moneths at the first, and in manner doth nothing els. But the elder he waxeth, wakefull he is every day more than other. Babes at the very beginning doe dreame. For they will waken and start suddainely in a fright: and as they lie asleepe, keepe a sucking of their lips, as if they were at the breast heads. Some never dreame at all. And if such chaunce contrarie to this custome, for to dreame ones, it hath been counted for a signe of death, as we have seene and proved by many examples and experiments. And here in this place there offereth it selfe a great question, and very disputable *pro & contra*, grounded upon many experiments of both sides: namely, Whether the soule of man while the bodie is at rest, foreseeeth things to come? and how it should so doe? or whether this be a thing of meere chaunce and altogether conjecturall, as many others be? And surely if we goe by histories, we may find as many of the one side as the other. Howbeit all men in manner agree in this, That dreames either immediatly upon drinking wine and full stomacke, or els after the first sleepe, are vaine and of no effect. As for sleepe, it is nothing else but a retreat and withdrawing of the soule into the mids of it selfe. Evident it is, that Horses, Dogs, Kine, Oxen, Sheepe, and Goats doe dreame. Whereupon it is credibly also thought, that all creatures which bring forth their young quicke and living, doe the same. As for those that lay egges, it is not so certain that they dreame: but resolved it is, that they all doe sleepe. Now let us passe and proceed to the treatise of Insects.





THE ELEVENTH BOOKE OF
THE HISTORIE OF NATVRE,
WRITTEN BY C. PLINIVS
SECVNDVS.

¶ *The Preface.*

T *remaineth now to write of those living creatures, which are the most subtill of all others that Nature hath brought forth: forasmuch as some are of opinion, That they breath not, ne yet have any blood at all.*

CHAP. I.

¶ *Of Insects in generall.*



Any and fundrie sorts there be of Insects, as well among land creatures as those that flie in the aire. Some are winged, as Bees: some have partly wings and partly feet, as Pismiers: others want both, and neither flie nor goe on their feet. And well may they all be called *Insecta*: by reason of those cuts and divisions, which some have about the necke, others in the breast and belly; the which doe goe round and part the members of the bodie, hanging together only by a litle pipe and fistulous conveiance. There be of them, that have not the bodie divided entire, one part from the other by these incifures, cuts, and wrinkles; but they appeare onely either under the bellie, or upon the backe above, and go no deeper, neither yet round the whole compasse of the bodie. But a man shall perceive in them certaine rings or circles, apt to bend and wind to and fro, & those so plated and plained one over another, that in no thing elsewhere, is more seen the workmanship of Nature, than in the artificiall composition of these litle bodies.

CHAP. II.

¶ *The industrie and subtiltie of Nature in framing these Insects.*

IN bodies of any bignesse, or at leastwise in those of the greater sort, Nature had no hard peece of worke to procreat, forme, and bring all parts to perfection; by reason that the matter whereof they be wrought, is pliable and will follow as she would have it. But in these so litle bodies, (nay prickes and specks rather than bodies indeed) how can one comprehend the reason, the power, and the inexplicable perfection that Nature hath therein shewed? How hath she bestowed all the five senses in a Gnat? and yet some there be, lesse creatures than they. But (I say) where hath she made the seat of the eies to see before it? where hath she set and disposed the tast? where hath shee placed and inserted the instrument and organ of smelling? and above all, where hath she disposed that dreadfull and terrible noise that it maketh, that wonderfull great sound (I say) in proportion of so litle a body? Can there be devised a thing more finely & cunningly wrought than the wings set to her bodie? Marke what long-shanked legs above ordinarie shee hath given unto them. See how shee hath set that hungrie hollow concavitie in stead of a belly: and hath made the same so thirstie and greedie after blood, and mans especially. Come to the weapon that it hath to pricke, pierce, and enter through the skin; how artificially hath shee pointed and sharpened it? And being so litle as it is, (as hardly the fineness thereof cannot be seen) yet as if it were of bignes and capacitie answerable, framed it she hath most cunningly for a twofold use: to wit, most sharpe pointed, to pricke and enter; and withall, hollow like a pipe for to sucke in and

A and conveigh the bloud through it. Come to the Wood-worme, what manner of teeth hath Nature given it, to bore holes and eat into the verie heart of hard oke? who heareth ^{not the} any found that she maketh while she is at her worke? and yet in wood and timber is in manner all her feeding. We make a wonder at the monstrous and mightie shoulders of Elephants, able to carrie turrets upon them. Wee marveile at the strong and stiffe necks of Bulls, and to see how terribly they will take up things and toss them aloft into the aire with their hornes. We keepe a wondering at the ravening of Tygres, and the shag manes of Lions: and yet in comparison of these Insects, there is nothing wherein Nature and her whole power is more seene, neither sheweth she her might more than in the least creatures of all. I would request therefore the readers, that in perusing this treatise, they will not come with a prejudicate opinion, nor (because many of these

B sillie flies and wormes be contemptible in their eyes) disdain, loath, and contemne the reports that I shall make thereof; seeing there is nothing either in Natures workes that may seeme superfluous, or in her order unworthie our speculation.

CHAP. III.

§ Whether Insects doe breath, and whether they have blood or no?

Divers have denied that they breath at all; and upon this reason they ground their position, Because they have no arterie or windpipe annexed or reaching to any instrument within, of respiration. And they be of opinion, that they live indeed as plants, hearbs, and trees:

C howbeit (say they) there is a great difference betweene having life, and drawing wind or vitall breath. And by the same rule they affirme, that they have no blood, which is in none that be without heart and liver. Neither doe any things breath which want lungs. And from hence arise a world of other questions thereupon depending. For the same men denie flatly, that these creatures have any voice: notwithstanding so great humming of Bees, & singing sound of Grasshoppers, and such other, whereof wee will consider in due time and place, accordingly. Verily for mine owne part, the more I looke into Natures workes, the sooner am I induced to beleieve of her even those things that seeme incredible. Neither doe I see any inconvenience to beleieve, that these Insects may as well draw wind and breath without lungs, as live without such noble and principall parts as are requisite for life in other creatures: according as wee have already

D shewed in the discourse of fishes and such like, that live in the sea; howsoever the quantitie, depth, and heights of the water, may seeme to impeach and stop their breath. For who would easily beleieve, that some creatures should flie at libertie, and living as they doe in the mids of wind and aire, yet want wind and breath themselves? that they should have a sense and care to seeke their living, to engender, to worke, and to forecast for the time to come: and albeit they have no distinct members, to carrie (as it were in a ship) their severall senses, yet that they should heare, smell, and tast; yea and be endued with other singular gifts besides of Nature, to wit, wisdom, courage, skill, and industrie. Indeed, confesse I must, that blood they have none: no more have all creatures that live upon the land: howbeit a moist humor they have, somewhat like unto blood, which serveth them in stead thereof. Like as in Cuttles of the sea, there is found a certaine

E blacke liquor in stead of blood: and in all the sort of Purples and such shell fishes, that excellent juice which staineth and dieth so as it doth. Semblably in these Insects, whatsoever humour it is whereby they live, the same may well enough goe for blood and so be called: all the while that every man hath libertie to give it what name he thinketh fittest. As for me, my purpose is not to judge and determine of these doubtfull quilllets, and their causes: but to set downe and shew the nature of such things as be cleare and apparent.

CHAP. IIII.

§ The substance of the bodie in these Insects.

F These Insects, so farre as a man may perceive, seeme not to have either sinewes or bones, no chine nor gristle, no fat, no flesh, ne yet so much as a tender and brittle shell, as some sea-fishes have, nor that which may be truly called askin; but a certaine corporall substance of a middle nature between all these: for their bodie without, is like a drie thing, and yet more tender and soft than a sinew: whereas in all other parts the matter is to be accounted rather drie than

than hard. This is the very substance whereof they consist, and nothing have they besides. For within there is nought, unlesse it be in some very few, who have a certain pipe or conduit in stead of a gut, and the same wrapped and enfolded together. Which is the cause, that if they be cut in twaine and pulled in peeces, yet they have a speciall propertie to live long, and each part asunder will pant and stirre by it selfe. The reason is, because the vitall vertue in them (whatsoever it is) is not seated in any one member, this or that, but spread and defused throughout the whole bodie; and least apparent in the head, of all other parts: for, that alone, unlesse it be plucked away together with the breast, mooveth not one jot. No kind of creatures have more feet than these: and the more they have, the longer live they when they be divided asunder; as we see by experience in the Scolopendres. Eies they have, that is certaine; and besides sight, they are not without the senses of feeling and tasting: some there be which smell, and a few that have their hearing also.

CHAP. V.

Of Bees.

BVt among them all, Bees are principall, and by good right deserve especiall admiration, as being the onely Insects ordained by Nature for mans use. They gather honie, a most sweet, pleant, fine, and wholesome liquor. They frame the honie combes, and worke the waxe, which serve for a thousand turnes in this life. They endure paines continually, and dispatch their worke and businesse. They have a policie and Commonwealth among themselves. They hold their severall counsels: and there is not a swarme or cast that they have, without a king and captaine of their own: and that which is most admirable of all, there be civile fashions and customes among them. Moreover, being as they are, neither tame and gentle, nor yet to be counted wild and savage, yet (see the wonderous worke of Nature!) by the means of so little a creature, nay, a shaddow rather (to say a truth) of the least creature, shee hath effected a thing incomparable. What strength of sinewes, what force and puissance is able to countervaille this so great industrie and effectuall power of theirs? What wit and policie of man is answerable to their discreet and orderly course? Beleeve me, they passe them all, & in this one point surpasse, That all things are common among them, and nothing know they private and severall. What should we debate and make question any more as touching their breath? Why should we dispute of their blood, which cannot chuse but bee very little in such small bodies? Let us rather consider hence-forth their wit, and the gifts of their mind.

CHAP. VI.

The naturall order and regiment that is in Bees.

BEES all winter time keep close within their hives. And good reason: for how possibly should they endure hard frost and chilling snow? how should they abide the peircing blaits of the North winds? And verily it is the manner of all these Insects so to doe, but yet they keepe not in so long. For why? being nettled warme as they are within our houses, they sooner doe recover their vigor, and come abroad betimes. But as concerning Bees, either the times have changed, and places altered their course, or els the writers beforetime of this argument have greatly erred. They begin to retire themselves and take up their wintering harbor, presently upon the setting and occulation of the starre Vergilia; and come not forth into the field againe, untill after the rising and apparition thereof. So that Bees goe not abroad at the very beginning of the Spring, as writers have set downe, (for who seeth not the contrarie throughout all Italie) but remaine still close and secret, untill that Beanes begin to bloume; before which time they settle not themselves to any worke or labour. But from thence forward, they loose not a day, they slacke not their painefull travell, neither play they one jot, if the weather be faire and will permit. The first thing they doe, is to make their combes and waxe, that is to say, their own habitations and store-houses. When they are provided of lodging, they thinke upon the multiplying of their owne kind: and finally, they gather and make both honie and waxe: the substance whereof they sucke from the flowers of trees and hearbes, from the gums also of trees which breed such gluey matter; and besides, out of the juice, gum, and rosin of the willow, elme, and cane. With these and such like, they plaister all the hive within throughout, as it were with a coat or parget, entermingling

A gling withall other juices that are more unfavorie, gathered from the bitterest hearbes they can get: to the end that they might keepe out other little vermines that are greedie of their honnie: as knowing full well, that they are about a peece of worke which is worthie to be desired and fought after. Of this gummie and glutinous substance they frame also their dores and entries which are wide and large.

CHAP. VII.

¶ The proper tearmes belonging to their worke.

THe first foundation of their worke, skilfull honie-maisters doe call **Commofis**: the second **Piffoceros**: the third **Propolis**, which lieth betweene those former coats and the waxe of the honie-combe, whereof there is so great use in Physicke. **Commofis** is that first coat or crust of a bitter tast. **Piffoceros** commeth next after it, as it were a thinner course of pitch or varnish, and a weaker kind of waxe, made of the more liquid and mild gum of vines and Poplars. But **Propolis** consisteth of a more solide matter, as having the strength of some floures withall: howbeit, as yet it is no full and perfect waxe, but the foundation and strengthening of the combes: and serveth as a good defence against cold, and to stop the passage of waspes and such hurtfull creatures as would doe injurie to the Bees, for still a strong sent it carrieth, as which, many men doe use in stead of Galbanum. After this munition done, then followeth the provision of that which is called **Erithace**, some tearme it **Sandaracha**, and others, **Cerinthus**. This must serve for the Bees meat, whereof they are to live whiles they worke: and found it is oftentimes, laid apart within the concavities of their combs, it being also of a bitter tast. Now this **Erithace** commeth of the ***Spring-dew**, and the moisture issuing out of trees in manner of gumme: in lesse abundance ever, when the Southwest wind bloweth: but when it is full South, more blacke: and in the Northerly constitution, farre better and more red withall. Great store hereof, Bees meet with upon Almond trees. *Menebrates* saith, That it is a flower foreshewing what harvest shall ensue: * but no man saith so besides him.

**Rose veruo,*
or *Sea-dew,*
Rose marino.

*Being decei-
ved with the
Homonymie
of the word
Cerinthus,
which hath a
double signi-
fication.

CHAP. VIII.

¶ What flowers they be which Bees serve themselves most withall for their worke.

AS for waxe, Bees gather and make it of the flowers of all trees, hearbes, and plants, saving the docke and ***goose-foot**, which are two kinds of hearbes. Some except also a kind of Broome called **Spart**: but untruly: for in Spaine (where there be many places full of that shrub) the honie carrieth the strength thereof in the tast. I am besides of opinion, that they be deceived, who thinke that Bees gather not of Olive trees. For we see it ordinarie, that there be more casts and swarmes of Bees where Olives grow in greater abundance. These pretie creatures hurt no fruit whatsoever. They will not settle upon a flower that is faded, and much lesse of any dead carkasse. They use not to goe from their hive about their businesse above threescore paces.

E And if it chauce, that within the precinct of these limits they find not flowers sufficient: out goe their spies, whom they send forth to discover forage farther off. If in this expedition, before they come home againe, they bee overtaken by the night, they couch upon their backs for feare least their wings should bee overcharged with the evening dew, and so they watch all night untill the morning.

**Chenopode.*

CHAP. IX.

¶ Those that have taken a speciall pleasure in Bees.

SVch is the industrie of this creature, that no man need to wonder at those two persons who delighted so much in them, that the one (namely *Aristomachus* of Soli) for threescore yeares lacking but twaine, did nothing els but keepe Bees: and *Philiscus* the Thasian employed the whole time of his life in Forrests and desarts, to follow these little animals: whereupon hee was surnamed *Agrius*. And both these upon their knowledge and experience, wrate of Bees.

THe manner of their businesse is this. All the day time they have a standing watch and ward at their gates, much like to the *corps de guard* in a campe. In the night they rest untill the morning: by which time, one of them awaketh and raiseth all the rest with two or three bigge hums or buzzes that it giveth, to warne them as it were with sound of trumper. At which signall given, the whole troupe prepareth to flie forth, if it be a faire and calme day toward: for they doe both foresee and also foresheew when it will be either windie or rainie, and then will they keepe within their strength and fort. Now when the weather is temperate (which they foreknow well enough) and that the whole armie is on foot and marched abroad, some gather together the vertue of the flowers within their feet and legs: others fill their gorge with water, and charge the downe of their whole bodie with drops of such liquor. The younger sort of them go forth to worke, and carrie such stuffe as is before-named, whiles the elder labour and build within the hive. Such as carrie the flowres abovesaid, stuffe the inner parts of their legs behind (and those Nature for that purpose hath made rough) with the helpe of their forefeet; and those again are charged full by the meanes of their muffle. Thus being full laden with their provision, they returne home to the hive, drawne even together round as it were in a heape, with their burden: by which time, there be three or foure readie to receive them, and those ease and discharge them of their lode. For this you must thinke, that they have their severall offices within. Some are busie in building, others in plaistering and overcasting, to make all smooth and fine: some be at hand to serve the workemen with stuffe that they need; others are occupied in getting readie meat and victuals out of that provision which is brought in: for they feed not by themselves, but take their repast together, because they should both labour and eat alike, and at the same houre. As touching the manner of their building, they begin first above to make arch-worke embowed, in their combs, and draw the frame of their worke downward; where they make two little allies for every arch or vault, the one to enter in by, the other to go forth at. The combs that are fastened together in the upper part, yea and on the sides, are united a little, and hang all together. They touch not the hive at all, nor joine to it. Sometime they are built round, otherwhiles winding bias, according to the proportion of the hive. A man shall find in one hive honycombs somtime of two sorts: namely, when two swarmes of Bees accord together: and yet ech one have their rites and fashions by themselves. For feare least their combs of waxe should be readie to fall, they uphold them with partition-walls, arched hollow from the bottome upward, to the end that they might have passage every way to repaire them. The formost rankes of their combs in the forefront, commonly are built void and with nothing in them, because they should give no occasion for a theefe to enter upon their labours. Those in the backe part of the hive, are ever fullest of honie: and therefore when men would take out any combes, they turne up the hives behind. Bees that are employed in carrying of honie, chuse alwaies to have the wind with them, if they can. If haply there doe arise a tempest or a storme whiles they bee abroad, they catch up some little stonie greet to ballaise and poise themselves against the wind. Some say, that they take it and lay it upon their shoulders. And withall, they flie low by the ground under the wind when it is against them, and keepe along the bushes, to breake the force thereof. A wonder it is to see and observe the manner of their worke. They marke and note the flow-backs, they chastice them anone, yea, and afterwards punish them with death. No lesse wonderfull also it is to consider how neat and cleane they bee. All filth and trumperie they remove out of the way: no foule thing, no ordure lieth in the hive to hinder their businesse. As for the doung and excrements of such as are working within, they be laid all on a heape in some by corner, because they should not goe farre from their worke: and in foule weather (when otherwise they have nought to doe) they turne it forth. Toward evening, their noise beginneth to slacke and grow lesse and lesse: untill such time as one of them flieth about with the same lowd humming, wherewith shee waked them in the morning, and thereby giveth a signall (as it were) and commaundement for to goe to rest: much after the order in a campe. And then of a suddaine they are all husht and silent.

A

CHAP. XI.

¶ *Of the Drone-bees.*

THe houses and habitations that Bees build first, are for the Commons: which being finished, they set in hand with a pällace for their king. If they foresee that it will be a good season, and that they are like to gather store of provision, they make pavilions also for the Drones. And albeit they be of themselves bigger than the very Bees, yet take they up the least lodgings. Now these Drones be without any sting at all, as one would say unperfect Bees, and the last fruit of such old ones as are wearie and able to doe no more good; the very latter brood and increase, and to say a truth, no better than slaves to the right Bees indeed. And therefore the others as maister Bees over them, have them at their commandement: if any drudgerie or such like businesse is to be done, out are they sent first: make they but slow halt in that they are set about, sure they are to pay for it, and to be punished without mercie. And not only in their ordinarie worke they serve them in good stead, but also they helpe them to multiplie: for the hotter that the place is, the more hope there is of a greater increase. Certes, this is found by experience, That the better the hive is peopled with a number of Bees, the Cast when time comes will be the greater, and the oftener will they swarme. But after the honie is growing once to maturitie and perfection, then begin they to drive these Drones out of doores: nay, ye shall have many Bees set upon one poore Drone, and kill him outright. So that a man shall not lightly see any of that kind but in the Spring time.

B

If one plucke off the wings from a Drone, and put him againe within the hive, he will never lin untill he have done the like by all the rest of the same kind. As touching the roiall pällaces for the kings and captaines that shall bee, built they are all most stately, great of receipt, in shew magnificent, seated by themselves apart, and like citadels raised upon some high knap or tuft of a mountaine. If one of these castles chance to be pressed or crushed, there will no more come of that princely race. All the lodgings and rounes where the Bees abode is, are six cornered, according to the number of feet employed in that worke. None of all this is done at any set time or day appointed: but they take the opportunitie when they can espie faire weather to fit their businesse, and so doe these things by snatches. And surely within a day or two at the most, they fill their store-houses with honie.

D

CHAP. XII.

¶ *The nature of Honie.*

THis pleasant and sweet liquor which we call honie, is engendred naturally in the aire, and especially by the influence and rising of some starres: but principally during the fervent heat of the canicular daies, even when the Dog starre is in his full power and force: never before the appearing of the starre Vergiliæ, but alwaies before day. For so about the day breake betimes in the morning, the leaves of trees are found bedewed with honnie: and looke whosoever they are, that have occasion to be abroad in the aire about the dawning of the morning, they may evidently perceive their clothes wet with a clammy humour of honie, yea, and their haire glewed therewith together, if they goe bare headed. Bee it what it will, either a certaine sweat of the skie, or some unctuous gellie proceeding from the starres, or rather a liquor purged from the aire when it purifieth it selfe; would God wee had it so pure, so cleare, and so naturall, and in the owne kind refined, as when it descendeth first, whether it be from skie, from starre, or from the aire. For even now such as it is, passing (as it were) through so many hands: namely, falling from a region so high and remote from us, and in the way as it cometh catching much filth; and namely, infected with the grosse vapour of the earth which it meeteth in the fall: moreover, sucked and drunke (as it is) by the Bees from the leaves of trees and grasse, and so gathered and laid up in their little bellies or bladders, (for at their mouth they spread and cast it up againe;) corrupted also and sophisticated with other humors drawne out of flowers; finally, so long toking within the hives, and suffering so many alterations: yet for all the sorrow, a great resemblance it carrieth still with it of a most pleasant, sweet, and celestial liquor.

F

CHAP. XIII.

The best kind of Honie.

The best honie is ever there, where the best flowers are; within the receptacles whereof, it lieth. As we may see in the country about Athens, which carrieth the name for honie: also in Sicilie within those territories about Hymettus and Hybla: and lastly, in the Island Calydna. Now this honie, whereof we treat, is at the first cleare and thin as water; and for certaine daies in the beginning, it workes and boiles like to new wine, and so purgeth it selfe. By the twentieth day it getteth a certaine consistence and thicke substance, and soone after gathereth a thin creame or skin over it: which in the very heat of working, is raised of a scum, and so thickeneth. The best simply that Bees can sucke, and least infected with the corruption of tree branches, is that which they get out of the leaves of Oke, Tilia [*i. Linden tree,*] and Canes.

CHAP. XIII.

The sundrie sorts of Honie, according to diverse regions.

Honie (as wee said before) is better or worse, according to the region where it is gathered; and that in many respects. For in some place ye shall have goodly combs: howbeit, more commendable for waxe than the honie in them: as in the Pelignians country, and Sicilie. In others, and namely in Candie, Cypres, and Astricke, the combes yeeld more honie than waxe. Some countries there be, especially in the North parts, where the combes passe for bignesse; insomuch, as in Germanie there hath been a hony-combe seene eight foot long, and black all within. But in what region soever it be that honie is found, three kinds there be of it. First, the Spring honie, made of flowers onely; like as the combe also: and thereupon the Greekes call it Anthimon, which is as much to say as the Floure-honie. Some would not have this to be once touched, but to serve for nourishment of the young Bees, that the swarmes or casts may be more strong and lustie. Others againe leave for the Bees of none lesse than of it: by reason of the great plentie like to follow, at the rising of those notable starres in the Summer ensuing. Moreover, the combes are in their principall beautie about the Sunnestead in the Summer, when daies be longest, at what time as the Vine and Thyme do begin to floure. Also, in taking forth of the honycombs, needfull it is to be well advised in ordering the matter for the provision of food for Bees. If they be cut short and destitute of their meat, they either despaire and die for want, or else depart and flie away. Contrariwise, if you leave them too much, plentie breeds idlenesse, that they will not labour: neither deigne they to feed of Erithace, their ordinarie food, but fall to the good honie. They therefore that bee well experienced in these matters, thinke it good to leave them the twelfth part of this store and vintage, if I may so say, which is gathered in the combes. And verily, it seemeth that Nature hath ordained a certaine set day for to begin this vintage, if men would take knowledge thereof, and marke it well; namely, the thirtieth day, after the Bees swarmed and went forth: and usually it falleth out, that this gathering commeth within the month of May. A second kind of honie there is, which we call Summer honie, and is named also Horæum, of that principall season wherein it is made, namely, in the very middest of dog daies, when the star Sirius is in his full strength: and that commonly is thirtie daies after the Sunnestead. And I assure you, Nature hath shewed her admirable and excellent power to men ward in this behalfe; in case their fraud and deceit would suffer her workes in their entire and proper nature without corruption and sophistication, which marreth all, and maketh nothing but confusion. For upon the rising and apparition of any starre, and especially of those that be more excellent than the rest; or after that a rainebow is seene above the earth, and no showers of raine presently follow, but a drizzling dew warmed with the raies and beames of the Sunne; yee shall have that which falleth, not to be bare honie, but a very medicinable thing, even a coelestiall gift, singular good for eyes and ulcers, yea, and comfortable to the principall noble parts within the bodie. And if this happen to be at the rising of the dog starre, and it chaunce withall, that upon the same day (as oftentimes it falleth out) *Venus*, *Iupiter*, or *Mercurie* be Orientall, then shall yee have so heavenly a sweet liquor, that no one thing in the world may bee comparable to it for the curing of all our maladies, and even to reduce and recover us backe from death to life, like unto that coelestiall and

A and divine Nectar, which immortalizeth the gods above.

CHAP. XV.

¶ *The markes of good Honie.*

More plentie of honie is gathered in the full of the Moone, than at any other time: and if therewith the weather be faire, the same will be more unctuous and fattie. In all kinds, the best honie is that, which runneth of it selfe as new Wine and Oile; and called it is Accedon, as a man would say, gotten without care and travell. All Summer-honie is red, as being made in the driest season of the year. The honie which commeth of Thyme, is held to bee the best and most profitable: in colour like gold, in tast right pleasant; evident to be knowne by the little leaves therein: and the same is likewise fattie. That which is made of Rosemarie, or within the aire & vapour of the sea, is thick: and such verily as is thus candied, and will not run like life-honie, is nothing commendable. As for Thyme honie, it will not thicken: and if a man touch it, rope it will and draw small slimie threds after it: which is a principall sign of the weight and heaviness thereof. If honie be short in the handling, and soone breake, and that the drops part one from the other, it is thought to be a token of the worst and coursest of all. Another triall there is besides of good honie, namely, if it be fragrant and odoriferous to smell unto, sweet in tast, and biting withall, or quicke at the tongues end, glutinous, and cleare. As touching the driving of hives for Summer honie, *Thasius Dionysius* is of opinion, that the tenth part thereof should be left for the Bees, namely, if they were full: if not, than according to the proportion: but if they were but light and very thin, he would not have them to bee touched at all. The Athenians goe by this rule, and doe observe duly the Caprificall day, which is kept holie unto *Vulcan*: for then they ever begin to drive their hives for this kind of honie.

CHAP. XVI.

¶ *Of a third kind of Honie: and how a man should know good Bees.*

THere is a third sort of wild honie, which the Greekes call **Ericæum*, and is of least reckoning. It is gathered after the first raine in Autumne, when the heath and lings only bloum in the woods, whereupon it seemeth as if it were sandie. This kind of honie is engendered for the most part after the rising of *Arcturus*, much about the Ides of September. Some there be that continue in gathering Summer honie unto the rising of *Arcturus*: betweene which and the Autumne *Æquinoctiall* are 14 daies: & from thence unto the setting of the *Vergiliæ* (namely, for the space of 48 daies) the said heath is most in his blouming time. This shrub the Athenians call *Terralix*; the Eubœans name it *Sifara*: and they repute it to be a flower most pleasant to Bees, haply, because at that time there is no plentie of other flowers. This gathering of honie is about the end of vintage, & the occultation of the *Vergiliæ*; and commonly endeth by the Ides of November. In driving of the hives for this honie, by good reason, two [third] parts thereof would be reserved for the Bees: and especially those corners of the combs, which have in them the provision called *Erithace*. From the mids of winter unto the rising of *Arcturus*, for 60 daies Bees are nourished only with sleepe, without any other food. But from that time unto the Spring equinoctiall, and namely, where the weather is more warme, they are awake. Howbeit, they lie still in their hive, & then fall to their victuals which they had laid up in store against that time. But in *Italie* they do the like indeed after the rising of the star *Vergiliæ*: howbeit, untill then they do nothing but sleep. And there verily, men use when they take the honie forth of the hives, to weigh the combs, and so by weight dispence & set out how much they will leave them for their food: having this opinion, that they are bound to deale in justice & equitie even with the very Bees: inso-much, as it is commonly said, If they be defrauded of their due in this societie & part-taking, and find falsehood in fellowship, they will die for greefe: and so both the old stock will be lost, and the hope also of a new increase. In the first place therefore, this is a rule, That such folk only be set about this businesse to drive the hives, who are neat and clean. A theefe, & a woman whiles she is in her monthly sicknesse, they abhor. In the taking out of honie, the best means to drive away the Bees, is to smoke them out of the hive: for feare that you anger them, or that they devour the honie themselves with more greedinesse. Moreover, when they grow to be idle, perfuming and smoking

of them thus now and then, maketh them more fresh to goe about their worke. For when they lie still and doe nothing, they make their combes look dead and blackish. Againe, if they be overmuch smoaked, they will be the worfe for it : and surely, the very honie soone catcheth the hurt hereof: for so tender and weake will it be, that with the least dew that is, you shall have it to turne and waxe soure. And therefore in all kinds of honie they observe and keepe that which is called Acapnon, [i. without smoke.] The honie gathered of both sorts of Thyme, called thereupon Bithymum, is not white : howbeit, very good it is for eies and to cleanse ulcers.

Now as touching the generation of Bees, and how they multiply and encrease, much dispute there hath been among the learned, and a nice question this is. For first and foremost, Bees were never seen to engender one with another : and therefore most men have been of opinion, that young Bees must needs be made of flowers fitly and handsomly laid together and composed, according to Natures lore. Others say, that one master-Bee, which is the king in every swarme, doth beget them all : and that he forsooth is the only male; bigger also than the rest and more strong, because hee should not faint and faile in the action: for without such an one, we see there is no breed : and him all the other Bees attend upon, not as their leader and captain, but as the female follow the male. Certes this were a good conjecturall opinion, and founding to a truth, but that the breed of these Drone-bees abovesaid, doth checke and overthrow it cleare: for what reason is therethat one and the same manner of procreation, should bring forth some perfect and others unperfect? The former opinion yet might seeme more probable, but for another difficultie and inconvenience that crosseth it too: for otherwhiles in the utmost edges and sides of the combs, there are seen to breed the bigger kind of Bees, which chase & drive the others away: and this vermin is called Oestrus, [i. the gad-Bee or Horfe-flie.] Now if those little wormes or grubs from whence the Bees come, were made of flowers, which they themselves formed and brought into fashion, how commeth this gad-Bee, and whereof is hee made? This is certein, that Bees couvie and sit as Hens doe : and that which is (after a sort) by them hatched, seemeth at the first to be a little white grub or maggot, lying crossè overthwart the honey, and so fast sticking thereto, as if it seemed to feed thereupon. The king that shalbe, at the very first is yellow, and of the colour of honey; as if he were made of the most choise and excellent flower of all the rest: nothing like to a grub as the other, but presently hath wings. The rest of the multitude, when they begin to take some shape, are called Nymphæ: like as the Drones at the beginning, be tearmed Sirenes or Cephenes. If a man take their heads from either sort, before they be winged, it is a most pleasant and excellent meat for the old dams. In proceffe of time, as they grow bigger, the old Bees distill and drop meat into their mouthes, as they sit upon them: and then they keepe most humming (as some thinke) for to set the combs into an heat, which is requisite and necessarie for the hatching of them: and thus they continue, untill the little pellicles or membranes be broken; within which, everie one lieth by it selfe, as eggs: and then they break forth all together and shew themselves accomplished Bees. The manner and experiment hereof, was seene upon a time in a ferme neare unto Rome, belonging to a Nobleman of Rome who sometime had been Consull: for hee caused his hives to be made of lanterne hornes that a man might see through into them. These young wormes be 45 daies before they come to their perfection.

There is found in some combs, a certaine bitter thing and hard like to wax, which the Latins call *Clerus*. This is as it were the abortive and untimely fruit of the Bees, to wit, when either by maladic or idleness, or rather upon some barrenesse and unfruitfull disposition by nature, Bees are not able to bring the same to perfection.

As for the young Bees, they are not so soone abroad, but they begin to labour with their mothers, and are trained by them to learne how to gather honey. This young people have a young king also, unto whome they make court, and whome they follow. And many such kings are bred at first, for feare least they should want: but when the Bees are growne bigge, they all agree with one accord and voice, to kill those that be most untoward among them, for feare they should make divisions, factions, and siding to parts. These kings be of two sorts: those that are red all over, be better than the blacke or partie-coloured. All the race of them be verie faire and goodly to see to; and twice as big as the rest: their wings shorter, their legges streight; in their port and manner of march, more stately: carrying in their front a white starre, like a diademe or coronet: farre brighter also and more neat they be than the common sort.

A

CHAP. XVII.

§ The regiment of Bees, and their government.

WHat should a man now dispute about *Hercules*, whether there was but one of that name or many? Likewise as touching the Sepulchre of Prince *Bacchus*, where and which it is? As also trouble his head in many other such like antiquities, buried by long continuance of time. For behold, in one small matter that is daily seene in our countrey houses, in a thing annexed to our fermes, and whereof there is such store, all Authours who have written of Agriculture are not yet resolved: namely, Whether the king of Bees alone hath no sting, and is armed only with majestie? or, whether Nature hath bestowed a sting upon him, and denied him only the use therof? For certein it is, that this great commander over the rest, doth nothing with his sting: & yet a wonder it is to see, how they all are ready to obey him. When he marcheth abroad, the whole armie goeth forth likewise: then they assemble together, & environ him round about; they are his guard, and so close they keepe united together, that they will not suffer him once to be seene. At other times, when all his people are busie in labor, himselve (as a right good captaine) overseeth their workes, goeth about from one to another, encouraging them in well-doing, and exhorting them to plie their businesse: himselve onely exempt from all other travell and painstaking. About his person he hath a certain guard ever attendant: he hath his Lictors and officers alwaies in readinesse, in token of majestie and princely port. Hee never setteth forward, but when the whole swarme is prest likewise to goe forth: and in truth, long time before, a man may perceive that they be about a voiage and expedition; for, many daies together there is an extraordinary humming and noise within, whiles they prepare to dislodge, trussing up as it were their bag and baggage, and expecting onely a faire day of remoove. And suppose that the king have in some battaile lost one of his wings, yet will not his hoast forsake him and flie. When they be in march, each one desireth and striveth to be next the prince, as taking a joy and pride to be seene of him, how lustily they performe their devoir. If he begin to be wearie, they support him with their shoulders: if hee be tired indeed and faint outright, they carry him full and whole. If any one of their owne companie chauce to faile for very wearinesse, and doe drag behind, or stray aside and wander out of the way, it will yet endeavour to follow the armie only by the smell and sent. Where the king once seeth and taketh up his resting place, there they all pitch downe their tents and encampe. And I assure you, herein lieth a matter of great weight and importance; as touching the Auguries & presages gathered by the manner of their serling, prognosticating both to publicke states and also to privat persons, somthing to ensue of much moment, either for good or otherwise; according as they have been observed to hang together in clusters like bunches of grapes, either at mens houses or upon the temples of the gods. By occasion whereof, folke had recourse to their devotions and sacrifices, for to appease the heavenly powers: and yet oftentimes such foretokens have not ben expiat without some strange events in the end. There was a swarme of Bees rested upon the very lips and mouth of *Plato*, when he was but a very babe and infant; fore-shewing (no doubt) that singular eloquence of his, and sweet utterance that afterwards he had. Another cast of Bees settled within the very camp of Generall *Drusus*, the very same day, when he obtained that notable victorie at Arbalo. By which examples we may see, that this conjecturall skill and learning of these Soothsayers holdeth not alwaies, nor proveth ever true: for they forsooth suppose this to be evermore a portenteous sign of some fearfull event and misfortune. To returne againe to our captain Bee: if he chauce to be entrapped and surprized by the enemy, the whole armie is sure withall to be taken with him. If he be deffected and slaine, the field is lost: all the rest are scattered, and seeke their fortune to serve some other prince: for without one king or other, live they cannot. Sometime they are driven to kill those of the kings race, and namely when there be many kings together: but this they doe perforce and full against their wills: and before they will so doe, they chuse rather to ruinate and put downe the houses wherein they were bred; especially when there is some feare of scarfitie, by reason of the unkind season: and at such a time also, they chase and drive away the drone-Bees. And yet I see some doubt made of them: for divers are of opinion, that they be a kind of Bees by themselves, and that the rest doe set against them as very theeves. The biggest they are of all others, but blacke and broad bellied: good reason therefore that they should be called

called Theeves, because they come stealing and eat up their hony. Certain it is, that these drones be killed by the other Bees: and surely, king of their owne they have none. But how they should be naturally without a sting, there is some question, and the same as yet not determined. This is well known, that in a moist and rainie spring, Bees multiply better: but if it be drie weather, there will be more encrease of honey. Now if it happen, that the meat in one hive be spent, the Bees belonging thereto will assaile their next neighbours, with intent to rob and spoile them of their provision. But they on the contrarie side, put themselves in battaile aray, with full purpose to receive them againe. And if there chance to be a keeper by, to see the combat, that one part which perceiveth him to favor their side, will not once make at him for to sting him. Other causes there are besides, which make them often go together by the ears: and then shall ye have two severall captains to arraigne their battailons one against another. But most of all they brawle and jarre upon occasion of gathering and carrying flowers, whiles they call each one to his owne companie, for to come forth and take part. But all this great fray is soone parted and dispatched, either by casting up some dust among them, or by making a little smoke and perfume under them. And reconciled soon they be againe, with setting before them a messe of milke, or honied-water.

CHAP. XVIII.

Of the sundrie sorts of Bees in generall: and what things be contrarie and hurtfull unto them.

THere is a kind of rusticall and wild Bee: and such are more rough and hideous to see to: much angrier also and curst than the rest: howbeit, more laborious and painfull by farre. Of domesticall and tame house-Bees, there are two sorts. The best be those that are short, well trust up and round, and withall, painted with sundrie colours. The long ones be the worse, and such as resemble waspes: and yet the worst of all others, bee those that are hairie all over. Within the kingdome of Pontus there bee white Bees, and those make honey twice in everie moneth. Moreover, along the river Thermodoon, there be two sorts more. The one, gathereth hony in trees: others, within the ground, and bring great encrease thereof: for they frame their combs with a threefold course and ranke. The sting that Nature hath given unto Bees, sticketh within their bellies. Some are of opinion, that with the first prick they give with it, they die presently. Others hold, that they die not withall, unlesse they thrust it forth so far, that some of the gut followeth after: mary howsoever it be, they become afterwards no better than drones: neither gather they any more honey, as if they were guelled of their vigor and strength; so as they cease to doe good and harme both at once. We find it written in Chronicles, that horses have been stung to death by them. Filthie stinking favours they cannot abide, and namely, such as be contagious; and from them will they flie farre enough. Nay more than that, sure they will be to haunt and sting them that smell as they goe of sweet pomanders and odoriferous ointments, notwithstanding they be otherwise themselves subject to the injuries of most living creatures. For first and foremost, they are molested and assailed by those of their owne nature, but yet degenerate and of bastard breed, to wit, Wasps and Hornets: also by a kind of Gnats called Mullions. Swallows, Martins, and some other birds, make foule work among them, and are their mortall enemies. The Frogs lie in wait for them as they come to drinke: which is the principall worke they have to doe, when they be about to multiply and breed young. And not those Frogs onely which keepe in standing pooles and running rivers, but those land-Frogs of a Todes kind will come of their owne accord from out of the brambles and briers where they keepe, and leap up to the very dore and entrance of the hive; where they will blow and breath in unto them: and when the Bees come flying forth thither, to see what the matter is, soone are they snapt up and devoured. And as for Frogs, all the sort of them are supposed not to feele the prick of their sting. Sheepe also are no friends of theirs: for if they get once entangled within their wooll, hardly can they get out again. Seerth but Crabfishes neer unto their hives, the very aire & smell thereof will kill them. Over and besides, Bees naturally are many times sick; and that do they shew most evidently: a man shall see it in them by their heavie looks, and by their unlustines to their businesse: ye shall marke how some will bring forth others that be sicke and diseased, into the warme sunne, and be readie to minister unto them and give them meat. Nay, ye shall have them to carie forth their dead, and to accompanie the corps full decently, as in a solemne funerall. If it chauce that

A the king be dead of some pestilent maladie, the commons & subjects mourne, they take thought and grieve with heaue cheere and sad countenance: idle they be, & take no joy to do any thing: they gather in no provision: they march not forth: onely with a certain dolefull humming they gather round about his corps, and will not away. Then requisite it is and necessarie, to sever and part the multitude, and so to take away the bodie from them: otherwise they would keepe a looking at the breathlesse carcasse, and never go from it, but still mone and mourne without end. And even then also they had need be cherished and comforted with good victuals, otherwise they would pine away and die with hunger. To conclude, a man may soone know when Bees be well in health, by their chearefulnesse and fresh hue that they carrie.

CHAP. XIX.

⚡ Diseases of Bees.

T Here be diseases also and imperfections in their worke: and namely, when they fill not their combes, or bring not to perfection their young Bees. The first is called Cleros, like as the other Blapfigonia. Moreover, the sound made by reverberation of the aere, which men call Eccho, is hurtfull unto them: for they feare mightily that resounding noise, comming with a double stroke. Mists and Fogs also trouble them much. As for Spiders, they be their greatest enemies of all others, in case they can prevaile so much as to enter into the hive, and weave a copweb within it: for they kill all the Bees, and there is no remedie against it. Over and besides, that Moth or Butterflie which useth to flie about the snuffe of a candle burning, (a poore flie flie otherwise and of base account) here doth much hurt, and that in divers sorts. For not only it selfe eateth and gnaweth the waxe of their combes, but also ^{they} blow and leave behind them such excrements as afterwards prove other moths. Also, wheresoever he goeth and flieth within the hive, he leaveth behind him a certaine substance, comming most from the dustie downe of his wings, with which he thickeneth the threads (as it were) of copwebs. There breed likewise even in very wood, certain wormes, which above all things make means to eat the combes. What should I speake of their owne greedie feeding and glutting themselves with too much liquour of the flowers, in the Spring time especially? whereupon ensueth a daungerous fluxe and looseness of their bellie. As for Oile, it is not bane to Bees onely, but also to all other Insects: especially, if a man dip their heads in it, and then let them be in the Sunne; for presently they will die of it. Many times Bees are causers of their owne death, with getting a surfet by excessive devouring of honie, namely, when they see it readie to be taken out of the hive: for otherwise they are very thrifrie and overgreat sparers, and such, as at other times will drive out those that wast prodigally and be gluttinous, no lesse than such as be idle luskers, and slow at worke. Nay, even their owne honie doth them hurt: for if they be annointed therewith in their hinder parts, they will die upon it. Lo how many enemies this creature (so liberall and bountifull) hath! see, how many casualties it is subject unto! and yet what be these I have already rehearsed, in proportion and comparison of those which are omitted? Their remedies will we speake of in convenient time and place: for this present, content I will my selfe to treat onely of their natures.

CHAP. XX.

⚡ How to keepe Bees to the hive: and the manner of repairing them.

B Ees joy in the clapping of hands, and ringing of brasen basons: at the sound thereof they will assemble and come together. Whereby, it is a plaine case, that they have the sence of hearing. When they have done their taske of worke; when they have brought toorth their young ones, and fully accomplished all their devoire; then they performe a solemne of exercise: wherein after they have flowne abroad in the open aire at libertie, fetched their compassse about on high, gathered into rings and rounds in manner of tournament for their pleasure: then at last when it is time of repast, they returne home againe. The longest time that they can live, (say, that they passe through all daungers, and no misfortune light upon them, but every thing that is adverte, fall out well and happily) is not above seven yeares. And never was it knowne or heard of, that an hive continued above ten yeares. Some writers be of opinion, That dead Bees if they bee kept within house all a Winter, and when the Spring is come, bee laid forth in the hote Sunne

The eleventh Booke of

Sunne to drie, and one whole daie be kept covered all over with figtree ashes, they will revive and be quicke againe. But suppose they be not onely dead, but their bodies also lost and gone, some say they may be repaired and a new swarme engendred, by laying the fresh paunches of oxen or kine newly killed, with the dung, garbage and all, within a dunghill there to putrifie. *Virgill* affirmeth, that the carcaffes of any young steeres, will doe the same: like as dead hortes will breed Waspes and Hornets: and Asles carrion turne to be Beetle-flies, by a certaine metamorphosis which Nature maketh, from one creature to another. And yet there be none of all these, but are scene to engender: howbeit the manner of their breed is much after the nature of Bees.

CHAP. XXI.

Of Waspes and Hornets.

WAspes use to build their nests on high, of earth and clay, and therein doe make their rooms and cells of wax. Hornets, in caves and holes under the ground. All these verily have their chambers made with sixe corners, and yet their nests consist of some barke and substance like cobwebs. And as they be a barbarous and savage kind of creatures, so their young is not uniforme: one is readie to flie abroad, whiles another is yet but yong and not sledge, and a third a meere worme and grub still. All these breed in the Autumne, and never in the Spring. When the moone is in the full, they encrease marveilously. As for the little Wasps, called *Ichneumon*es (and lesse they be than others) they use to kill one kind of Spiders called *Phalangia*, and carrie them into their nests: they besmeare them all over with a liniment, sit over them, and so procreate their owne kind. Moreover, all the sort of these live upon flesh, contrarie to the manner of Bees, which will not touch a dead carcasse. But Waspes hunt after the greater flies: and when they have whipt off their heads, carrie away the rest of their bodies for their provision. The wild Hornets use to keepe in hollow trees. All winter time, like other Insects, they lie hidden, and live not above two yeeres. If a man be stung with them, hardly he escapeth without an ague. And so we have written, that 27 pricks of theirs will kill a man. The other Hornets which seeme to be the gentler, be of two sorts. The lesse of bodie, doe worke and travaile for their living, and they die when winter is come. But the greater sort of them continue two yeeres: and those also are nothing dangerous, but mild and tractable. These make their nests in the spring, and the same for the most part having foure doores or entries unto them, wherein the lesser labouring Hornets above said, are engendred. When those are quick, brought to perfection, and gotten abroad, they build longer nests; in which they bring forth those that shall be mothers and breeders: by which time, those young Hornets that worke, be readie to doe their businesse and feed these other. Now these mothers appeare broader than the rest: and doubtfull it is, whether they have any sting or no? because they are never seen to thrust them forth. These likewise have their drones among them, as well as Bees. Some thinke, that toward winter, these all doe loose their stings. Neither Hornets nor Waspes, have kings or swarms, after the manner of Bees: but yet they repaire their kind and maintaine their race by a new breed and generation.

CHAP. XXII.

Of Silkwormes: the *Bombylius*, and *Necydalus*. And who first invented silke cloth.

AFourth kind of flie there is, breeding in *Affyria*, and greater than those above-named, called *Bombyx*, [*i. the Silkworme.*] They build their nests of earth and clay, close sticking to some stone or rocke, in manner of salt: and withall so hard, that scarcely a man may enter them with the point of a speare. In which they make also waxe, but in more plentie than Bees: and after that, bring forth a greater worme than all the rest before rehearsed. These flies engender also after another sort; namely, of a greater worme or grub, putting forth two horns after that kind: and these be certain Cankerwormes. Then these grow afterwards to be *Bombylij*; and so forward to *Necydali*: of which, in six moneths after, come the silkwormes *Bombyces*. Silkwormes spin and weave webs like to those of the Spiders, and all to please our dainty dames, who thereof make their fine silkes and velvets, forme their costly garments and superfluous apparell, which are called *Bombycina*. The first that devised to unweave these webs of the Silkworme,

A worme, and to weave the same againe, was a woman in Coos named *Pamphila*, daughter of *Lattus*: and surely she is not to be defrauded of her due honour and praise, for the invention of that fine silke, Tiffanie, Sarcenet, and Cypres, which instead of apparell to cover and hide, shew women naked through them.

CHAP. XXIII.

¶ Of the Silke worme in Cos.

B IT is commonly said, that in the Iland Cos there be certain Silke worms engendred of flowers, which by the meanes of raine-showers, are beaten downe and fall from the Cypres tree, Terebinth, Oke, and Ash: and they soone after doe quicken and take life by the vapour arising out of the earth. And men say, that in the beginning, they are like unto little Butterflies naked; but after a while (being impatient of the cold) are overgrowne with haire; and against the winter, arme themselves with good thicke clothes: for being rough-footed, as they are, they gather all the cotton and downe of the leaves which they can come by, for to make their fleece. After this, they fall to beat, to felt and thicken it close with their feet, then to card it with their nailes: which done, they draw it out at length, and hang it betweene braunches of trees, and so kembe it in the end to make it thin and subtile. When all is brought to this passe, they enwrap and enfold themselves (as it were) in a round ball and clew of thread, and so nestle within it. Then are they taken up by men, put in earthen pots, kept there warme, and nourished with bran, untill such time as they have wings according to their kind: and being thus well clad and appointed, they are let go to doe other businesse. Now as touching the wooll or fleece which they have begun, men suffer it to relent in some moisture, and so anon it is spun into a small thread, with a spindle made of some light Kex or Reed. This is the making of that fine Say, whereof silke cloth is made; which men also are not abashed to put on and use, because in summer time they would goe light and thin. And so farre doe men draw backe now a daies from carrying a good corslet and armour on their backs, that they thinke their ordinarie apparell doth over-lode them. Howbeit, hitherto have they not medled with the Assyrian Silke worme, but left it for the fine wives and dames of the city.

CHAP. XXIIII.

¶ Of Spiders, and their generation.

D IT were not amisse to joine hereunto a discourse of Spiders, for their admirable nature, which deserveth a speciall consideration. Wherein, this is first to be noted, that of them there be many kinds, and those so well knowne unto every man, that needles it is to particularize and stand much upon this point. As for those which be called Phalangia, their stinging and biting is venomous, their bodie small, of divers colours, and sharpe pointed forward; and as they goe, they seeme to hop and skip. A second sort be blacke, and their feet are exceeding long. All of them have in their legs, three joints. The least of this kind, called Lupi, spin not at all nor make any webs. The greater, stretch forth their webs before the small entries into their holes within the ground. But the third kind of Spiders, be they which are so wonderfull for their fine spinning and skilfull workmanship: these weave the great and large cobwebs that wee see; and yet their verie wombe yeeldeth all the matter and stuffe whereof they be made. Whether it be, that at some certein season naturally their belly is so corrupt (as *Democritus* saith :) or that within it there is a certain bed (as it were) which engendreth the substance of silke. But surely whatsoever it is, so sure and steadie nailes the Spider hath; so fine, so round, and even a thread she spinnes, hanging thereunto her selfe, and using the weight of her owne bodie in stead of a wherve; that a wonder it is to see the manner thereof. Shee beginneth to weave at the very mids of the web, and when she hath laid the warpe, bringeth over the woofe in compasse round. The mathes and marks she dispenseth equally by even spaces; yet so, as every course groweth wider than other: and albeit they do encrease still from narrow to be broader, yet are they held and tied fast by knots that can not be undone. Marke, I pray you, how artificially she hideth the snares in that net of hers, made into squares, to catch the poore flies. A man would not thinke (who seeth the long yarne in her web wrought serce-wise, smoothed and polished so cunningly, and the verie manner of the woofe so glewish and clammye as it is, of it selfe) that all were to any purpose, and served for that which she

she intendeth. See withall, how flacke and hollow the net is made, to abide the wind, for feare of breaking: and thereby so much the better also to fold and enwrap whatsoever commeth within her reach! What a craft is this of hers to leave the upper part thereof in the front undone, as if she were wearie (for so a man may guesse, when he can hardly see the reason) and (as it is in hunters net and toile) that so soone as those nets be stumbled upon, they should cast the flies headlong into the lap and concavities of the net? To come now unto her nest and hole: Is there any Architecture comparable to the vault and arched frame? And for to keepe out the cold, how is it wrought with a longer and deeper nap than the rest! What subtiltie is this of hers, to retire into a corner so farre from the mids, making semblance as though she meant nothing lesse than that she doth, and as if she went about some other businesse! Nay, how close lyeth she, that it is impossible for one to see, whether any bodie bee within or no! What should I speake of the strength that this web hath to resist the pufes and blasts of winds? of the toughnesse to hold and not breake, notwithstanding a deale of dust doth weigh and beare it downe? Many a time ye shall see a broad web reaching from one tree to another: and this is when she learneth to weave and beginneth to practise and trie her skill. She stretcheth a thread, and warpeth in length from the top of the tree downe to the very ground; and up again she whirles most nimbly by the same thread: so as at one time, she spinneeth and windeth up her yarne. Now if it chauce that any thing light into her net, how watchfull, how quick-sighted, how readie is she to run? Be it never so little snared even in the very skirt and utmost edge thereof, she alwaies skuds into the mids; for so by shaking the whole net, she entangleth the flie or whatsoever it be, so much the more. Looke what is slit or rent therein, she presently doth mend and repaire, and that so even and small, that a man cannot see where the hole was derved and drawne up againe. These Spiders hunt also after the yong Lizards: first they enfold and wrap the head within their web: then, they catch hold and tweake both their lips together, and so bite and pinch them. A worthy sight and spectacle to behold, fit for a king, even from the stately Amphitheatres, when such a combat chanceth.

Moreover, there bee many pefages and prognostications depend upon these Spiders: for against any inundations and overflowings of rivers, they weave and make their cobwebs higher than they were wont. In faire and cleare weather, they neither spin nor weave: upon thicke and cloudie daies, they be hard at worke: and therefore many cobwebs be a signe of raine. Some thinke, it is the female that spinneeth and weaveth; and the male, which hunteth and getteth in the provision for the familie: thus ordering the matter equally in earning their living, as man and wife together in one house. Spiders engender together with their buttocks, and little worms they doe lay like eggs. For, considering that the generation of all Insects besides, in a manner can be declared and shewed no otherwise, I must not deferre the relation of it, being so admirable as it is. Well then, these eggs they do lay in their webs, but scattering here and there, because they use to skip and leape when they thrust them forth. The Phalangius onely sitteth upon the egges within the very hole, and those in great number: which begin not so soon to peepe, but they eat the mother, yea and oftentimes the father likewise, for he helpeth her also to coove. And these kind of Spiders bring commonly 300 at a time: whereas all the rest have fewer. They sit ordinarily thirtie daies. As for yong Spiders, they come to their full growth and perfection in 4 weeks.

CHAP. XXV.

Of Scorpions.

SEmblably, the land Scorpions doe lay certaine little worms or grubs in manner of eggs: and when they have so done, perish likewise for their labour, as the Spiders. Their stings be as venomous and daungerous, as those of serpents: and albeit there ensue not thereupon so present death, yet they put folke to more paine a great deale; insomuch as they languish and lie drawing on three daies before they die. If a maiden be stung with one of them, she is sure to die of it: other women also for the most part catch their death thereby, and hardly escape. Yea and men also find their poison to be mortall and deadly, if they be stung in a morning by them when they creepe newly out of their holes, fasting, and before that they have discharged their poison by pricking one thing or other first. Their sting lieth in their tails, and readie they are with it alwaies to strike. There is not a minute of an houre but they practise and trie how they can thrust it forth, (so malicious they be) because they would not loote and misse the first opportunitie presented

unto

A unto them. They strike both sidelong or byas, and also crooked and bending upward, with their taile. The poison that commeth from them, is white, as *Apollodorus* saith: who also hath set down nine sorts of them, and distinguished them by their colours, which me thinkes, was but superfluous and more than needed; considering that a man cannot know by his discourse, which of them he would have to be least hurtfull and noisom. He affirmeth, that some have double stings, and that the males are more curst and cruell than the females: for he avoucheth, that they doe engender together, and that the males may be knowne by this, That they are long and slender. Moreover, that they be all of them venomous about mid-day, when they bee enchaffed and set into an heat, by the scalding and scorching sunne: also when they be drie and thirstie, they cannot drinke their full and quench their drought. This is well knowne, that those which have seven joints in their tailles, be more fell than the rest: for it is ordinarie in them to have but six. In *Africke*, this pestilent creature useth to flie also, namely, when the Southerne winds blow, which carrie them aloft in the aire and beare them up as they stretch forth their armes like oares. The same *Apollodorus* before-named avoucheth plainly, that some of them have very wings indeed. The people called *Psylli* (who making a gainfull trade and merchandise of it, to bring in hither unto us the poisons of other countries, and by that meanes have filled *Italie* with forrein venomous beasts) have many times assaied to bring them hither; but never would they abide so much as the aire of *Sicilie*, nor live in that tract. Howbeit we see of them now and then in *Italie*, but harmlesse they be all: like as in many other places besides, and namely about *Pharus* in *Ægypt*. In * *Scythia* they be so dangerous, that they kill their hogs; which otherwise be creatures that can eat such poisons, and yet live and doe full well. And if it be true that is said, the black swine die more speedily, especially if after they be stung, they goe into the water and drench themselves. If a man bee stung with a *Scorpion* and drinke the powder of them in wine, it is thought to be present remedie. Men hold, that nothing is more contrary unto them than oile, if they be dipped therein: as also to the *Stellions*, which are made like *Lizards*, and doe no hurt to them onely, because they are without bloud. Like as the *Scorpions* also are said to be harmlesse to any thing that is bloudlesse. Some are of opinion, that they likewise devoure their young, save onely one who is more slie and craftie than the rest, who gets upon the rumpe behind of the mother, and there sits, being assured that he is safe enough in that place, both from sting of taile and tooth in mouth. This *Scorpion* revengerth the death of his other brethren and sisters: for in the end he skips upon the back of father and mother both, where he gnaweth and eateth them to death.

D To conclude, *Scorpions* usually doe breed eleven young ones at a time.

* Or rather
in *Caria*.

CHAP. XXVI:

Of *Stellions* and *Grashoppers*.

THe *Stellions* after a sort be of the nature of *Chamæleons*, living onely upon dew and *Spiders*. *Grashoppers* also live much after the same manner. And they be of two sorts; namely, the lesser, which come first, and die last: but those be mute. The latter breed, seldome or never flie: and those likewise are of two kinds. Such as sing alowd, be named *Echetæ*; and the lesser sort of them *Tettigoniæ*: but those other are more shrill, and chant full merrily. The male *Grashoppers* in both kinds, doe sing: the females are silent. The people of the East countries make their food of them: even the very *Parthians*, who otherwise abound in wealth. The hee *Grashoppers* are the sweeter meat before the time of engendring: and the shee *Grashoppers* afterward, by reason of eggs knotted within them, and those be white. They engender with their bellies upward. They have a certain roughnesse upon their backs, which is very sharpe, and therewith they worke a hollow gutter in the ground, as a nest to lay their eggs and breed in. At the first, appeareth a little worne or magot; whereof commeth afterward that which they call *Tetigomera*, as one would say, the mother of *Grashoppers*, or the great *grashopper*. For about the Sunstead in Summer, the utmost crust or case thereof breaketh, and then out they flie, and alwaies in the night. At the first, blacke they be and hard withall. Of all creatures that are known to live, the *Grashoppers* alone have no mouth: in stead whereof, they have a certaine sharpe pointed thing in their breast (like unto their tongues that carrie stings in their mouths) and with it they sucke and licke in the dew. Their breast is full of little pipes, from whence commeth that ringing noise of the *Echetæ* which we doe heare, as I have above said. Moreover, their bellie is

emptie and hath nothing in it. When a man raiseth them, so as they bee thereby forced to flie, they yeeld forth a certaine humour: which is the onely argument that they bee nourished of the dew. They have moreover this one marke from all other creatures living, namely, no concavite of their bodie to be seen whereby to void out any excrements. So dim-sighted they be, that if a man chauce to come neare unto them, plucking in and stretching out his finger before them, they will presently leape upon it, supposing that it is some leafe that waggeth. Writers there bee, that make two more kinds of them, namely, the greater, which appeare at the first spring and budding of trees; whereupon it is called Surcularia: and a lesser, which some name Frumentaria, others Avenaria. For this sheweth it selfe when corne is ripe and begins to die in the straw.

CHAP. XXVII.

☞ *Places wherein there be no Grasshoppers: also where they are mute.*

IN countries bare and naked of trees and wood, there breed no Grasshoppers: and therefore ye shall have them at Cyrene, about the towne, but not in the plaines and fields thereof. Neither shall a man meet with them in woods that be cold and full of shade. It seemeth also, that they take a liking to some one quarter more than another: for in the region of the Milesians, few places there be that have them: but in Cephalenia, there is a river that doth limit and bound them: for of the one side there be plentie of them; and on the other, few or none. In the territorie of Rhegium they be all mute. Passe the river once and come into the Locrians countrey, yee shall heare them chaunt lustily. Wings they have like to those of Bees, but larger, to the proportion of their bodies.

CHAP. XXVIII.

☞ *The wings of Insects, and sundrie kinds of Beetles.*

OF Insects, some carrie two wings about them, as the flies: others foure, as Bees. As for Grasshoppers, they flie with wings made like pellicles or fine skins. In summe, all Insects which be armed with a sting in their bodie or taile, have foure a peece: and none againe have above twaine that carrie their offensive weapon in the mouth. To the former, Nature hath given it for to revenge; to the other, onely to feed themselves, and content their appetite. Moreover, plucke from any of them their wings, there will never come new in the place. None that have a sting in their taile, be double winged. Some Insects there be, which have growing a certaine huske or cod over their wings, for the safeguard and defence thereof, as the Beetles: and the wings of such be thinner and more brittle than others. Sting have they none, but a certaine kind of the great ones be armed with two long hornes boking out before them, and two-forked they be and toothed like pinsons, in the top, which (when they list) they can bring together and make them meet, and so nip and bite withall. These Beetles, folke use to hang about the necke of young babes, as present remedies against many maladies. Such Beetles, *Nigidius* calleth Lucanes. Over and besides, there is another sort, which tumbling upon their backe in dung, do roll it into great round balls with their feet; and therein doe make nests for to bestow the little grubs (which are their young) against the cold of winter. Some there be that use to flie up and down, and where ever they go, make a great buzzing noise as if they lowed. Ye shall have others againe that keepe in meadows; yea and Creckers that haunt the hearth and stocke of chimnies, where they make many holes, and lie cricking alowd in the night.

The Glo-wormes, are named by the Greeks *Lampyrides*, because they shine in the night like a sparke of fire: and it is no more but the brightnes of their sides and taile: for one while as they hold open their wings, they glitter; another while when they keepe them close together, they be shadowed and make no shew. These Glowbards never appeare before hay is ripe upon the ground, ne yet after it is cut downe. Contrariwise, the flies called *Blattæ*, live and be nourished in darkenesse: light is an enemy unto them, and from it they flie. They breed commonly in baines and stouves, of the moist vapours that be there. Of the same kind there be other great Beetles red in colour, which worke themselves holes in the drie earth, where they frame certaine receptacles like unto Bees combs, little and small, full of pipes resembling hollow sponges; and all

A all for a kind of bastard honey, whereof yet there is some use in Physicke. In Thrace neare to Olynthus, there is a little territorie or plot of ground, where this one creature (among all other) cannot live; whereupon the place is called Cantharoletus. The wings generally of all Insects, bee whole, without any flit: and none of them hath a taile but the Scorpion. Hee alone hath not onely armes, but also a sting in the taile. As for the rest, some of them have a sharpe pricked weapon in their muzzle, as namely, the Breese or great Horse-flie, called in Latine *Afilus* or *Tabanus*, whether you will. Likewise Gnats also, and some kind of flies. And these prickes serve them in good stead both for mouth and tongue. Some of these are but blunt, and not good for to pricke, but onely handsome to sucke withall, as flies, which have all of them a tongue, beeing evidently fistulous and like a pipe. And none of all these have any teeth. There be Insects with little hornes proaking out before their eyes, but weake and tender they be, and good for nothing; as the Butterflies. And there bee againe, that are not winged, and such be the Scolopendres. All Insects that have legges and feet, goe not directly, but bias and crooked. Of which, some have the hinder legges longer than the former, and such bend hooked outward; as the Locusts.

CHAP. XXXIX.

Of Locusts.

C **T**He Locusts lay egges in Autumne, by thrusting downe into the ground the fistule or end of their chine, and those come forth in great abundance. These egges lie all winter long in the earth; and at the end of the spring the yeere following, they put out little Locusts; blacke of colour, without legs, and creeping upon their wings. Hereupon it commeth, that if it be a wet spring and rainie, those eggs perish and come to no good: but in a drie season, there will be greater encrease and store of Locusts the Summer ensuing. Some writers hold opinion, that they lay and breed twice a yeare: likewise that they perish and die as often. For they say, that when the star Vergiliae doth arise, they breed: and those afterwards about the beginning of the Dog-daies, die; and others then come in their place. Others say, that they engender and breed againe their second litter, at the full or setting of Arcturus. True it is indeed, that the mothers die so soone as they have brought forth their little ones, by reason of a small worme that presently breedeth about their throat, which choketh them. And at the same time, the males likewise miscarrie. See what a litle matter (to speake of) bringeth them to their death! and yet a woonder it is to consider, how one of them when it list will kill a serpent: for it will take him fast by the chaws, and never lin biting untill shee hath dispatched him. These little beasts breed no where but in plaine and champion countries, namely, such as be full of chinkes and crevises in the ground. It is reported, that there be of them in India, three foot long: where the people of the countrey use their legs and thighes for sawes, when they be throughly dried. These Locusts come by their death another way, besides that above-named: for when the wind taketh them up by whole troupes together, they fall downe either into the sea, or some great standing pooles. And this many a time happeneth by meere chaunce and fortune; and not (as many have supposed in old time) because their wings are wet with the night dew. For even the same Authors have written, that they flie not in the night for cold. But little know they, that it is ordinarie with them to passe over wide and broad seas, and to continue their flight many daies together without rest. And the greater wonder is this, that they know also when a famine is toward: in regard whereof, they seeke for food into farre countres: in such sort, as their comming is ever holden for a plague of the gods, proceeding from their heavie wrath and displeasure. For then commonly they are bigger to be seene, than at other times: and in their flight they keepe such a noise with their wings, that men take them for some straunge foules. They shade and darken the very Sunne as they flie, like unto a great clowd: insomuch, as the people of every country behold them with much feare, least they should light in their territorie, and over-spread the whole countrey. And verily their strength is such, that they hold out still in their flight: and as if they had not enough of it to have flowne over seas, they give not over to traverse mightie great countries in the continent. And looke in what place soever they settle, they cover whole fields of corne with a fearfull and terrible clowd: much they burn with their very blast, and no part is free but they eat and gnaw even the very dores of mens dwelling houses. Many a time they have been knowne to rake

their flight out of Affricke, and with whole armies to infest Italie: many a time have the people of Rome, fearing a great famine and scarcitie toward, beene forced to have recourse unto *Sibyls* bookes for remedie, and to avert the ire of the gods. In the Cyrenaick region within Barbarie, ordained it is by law, every three yeares to wage warre against them, and so to conquer them: that is to say, first to seeke out their neasts, and to squash their egges; secondly, to kill all their young; and last of all, to proceed even to the greater ones, and utterly to destroy them: yea, and a grievous punishment lieth upon him that is negligent in this behalfe, as if hee were a traitour to his prince and country. Moreover, within the Island Lemnos there is a certaine proportion & measure set down, how many & what quantitie every man shall kill; and they are to exhibit unto the magistrate a just and true account therof, and namely to shew that measure full of dead Locusts. And for this purpose they make much of *Taies*, *Dawes*, and *Choughs*, whom they doe honour highly, because they flie opposite against the Locusts, and so destroy them. Moreover, in Syria they are forced to levie a warlike power of men against them, & to make riddance by that means. See in how many parts of the world this hurtfull and noisome vermine is disperfed and spread: and yet in Parthia they are taken for very good meat. The voice that they have (such as it is) seemeth to come from the hinder part of their head: for about that place where the jointure is of the shoulders to the nape of the necke, they are supposed to have certaine teeth, which by grating and grinding one against the other, doe yeeld a kind of crasping noise: and namely, about the time of both the *Æquinoctials*: like as the *Grashoppers* at midsummers Sunstead. Locusts engender after the manner of all other Insects which do engender: to wit, the female carieth the male: and she lying underneath, bendeth up the very end of her taile against the other: and thus they continue a good while ere they part asunder. To conclude, the males of all this kind be lesse than the females.

CHAP. XXX.

Of the ordinarie *Pishires* of our country in Italie.

Most part of Insects do breed a grub or litle worme. For even the very Ant in the Spring time doth bring forth such wormes like egges. These filie creatures labour and travell in common, as the Bees doe: this onely is the difference, that Bees doe make their owne meat; whereas these store up only their food and provision. As touching their strength, if a man would compare the burdens that they carie, with their own bodies, he will find and confesse, that there is not a creature againe in the world, for that proportion, stronger. And how doe they carie them? even with their very mouths. Howbeit, if they meet with any greater load than they can bite betweene their chawes, then they set their shoulders to it, and with their hinder legs also make meanes to drive it forward. They have among them a certain forme of Commonwealth: they remember: they are not without care and fore-cast. Looke what seeds or graines they do lay up for provision, sure they will be to gnaw it first, for feare they should sprout and take root againe and so grow out of the earth. If a corne or seed be too big for their carriage, they divide it into peeces, that they may goe with it more easily into their house. If their seeds within, chauce to take wet, they lay them abroad, and so drie them. They give not over worke by night, when the Moone is at the full: but when she is in the change, they rest and play them. When they are at worke, how painefull are they? how busie, how industrious? And for as much as they make their purveiance in diverse places, and bring from all parts, without knowledge one of the other: they keepe among them certain market daies, for a mutuall interview and conference together. And verily, it is a world to see, how then they will assemble; what running, what greeting, what entercourse and communication there is betweene them, whiles they are inquisitive, as they meet one with another, What newes abroad: even like marchants at a Burse. Their waifare is so ordinarie and continuall, that wee may see the very hard flint and pebble stones worne with their passage too and fro: wee may see (I say) a very path-way made where they use to goe about their worke: whereby, let no man doubt of what force and power continuall use is, of any thing whatsoever, be it never so litle. Of all living creatures, they onely and men, doe enterre and burie their dead among them. To conclude, throughout all Sicilie a man shall not see a flying Ant.

A

CHAP. XXXI.

¶ Of Indian Pismires.

IN the temple of *Hercules* at *Erythræ*, there were to be seene the hornes of a certaine Indian Ant, which were there set up and fastened for a wonder to posteritie. In the countrey of the Northerne Indians named *Dardæ*, the Ants doe cast up gold above ground from out of the holes and mines within the earth: these are in colour like to cats, and as big as the *wolves of ^{Or Foxes.} *Ægypt*. This gold before said which they worke up in the winter time, the Indians do steale from them in the extreame heat of Summer, waiting their opportunitie, when the Pismires lie close within their caves under the ground, from the parching Sun: yet not without great daunger. For if they happen to wind them and catch their sent, out they goe, and follow after them in great hast: and with such furie they flye upon them, that oftentimes they teare them in peeces; let them make way as fast as they can upon their most swift Camels, yet they are not able to save them. So fleet of pace, so fierce of courage are they, to recover gold that they love so well.

B

CHAP. XXXII.

¶ The diverse generation of some Insects.

MAny Insects there be that breed after another sort, than the former above specified: and principally of dew, which setleth upon the Radish leafe in the beginning of Spring. For being made thicke, and hardened with the heat of the Sunne, it groweth to the bignesse of the graine of Millet. From it ariseth a little grub, and three daies after it becommeth a kind of canker-worme: and so in processe and tract of time it groweth bigger without mooving at all, and gathered an hard huske or case about her: onely if a man touch the webbie panicles, wherein the said worme lieth enwrapped, it will seeme to stir. This is called *Chrysalis*: and after some time, when the keex or huske is broken, he proveth a faire flying butter-flie.

C

CHAP. XXXIII.

¶ Of Insects that breed in wood, and of wood.

Semblably, there be some Insects engendred of raine drops standing upon the earth; and others also in wood. For not onely the ordinarie wood-wormes breed in timber, but also certaine Brees and Horse-flies come of it, yea, and other such like, whensoever the wood is dotted with overmuch moisture. Like as within one of our bodies there have been found broad wormes, of thirtie foot in length, yea, and sometimes with the vantage. Also there have ben seen in dead carions many wormes: and the very flesh of men whiles they be alive, is apt to breed such vermine: and so is the haire of the head to harbour lice; of which filthie and lothsome creatures, both *Sylla* the Dictatour, and also *Alcman* (one of the most renowned Greeke Poets) perished. Moreover, birds are much infested and troubled therewith. And as for Feasants, they will die therof, unlessse they bestrew themselves with dust. Of such beasts as carie haire, it is verily thought that the Assie alone and Sheepe are free from this kind of vermine. Some kind of cloth likewise is apt to engender lice, & especially those which are made of wooll, that Sheepe bare which were worried of *Wolves*. Over and besides, I find in some writers, That there is some water will engender this vermine, if we doe but wash therein. For even in waxe there will breed mites, but such are thought to be of all creatures that have life, the very least. Also, ye shall have others again engender of filthie drie dust, namely, fleas, which use to skip and hop with their hinder feet lustily like these tumblers and yautours. Last of all, there be that come of a certaine moist powder in cranies of the ground, and those be our ordinarie little flies.

E

CHAP. XXXIIII.

¶ Of one kind of creature that hath no passage to void excrements.

THere is a creature as foule and illfavoured as the rest, which hath evermore the head fast sticking within the skin of a beast, and so by sucking of bloud liveth, and swelleth withall. The only living creature of all other that hath no way at all to rid excrements out of the

F

bodie: by reason whereof, when it is too full, the skin doth cracke and burst, and so his very food is cause of his owne death. In Horses, Affes, and Mules, these doe never breed. In Kine and Oxen they be common: and otherwhiles in dogs, who are pestered not onely with these tickes, but also with all other vermine abovenamed. And in Sheepe and Goats a man shall find none other but tickes. It is as strange a thing also to see, how the horseleeches which be nourished in standing waters of fennes, are thirstie after blood. For these will thrust their whole head into the flesh for to draw and sucke out blood. Finally, there is a kind of flies that plagueth dogges, and none els: they are busie commonly about their eares, where they will bite & sting them shrewdly; for there they cannot come by them with their teeth to snap and kill them.

CHAP. XXXV.

Of Moths and Gnats.

Wool and cloth when they be dustie breed moths, especially if a Spider also be gotten within them. For the Spider is very thirstie, and by reason that he drinketh up all the moisture of the cloth or wooll, he increaseth the driness much more. In paper also they will engender. A kind of them there is that carie their coats and cases with them, as Cockles and Snailles doe: but they have feet to be seen. If they be turned out of their coats or husks, they presently die. If they grow still, they will proove to be Chrysalides. The wild fig-tree doth breed certaine Gnats called Ficarij. As for the Cantharides or French greene flies, they be bred of little wormes in Fig-trees, Peare-trees, wild Pines or Pitch-trees, the Eglantine brier, and Roses: A venomous vermine this is, howbeit, medicinable in some sort. The wings be they that are good in Physicke: cast them away, and the rest is deadly. Moreover, there be other Gnats, that foure things will engender. And no marvell, seeing that there be some wormes found in snow, & those are white, if the snow be but thin and new fallen. But in case it have lien long, and be deepe, a man shall find in the mids within, those that are red, (for snow also if it be old, waxeth red) rough and hairie, greater also than the rest, and dull of motion.

CHAP. XXXVI.

Of the fire-flie, called *Pyralis* or *Pyrausta*.

The fire also, a contrarie element to generation, is not without some living creatures engendered therein. For in Cypres, among the forges and furnaces of copper, there is to be seen a certaine foure-footed creature, and yet winged, (as big as the greater kind of flies) to flie out of the very middest of the fire: and called it is of some *Pyralis*, of others *Pyrausta*. The nature of it is this: So long as it remaineth in the fire, it liveth: but if it chauce to leape forth of the furnace, and to flie any thing far into the aire, it dieth. There is a river in the kingdome of Pontus called *Hypanis*, which about the Summer Sunnestead, useth to bring downe the streame certain thin pellicles or bladders like unto grape kernils: out of which there breaketh forth and issueth a foure-footed flie, like unto those abovenamed: and it liveth not above one day, whereupon it is called *Hemerobion*, [*i. a day-flie.*] All other Insects of like sort, may continue and live a seven-night. The Gnat and the little wormes, three weekes: but such as bring forth their young alive, may endure a full month. As for the Metamorphosis of these creatures from one forme to another, it is most commonly performed in three daies, or foure at the most. All the rest of the winged kind, lightly die in Autumne: among which, the Brees and Horse-flies are ordinarily blind first. To be short, those flies which have been drowned, and so come to their death, if they be laid and kept in hote cinders or ashes, will come againe to themselves, and revive.

CHAP. XXXVII.

A discourse Anatomically, of the nature of living creatures, part by part, according to their particular members.

The head.

It remaineth now to treat of the severall parts of the bodie, and over and above the former description, to particularize and set downe the storie of one member after another. First therefore, this is generall, that all living creatures whatsoever having blood, have also heads. And few

A few of them have cops or crested tufts upon their heads, unlesse it be birds, and those are of diverse formes & fashions. The Phoenix is adorned with a round plume of feathers, out of the mids of which there groweth another little pennache. Peacockes carie upon their heads a tuft (as it were) of little hairie trees: and the Stymphalides, a locke of crisped and curled haire. Pheasants have feathers standing up like hornes. The pretie Titmouse or Nonett is filleted or coised upon the head: and in lieu thereof, the Larke hath a little peruke of feathers, and thereupon at first it was called Galerita, but afterwards after the French word Alanda, and of it one of the Romane Legions tooke the name, because of their pointed morions. Wee have written alreadie of the Ginnie or Turkie Cocks and Hens, upon whom Nature hath bestowed a folding crest, lying from the very bill, over the middest of the head, unto the nape of the necke. She hath given likewise unto all the sort of Seawewes, Fen-ducks, and Moore-hens, certain cops and crisped tufts: to the Woodpeck also and Baleare Crane. But above all others, the house dunghill Cocks carie upon their heads the goodliest ornament of their comb, and the same consisting of a massie and fleshie substance, ended besides like a saw. And yet we may not properly say it is either flesh, gristle, or callositie, but composed of some particular matter by it selfe, which cannot well be named. As for the crests of Dragons, I could meet with no man hitherto that ever saw them.

Crests, Tufts, and Combes.

To come now to Hornes, there be many fishes (as well of the sea as fresh waters) and also Serpents, that have hornes in divers and sundrie sorts. But to speake a truth and properly, they be no hornes indeed, for those pertaine onely to four-footed beasts. As for *Atheon* and *Cippus*, of whom we read in our Latine historie, that they had hornes, I take them to be meere fables, and no better. Certes, in nothing more hath Nature taken her pleasure than in this: as if shee had meant to sport and make her selfe merrie in these armes and weapons of beasts. For in some shee hath made them knagged and branched, as in Deere, both red and fallow; in others, plaine and uniforme, without tines, as in the Spitters, a kind of Stag, which thereupon bee called Subulones in Latine, for that their hornes be like a shomakers *Nall blade. There be againe which have broad

Hornes.

Subula.

D Bulls hornes be streight and upright, readie alwaies to doe a mischeefe. The females of this kind, to wit, Cowes, are horned as well as Bulls: whereas in many others, the males only be in that wise armed. The wild Goats called Roch-goats have their hornes turning backward, whereas in fallow Deere they bend rather forward. There is a kind of Roe Bucke, called in Affricke Addace, which the Greekes have named *Strepsiceros*, and they have upright hornes: but they are furrowed and wreathed round about, as if they were ribbed like the backe of a Lute; or rather chamfered like the ridge of a land, and alwaies sharpe pointed with a tip. Ye shall have droves and herds of beasts, namely, Kine and Oxen in Phrygia, which will stir and wag their hornes like eares. And those in the kingdome of the Troglodites, carie their hornes pendant directly to the ground, which is the cause, that as they eat, they are forced to beare their neckes awrie, and looke at one side. Some have but one horne apeece, and that either in the mids of the forehead, as the Oryx; or else in the nose, and muffle, as the Rhinoceros, wherof we have written before. In summe, there be that have strong and hard hornes to butt with: others to strike and gore withall: some crooking forward, others bending backward. In some, they are good onely to tosse and sling, and that in diverse manners. For there be of them that give backe, others turne one against another, and some even joine and meet together: but all run up sharpe pointed in the end. A kind of beasts there is, that use their hornes in stead of hands, to scratch their bodies when it itcheth: & others serve their turne to found the way before them, as certain shell-Snailes and Winkles. And these hornes given for this purpose, are some of them of a fleshie substance, as those of the Serpents called *Cerastæ*: and otherwhiles one alone without a fellow. As for the Periwinkles and Snailes aforesaid, they are never without twaine a peece; and at this passe they have them, to put out and draw in as they list. In Buffles hornes, the barbarous people of the North parts use to drinke: and yee shall have the hornes of one Buffle head to hold full two measures, called *Vrnæ*, which is about eight gallons. In some countries men head their speares and javelines with horne. With us in Italie they be cut into thin plates, and serve for lanternes: and surely they are so transparent and

cleare,

cleare, that they make the candle (within enclosed) to cast the greater light, and farther off. Nay, **G** they are good for many other toies of delight and pleasure: inso much, as some paint & die them with sundrie colours, others varnish and anneile them: and yee shall have men to make thereof their fine inlaid workes in Marquettrie of diuers colours, called therupon Cerostrata. All hornes in manner be hollow, save that as they grow toward the pointed tip, they bee solide and massie: onely Deeres both red and fallow, are found and entier throughout: and every yeare they fall off. Husbandmen in the countrey, when they see their Oxe hooves surbatted and worne too neere the quicke with overmuch travell, annoint their hornes with sweet grease, and that is the way to make them grow againe. And in very truth the hornes of these beasts are of so pliable a substance, and easie to be wrought, that as they grow upon their heads, even whiles the beasts are living, they may with boiling waxe bee bended and turned every way as a man will: yea, and if they bee cut **H** when they breake new forth out of the skin, they may be easly writhed to grow severed in sundry parts, so as every head may seeme to have foure hornes. For the most part, the hornes of Cowes are more tender and thinner than the other: like as wee see it is in the females of smaller beasts. Ewes have none at all: ne yet Hinds and Does: no more than the beasts that have feet cloven and devided into many toes: or those that be whole hoofed, except the Indian Ass, who is armed with one horne and no more. Beasts cloven footed in twaine, have likewise two hornes: but none at all have they which are toothed in the upper mandible. They that make this reason, Because the matter of their teeth runneth all into the horne, and so contrariwise; are deceived, and soone convinced by this, That Hinds and Does are toothed no more than Stags and Bucks, and yet are not horned. In other beasts the hornes grow to the very bone of the head, in Deere onely they **I** come out of the skin, and are grassed no deeper. Fishes of all living creatures have the biggest heads, for the proportion of their bodies: haply, because they might the better dive under water and sinke to the bottome. No kind of Oysters have any head at all: no more than Spunges, or any other in manner, which want all their fences but onely feeling. Some have heads indeed, but within their bodie, and not devided apart from it, as Crabs and Creifishes.

*With us it is
otherwise.

Haire.

Mankind of all living creatures hath most haire on the head, even men as much as women: as we may see in those countries, where they never cut their haire, but let it grow. And namely in Savoy, Dauphine, and Languedoc about the Alpes, where men and women both weare long haire: and thereupon a part of France is called Comata. And yet this is not so generall, but that the nature of some land and soile, may make some alteration and varietie. For the Myconians naturally have no haire at all: like as the Camians be all subject to the disease of hard and swelling Spleenes, even from their mothers wombe. Some reasonlesse creatures likewise are by nature bald, as Ostriches, and certaine *water Ravens, which of the Greekes are named thereupon Phalacro-coraces. Seldome doe women shed their haire cleane, and become bald: but never was there any guelded man knowne to be bald: nor any others that be pure virgins, and have not sacrificed unto *Venus*. The haire growing beneath the ventricles of the brain, and under the crown of the head, like as also about the temples and eares, falleth not off quite. Man alone of all creatures, groweth to be bald: I speak not of those that are so by nature. Men, women, and horses, wax gray haired: men and women both, begin at the fore-part of their heads to be grislic, and afterwards behind. Men and women alone are double crowned.

*Or rather Al-
pinc.

Braine-pan.

Some creatures have the bones of their skull flat, plaine, thin, and without marrow: and the same united and joined together by certaine sutures or seames endented and toothed on either sides, which run one into another. The ruptures and crackes of the braine-pan cannot be consolidated and fauded perfectly againe: But if the spils and peeces be gently taken forth, and but small, there is no daunger of death: for in their place there will grow a certaine callous cicatrice, or fleshie substance, that will supplie in some sort that defect. Beares of all others have the tenderest skulls; and Parrots, the hardest; as we have said before in place convenient.

Braines.

Moreover, all living creatures which have blood, have likewise brains: yea, and those in the sea which we call Soft-fishes, although they have no blood at all, as namely, the Pour-cuttles or Polypes. But man, for his bignesse and proportion hath the most braine of all other: and the same is the moifest and coldest part that he hath within his bodie. Enfolded it is within two tunicles or kels, both above and beneath: whereof, if the one bee peirced and wounded, [to wit, *Pia mater*] there is no way but present death. Also, men commonly have more brains than women. And both of them have neither blood nor veines therein: as for that, which is in other creatures, it wanteth

M

A wanteth all kind of fat. The learned Anatomists, who have searched deeply into the nature of things, doe teach us a difference betweene the braine and marow of bones: for, brains in the boiling and seething, waxe hard. In the middest of the braine of all creatures there be certaine little *bones. Man alone in his infancie hath his braine to pant and beat: and fully settled it is not, nor confirmed, before that he begins to speake. Of all parts necessarie for life, it is placed highest, and next unto the cope of head and heaven both: without flesh, without bloud, without filth and ordure. And in truth, it is the fort and castle of all the fences: unto it all the veines from the heart doe tend: in it they all doe likewise end. It is the very highest keepe, watch-tower, and sentinell of the mind: it is the helme and rudder of intelligence and understanding. Moreover, in all creatures it lieth forward in the front of the head: and good reason, because all our fences bend that way jult before our faces. From our braine comes sleepe, from thence proceedeth our naps, our nods, our reeling, and staggering. And looke what creature so ever wanteth braine, the same sleepeth not. Stags (by report) have within their heads twentie little wormes, to wit, in the concavities under their tongue, and about that jointure where the head is grafted to the chin-bone.

* *Officula*, some read *Officula*, holes.

Man alone hath not the power to shake his Eares. Of flaggie, long, and hanging eares, came the surnames first of the *Flacci* (families, and houses in Rome.) There is no one part of the bodie costeth our dames more than this, by reason of their precious stones and pendant pearles thereat. In the East countries, men also as well as women, thinke it a great grace and braverie to weare earrings of gold. As touching their proportion, some creatures naturally have bigger or lesser than others. Deere onely, the fallow as well as the red, have them slit and as it were divided. In Rats and Mice they be hairie. To conclude, no creature hath ears but those that bring forth their young alive: and none of them are without, save onely Seales, Dolphins, Vipers, and such fishes as wee called Cartilagineous and gristly. And these all in stead of eares, have certaine holes or conduits, except the foresaid gristly fishes, and the Dolphins: and yet manifest it is, that they do heare well ynough. For delighted they be with musicke: and upon some great noise and suddain cracke they are astonished, and then easly taken. But marvell it is how they should heare as they doe: neither can I comprehend the reason and meanes thereof, no more than I am able to shew how they doe smell: for no Organes and Instruments have they thereof to be seene, & yet there is not an hound upon the land senteth better, nor hath a finer nose than they. Of all foules, the Like-owle and the Otus alone, have feathers like eares: the rest have only holes to heare by. And after the same manner skaled fishes and serpents. In Horses, Mules, and Asses, and all such as serve either packe or saddle, the eares are tokens of their courage more or lesse, and will shew what stomacke is within them. If they be tired and wearie, they hang downe flaggie: bee they afraid, you shall perceive them to wag too and fro: in heat of furie, they stand pucking up: in sicknesse they lie downe.

Eares.

Man onely of all creatures hath a Face and Visage: the rest have either musles and snouts, or else bills and beakes. *Face or Visage.*

Other creatures have Foreheads also as well as men: but in mans alone we may see and read sorrow and heavinesse, mirth and joy, clemencie and mildnesse, crueltie and severitie; and in one word, guesse by it, whether one be of a good nature or no? *Forehead.*

In the ascent or rising of the forehead, man hath Eie-brows set, like unto the eaves of an house; which he can moove as hee list, either both at ones, or one after another: and in them is shewed part of the mind within. By them we denie, by them we graunt. These shew most of all others, pride and arrogancie. Well may it be that pride doth appeare and settle in some other part, yet here is the seat & place of residence. True it is, that in the heart it beginneth, but hither it mounteth and ascendeth, here it resteth and remaineth. No part can it find in the whole bodie more eminent and hautie, and withall more steepe than the browes, wherein it might rule and raigne alone without controulment. *Eie-browes.*

Next under the browes is the Eie, the most precious member of the whole bodie, which by the use of light maketh difference betweene life and death. Yet hath not Nature given eies to all creatures: Oysters have none: and for some other shell-fishes, it is hard to say whether they have any or none. As for Scallops, if a man stir his fingers against them as they lie gaping open, they will shut, as if they saw. And the shell-fishes called Solenes, give backe if any edge-toole come neare unto them. Of foure-footed creatures, Moldwarpes see not at all: a certaine shew and forme *The Eie.*

forme

forme they have of eies to be seene, if a man take off the skin that lieth over the place. Moreover among foules of the air, those of the Herons kind, which are called Leuci, for that they be white, want (by report) one eie: And for certaine, in case of Augurie, if these birds stie either into the South or North, it is holden for an excellent good presage, for they assure men that perill is past and promise securitie. *Nigidius* affirmeth, That neither Locusts nor yet Grasshoppers have eies. As for Snailes and such like, the two little hornes that they put forth, serve them in stead of eies, as they found or trie the way before them. The earth-mads and all the sort of wormes and grubs, ate without eies. Men alone of all living creatures have eies of divers colours, some of one, and some of another. For all other creatures of one and the same kind, are eied alike. Howbeit, some horses there be that extraordinarily have *red eies. But in men it is hard to set downe the infinite varietie and difference in them: for some have great glaring eies: others againe as little and as pinking. Others also there be that have them of a moderate and reasonable bignesse. Some be goggle-eied, as if they would start out of their heads, and those are supposed to be dim-sighted: others be hollow eied, and they are thought to have the best and clearest sight: like as they who for colour have Goats eien. Moreover, ye shall have some men, who can discern a far off: others againe that see not but neere at hand. Many there are, whose eie sight dependeth of the Sunnes light: for let the day be overcast and cloudie, or the Sun gone downe, they see just nothing. And others contrariwise there be, that al the day time have but a bad sight: yet in the night season, they see better than any others. As concerning two bals or apples in one eie, as also who they be that can bewitch and hurt folke with their very eie, sufficient hath been said already. *Gray eies commonly in the darke see more cleare than others. It is reported of *Tiberius Caesar* the Emperour to have had this propertie by himselfe, that if he were awakened in the night, for a while he could see every thing as well as in the cleare day light; but soone after, by little and little, the darknesse would overcast and shadow all againe: a gift that no man in the world was ever knowne to have but himselfe. *Augustus Caesar* of famous memorie, had *red eies like to some horses: and indeed wall-eied he was, for the white thereof was much bigger than in other men: which also was the cause, that if a man looked earnestly upon him, and beheld them wistly (and a man could not anger him worse) he would be displeas'd, & highly offend'd. *Claudius Caesar* had a fleshie substance about the corners of his eies, that tooke up a good part of the white, and many times they were very red and bloudshotten. *C. Caligula* the Emperour, his eies were ever set in his head, and stiffe againe. *Nero* had a very short sight; for unless he winked (as it were) and looked narrow with his eies, he could not well see ought, were it never so neare. Twentie couple of professed maisters of fence and sword-plaiers there were in the fense-schoole, that *C. Caligula* the Emperour maintained: & among the rest, two there were & no more, whom a man could not make to wink, or once to twinckle with their eies: present before them what weapon he would, or make offer to strike, so steadie and firme were they: and therefore they evermore carried the prize, and were invincible. So hard a matter is it for a man to keepe his eies from twiring. And many men naturally cannot chuse but be evermore winking and twinckling with their eies: but such are holden for fearefull and timorous persons. None have their eies all of one colour: for the ball or apple in the middle is ordinarily of another colour than the white about it. Neither in any one part of the bodie are more signes and tokens to be gathered of the affection and disposition of the heart, than in the Eie: of man especially above all other creatures. By it we may know whether one bee modest, staid, sober, gentle, mild, pittifull, or no. It sheweth mallice, hatred, love, heavinesse, sorrow, and joy. In the cast also of the Eie there is as much varietie: for some have a furious, cruell, terrible, fierce, sterne, and frie looke: others shew gravitie and constancie in their Eie. Some have an overthwart regard with them, others looke askew and awrie. One while a man lookes atone-side, and hath a wanton sheepes eie: another while he casteth his eie downe, and looks heavily: and when hee list againe, he can give one a pleasant and merrie looke. In breefe, the Eies are the verie seat and habitation of the mind and affection. For one while they bee ardent and fierie: otherwhiles they bee bent and fixed upon a thing: one time they twincke, another time they winke close and see nothing. From them proceed the teares of compassion: when we kisse the eie, wee thinke that wee touch the very heart and soule. From hence commeth our weeping: from hence gush out those streames of water that drench and run downe the cheekes. But what might this water and humour bee, that in hearts greese issueth in such plentie, and is so readie to flow? where may it lie at other times, when wee are in joy, in mirth, and repose? It cannot

- A** cannot bee denied, That with the Soule we imagine, with the Mind we see, and the Eies as vessels and instruments receiving from it that visuall power and facultie, send it soon after abroad. Here-upon it commeth, that a deepe and intentive cogitation blindeth a man so, that hee seeth not; namely, when the sight is retired farre inward. Thus it is, that in the Epilepsie or Falling-sicknes, the eies are open and yet see nothing: for why? the mind within is darkened. Moreover, Hares have this qualitie, to sleepe open eyed; and so doe many men besides them: and this the Greeks doe expresse by the tearme *κορυβασιτιαν*. Nature hath framed and compounded the Eie, of many thin membranes or skins. As for those tunicles withoutforth, they are tough and hard * like ^{* κρησταυριδιαις} horne, to withstand the injuries of heat and cold: and those shee hath ordained eftsfoones to be cleansed and purified with the moisture of teares, to the end that they should be slipperie and mooveable, for to turne quickly and to shift from all that may offend. As for the middle part and membrane of the Eie, shee hath set it in a ball, like a window made of transparent horne [or rather ^{καρπειδιαις} of a grape:] the litle compasse whereof containeth all the sight of the Eye, and suffereth it not to wander and roll here and there, but directeth it as it were within a certaine pipe or small conduit: by which meanes also (to note by the way) the apple being gathered into so narrow a circle, doth easily avoid all inconveniences that are incident unto it, for to annoy the same. This ball and point of the sight is compassed also round about with other circles of sundry colours, black, blewish, tawnie, russet, and red; to the end that by this medley and temperate mixture of colors environed with the white besides, the light might be let in and represented to the Opticke-sinew: and also by a temperate reverberation and bearing backe from those other colours, it should not dazle or offend the eye with the exceeding brightnesse therof. In summe, this mirror or glasse-window, is so perfect and so artificially contrived, that as little as the ball of the sight is, a man may see himselfe full and whole in it. And this is the cause that many foules, from a mans fist are ready to pecke at the eyes above all other parts, for that they would gladly sort and draw unto their owne representation and image, which they see in the eies, as unto that which they naturally affect. Certain sumpter-horses and mules, and such like beasts of carriage onely, are troubled with sore eyes, and diseased that way at every chaunge and encrease of the moon. But man alone, in the catarrhact and suffusion of the Eie, by voiding from it a certain humor which troubled the sight, doth recover and see againe. There have been many known blind twentie years and more, and yet afterwards enjoyed the benefit of their eies. Some have been borne blind, without any fault or defect of their eies. Divers men likewise have sodainly lost their sight by some secret accident, and no outward offence knowne to give occasion thereof. Many right skilfull masters in Chirurgerie, and the best learned Anatomists, are of opinion, That the veines of the eies reach to the braine. For mine owne part, I would rather thinke, that they passe into the stomacke. This is certain, I never knew a mans Eie pluckt out of his head, but he fell to vomiting upon it, & the stomack cast up all within it. We that be citizens of Rome, have a sacred and solemne manner and use among us, To close up their Eies that lie dying, and are giving up the ghost; and when they be brought to the funerall fire, to open them againe. The reason of this ceremonious custome, is grounded hereupon, That as it is not meet for men alive to have the last view of a mans Eie in his death, so it is as great an offence to hide them from heaven, unto which this honour is due, & the body now presented. Man alone is subject to the distortion & depraved motion of his Eies. Hereof are come the surnames of certaine families in Rome, *Strabones* and *Pati*: for that the first of those houses were squint-eyed, and had rolling eies. Those that were borne blinke but with one eye, our countrymen called *Coelites*: as also them that were pinke-eyed and had verie small eies, they tearmed *Ocelle*. As for such as came by those infirmities by some injurie or mischaunce, they were surnamed *Lucini*. Moreover, we see that those creatures which ordinarily do see by night (as Cats doe) have such ardent and fierie eyes, that a man cannot endure to looke full upon them. The eyes also of the Roe-bucke and the Wolfe are so bright, that they shine againe, and cast a light from them. The Sea-calves or Seales, and the Hyenes, alter eftsfoons their eies into a thousand colours. Over and besides, the eies of many fishes doe glitter in the night, when they be drie: like as the putrified and rotten wood of some old trunke of an oke or other wood. We have said before, that those winke not nor shut their eie-lids, who cannot roll their eies at one side, but are faine to turne their whole head withall when they would see a thing that is not just before them. The Chamæleons (by report) roll their eies all whole every way as they list, up and downe, too and fro. Crabs looke awrie. And yet such fishes as are enclosed within a brittle

brittle and tender shell, have their eyes inflexible and stiffe. Lobsters and Stirimpes for the most part, have their eyes standing out verie hard, albeit they be covered with the like shells. Those that have hard eyes, are not so well sighted as those that have moift. It is commonly said, that if a man plucke the eyes out of the heads of young serpents, or young Swallowes, they will have new againe in their place. All Insects and other creatures that lie within hard shells, stirre their eyes as four-footed beasts doe their eares: but in those that have tender shells, their eyes be hard. And all such, as also fishes and Insects, have no lids to their eyes, and therefore cover them not. But there be none without a thin membrane or pellicle over them, which is cleare and transparent like glasse.

Eye-lids.

Men and women have haire growing on the brims of both Eye-lids: but women doe colour them every day with an ordinarie painting that they have: so curious are our dames and would so faine be faire and beautifull, that forsooth they must die their eyes also. Nature ywis gave them these hairy eyelids for another end, namely, for a palaisade as it were and rampier of defence for the sight, yea and to stand out like a bulwarke for to keepe off and put by all little creatures that might come against the eyes, or what things soever els should chauce to fall into them. Some write, That the haire of the eyelids will shed and fall away, but not without some great injurie, and namely, in such persons as be overmuch given to leacherie. No other living creatures have these haire, but such as otherwise be clad all over their bodies with haire or feathers. But, as foure-footed beasts have them in the upper lid onely, so Fowles have none but in the nether: like as those serpents which are tender skinned and are foure-footed, as Lizards. The Ostrich is the only foule which hath haire on the upper eye-lid. The Ape hath on them both as well as man. Moreover, all fowles have not eye-lids, and therefore such doe not winke, namely, those that bring forth living creatures. The greater and heavier fowles, when they would close their eyes, do it with drawing up the nether lid. The same also twinkle by means of a pellicle or skin coming from the corners of their eyes. Doves and such like birds winke with both eye-lids: but foure-footed beasts that lay eggs, as Tortoises and Crocodiles, use the nether lid onely, without any twinkling at all, because their eyes be very hard. The utmost compasse or edge of haire in the upper lid, the Latines called in old time *Gilium*, and thereof came the name of the browes, to be *Supercilium* in Latine. This brim of the eye-lid, if it be divided by any wound, cannot be drawne together againe: like as some few parts besides of mans bodie.

Balls of Cheeks

Vnder the eyes, are the balls of the Cheeks, which men and women only have; which in old time they called *Gene* in Latin. And by the law of the twelve Tables, women were expressly forbidden not to teare, rent, or scratch them in any case with their nailles. This is the seat of bashfulness and modestie: heare appeareth most of all the rednesse of blushing. Vnder them, are the hollow pits of the cheekes, wherein mirth and laughter doe lodge and inhabit.

Nose-trills.

Man only hath his Nose standing forth aloft, which now adaies they dedicate to flie scoffing and derision, insomuch as they attribute that tearme to dry mockers and flowers. And verily there is not a creature besides, that hath his nostrills so bearing out. [As for birds, serpents, and fishes, they have holes only to smell at, without any other nostrills to be seen.] And hereof come the surnames of *Simones* and *Silones*, whereof the former have flat noses, the other are hooked and camoise nosed upward. Infants have been known many times when they are seven moneths old, to want the holes and passages both of nose and eares.

Lips.

Then follow the Lips: some men there be that put them far out, by reason that they are gag-toothed or rut-mouthed, and those are called *Brocci*. Others againe who are blabber-lipped, are named in Latine *Labcones*.

Mouth.

As for the Mouth, all creatures have it that bring forth their young alive: and either it is gentle and pliable, or els hard and unruly; as we see hories, that either willingly receive, or else refuse the bit. By which also we give to men, the tearme either of modest and good countenance, or els of shamelesse and untoward. But instead of mouth and lips both, Nature hath given to all fowles sharpe Bills of an hornie substance: and as many of them as live upon ravin and prey, have them hooked inward: but such as gather and pecke onely, they have straight beakes. As for those that either graze, root, or pudder in mud, like to swine, they are broad and flat billed. As for horses, mules, and such like, they use their mouthes in stead of hands, to gather in their food as they either feed in pasture, or be at racke and manger. And the wider mouthes have they that live of killing and devouring other beasts.

Bills.

A No creatures living, but man and woman, have Chins and lawes. The river Crocodile alone mooveth the upper chaw: the land Crocodiles chew as other creatures doe, but only bias. Chin & Law.

Of Teeth, there be three sorts: for either they be framed like sawes, or else set flat, even, and levell: or last of all, stand gabbing out of the mouth. The saw teeth run one betweene another, as if two combs grew together, because they should not weare if they met one with another, as we see in serpents, fishes, and dogs. Horses and men have their teeth of one even levell: The Bore, the water-Horse, and the Elephants, have their tuskes and fangs sticking forth. Of those teeth which are smooth and meet just one against another; such as divide and cut the meat, bee broad edged, as the fore-teeth: those that grind and chew, be double, and stand within the chaw: but such as sever and part the meat in the mouth, be sharpe pointed: and we call them our eye-teeth; Teeth.

B the Latines, *Caninos*, or Dog-teeth, And these are they, that of saw-teeth be the longest. Even and levell-raunged teeth, be either in both chawes alike, as in an horse; or els they be wanting before in the upper chaw, as in Kine, Bulls, Oxen, Sheep, and all such as chew cud. Goats have none above but the two foreteeth. None have gabbed tusks standing forth of the mouth, whose teeth are fashioned like a saw. The females of them that have those fangs and tuskes, if haply they have the like (for seldome they are seene with such) make no offensive use of them at all: for whereas the Bores doe strike with them, the Soves only doe but bite. No horned beast hath such tuskes: But all those have hollow teeth, whereas in all the rest, they be sound and solid. All fishes be toothed like sawes, save only the Guilt-head Scarus; for this only of all creatures living within the water, hath an even course of teeth. Furthermore, many fishes bee found to have their mouth, yea and their tongue, covered and beset all over with teeth: to the end, that by the meanes of many wounds (as it were) they might make soft their meat, which otherwise they could not possibly chew and teare. In many the teeth stand in the pallat and rouse of their mouth, yea and in their very taile. Moreover, some there be that have them crooking inwardly to the mouth, that the meat might not fall out againe: as having no other meanes to hold it in. Also, the Aspides and Serpents are likewise toothed, but they have above, both on the right side and the left, two teeth that be very long, and those are hollowed within after the manner of small pipes, like to the stings of Scorpions, by which they discharge their poison. The best writers who have searched most curiously into the secrets of Nature, doe hold, That the venome of Serpents is nought else but their gall; and that by certaine veines under their ridge bone, the same passeth along to the mouth. Some say, that a Serpent hath but one venomous tooth; which because it is crooked, therefore he turneth and bendeth it upright when he would sting or bite withall. Others affirme, that at such a time the same falleth out, and a new cometh up againe and groweth in the place; for easie it is to be driven or shaken out: and we see some of them handled and carried in mens bosoms, without that tooth. It is said moreover, that the Scorpions have the like tooth in their taile, and most of them three together. Vipers teeth are covered and lie hidden within their gumbs. This serpent being full of poison, redoubleth her pricke, and at every bit letteth in poison into the wound. No flying foule hath teeth, save onely the Bat or winged-mouse. Of all creatures which beare no hornes, the Camell onely hath no foreteeth in the upper chaw. Such as be horned, have no saw-teeth. Snailles likewise have teeth: witnesse the leaves and tendrils of vines, which the very least of them all do gnaw and eat away. But for Sea-fishes, That those which live in shells, or be gristly, should have their foreteeth; and namely, that the sea-Vrchins five apeece; I cannot but wonder how men could come by the knowledge. Insects, in stead of teeth, have a sharpe prick to sting withall. Apes have teeth even as men. An Elephant hath foure teeth within to chew with, (besides those that stand out) which in the males turne and bend upward, but in the female they are streight, and shute directly downward. The fish also called *Musculus Marinus*, which goeth before the Whale or Whirlepoole as his guide, hath no teeth at all; but in stead thereof, his mouth all within, his tongue also and pallat, is rough againe with certaine bristles. The lesse foure-footed land-beasts, have the two fore-teeth of either side, longer than the rest. As for all other creatres, they bring their teeth with them into the world: man only is born without them, & at the seventh moneth they commonly breed. In all other creatures they continue still and stick fast; except men, Lions, Horses, Mules, Asses, Dogs, and such as chew cud, for these change their teeth: but Lions and Dogs cast onely the eye-teeth, called *Canini* in Latine. The eye-tooth of a Wolfe (so it grow on the right side of the head) is thought to doe strange matters. The great grinders which stand beyond the eye-teeth, in no creature whatsoever do fall

out of themselves. As for the farthest cheek-teeth in a mans head, which be called *Gennini*, [i. the Wit-teeth] they come about the time that hee is twentie yeeres old; and in many at fourescore yeeres of age. Sure it is, that those teeth fall from women in their old age, and soone after come againe: such women I meane, as had no children in their youth. And *Mutianus* hath reported, That he saw one *Zanclus* a citizen of Samothrace, who had new teeth comming up after he was an hundred yeeres old and foure. Moreover, males ordinarily have more teeth than the females: as we may see in mankind, Sheepe, Goats, and Swine. *Timarchus* the sonne of *Nicoles* the Paphian, had a double course of teeth in either jaw. He had a brother also who never cast his fore-teeth, and therefore he wore them before, to the very stumps. Wee read in Chronicles of one man that had a tooth growing out of the very pallat of his mouth. As for the eye-teeth, if they be lost by any mischaunce, there never grow againe any other for them. In Horses onely, of all other creatures, teeth waxe whiter by age: for in the rest, they turne to be browne and reddish. The age of Horses, Asses, and Mules, is known by a marke in the teeth: a horse hath in all, fortie. At the end of thirtie moneths, he loofeth his fore-teeth of either chaw, as well above as beneath: the yeere following as many, even those that be next, namely at what time as they put out those which be called the cheeke-teeth. At the beginning of the fifth yeere, he loofeth other two, but there come up new in the place in the sixth yeere. By the seventh yeere he hath all, as well those that should come in others place, as those which are firme and never chaunge. A guelding never casts his teeth, no not his sucking teeth, in case he were guelded before. Asses in like manner begin to shed their teeth at the thirtieth moneth of their age; and so forward from sixe moneths to sixe moneths: and if they sole not before they have shed their last teeth, they are for certein to be held barren. Kine and Oxen, when they be two yeeres old, doe chaunge their teeth. Hogs or swine never have any teeth to fall. Now when as these marks are gone out, which shew the age of Horses, Asses, and such like, ye must (to know their age) goe by the overgrowth and standing out of the teeth, the greynesse of the haire over their browes, and the hollow pits therabout: for then are they supposed to be sixteen yeeres of age. As touching men, some are thought to have venome and poison in their teeth: insomuch as if they be shewed bare and naked against a cleare mirror or looking glasse, they will dim the beaurie thereof, yea and kill young pigeons whiles they be calow and unplumed. But forasmuch as wee have spoken sufficiently of Teeth, in our treatise as touching the generation of Man, we will passe over the rest, and proceed unto other parts; save only that this is to be observed and noted, How children be sicke when they are about breeding of teeth. And to conclude, of all other creatures, those are most dangerous with their teeth, which have them framed like sawes, and closing one betweene another.

The Tongue.

Now as concerning Tongues, we observe much diversitie in them: for all creatures are not tongued alike. First and formost, Serpents have very thin tongues, and the same three-forked, blacke of colour, shaking, and readie to pierce; and if a man take them forth, very long. Lizards have tongues two-forked and full of haire: so have the Seales or Sea-calves a double tongue: but the tongues of these beforenamed, are as small as haire: as for the rest, their tongues serve them to lick their muzzles and lips all about. Fishes have their tongues for the greater part thereof, cleaving fast to their pallat; and in Crocodiles they are so, cleane throughout. But as well fishes as other creatures of the water, have a fleshie palat, which serveth them in stead of a tongue to tast withall. Lions, Libards, and all of that sort, yea and Cats, have their tongues rough and uneven, made like a file with many small edges lapping one over another: in such sort, as that with licking it will weare the skin of a man so thin, that their spittle and moisture when it cometh neare unto the bloud and the quicke, will drive oftentimes into rage and madnesse, those whome they so lick, yea although otherwise they be made tame and gentle to come to hand. As touching the tongues of Purple fishes, wee have written already. Frogs have their tongues in the forepart fast to the mouth: the hinder part within toward their throat, is free and at libertie, wherby they keep that croking which we hear at one season of the year; namely, when the males call unto the females for to engender; and then they be named *Olalygones*: for at that time they let downe their nether lip somewhat under the water, that they gargle with their tongue leuell to the water, which they received into their throat: and so while their tongue quavereth withall, they make that croking noise above said. He that would looke then advisedly upon them, should see their specks so swolne and stretched out full, that they will shine againe: hee should perceive their eyes ardent and fiery with paines that they take thus with the water. Those creatures that have

A have pricks and stings in their hin-parts, are furnished also with tongue and teeth. As for Bees, their tongue is very long; and the Grasshoppers put it forth a good way. They that have a fistulous sting or pricke in their mouth, are provided neither of teeth nor tongue. In some Insects, (as namely Pisinires) the tongue lieth close within. Elephants; above all other beasts, have a large and broad tongue. All creatures have their tongue loose and at libertie at all times, each one in their kind: man only is oftentimes so tongue-tied, that needfull it is to cut certain strings and veines for to ease it. *Metellus* the high priest and chiefe sacrificer at Rome, had such a stutting and stammering tongue (by report) that against he should dedicate the temple of the goddesse *Opifera*, he laboured so with his tongue for utterance, for certaine moneths together; and tooke such paines, as if he had been upon the racke. All children, by that time that they be seven yeeres old at the farthest, speake readily, so as they be not by some unnaturall cause empeached.

B But some men there be, which have their tongues so at commaundement, and so artificially they can handle it and their throat together, that they are able to counterfeit the singing of all birds, and the voice of any other creature, that one cannot know and discern them asunder. As touching Taſt, which is the judgement of meats and drinks, to wit, What smacke and tallage they have? all other living creatures find it at the tip of their tongue only: but man tasteth as well with the pallat or rouse of his mouth. The spongeous kernels, which in men be called Tonsillæ, or the Almands, are in Swine named the Glandules. That which betwixte them hangeth downe from the inmost part and rouse of the mouth, by the name of the *Vvula*, is to be found in man onely.

C Under it, there is a little tongue (which the Greekes call *Epiglottis*) at the root of the other: *The flap Epiglottis.* and the same is not to be found in any creature that laith eggs. A twofold use it hath, lying as it doth betwene the two pipes. Whereof, that which beareth more outward, and is called The rough Arterie, or the Windpipe, reacheth unto the lungs and heart. And as a man doth eat and swallow downe his meat, this foresaid little flap doth cover it, for feare least as the spirit, breath, and voice passeth that way, the meat or drinke (if it should goe wrong to the other conduit or passage) might endaunger a man and put him to great trouble. The other is more inward, called properly the Gullet, or the *Wezand*, by which we swallow downe both meat and drinke, and it goeth to the stomacke first, and so to the belly. This also the said flap doth cover by turns, to wit, as a man doth either speake or draw his breath, least that which is already passed into the stomacke, should come up againe, or be cast up unseasonably, and thereby empeach a man in his speech. The Windpipe, consisteth of a gristle and fleshie tunicle: the *Wezand*, of a membranous or sinewie substance and flesh together.

D There is no creature having a Necke indeed, but it hath also both these pipes. Well may they have a gorge or throat, in whome there is found but the gullet onely: but nape of necke behind; they can have none. As for those upon whome Nature hath bestowed a neck, they may with ease turne their head about too and fro every way, to looke about them, because it is composed of many spondyles, or turning round bones, tied and fastned one unto another by joints and knots. The Lion onely, together with the *Woolfe*, and the *Hyæna*, have this neck bone of one entire and straight peece, and therefore stiffe that it cannot turne. Otherwise it is annexed to the chine, and the chine to the loines.

E This Chine likewise is a bonie substance, but made round and long, and fistulous within, to give passage to the marow of the backe, which descendeth from the braine. Learned men are of opinion, That this marow is of the same nature that the brain is: and they ground upon this experience, That if the thin and tender skinne that encloseth it, be cut through, a man cannot possibly live, but dieth immediatly. All creatures that be long legged, have likewise in proportion as long neckes. So have also water-foules, although their legges be but short. But contrariwise, yee shall not see any birds with long neckes, that have hooked tallons. Men onely and Swine, are troubled with the swelling bunch in their throats: which many times is occasioned by corrupt water that they drinke. The upper part or top of the *wezand*, is called the Gorge, or the Gullet: the nether part or the extremitie thereof, is the Stomacke. There is another fleshie concavitie of this name, under the windpipe, annexed to the chine-bone: long it is and wide, made in fashion of a bottle, flagon, or rather a gourd. Those that have no gullet, are also without a stomacke, a necke, and a *wezand*; as fishes: for their mouthes and bellies meet. The sea-Tortoise hath neither tongue nor teeth: with the edge of his muffle (so sharpe it is) hee is able wellenough to chew all his victuals.

The Stomack.

Vnder the Arterie or Wind-pipe, is the mouth of the Stomacke; of a callous or grifflie substance, thicke toothed, with prickles in manner of a bramble, for the better dispatching of the meat: and these notches or plaits grow smaller and smaller, as they approach neerer to the bellie: so as the utmost roughnesse thereof in the end is like unto a smiths file.

The Heart.

Now are we come to the Heart, which in all other living creatures is situate in the very middest of the breast: in man onely it lieth beneath the left pap, made in manner of a Peare, and with the pointed and smaller end beareth out forward. Fishes alone have it lying with the point upward, to the mouth. It is generally received and held, that it is the first principall part which is formed in the mothers wombe: next unto it the braine, and the eies last of all. And as these bee the first that die, so the Heart is last. In it (no doubt) is the most plentie of heat, which is the cause of life. Surely it ever moveth and panteth, like as it were another living creature by it selfe. Covered it is within forth with a very soft, yet a strong tunicle, that enwrappeth it: defended it is besides with a strong mure of ribs, and the breast bone together: as being it selfe the principall fortresse and castle, which giveth life to all the rest. It containeth within it certain ventricles and hollow receipts, as the cheefe lodgings of the life, and bloud, which is the treasure of life. These in greater beasts are three in number: and none there is without twaine. This is the very seat of the mind & soule. From this fountaine there doe issue two great vessels, Maister-veines, or Arteries, which are divided into branches: and being spread as well to the fore-part as the backe parts of the bodie, into smaller veines, doe minister vitall bloud to all the members of the bodie. This is the only principall part of the bodie that cannot abide to be sick, or languish with any infirmitie: this lingereth not in continuall paine: no sooner is it offended, but death ensueth presently. When all other parts are corrupt and dead, the Heart alone continueth alive. All living creatures that have an hard and stiffe Heart, are supposed to be brutish: those that have small Hearts, be taken for hardie and valiant: contrariwise, they are reputed for timorous and fearfull, which have great Hearts. And the biggest Heart, in proportion of the bodie, have Mice, Hares, Asses, Deere, Panthers, Weasels, Hyænes; and in one word, all creatures either by nature fearefull, or upon feare hurtfull. In Paphlagonia, Partridges have two Hearts. In the Hearts of Horses, Kine, Bulls, and Oxen, are otherwhiles bones found. The Heart in a man groweth yearely two drams in weight, untill he be fiftie yeares of age: and from that time forward it decreaseth from yeare to yeare as much: whereupon he is not able to live above one hundred yeares, for want of Heart: as the Ægyptians be of opinion; whose manner is to preserve the dead bodies of men spiced and embaulmed. It is reported of some men, that they have Hearts all hairie: & those are held to be exceeding strong and valorous. Such was *Aristomenes* the Messenian, who slew with his owne hands *300 Lacedæmonians. Himselfe being sore wounded and taken prisoner, saved his owne life once, and made an escape out of the cave of a stone quarrie, where he was kept as in a prison: for he gat forth by narrow Foxe holes under the ground. Being caught a second time, whiles his keepers were fast asleepe, he rolled himselfe to the fire, bound as he was, and so without regard of his owne bodie, burnt in sunder the bonds wherewith he was tied. And at the third taking, the Lacedæmonians caused his breast to be cut and opened, because they would see what kind of Heart he had: and there they found it all overgrowne with haire. Moreover, this is observed in perusing the inwards of beasts, That when they be well liking, and do presage good, the Heart hath a kind of fat in the utmost tip thereof: Howbeit, this would be noted, That according to the Soothsaiers learning, their Heart is not alwaies taken for a part of the bowels or entrailles. For after the 123 Olympias, when *Pyrrhus* king of Epyrus was departed out of Italie, what time as *L. Posthumius Albinus* was king sacrificer at Rome, the Soothsaiers and Wisards began first to looke into the Heart, among other inwards. That very day when as *Cæsar* Dictatour went first abroad in his roiall purple robe, and tooke his seat in the golden chaire of estate, he killed two beasts for sacrifice, and in both of them the entrailles were found without any Heart: whereupon arose a great question and controverfie among the Augures and Soothsaiers, How it could be, that any beast ordained for sacrifice should live without that principall part of life? or whether possibly it might loose it for that present onely? Over and besides, it is held for certaine, that if any die of the trembling and ach of the Heart, or otherwise of poyson, their Heart will not burne in the fire. And verily, an Oration there is extant of *Vitellius*, wherein he challengeth *Piso*, and chargeth him directly with poysoning of *Germanicus Cæsar*, upon this presumption: for he openly protested and proved, That the heart of *Germanicus* would not consume in the funerall fire, by reason of poyson. But contrariwise,

* In three sundrie battailes.

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A riwife, *Piso* alledged in his owne defence the foresaid disease of the Heart called *Cardiaca*, whereof as he said, *Germanicus* died.

Vnder the Heart lie the Lights, which is the very seat of breathing: whereby we draw and deliver our wind. For which purpose, spongeous it is and full of hollow pipes within. Few fishes as we said before, have any Lungs: other creatures also that lay egges, have but small, and the same full of froth, and without blood: whereupon they be not thirstie at all: which is the cause likewise that Seales and Frogs can dive so long under the water. The Tortoise also, albeit hee have verie large Lungs, and the same under his shell, yet there is no blood therein. And verily, the lesser that the Lungs be, the swifter is the bodie that hath them: The Chamaeleons Lights be very big, for the proportion of his bodie, for little or nothing els hath he within it.

The Lights or Lungs.

B Next followeth the Liver, which lieth on the right side. In that which is called the head of the Liver, much varietie and difference there is. For a little before the death of *Marcellus*, (who was slaine by *Annibal*) as he sacrificed, there was found a Liver in the beast, without that head or fibres aforesaid. And the next day after, when he killed another for sacrifice, it was seen with twain. When *C. Marius* sacrificed at *Vtica*, the same was likewise wanting in the beast, being opened. Semblably, when prince *C. Caligula* the Emperour sacrificed upon the first day of Januarie, at his entrance into the Consulship, the Liver head was missing: but see what followed! in that yeare his hap was to be slaine. Moreover, his successor *Claudius*, within a month before he died by poyson, met with the like accident in his sacrifice. But *Augustus Cesar*, late Emperour of famous memorie, as he killed beasts for sacrifice, the very first day that he entred upon his imperiall dignitie, found in sixe of them sixe Livers, which were all redoubled and folded inward, from the nethermost lobe or skirt beneath: whereupon answer was made by the Soothsayers, that within one yeare he should double his power and authoritie. The foresaid head of the Liver, if it chance to be slit or cut, presageth some evill hap, unlesse it be in case of feare and pensiveness: for then it betokeneth good issue, and an end of care and sorrow. About the mountaine *Brietum* and *Tharne*; also in *Chersonesus* neare unto *Propontis*, all the Hares ordinarily have two Livers: and (a wonderous thing it is to tell) if they bee brought into other countries, one of the said Livers they loose.

The Liver.

C Fast to the Liver hangeth the Gall; yet all creatures have it not. And about *Chalcis* in *Euboea*, the sheepe are quite without Gall. But in *Naxus* they all have two Galls, and the same very big. The strangers that come into both those parts, think the one as prodigious and monstrous as the other. Horses, Mules, Asses, Deere both red and fallow, Roe-buckles, Swine, Cammels, and Dolphins, have no Gall. Some Mice and Rats there bee which have it. And few men there are without, howbeit, such are of a stronger constitution, more healthfull, and longer lived. Howbeit some are of opinion, That all Horses have Gall, not annexed to their Liver, but within their bellie: and as for the Deere aforesaid, it lieth (as they thinke) either in their taile, or else their guts: which (by their saying) are so bitter, that Hounds and Dogs by their good wils would not touch them. Now this Gall is nothing els but an excrement purged from the worst blood: and therefore blood is taken to be the matter thereof. Certaine this is, that no creatures have Livers, but such as likewise have blood. And in truth, the Liver receiveth blood from the Heart, unto which it is adjoined, and so conveigheth and distributeth it into the veines. Blacke choller lying in the Liver causeth furie and madnesse in man: but if it be all cast up by vomit, it is present death. Hereupon it commeth, that we tearme furious and raging persons by the name of chollericke, or full of Gall: so great is the venome of this one part, if it reach once to the seat of the mind, and possess it. Nay more than that: if it be spread and dispersed over all parts of the bodie, it infecteth it with the yellow jaundise, yea, and coloureth the very eies, as it were with Saffron. Let it out of the bladder or bag wherein it is, ye shall see it stain vessels of Brasse, yea, they will become blacke againe, and loose their brightnesse if they be touched therewith. No marvell then if the venome and poyson of Serpents, proceed from the Gall. They that use to feed of worne-wood growing in *Pontus*, commonly have no Gall. Ravens, Quailles, and Feasants, have their Gall joining to their kidneies, or rather to their guts, of one side and no more: and some to the guts only, as Pigeons, Hawkes, and Lampreies. Few birds there be that have Gall in the Liver. As for Serpents and Fishes; they have the greatest Galls of all others, for the proportion of their bodies. Most of them have their Gall along their guts throughout, in manner of the Hawke and the Kite. Moreover, in all Whale-fishes their Gall is fastened to the Liver; and so wee see it lieth in the Seales,

The Gall.

E *G g iij* whole

whose Gall is singular good for many purposes. Oxe Gall in limning giveth a golden colour: G
 The Soothsaiers have dedicated it to *Neptune*, & the mightie power of Water. *Augustus* the em-
 perour found two Galls in a beaft that he killed for sacrifice, upon that very day whereon hee ob-
 tained that famous victorie at Actium. Some say, that the lobes or fibres in the small Livers of
 certaine Mice and Rats, are commonly found to be as many as the Moone is daies old in every
 month: and looke how many daies you reckon of her light, so many may you count the fibres
 aforesaid. Also, that their liver groweth at midwinter, when daies be at shortest. In the kingdomes
 of Grenada and Andalusia in Spaine, Connies are many times found with double Livers. The
 land Frogs of Toadskind, have one lop or lappet of the Liver, which Ants will not touch; be-
 cause of the poyson therein, as is supposed. Liver of all things may be kept and preserved lon-
 gest: and we read in Chronicles, that there have been found in some cities long besieged, Livers H
 in salt or powder, which had continued a hundred years. Serpents and Lizards have long Livers.
 In that sacrifice which *Cesna Volaterranus* killed, Dragons were seene to issue from among the
 Entrailes and the Liver; and this turned to be a luckie presage. And verily, why should we thinke
 this report or any other in sacrifices, to be incredible? considering, that upon the very day that
 king *Pyrrhus* was slaine, the heads of the beasts being slaine for sacrifice, (notwithstanding they
 were cut off from the bodies,) mooved forward upon the ground, and licked up their owne
 blood.

The Midriffe.

The upmost inwards of a man, to wit, the Heart and the Lungs, are devided from the other
 entrailes beneath, by certaine pellicles or rimmes of the Midriffe, which the Latines call *Prec-*
cordia (because they are drawne and set before the Heart as a defence:) and the Greekes *Phren-*
es. True it is, that Nature in great providence hath enclosed all the noble and principall parts
 within severall skins and coats of their owne, which might serve in stead of sheaths and cases for
 their better defence: but in this partition of the Midriffe, she had a more particular regard to the
 propinquitie of the Stomacke and Bellie, least that the vitall parts being so neare, should be op-
 pressed and suffocated with the steames and vapors of the meat therein boiling. To this part are
 we beholden for our quicke wit, this membrane of the Midriffe we may thank for our readie con-
 ceit and understanding: to which effect, charged it is with no flesh, but composed of fine & sub-
 tile finewes. The same likewise is the very especiall seat of mirth: as we may perceive evidently by
 tickling under our arme holes, unto which it reacheth: and as in no place of mans bodie the skin
 is more fine and tender, so it taketh as great pleasure to be tickled & lightly scratched there. And K
 hereupon it is, that in solemne combates of sword-fencers at utterance with the sharpe, as also
 in field battels, we have many a time seene men wounded and thrust through the Midriffe, to die
 laughing.

*The Bellie or
 Paunch, with
 the Guts.
 *A Wolfe faith
 seure-fold.*

To proceed in our Anatomic, all creatures having a Stomack or Read, are not without a Bel-
 lie under it. As many as chew cud, have the same *double or two-fold, the rest one and no more:
 and looke who want blood, are without it also. For some there be that have one entire gut, which
 beginneth at the mouth, and by a certaine way redoubleth and returneth backe againe thirther,
 and namely, the Cuttill and the Polype. In man it is annexed to the bottome of the Stomacke,
 like as in a Dog. And in these twaine onely, narrower it is in the lower part: which is the cause,
 that none but they doe vomite: for when their bellies bee full, the streight passage beneath kee-
 peth the meat from descending, and so it returneth upward: which cannot happen to them that L
 have it wide and large, whereby the meat is sooner sent downe into the guts beneath. Next to
 the bag of the Stomacke, men and sheepe have the small guts called *Lactes*, through which the
 meat passeth: in others it is named *Ile*. Next unto which are the greater guts, that reach into the
 Paunch: and in man they are full of windings and turnings: which is the reason, that as many as
 have a great space betweene the Stomacke and the Paunch, are more hungrie and greedie of
 meat than others. And those who have the fattest and most greafiest bellies, most commonly are
 the grossest of capacitie and understanding. Some foules likewise have a two-fold recepracle for
 their meat: the one is the gizzer, craw, or gorge, wherein they bestow at the first their meat when
 they take it new: the other is the true Stomacke indeed; into which they send out of the former, M
 the victuals already altered, prepared, and in good forwardnes of concoction. And such be Hens
 and Pulletin, Coists or Stock-doves, Houfe-doves or Pigeons, and Partridges. All the rest in
 manner want the said gezzier, but in stead thereof have a wider gorge, wherethrough the meat
 passeth into the Stomacke, as Choughs, Ravens, and Crowes. Some againe there be that
 have

A have neither one nor other, but bee farre different from the rest, and these have their bellie hard to their gorge: and especially such as have long neckes and narrow, as the bird Porphyrio. The paunch or belly of those beasts which are whole houghed, is hard & rough. And in land beasts, it is in some thicke toothed, and set full of sharpe prickes: in others it is framed rugged likewise, plaited crosse in manner of lattice, readie to catch and bite whatsoever. Those which have not teeth in both chawes, nor yet chew cud, do in this belly concoct and digest their victuals, and out of it they send the meat into the paunch where the guts lie. This member, in the middes, is in all creatures fastened to the navill: and in man it is like unto that of a swine, having toward the neather part, a great gut named Colon: and this is it, which giveth occasion to the intollerable paine of the colique. This Gut in dogs, is very straight and narrow, whereupon they have much adoe to discharge it, and lightly they doe not skummer, but with great paine and difficultie. Those creatures of all others be counted most unsatiabie, whose meat passeth immediatly out of their belly into the straight gut Longaon, or the Tiwill: as among foure-footed beasts, the Woolfe, engendred betweene the Hind and a hee-Woolfe: and in fowles, the Cormorant. An Elephant hath foure bellies or paunches: all other parts within, bee answerable to those in Swine. Their lungs be foure times as big as those in an Oxe. The gorge or craw, & the stomach or gizier in birds, is the thicke and fleshie. In the maw or stomacke of Swallowes young birds, there be some certaine little white stones, or els of a reddish colour, called thereupon Chelidonij: and they be in great request in Art-Magicke, namely for charmes and enchantments. Likewise in the second belly or paunch of young Heifers, there is found a small, blacke, and gravelly stone round as a ball, and light withall: a singular remedie (as it is thought) for women that have hard labour and be delivered with much paine and difficultie, so it bee taken before that ever it touch the ground. The Stomacke and the Guts, are kept within a fat and thin cawle, in all creatures but those that lay eggs.

*The Cawle
or Kell.*

B Unto this Cawle, is fastned the Splene on the left side of the belly just over-against the liver. And otherwhiles these two shift their places, and one lieth where the other should; but that is ever held as a prodigious token. Some are of opinion, that those creatures which lay eggs have a Splene, but it is very small: as also the Serpents. And surely such an one appeareth plainly in the Tortoise, Crocodile, Lizards, and Frogs. Certain it is, that the bird *Ægocephalus* hath none at all, no more than others that want blood. This member hath a proprietic by it selfe sometimes, **D** To hinder a mans running: whereupon professed runners in the race that bee troubled with the splene, have a devise to burne and wast it with an hot yron. And no marveile: for why? they say that the Splene may be taken out of the bodie by way of incision, and yet the creature live nevertheless: but if it be man or woman that is thus cut for the Splene, hee or shee looseth their laughing by the meanes. For sure it is, that untemperate laughers have alwaies great Splenes. In Sceptis (a countrey of Asia) the sheepe have very small Splenes, and from them were devised the remedies to cure the disease thereof, and to wast their excessive greatnesse.

The Splene.

But about Britetum and Tharne (the hills abovenamed) the Deere have four Kidnies apeece: whereas on the contrarie side, neither feathered foule nor skalie fish, have any. Moreover, the Kidnies sticke close unto the bones. The right kidney in all creatures is the bigger, lesse fat, and dryer of the twaine: howbeit in both of them, there is a fat issueth out of the mids, save only in Seales. All living creatures are fatteest about the raines of the backe: and sheepe may be so farre overgrowne with fat, that they will die thereof. Sometime there be litle stones found in them. All foure-footed beasts that bring forth their young quick, have Kidnies. And of such as lay eggs, the Tortoise alone, which also hath all other entrails. The Kidnies of a man, be like to those of Kine and Oxen, as if they were composed of many together.

Kidnies.

Nature hath embarred the Breast-part (wherein lie the vitall members) with ribbes round about: but toward the belly (which needs must grow and stretch) she hath not so done, but hath given it libertie: for no living creature hath bones to compass the paunch. Mans Breast onely is broad and square: in all others it is framed otherwise, like the keele of a ship: which is more evidently to be seene in birds and in water-fowles most of all others. As for Ribbs, man only hath eight that be full and whole: Swine have ten: horned beasts thirteene: Serpents thirtie.

Brest & Ribbs.

F Under the belly and paunch in the fore-part of the bodie, hangeth the bladder: which no creature laying eggs hath, save onely the Tortoise. It is found in none but such as have a paire of lungs, and the same with blood: neither in any creeping creature without feet. Betweene it and

The Bladder.

the

the belly be certaine canals or arteries, reaching to the groine, which by the Greeks are named *Mia*. [*i.* the Flankes.] In the bladder of a Wolfe, is found a little stone called Syrites. But in some mens bladders, ye shall see otherwhiles certaine grosse haire to engender, like to bristles; also gravell and stones, which put them to intollerable paine. This bladder consisteth of a certain tunicle or skin, which if it be once wounded, cannot be againe consolidated; no more than those fine pellicles or rinds that enwrap the braine and the heart. For you must thinke, that there bee many sorts of these membranes or filmes serving to sundry uses.

The Matrice.

As for women, their inward parts are answerable to mens in all these respects abovesaid; and besides, they have by themselves adjoining close unto the bladder, another little bag or purse; whereupon it is called in Latine *Vterus*: and it hath another name beside, to wit, *Loci*; which we call the Matrice, the Mother, or the Wombe: and in other creatures it is tearmed *Vulva*. In Vipers, and such as hatch their eggs, within them it is double. In those that lay egges, it lyeth fast to the Midriffe. In women, it hath of either side two chambers or concavities. It at any time it chance to be perverted and turned the wrong way, or take aire into it, it is deadly, and riseth up to stop the wind. If Kine be with Calfe, men say, that they carie not their yong but in the right cell or receptacle thereof, yea, although they go with two Calves at once. Our fine-toothed gluttons doe find a better tast in a Sows wombe that slippeth and casteth her Pigs and it together, or is cut out of her bellie, than if the dam bringeth forth her fruit at the full time. The one forsooth is called *Ejecticia*, the other *Porcaria*. And the best is that of a young Sow that never farrowed before: and contrariwise, of old Sows and such as have given over to farrow. After she hath pigged, unlesse she be killed the same day, she hath a dead colour, and is but leane. And yet that of a young Swine is not greatly commended, unlesse it be of her first Pigs. Howbeit, those of old Sows also be in request, so they have not given over breeding: and namely, if they be taken either within two daies before they should pig, or within two daies after they have pigged, or at leastwise, the very same day. The next to the cast-wombe abovesaid, is that of a Sow killed a day after she hath pigged. The paps and teats of such a Sow, newly having farrowed, is counted excellent good meat, so that it be taken before that ever the Pigs sucked them drie: but those of a Sow which hath cast her Pigs before time, is held for the worst of all. In old time they called this morcell in Latine *Abdomen*, and before it was growne hard and brawnie, they never were wont willingly and wittingly to kill Sows, * even upon the point of their farrowing, and being ready to Pig [as our monstrous gluttons doe nowadaies, because they would have the teats soft, tender, and full of milke.]

Incientes.

Tallow and Grease.

All horned beasts having teeth growing but in one jaw, and pasterne bones about their feet, doe beare tallow or sewer, and feed fat. Those that be cloven-footed, or otherwise have feet divided into many toes, and beare no hornes; have no tallow, but grease or fat, The tallow or sewer groweth to be hard, and when it is throughly cold, is brittle and apt to crumble and breake; and is ever found in the edge and extremities of the flesh: contrariwise, the seame or grease is enterlarded betweene the flesh and the skin; liquid it is, and easie to melt. Some creatures there bee that will never be fat, as the Hare and Partridge. Generally, whatsoever is barren, bee it male or female, will soon feed fat. Sooner grow they to be old which are overfat. No living creatures there are but have a certaine fat in their eies. And the tallow in any thing whatsoever, is fencelesse: for neither hath it Arteries nor Veines. The fat also & grease in most of them, is without fence: And hereupon it is, That some affirme, how Mice and Rats have gnawne and eaten fat Hogs whiles they were alive, and made them nests in their backs: yea, and *Lucius Apromius* sometimes Consull, had a sonne so fat that he could not goe, so heavie was he loden with grease; in somuch, as he was faine to take some of his grease forth of the bodie, and so discharge himselfe and become lighter.

Marrow.

Marrow seemeth to be much of the same nature: in youth it is red, and in age waxeth white. This is never found but in hollow bones: and yet not in the legs of Horse, Ass, Mule, or Dog. And therefore if they chance to be broken, they will not powder and unite againe; which happeneth when the Marrow runneth out to the place of the fracture. In those that carie grease or sewer, fattie it is and greasie: but in horned beasts it resembleth Tallow. Sinewie it is, and that onely in the ridge of the backe of as many as have no bones, as namely, in all fishes. Beares have none at all. A Lion likewise hath but very little, to wit, in some few bones of his thighes and buts behind, and also of his legs before under his shoulders, For his other bones are so hard, that they will strike

A strike fire, as it were an hard flint. The Marrow is hard in them that gather no greafe, but rather tallow.

The bones of Asses legs are good to sound shrill, and to make pipes of. Dolphins have verie bones, and not prickie chines: for they bring forth their young alive. Serpents have onely prickie ridges. Fishes that be soft have no bones: but their bodie is bound with certaine hoopcs or circles of flesh, as the Cuttill and the Calamarie. Neither have Insects any bones at all. Those fishes which be not soft, but gristly, have a kind of marrow in their ridge bone. Seales have gristle, and no bone. The eares and nosethrils of all creatures, if they beare up but a litle, have a soft tender gristle apt to bend and wind: such is the goodnesse of Nature, providing that they should not breake. A gristle if it be broken, will not close together and be found. Neither will bones, if ought be cut from them, grow again: unlesse it be in horses and such beasts of cariage, and namely, betwene the house and the pasternes.

Bones and Gristles.

B A man Groweth in height and length untill he be one and twentie yeares of age: then be-
ginneeth he to spread and burnish in squarenesse. As well men as women-kind, shute up most and undoe the knot that hindered their growth, when they are come to fourteene yeares of age, and be undergrowne: and most is this seene, if some sicknesse happen about that time.

Growth.

As for the Sinewes, Ligaments, and Cords, which take their beginning at the heart, be covered (as it were) with a certaine white and glutinous substance; and the like cause and nature they have. These in all bodies, are tied to the slipperie bones: the knittings of the bones together, which be called joints, they fasten and bind together, some by comming betwene, others by clasping round about, and others againe, by passing crosse over: in one place they be twined round, in another broad, according as the figure of each part doth require. Be they cut atwo, as they cannot knit againe, so they put a man to no paine: pricke or wound them, a wonder to see, what extremitie of paine will thereupon ensue. Some creatures be without nerves and sinewes, as namely fishes, for they stand much upon Arteries: and yet ye shall have neither the one nor the other in soft fishes. Look where there be Sinewes, Cords, and Ligaments, those that lie more inward and underneath, stretch out the part and give libertie: whereas the uppermost that lie over them, draw the same in as much.

Sinews, Cords, & Ligaments.

D Among these are hidden the Arteries, that is to say, the passages of the spirit and life. And over them ride the Veines, even the very conduits and channels that carie the blood. The Pulse or beating of Arteries, is most evident in the extremities or ends of any members; and for the most part bewraith hidden diseases. *Herophilus* that renowned Poet and interpreter of Physick, hath with marvellous skill reduced the order thereof into an art: he hath set downe most artificially, the certaine measures and times, the compasse, the metricall lawes thereof, according to every age: when they strike even and steadie, when too fast, when too slow. But the skill hereof is little exercised, and his invention in that behalfe neglected: because it seemed overwittie, subtle, and curious. Howbeit, the observation of the strokes, either comming thicke and fast, or slow and softly, giveth a great light to judge of the strength of Nature, that governeth our life. Arteries want fence, and no marvell, for they be without blood. Neither doe they all containe within them vitall spirit. For there have beene knowne some of them cut in twaine, and yet that part of the bodie only is mortified, which received the offence. Birds have neither Veines nor Arteries. Likewise, Serpents, Tortoises, and Lizards, have but very little blood. The Veines disperfed at the last into most fine and small threadie fibres under all the skin, grow at the length to be so slender that the blood cannot possibly passe through them, nor any thing else: save a thin humour or moisture, which through infinite small pores of the skin doth breath forth, and standeth there like a dew, and is called Sweat. The place where all the Veines doe meet in a round knot together, is the Navell.

Veines and Arteries.

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CHAP. XXXVIII.

Of Blood, as well that which soonest waxeth drie, as that which will not thicken at all. Also, which is the grossest blood, and heaviest, which the lightest and thinnest: and last of all, what creatures living have no blood at all.

Those that have much blood, and the same fat and grosse, are angrie and chollericke. The blood of males is commonly blacker than that of females: yea, and more in youth than in old

old age: and the same in the bottome and lower part, setteth fatter and grosser than above. In G
 blood consisteth a great portion and treasure of life. When it is let out, it carieth with it much
 vitall spirit: howbeit, senselesse it is, and hath no feeling. The strongest creatures be they which
 have the thickest blood: but the wisest, those that have thinnest: the more fearefull, that have
 least: but dull and blockish altogether which have none at all. Bulls blood of all others soonest
 congealeth and waxeth hard, and therefore poyson it is, to be drunke especially. The blood of
 Bores, red and fallow Deere, Roe-buckes, and all Buffles, will not thicken. Asses blood is most fat-
 tie and grosse: and contrarily, mans blood is thinnest and finest. Those beasts which have more
 than foure feet, are bloodlesse. Those that be fat have small store of blood, because it is spent in
 fatnesse. Man onely bleedeth at the nose: some at one nostrill alone, others at both: and some
 againe void blood downward by the Hemorrhoids. Many there be that cast up blood at cer- H
 taine times ordinarie, by the mouth: as not long since *Matrinus V. scus*, late Pretor of Rome: and
 usually every yeare *Volusius Saturninus*, Provost of the citie; who notwithstanding lived untill he
 was above fourescore and ten yeares of age. Blood is the onely thing in the bodie that encreaseth
 presently. For so we see, that beasts killed for sacrifice will bleed most freshly and in greater abun-
 dance, if they dranke a little before. Those creatures that lie hidden in the earth at certain times,
 (as we have said before) have no blood in all that while; unless it bee some few, and those verie
 small drops gathered about their hearts. A wonderful worke of Nature, that it should be so: as
 also, that in a man it should alter and change ever and anon, so as it doth upon every small occa-
 sion: and the force and strength thereof varie, not only for defect and want of matter to disperse
 abroad, but also for every little motion and passion of the mind, as shame, anger, and feare. For I
 one while it sheweth pale, another while red, more or lesse, in much varietie of degrees. In case
 of anger it wil shew one colour: of shame and bashfulnesse appearing in another. In feare, doubt-
 lesse it retireth and flieth back, in such sort, as a man knoweth not what is become of it: so as ma-
 ny in that fit have ben stabbed and run through, and yet bled not at all one drop: but this sud-
 daine change of colour happeneth to men onely. For in other creatures, which (as we have said)
 doe alter their hue, it is an outward colour that they take from the reflection of certaine places
 neare unto them, man alone hath this change from within himselfe. To conclude, all maladies,
 and death especially, consume the blood.

CHAP. XXXIX.

Whether in Blood resteth the soveraigntie or no? Also of the nature of Skin,
 of Haires, and the Paps.

SOME measure not the finenesse of spirit and wit by the puritie of blood: but suppose that
 creatures are brutish, more or lesse, according as their Skin is, thicker or thinner: and as the
 other covertures of their bodie be either grosse and hard, or thin and tender: as we see for
 example in Oysters and Tortoises. They affirme moreover, that the thick hide in Kine and Oxen,
 and the hard bristles in Swine, impeach the entrance of subtile aire and fine spirit into their bod-
 ies: in such wise, that nothing can pierce and passe through, which is pure and fine, as it should
 be. And hereto they bring men also, as a prooffe, who are thicke skinned, and more brawnie; for L
 to be more grosse of sence and understanding: as who would say, that Crocodiles were not ve-
 ry wittie and industrious, and yet their skin is hard ynough. And as for the River-horse, his hide
 is so thicke, that thereof javelines and speares are turned: and yet so industrious is that beast,
 that in some case he is his owne Physician, and he hath taught us to open a veine, and let blood.
 The Elephants skin is so tough and hard, that thereof be made targuets and shields, of so good
 prooffe, that it is impossible to pierce them through: and yet they are thought to be of all foure-
 footed beasts, most ingenious and wittie. Wherefore, conclude wee may, that the skin it selfe is
 senselesse, and hath no fellowship at all with the understanding: and especially that of the head;
 and wheresoever it is of it selfe naked and without flesh, be sure (if it be wounded) impossible it is
 to consolidate the wound, and namely, in the eie-lids and the bals of the cheekes. All creatures M
 that bring forth their young quicke, are hairie: those that lay eggs, have either feathers, as birds:
 skales, as fishes: or else bee covered with shels, as Tortoises: or last of all, have a plaine skin and
 no more, as Serpents. The quilts of all feathers bee hollow. Cut them, they will grow no more:
 plucke them, they will come againe. Insects flie with thin and brittle pellicles or membranes.

The

- A** The sea Swallowes have them evermore moist and drenched in the sea. As for the Bat, he is afraid to wet them, and therefore flieth about houses, & his wings besides are divided into joints. The haire that groweth of a thick skin, are commonly hard and grosse: but evermore thinner and finer in the females. In Horses and Mares they grow at length upon their maines. Lions also have them long about their shoulders and foreparts. Conies have long haire about their cheekes; yea, and within-forth: as also in the soles of their feet: and so hath the Hares, according to the opinion of *Trogus*: who thereby collecteth, that hairie men likewise are more lecherous than others. The hairiest creature of all other is the Hare. In mankind only there groweth haire about the privie parts: & whosoever wanteth it, man or woman, is holden for barren, & not apt for generation. Haires in men and women are not all of one sort: for some they bring with them into the world, others come up & grow afterwards. Those that they have from their mothers wombe, do not lightly fall and shed, & least of all in women. Yet shall ye have some women to shed the haire of the head by occasion of sicknesse: as also other women to have a kind of downe upon their face; and namely, when their monethly fleures doe stay upon them. In some men, the latter kind of haire, to wit, of the beard, &c. will not come of their owne accord, without the helpe of Art. Foure-footed beasts doe shed their haire yeerely, and have it grow againe. Mens haire of their heads, groweth most: and next to it, that of their beards. If the haire be cut, it groweth not againe at the cut end, but springeth from the root. It groweth apace in some sicknesses, and most of all in the consumption of the lungs, and in old age, yea and upon the bodies of the dead. In lecherous persons, the haire of their head, browes, and eye-lids, with which they came into the world, doe fall more early than in others: but those that spring afterwards, grow sooner againe, if they be cut or shaven. The wooll and haire that foure-footed beasts doe beare, is more course and thick by age, but it commeth not in such plentie as before. And such have alwaies their back well covered with haire and wooll, but their bellies bare. Of Kine and Oxe hides foddren, there is made gliew: but the Bulls hide hath no fellow for that purpose. Man only of all males, hath evident paps in his breasts: other creatures have little nipples onely in shew of teats. Neither have all females teats in their breast, but only such as are able to suckle their young. None that lay eggs have paps: nor any have milke unlesse they bring forth their young living: and yet of all foules I must except the Bat alone. As for the illfavoured Scritchowles, called Stryges, I thinke they be but tales that goe of them: namely, That they will give milke out of their breasts to young infants. True it is, all men agree in this, That the manner was in old time, to use in cursing and execration, the tearme of *Strix*, but what bird it should be, I suppose no man yet knoweth.

CHAP. XI.

Notable observations in living creatures, as touching their Paps.

- S** Hee Asses are much pained with the ach of their Vdders, when they have foled: and therefore after sixe moneths, they will not give them any more sucke: whereas mares doe suckle their colts a whole yeare almost. Those beasts which be whole housed, and have not above two young at once, have all of them two Paps and no more, and those in no other place els, but betweene their hinder legges. Such as be cloven-footed, and horned likewise, have them in that place: but Kine have foure teats, Ewes and Goats but two apeece. Such beasts as be very fruitfull and bring many young, and likewise whose feet be parted into toes, these have many nipples or teat-heads all along their belly, disposed and set in a double course; as namely, Sows: of which, those of the better kind have twelve; the common sort, but ten. Also Bitches after the same manner. Some beasts have foure teats in the mids of their belly, as the Panthers: some twaine and no more, as the Lionesse. The Elephant alone hath twaine under his shoulders or legs before, and those not evident in the breast-part, but short therof and lying hidden as it were within the arme-pits. And generally, none that have their feet divided into toes, have Vdders behind under their hin-legs. A Sow, at every farrow, giveth the foremost nipples to those pigs that come first, and so in order as they be farrowed: and those teats be they that are next to her throat and highest. Every pig knoweth the own pap, and will take it & no other, when it commeth first into the world; and thereof it is nourished. If a pig be taken from the Sow, the milke of that pap will drie up presently, or returne backe, and the pap it selfe fall flat to the belly. Also if it chance that but one sucking pig be left, that pap alone will do the part and let downe milke, which Nature

ture first appointed for that one pig. Shee Beares have foure paps apeece, Dolphins have no more but two teats and nipples in the bottome of their belly, and those not very apparent to the eye, nor streight and direct, but lying somewhat aside and byas: and no beast besides giveth sucke as it runneth, but shee. To conclude, Whales, Whirlepooles, and Seales, nourish their young with their udder and teats.

CHAP. XLII.

Of Milke: and of what milke cheese cannot be made.

THe Milke that commeth from a woman, before that shee hath gone seven moneths with child, is not good: but from that time forward, it is holefome, because the infant may live and doe well after that tearme. Many are so firm and free of milke, that all their breasts are strut and full thereof, even as farre as to their arme-holes. Camels give milke untill they be great with young againe: and their milke is thought to be most sweet and pleasant in tast, if to one measure thereof you put three of water. A Cow hath no milke ordinarily, before that shee hath calved. The first milke that she giveth downe, is called Beestins: which, unlesse it be delaid with some water, will soone turne to be as hard as a Pumish stone. Shee Asses are not so soone with young, but they have milke in their udders: But if they go in good and battle pasture, it is not good that their young soles should sucke their milke in two daies after; for the very tast thereof, is enough to kill them: and this disease that commeth of such Beestins, is called Colofiratio. The milke that those give which have teeth in both chawes, is not good to make cheese of, because it will not cruddle. Camels milke, of all others, is thinnest; and Mares milke next to it. Asses milke is holden for to be thickest, and therefore they use it in stead of renning, to turn milke and gather curds thereof. It is thought also to be very good for to make womens skin faire and white. Certes the Empresse *Poppae*, wife to *Domitius Nero*, had alwaies wheresoever she went, five hundred shee Asses milch, in her traine: and in their milke she bathed and washed her whole bodie, as in an ordinarie baine, supposing that thereby her skin was not onely whiter, but also more neat, smooth, and void of rivels. All sorts of milke will thicken by fire, and turne into whey with cold. Cowes milke maketh more cheese than Goats milke, by twice as much almost, although you take no more of the one than the other. The milke of those that have above foure paps, is naught for cheese, but theirs is better that have but twaine. The rennet of an Hind-calfe, a Leveret, and a Kid, is much commended. But especially of a Leveret or Rabbet, which also is medicinal for the fluxe of the bellie: a thing to be observed in them alone, of all creatures that are toothed in both chawes. A wonder it is, that barbarous nations living of milke, have for so many hundred yeeres either not known, or els not regarded, the benefit of cheese: and yet they used to thicken their milke into a kind of pleasant soure-crud, in manner of a Sellibub: and to charn butter thereof: which is the very scum and creame of milke, much thicker than that which is called Whey. To conclude, I may not let passe, That Butter hath the vertue and properties of oile: inso much, as forraine and barbarous nations, doe annoint their children therewith, as wee also doe ours.

CHAP. XLIII.

Of Cheeses of sundrie sorts.

AT Rome (the onely place that hath best meanes neare at hand, to judge of the fruits and commodities of all nations in the world) the Cheeses which come out of the provinces of Nemausium, and from the villages of Læso and Baux, are highly praised for the best; but they last not long: their commendation is for the present season, whiles they be greene and new. There are brought good Cheeses from two coasts of the Alpes, which greatly praise the pasture thereabout. Also, daintie cheeses are made in Dalmatia, from whence we have passing good; and namely, from Drinaldi. Moreover, the province of Ceutronia sendeth us excellent cheese from Vatufium. But the great store and plentie of cheese commeth from the Apennine mountain: which yeeldeth us the Cebane cheese out of Liguria; and that is very fine meat, notwithstanding it be made most of Ewes milke. Also out of Umbria we have good cheese, from the dairies along the river *Æsio*. Howbeit in the confines betweene Tuscane and Liguria, the monstrous great cheeses are made, and namely about Luca, for one of them weigheth a thousand pounds.

A pounds. Next to these in goodnes, be those that are made neere unto the citie of Rome about Vestinum: but from out of the Sæditian territorie and the plains thereabout, there come cheefe that passe all the rest. As for cheefes made of Goats milke, they are not to be defrauded of their due praise, especially when they are fresh and new made; and if besides, they may have a little driness in smoke, which giveth both a good lustre & also a pretie tast unto them: for such cheefes be made within the very citie of Rome, and goe beyond all others. As for the cheefes made in Fraunce, they tast like a medicine, and have an aromaticall rellish with them. For outlandish cheefes beyond sea, the Bithynian carry the best name. That there is a certain tartar or salt, (if by nothing els) may well be knowne by the tast of the cheefe made thereof: for there is none but the older they are, the more saltish they bee: and yet such are well knowne to recover their fresh tast againe, if they bee soked in thyme-vinegre. Some report, that *Zoroastres* lived in the desert wildernes twentie yeeres with cheefe: the which was so well tempered, that it seemed nothing old, for neither it moulded, nor yet bred vermin:

CHAP. XLIII.

¶ *The difference betweene the members of Man and other creatures.*

OF living creatures upon the land, Man alone is two-footed. He only hath a cannell bone and shoulders; armes also to embrace: whereas others have shoulders onely and fore-legs to rest upon. In all creatures that have hands, they be fleshie withinforth onely: for the back-part consisteth of skin and sinewes. Some men there be, with six fingers to one hand. **C** We have heard, that *M. Curiatius*, a nobleman of Rome, had two daughters so handed: whereupon they were surnamed *Sedigita*. Also there was a man named *Volcatius*, who was an excellent Poet, and had six fingers to an hand, whereupon he was surnamed *Sedigitus*. Every finger of a mans hand hath three joints; the thumb twaine, and it bendeth and boweth full opposite to all the rest of the fingers: and yet by it selfe he stretcheth awrie from the others, and is thicker than the rest of the fingers. The little finger is equall in length to the thumbe: the fore-finger and the fifth (or ring-finger) are just of one size: betweene which, the middle finger is the longest. Those foure-footed beasts that live of ravine and prey, have five toes in their fore-feet, whereas others have but foure. Lions, Wolves, and Dogs, and some few others, have likewise five toes or pawes in their hin-feet, and one like a spurre, which beareth foorth behind and hangeth downe from the pasterne bone of the foot. **D** All other smaller beasts have five to a foot. The armes of all men be not of a just and even measure: for it is well knowne, That there was a Thracian sword-fencer named *Studisus*, belonging to the fence-schoole of *C. Caligula* the Emperor, whose right arme was longer than the left. Certain beasts without reason, use the ministerie of their fore-feet in stead of hands, and as they sit upon their rumpe, reach meat therewith to their mouth; as the Squirrils.

CHAP. XLIIII.

¶ *The resemblance that Apes have to men.*

AS for all the race and kind of Apes, they resemble the proportion of men perfectly in the face, nose, eares, and ey-lids: which eye-lids, these creatures alone (of all foure-footed) have under their eyes as well as above: nay, they have paps and nipples in their breasts, as women: armes also and legs bending contrary wayes, even as ours do. Naitles they have likewise and fingers like to us; with the middle finger longer than the rest, as ours be. A little they differ from us in the feet: for somewhat long they are, like as their hands be: and the sole of their foot is answerable to the palme of their hand. Thumbs and great toes they have moreover, with joints like (in all the world) to a man. And setting aside the member of generation, and that only in the hee Ape, all inward parts are the very same that ours, as if they were made just by one patterne.

CHAP. XLV.

¶ *Of Naitles.*

NAiles are taken and reputed for the extremities and utmost ends of the sinewes: and yee shall find them in as many as have fingers or toes. But in Apes they are channelled

halfe round like a gutter tile : whereas in man they be flat and broad. When one is dead, they will grow. In ravenous creatures, hooked they be and bowing inward : in dogs, right and streight, save only that, which in most of them crooketh from behind their legs like a spur. All creatures that have the fashion of a foot, have toes thereto, except an Elephant. And yet hee seemeth to have an apparence of five in number, but they are not divided asunder ; or if they be, they are not distinct one from another but very slightly, and liker rather to houses than to nails : the fore-feet also are bigger than the hinder. In the hin-feet they have short joints. The Elephant bendeth his hannes inward, as doth a man : whereas all other living creatures, bow the joynts of their hinder legs otherwise than of the former. For such as engender and breed young alive, bend their knees before them : but the joint of their hough behind, cleane backward. Mens knees and el-bowes, doe bow contrarie one to the other : so doe Beares and all the sort of Apes ; which is the cause that they be not so swift of foot as others. Four-footed beasts, as many as lay eggs, (as the Crocodile and Lizards) have their knees before, bending backward ; but those behind, bowing forward : and yet their legs be crooked like a mans thumb. In like sort, they that have many feet : unlesse it be the hin-feet of all, in as many as do skip and hop ; for they all be streight. Birds (after the manner of four-footed beasts) doe bow their wings forward, but the joynt of their leggs backward.

In the Knees of men, there is generally reposed a certain religious reverence, observed even in all nations of the world. For, humble suppliants creepe and crouch to the knees of their superiours ; their knees they touch, to their knees they reach forth their hands : their knees (I say) they worship and adore as religiously as the very altars of the gods. And for good reason haply they do so ; because it is commonly received, That in them their lieth much vitall strength. For in the very joint and knitting of both knees, on either side thereof before, there are two emptie bladders (as it were) like a paire of checkes ; which hollownesse or concavities, if it be wounded and pierced through, causeth as present death as if the throat were cut. In other parts likewise of the bodie, we use a certain religious ceremonie : for as our manner is to offer the backe-part of the right hand to be kissed, so we put it forth and give it as well in testimonie of faith and fidelitie. It was an auncient fashion in Greece, when they would make court and with great reverence tender a supplication to some great personage, for to touch the chin. In the tender lappet of the eare, is supposed to rest the seat of remembrance, which we use to touch when we purpose to take one for to beare witness of an arrest or other thing done, and to depose the same in the face of the court. Moreover, behind the right eare likewise, is the proper place of *Nemesis* (which goddesse could never find yet a Latine name, so much as in the very Capitoll) and that place are we wont to touch with the fourth finger (which is next to the least) in token of repentance, when we have let fall some word rashly, and would crave pardon of the gods therefore. The crooked and swelling veines in the legs, man alone hath, and women very seldome. *Oppian* writeth, that *C. Marius* (who had been Consull of Rome seven times) endured, without sitting downe for the matter, to have those vains taken forth of his legs : a thing that never any was knowne to abide before him. All four-footed beasts begin to goe ordinarily on the right hand, and use to lie downe on the right side : others go as they list. Lions and Camels only have this propertie by themselves, To keepe pace in their march foot by foot, that is to say, they never set their left foot before their right, nor overreach with it, but let it gently come short of it and follow after. Men and women have the greatest feet in proportion, of all creatures : but females ordinarily in every kind have lesse and slender feet than males. Men and women onely have calves in their legs, and their legs full of flesh. Howbeit we read in some writers, That there was one man in *Aegypt* had no calfe at all to his legs, but was legged like a Crane. Man alone hath palmes of his hands, and broad flat soles to his feet : and yet some there be, who that way are deformed and disfigured. And thereupon it came, that divers came to be surnamed *Planci*, [i. flat-footed :] *Planti*, [i. splay-footed :] *Scauri*, [i. with their ankles standing over-much out :] *Pausi*, [i. broad-footed.] Like as of their mishapen legs, some have been named *Vari*, [i. wry-legged :] others *Valia*, and *Vatinij*, [i. bow-legged :] which in perfections beasts also are subiect unto. Whole houghed are all they that beare not hornes : in regard whereof, they be armed with hough instead of that offensive weapon : and such as they be, have no ankle-bones : but all cloven-footed have those bones. Howbeit as many as have toes, want ankles : and in one word, there is not one hath them in the fore-feet. Camels have ankles like to Kine and Oxen, but somewhat lesse : for indeed they be cloven footed, although

A the partition be very little, and hardly discerned under the foot, but seemeth flesh all over the sole, as Beares also, which is the cause that if they travaile farre unshod, their feet are surbated; and the beasts will tire.

CHAP. XLVI.

§ A discourse of beasts Houfes.

THe Houfes of Horses, Mules, Asses, and such like beasts of carriage only, if they be pared and cut, will grow againe. In some parts of Sclavonia, the Swine are not cloven-footed, but whole houfed. All horned beasts in manner be cloven footed: but no beast beareth two hornes, and hath withall the house of one entire peece. The Indian Asses hath onely one horn. The wild Goat also called Oryx, is cloven houfed, and yet hath but one horn. The Indian Asses moreover, of all whole houfed beasts alone, hath the pasterne or ankle-bones. As for Swine, a mungrell kind they are thought to be of both, in regard of those bones; and therupon are reputed sithic and accursed. They that have thought that a man had such, are soone convinced. As for the Once, he indeed alone of all those whose feet are divided into toes, hath that which somewhat resembleth a pasterne bone. So hath a Lion also, but that it is more crooked and winding. As for the streight pasterne bone indeed, it beareth out with a belly in the joynt of the foot; and in that hollow concavitie wherein the said bone turneth, it is tied by ligaments.

C

CHAP. XLVII.

§ Of Birds feet, and their Clawes or Tallons.

OF Fowles, some have their feet divided into clees and toes; others be broad and flat footed: and some are betweene both; which have indeed their toes parted and distinct, and yet their feet be broad between. But all of them have foure toes to a foot: to wit, three in the fore part, and one behind at the heele in manner of a spur: howbeit this one is wanting in some that are long legged. The Wrynecke or Hickway, with some few others, have two before and other two behind. The same bird putteth out a tongue of a great length, like to serpents. It turneth the necke about and looketh backward: great clawes it hath like those of Choughes.

D Some bigger birds have in their legs one other thanke-bone more than ordinarie. None that have crooked tallons, be long legged. All that staulke with long thankes, as they flie stretch out their legs in length to their tails: but such as be short legged, draw them up to the mids of their belly. They that say, No bird is without feet: affirme also, That * Martinets have feet: like as also the swift Swallow called Oce, and the sea Swallow Drepanis. And yet such birds come so little abroad, that they be seldome seene. To conclude, there have ben now of late, Serpents known flat-footed like Geese.

CHAP. XLVIII.

§ Of the feet of Insects.

E

ALl Insects having hard eies, have their fore-legges longer than the rest, to the end that otherwhiles they might with them, scoure their eies, as wee see some flies doe: but those whose hinder-legs are longest, use to skip and hop, as Locusts. Howbeit, all of them have six legs apeece. Some Spiders there be, that have two over and above the ordinarie, and those be very long: and every leg hath three joynts. As for some sea-fishes, wee have said before that they have eight legs: namely, Many feet, Pourcuttles, Curtles, Calamaries, and Crabfishes: and those moove their fore-clees like armes a contrary way, but their feet either they turne round or else fetch them crooked at one side: and a man shall not see any living creature again, all round, but they. As for others, they have two feet to guide them and lead the way; but Crabs onely have foure. There be Insects besides upon the land, that exceed this number of feet; and then, they have no fewer than twelve: as the most sort of wormes: yea and some of them reach to an hundred. No creature whatsoever hath an odde foot. As touching the legs of those which be whole houfed, they be all full as long when they first come into the world, as ever they will be: well may they shoot out bigger and burnish afterward, but (to speake truly and properly) they

The eleventh Booke of

grow no more in length. And therefore when they be young sucking foles, a man shall see them scratch the eare with the hinder-feet: which, as they waxe elder and bigger, they are not able to doe, because their legges thrive only in outward compasse, and not in length. Which also is the cause, that when they be new foled, they cannot feed themselves but kneeling, untill such time as their necks be come to their full growth and just proportion.

CHAP. XLIX.

Of Dwarfes: and genitall parts.

There are no living creatures in the world (even the very foules of the aire not excepted) but in each kind there be dwarfes to be found. As for those males which have their instruments of generation behind, we have sufficiently spoken. In Wolves, Foxes, Weefils, and Ferrets, those genitall members be of a bonie substance; and of them there be soveraign medicines made, for to cure the stone and gravell in mans bodie engendred. The Beares pisse also, becommeth as hard as an horne (men say) so soone as his breath is out of his bodie. As for Camels pisses, they use in the East countries to make their best bow-strings thereof, which they account to be the surest of all others. Moreover and besides, the genitall parts put a difference betweene nation and nation; also betweene one religion and another: for the priests of *Cybele* (the great mother of the gods) use to cut off their owne members and to gueld themselves, without danger of death. On the contrary side, some few women there be, monstrous that way, and in that part resemble men: like as wee see there are Hermaphrodites, furnished with the members of both sexe. In the daies of *Nero* the Emperour, the like accident was seene (and never before) in some four-footed beasts. For he, in very truth, exhibited a shew of certaine Mares that were of the nature of those Hermaphrodites, found in the territorie of *Treviers* in Fraunce: and they drew together in his owne coach. And verily a straunge and wondrous sight this was, To see the great monarch of the world, sit in a charriot drawne by such monstrous beasts. As touching the stones of Rams, Buckes, and greater beasts, they hang dangling downe betweene their legs: but in Bores, they be trust together, & knit up short close to their belly. Dolphins have these parts very long, and the same lying hidden within the bottome of their bellies. In Elephants likewise they be close and hidden: In as many creatures as doe lay egges, the stones sticke hard to their loines within the bodie: and such bee ever most quicke of dispatch in the act of generation, and soone have done the feat. Fishes and Serpents have none at all; but in stead thereof there be two strings or veines reach from their kidnies to their genitall member. The ^{*}Buzzard (a kind of Hawke) is provided of three stones. A man hath his cods sometimes bruised and broken, either by some extraordinarie accident, or naturally: and such as be thus burst, are counted but halfe men, and of a middle nature betweene Hermaphrodites and guelded persons. To conclude, in all living creatures whatsoever, the males bee stronger than the females, setting aside the race of Panthers and Beares.

*Triorchia.

CHAP. L.

Of Tails.

There is not a living creature, excepting men and Apes, (take as well those that bring foorth their young alive, as others that lay egges onely) but is furnished with a taile, for the necessaie use of their bodies. Such as bee otherwise rough-haired and bristly, yet have naked tailes, as Swine: those that be long shagged and rugged, have very little and short skuts, as Beares: but as many as have long side haire, be likewise long tailed, as Horses. If Lizards or Serpents have their tailes cut off from their bodies, they will grow againe. In fishes they serve in good stead, as rudders and helmes to direct them in their swimming: yea they fit their turnes as well as oares, to set them forward as they stire them, to this or that hand. There be Lizards found with double tailes. Kine and Oxen have the longest rumpe for their tailes of any other beasts; yea and the same at the end, hath the greatest tuft and bush of haire. Ases have the said docke or rumpe longer than horses: and yet all such beasts either for saddle or packe, have it set out with long haire. Lyons tailes are fashioned in the verie tip thereof, like unto Kine or Oxen, and Rats: but Panthers are not in that wise tailed. Foxes and Wolves have

- A** have shag tailles like sheepe, but that they be longer. Swine carrie their tailles turned and twined round. And Dogges, that be of curres kind and good for nothing, carrie their tailles close underneath their bellies.

CHAP. LI.

Of Voices.

- A** *Aristotle* is of opinion, That no living creature hath any voice, but such onely as are furnished with lungs and wind-pipes: that is to say, which breath and draw their wind: & therefore he holdeth, that the noise which we heare to come from Insects, is no voice at all, but
- B** a very sound, occasioned by the aire that getteth within them, and so being enclosed, yeeldeth a certaine noise, and resoundeth againe. And thus it is (quoth he) that some keepe a humming or buzzing, as Bees: others make a cricking with a certain long traine, as the Grasshoppers; for evident it is, and well knowne, that the aire entring into those pipes (if I may so tearme them) under their breast, and meeting with a certaine pellicle or thin skin, beatech upon it within, and so setteth it a stirring, by which attrition, that shrill sound commeth. Againe, it is as apparent, that in others, and namely, Flies and Bees, the buzzing which wee heare, beginneth and endeth ever with their flying. For (no doubt) that sound commeth not of any wind that these little creatures either draw or deliver, but of the aire which they hold enclosed within, and the beating of their wings together. As for Locusts, it is generally beleevd and received, that they make that sound with clapping of their feathers or wings and thighes together. In like manner, among fishes in the waters, the great Scallops make a certaine noise as they shoot out of the water. But soft fishes and such as lie covered with a crust or shell, neither utter voice, nor yet yeeld sound. As for other fishes, although they be without lungs and pipes, yet are they not quite mute, but deliver a certaine sound. Howbeit, they that would maintaine, that fishes are dumbe indeed, doe cavill and say, that such a noise commeth of crashing and grinding their teeth together. But what will they say then to the water-Goat, and the river-Bore, which in the river Achelous do evidently grunt: as also others, whereof we have spoken? Againe, such as lay egges doe hiss: and Serpents draw their hissing out in length. The Tortoise hisseth likewise, but after a broken manner, with staies and rests betweenc. Frogs keepe a croaking after their kind, as hath been said before: & yet a man
- D** may seeme well to doubt thereof, how it should be? considering, that the noise which they make commeth but from their teeth and mouth outward, and is not framed in their breast or stomach. Howbeit, in them there is great difference, by occasion of the nature of diverse countries. For in Macedonie (by report) they are mute: and there also the Swine be dumbe. As for birds, the least evermore be most full of chirping, chaunting, and singing; and most of all, about the treading time. Some of them keepe a singing when they fight, as Quaiies: others, when they go to fight, as Partridges: and some againe after victorie, as Cockes. And they have a crowing by themselves differing from the cackling of hens: whereas in other birds you cannot discern the male from the female by the singing, as we see in Nightingales. Some sing all the year long, others at certain times, as we have more at large declared, in the particular treatise of each bird. The Elephant he sendeth out at his very mouth (somewhat short of his muffle) a certaine sound like to sneesing: but through that muffle or trunke of his, he soundeth (as it were) out of a Trumpet. Kine onely of females, have a bigger voice than Bulls: for in every kind els the female hath a smaller voice than the males: like as wee see in mankind, the guelded Eunuchs. As an infant is comming into the world, it is not heard to crie all the while that it is in the birth, before it be fully borne. When it is a yeare old, it beginneth to prattle and talke, but not afore. King *Crasus* had a sonne, who lying swaddled in his cradle, spake by that time he was sixe months old: but this was a prodigious sign, and presaged the finall ruin of that kingdome. Those children that begin with their tongue betime, are later ere they find their feet. The voice in man or woman beginneth to change & waxe greater at 14 years of age. The same in old age groweth againe to be smaller: & in no other creature doth it more often alter. Moreover, as touching the Voice, there be strange and wonderfull matters reported, and those worth the rehearfall in this place. For first and formost, we do see, That upon the skaffold or stage in publicke Theatres, if the floore be strowed over well and thick with saw-dust or sand, the voice of the actors will be drowned & lost, yea, and remaine still above the skaffold, as if it were there buried: also where there be hollow & uneven wals round about:

or emptie drie-fats and tuns set, the voice will be taken up in them, and passe no farther. But the same voice, betweene two walls directly set one along by another, runneth apace: yea, & through a vault it may be heard from the one end to the other, be the sound never so low; provided, that all bee smooth and even betweene, and nothing to hinder the passage thereof. To speake yet somewhat more of the Voice: In it resteth a great part of the countenance and visage of man, whereby hee is discerned and knowne. For we know a man by hearing his voice before wee see him, even as well as if our eies were fixed upon him. And looke how many men and women there are in the world, so many sundrie voices there bee, for each one hath a severall voice, as well as a face, by himselfe. And hereof ariseth that varietie of nations, that diversitie of languages, all the world through. From hence come so many tunes in song, so many notes in Musicke, as there bee. But above all, the greatest thing to be noted in Voice, is this, That whereas the utterance of our mind, thereby dooth distinguish us from brute and wild beasts: the same even among men maketh as great a difference betweene one and another, as the other is betweene man and beast.

CHAP. LII.

Of the excessse and superfluitie of some members. Also the discourse and sayings of Aristotle as touching mans life.

Looke what part is more than ordinarie by nature, in any living creature, the same serveth to no use. As for example, the sixt finger in a mans hand is evermore superfluous, and therefore fit for nothing. It was thought good in *Agypt* once to nourish and keep a monstrous man who had foure eies, whereof twaine stood in the backe part of his head behind: but surely he saw never a whit with them. I wonder verily, that *Aristotle* not onely beleevd, but also sticke not to set downe in writing, that there were certaine signes in mans bodie, whereby wee might foreknow whether he were long lived or no. Which, albeit I take to be but vanities, and not rashly to bee uttered without good advisement, (because I would not have men amused, and busily occupied in searching Prognostications in themselves, as touching their own life) yet will I touch the same, and deliver them in some sort, since so great a cleaerke as *Aristotle* was, held them for Resolutions, and thought them worth the penning. Hee putteth downe therefore, as signes of short life, thin teeth, long fingers, a leaden hew, many lines in the palme of the hand, with crosse bars or short cuts. Contrariwise, hee saith, That those who are Lute backed, thicke shouldered, and bending forward, who also in one hand have two long life lines, and above two and thirtie teeth in their head, and besides are well hanged, and have large eares, bee long lived. And as farre as I can guesse, he requireth not, that all these signes should concur and meet together, for to signifie as is before said: but, as I suppose, his meaning is, that every one of them by it selfe is significative and sufficient. Surely, these Physiognomers and Chiromantines or Palmestrie, as frivolous and foolish as they be, yet now adays are in credite, & every man is full of them. *Trogus*, a most grave and renowned Author among us, is of opinion moreover, That there is judgement to bee given, not onely of mens complexions, but also of their conditions, by their very sight and countenance: and surely, I thinke it not amisse to set downe his very words. A large and broad forehead (saith he) is a token of a dull conceit and heavie understanding: and contrariwise, they that have a little forehead, are by nature fickle and inconstant: and finally, a round forehead, and bearing out, argueth anger and choller, as if this outward tumor thereof bewraied the swelling and boiling of that humor. In whomsoever the eie-browes are streight and lie even, they betoken soft and effeminate persons: but if they bend and bow toward the nose, they shew austeritie. Say their turning and bending be toward the temples of the head, they are signes of a mocker and scorne: finally, where they lie very low, such persons (be yee sure) are malicious, spightfull, and envious. Long eies, in whomsoever they be, doe testifie hurtfull and dangerous persons. They that have the corners full of flesh, are of a malicious nature: where the white of the eie is spread large and broad, it is a token of impudencie. And such as every while be winking and closing of their eielids, (trust me truly) they bee giddie-headed, and unstaied. Those that have great eares, and especially the laps thereof, make account they be blabs of their tongue, and fooles withall. Thus much of Physiognomie, according to *Trogus*.

A

CHAP. LIII.

Of the spirit and breath of living creatures: also, what things be venomous in taste, and do kill. Of mens food. And last of all, what hindereth digestion and concoction of meat.

THe breath of Lions hath a very strong deane and stinking smell with it: but that of a Beare is pestilentiall and deadly: insomuch, as no beast will touch where a Beare hath breathed and blowne upon: for surely such will sooner corrupt and purrifie than others, as if they were blasted. As for the breath of a man, Nature hath suffered it to be infected many waies, namely;

B by the viands and meat that hee eateth; by faultie and rotten teeth; and most of all, by old age. And yet our breath, without which there is no sence, feeleth no pain it selfe, as being void of feeling, and altogether sencelesse. The same goeth and commeth continually without rest and intermission: the same is alwaies new and fresh: and as it shall depart out of the bodielaft, so it shall remaine alone, when all is gone besides it. Finally, returne it shall into the aire and the heaven, from whence it first came. Now, albeit this breath that we draw, be the very meanes whereby we live, and without which we cannot maintaine our life; yet otherwhiles troublesome it is unto us, and plagueth us as a very punishment ordained for us. The Parthians of all others bee most subject to this inconveniencie, even from their very youth, by reason of their grosse feeding of all meats indifferently, without choise and discretion: and especially of their drunkenesse. For excessive drinking of wine causeth stinking breath. But the Nobles and great States of that countrey have a remedie therefore, and make their breath sweet, by taking with their meats the kernels of Poime-citrons, which yeeld a most pleasant savour. The very breath of Elephants causeth Serpents to come out of their holes: but Stags and such other Deere, therewith doe blast and burne them. As touching certaine kinds of men, who by sucking only could draw and fetch out the poison out of bodies wounded by venomous Serpents, we have already spoken. As for hogs; they will feed of Serpents, and doe well ynough, whereas to other creatures they be no better than poyson. All those little creatures, which we named Insects, will die if they bee but sprinkled or wet with Oile. The Vultures or Geires which flie from sweet ointments, are desirous yet of other odors and perfumes: like as Beetles like well the smell of Roses. Some Serpents there be that the

D Scorpion killeth. The Scythians poyson their arrow heads with the venomous filthie blood of vipers and mans together. A present poyson this is, and remediless; and it no sooner toucheth but it taketh, and killeth forthwith. As touching those creatures that feed of poyson, we have spoken heretofore. Moreover, some creatures there be, which otherwise being harmelesse, if they bee fed with venomous beasts or plants, become also themselves noisome and dangerous. The wild Bores in Pamphylia, and upon mountaines of Cilicia, that have eaten Salamanders, become venomous: and whosoever chauce to eat of their venison, are sure to die upon it. And yet cannot a man know any such venome therein, either by sent at nose, or tast of tongue. Moreover, the very water or wine wherein a Salamander hath been stifled and suffocated, or whereof it hath been drunke, will kill a man that shall but sip thereof never so little. The like is to be said of that Frog which we call *Rubeta*, [i. the toad that liveth in bushes.] See how many ambushes our life is subject unto! Waspes feed greedily on Serpents, and upon that food their stings bee deadly. And therefore you see it skilleth much what meats we eat, and the manner of our food is very materiall. As we may learne farther in that treatise which *Theophrastus* wrote of the *Ichthyophagi* that live of fish: where he hath set downe, That Kine and Oxen doth eat fish, but they must in any case be alive.

To come now unto mens diet: their best and most wholesome feeding is upon one dish and no more, and the same plaine and simple: for surely this hudling of many meats one upon another of diverse tastes, is pestiferous: but sundrie fauces are more dangerous than that. As touching our concoction: all tart and sharpe meats are of hard digestion: also fulnesse and surfering: hastie and greedie feeding likewise be enemies to digestion, and hurtfull to the stomacke.

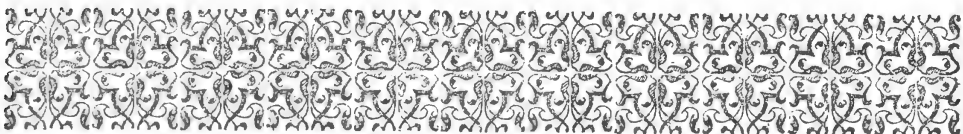
F In summe, we digest our meat more hardly in Summer than in Winter, and in age worse than in youth. Now to helpe and remedie all this excesse and enormitie, vomite hath been devised: but use it whosoever will, he shall find the naturall heat of his bodie thereby to decay: he shall sensibly perceive that it hurte the teeth, and eies especially. To goe to bed upon a full stomacke, and

to digest in sleepe, is better to make a man fat and corpulent, than strong and lustie. And therefore G
wrestlers and champions who are acquainted with full and liberall diet, use rather to walke after
meat for to digest. And in one word, much watching maketh best digestion.

CHAP. LIIII.

¶ *Of making bodies fat or leane. Also, what things being tasted, doe allay
hunger and quench thirst.*

BOdies grow to be burly and grosse, with sweet meats, fat feeding, and much drinke: contrari-
wise, drie diet, actually cold, and thirst withall, make a bodie leane. There bee beasts in Af- H
ricke, and especially the lesser sort, which drinke not above once in foure daies. A man may
well live seven daies without any food whatsoever: & well it is knowne, that many have continued
more then eleven daies without meat or drinke. There have been some knowne so hungrie ever-
more, that nothing would satisfie them, and such have died for very famine, although they did
nothing els but eat: a disease incident to no creature but to man. Some againe can assuage and
appease their hunger, yea, and slacke and extinguish their thirst with a very little, and yet preserve
and maintaine the naturall strength of their bodie: namely, with tasting Butter, Cheefe made of
Mares or Asses milke, and Licorice. But to conclude and knit up this discourse: the worst and
most dangerous thing every way that can be in all the course of our life, is Excesse and Superflu- I
itic; but to the health of our bodies most of all: and therefore the best course is, to cut off by all
meanes that which is offensive and heaue to the bodie. Thus much shall suffice as touching li-
ving and sensible creatures. Let us therefore now proceed to the rest of Natures workes.



THE TWELFTH BOOKE OF K
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECVNDVS.


¶ *The Preface.*



Hus you see by that which hath been written before, what are the natures as well in E
generall, as particularly in parts, of all living and sensitive creatures within the
compasse of our knowledge. It remaineth now to discourse of those which the earth
yeeldeth: and even they likewise are not without a soule in their kind (for nothing
liveth which wanteth it): that from thence we may passe to those things that lie hid-
den within the earth, and are to be digged out of it: to the end, that no worke and
benefite of Nature might overpasse our hands, and be omitted. And in truth, these treasures of hers lay
long covered under the ground, insomuch as men were persuaded, that Woods and Trees were the last
and onely goods left unto us and bestowed upon us by Nature. For of the fruit of trees had wee our first
food: their leaves and branches served to make us soft pallets and couches within the caves: and with
their rinds and barke we clad and covered our nakednesse. And even at this day, some nations there be M
that live still in that sort, and no otherwise. A wonderfull thing therefore it is, that from so small and
base beginnings we should grow to that passe in pride, that we must needs cut through great mountaines
for to meet with marble: send out as farre as to the Seres for silke stuffe to apparell us: dive downe into
the bottome of the red sea for pearles: and last of all, sinke deepe pits even to the bottome of the earth,
for

A for the precious Hemerauld. For this pride and vanitie of ours, wee have devised meanes to peirce and wound our eares: because, for sooth, it would not serve our turnes to weare costly pearles and rich stoness in carkanets about our necke, borders upon the haire of our head, bracelets about our armes, and rings on our fingers, unlesse they were engraven also and cut into the very flesh of our bodies. Well then, to follow the course of Nature, and the order of our life (as meet it is we should) we will treat in the first place of Trees, and lay before mens eyes the life of the old world, and what was their behavior and demea-
 nure at the first, in their manner of living.

CHAP. I.

B  The honour done in old time to Trees. When the Plane-trees were first knowne in Italie, and of their nature.



N old time, Trees were the very temples of the gods: and according to that auncient manner, the plaine and simple peasants of the countrey, favouring still of antiquitie, doe at this day consecrate to one god or other, the goodliest & fairest Trees that they can meet withall. And verily, we our selves adore not with more reverence and devotion the stately images of the gods within our temples, (made though they be of glittering gold, and beautifull yvorie) than

the very groves and tufts of trees, wherein we worship the same gods in all religious silence. First and formost, the auncient ceremonie of dedicating this and that kind of Tree to severall gods, as

C proper and peculiar unto them, was alwaies observed, and continueth yet to this day. For the mightie great Oke named Æsculus, is consecrated to *Iupiter*; the Lawell to *Ursus*; the Olive tree to *Minerva*; the Myrtle to *Venus*; and the Poplar to *Hercules*. Moreover, it is received and beleaved generally, That the Sylvanes and Faunes, yea, and certaine goddeses, are appropriate and assigned to woods and Forrests; yea, there is attributed unto those places a certaine divine power and godhead, there to inhabite: as well as unto heaven the proper seat for other gods and goddeses. Afterwards, in proesse of time men began to tast also the fruit of Trees, & found therein a juice (without all comparison) more lenitive & pleasant to the contentment of their nature, than that which came of corne and graine: for thereof made they Oile, a singular liquor to refresh and comfort the outward members and parts of the bodie: out of it they pressed Wine,

D the onely drinke that giveth strength within, and fortifieth the vitall powers. From thence gather we so many fruits, yearly growing and comming of themselves without the labour and industrie of man. And albeit, to serve our bellie and please our tooth, we sticke not to maintaine fight and deale in combat with wild beaists in the Forrests; although we hazard our selves in the sea, to meet with monstrous fishes which are fed with the dead bodies of men cast away by shipwracke; and all to furnish and set out the table: yet is not the cheare thought good ynough, unlesse fruits also be sent up at the latter end, that they may have the honour in all feasts of the second service, and the banquet. Besides all this, Trees serve our turnes for a thousand necessarie uses, without which our life could not be well maintained. With Trees we saile over seas into straunge lands, and by transporting commodities and marchandise too and fro, we make lands meet together: of Trees

E we build our houses wherein we dwell. Trees were the matter in times past, wherof were made the images of the gods. For as yet no man thought of the costly Anatomie of the Elephant, neither was their tooth in any account: whereas now adaies wee make the tressels, frames, and feet of our tables, even of the same yvorie that we see the faces of gods are portraied of; as if we had our warrant from them to begin and maintaine our riot and superfluitie in this behalfe. We find in old Chronicles, That the Frenchmen or Gaules tooke occasion first to come downe into Italie, and to overspred the whole countrey (notwithstanding they were beforetime debarred from thence by the impregnable fort, as it were, and the unpassable bulwarke of the Alpes between:) because one *Elicus*, a Swisser or Helvetian, who had made long abode at Rome (where he was entertained for his skill in Smiths worke and Carpentrie) at his return home again into his countrey, brought

F over with him drie Figs and Raifons: the first fruits also as it were of Oile and Wine for a tast, to set their teeth a watering. And therefore the French had good reason, and might well be borne withall and pardoned, for seeking to conquer even by force of armes those countries where such fruits grew. But who would not marvell rather at this, That our people here should go into farre countries, and fetch a Tree from thence, even out of another world, only for the shade that it gi-
 veth?

veth? For surely, of fruitfull trees Italie hath store ynough. And what tree should that be, but the very Plane? brought first over the Ionian sea into the Island Diomedea, for to beautifie the tomb of *Diomedes*. From thence translated into Sicilie, and so bestowed at length upon Italie, & there planted, as a most singular, rare, and speciall tree. But now is it caried at far as Terwin and Tournay in Fraunce, where it is counted an appertenance to the very soile that paieth tribute: inso-
 much, as people that will but walke and refresh themselves under the shaddow of it, must pay a custome therefore unto the people of Rome. *Dionysius* king of Sicilie, and the first of that name, caused them to be brought from Rhegium in Calabria to his roiall cittie, where his pallace was; onely of a singularitie, because they should be seen to give a shade before his house, where afterwards was made the Colledge or place of publick exercise. But these trees did not greatly like the soile, for they never grew big, nor prospered to any purpose. Howbeit, I find in writers, that there were other besides in Italie, and namely about Adria, as also in Spaine. And all this happened about the time that Rome was sacked by the Gaules. But afterwards they came to be so highly esteemed, that for to make them grow the better, men would be at the cost to water them with wine: for this was found by experience, that nothing was so good for them as to poure wine to their roots. Thus have wee taught even our trees also to drinke wine, and be drunke. The Plane trees of any great name at first, were those that grew in the walking place of the Academia in Athens; where the root of one outwent the boughs, 36 cubits in length. Now in this age there groweth a famous one in Lycia, neare unto the high way where men passe too & fro, & it hath a pleasant cold fountain adjoining to it: the same is hollow within like to an house, & yeeldeth a cave of 8: foot in compass: but it carieth such an head withall like a grove, so large, so broad, & so branched, that every arm resembleth one entire tree: inso much, as the shade therof taketh up & spreadeth a great way into the fields. And because in every respect, it might resemble a very cabbin and cave indeed, there are stonie bankes & seats within, in forme of an arbor round about, made as it were of pumish stone overgrown with mosse. And in truth, this tree and the situation therof, is so admirable, that *Licinius Mutianus* thrice Confull, and lately Lieutenant generall and governour of that province, thought this one thing worthie to be recorded as a memoriall to posteritie, That he and eighteen more persons of his companie, used to dine and sup within the hollownesse of that tree: where the very leaves yeilded of the own sufficient bed and bench-roume to rest and repose themselves: where they might sit secured from daunger of wind to blow upon them: where whiles he sat at meat, he wished nothing more than the pleasure to heare the showers of raine to pat drop by drop, and rattle over his head upon the leaves: & finally, that he tooke much more delight to lie within the same cabbin, than in a stately chamber built of fine marble, all glorious within with hangings of tapistrie and needleworke, of fundrie colours, and the same seeled over head with an embowed rooffe laid with beaten gold. Moreover, *Caligula* the Emperor had such another Plane tree growing in the countrey about Velitrae, most artificially: wherin he used to take great pleasure, with admiration of the fundrie lofts and planks one over another, the large settles also and spacious branches that the boughs yeilded, where hee was wont to sit at repast, making one of the fiftene guests. For the roume was of that capacitie, that it would receive not only so many to sit with ease at the table, but also the gentlemen & servitors that waited and ministred unto them: and he rearned this supping place by the name of, His nest: because it seemed like a birds nest in a tree. There is to be seene at Gortyna, within the Island Candie, one Plane-tree near unto a faire fountain: recorded it is as well by Greeks as Latines in their writings, and by the testimonie of them both, never sheddeth the leaves, but remaineth alwaies greene, as well in Winter as Summer: by occasion whereof arose the tale (so much given is Greece to devise fables by and by of every small matter) That *Jupiter* under that tree defloured the young ladie *Europa*: as if (forsooth) there were no other Tree but it of the same kind and nature, in Cyprus. But (as the nature of man is evermore curious, and seeking after novelties) the Candiotes, desirous to have of the same race within Creet, set many slips thereof in fundrie places, as if they longed to have more such vicious fruit (as is before named:) for in very deed that Tree is in no one thing more commendable, than for excluding the heat of the Sunne in Summer, and admitting it in Winter. In the time of *Claudius Caesar*, late Emperour, there was an enfranchised slave belonging to *Marcellus Eferminus*, a daintie guelled Eunuch of Theffalie, and exceeding rich, who caused certaine Plane trees to be brought out of Candie into Italie, for to plant them at a manor which hee had in the territorie neare to Rome. This freed Eunuch for to grow into
 more

A more power and favor with *Cesar*, had engrafted himselfe, as adopted among his freed-men: and surely for his wealth might well be called *Dionysius*, who was the first that transplanted these kind of trees. Thus you see, that over and above those monstrosities which Italie hath devised of it selfe, wee have remaining and reigning among us those also of straunge and forraine nations abroad in the world.

CHAP. II.

¶ Of the low or dwarfe Plane-tree. And who first devised to clip and shred Arbours.

B **A**S big as these Plane trees are, yet there be those of a forced smalnes to the other, called *Chama-platani*: whereby a man may perceive, that we have invented the meanes to have abortive trees also; even to hinder their growth, that they cannot come to their full perfection. And therefore even in trees as well as in other living creatures, there is a certaine infelicite, which may well be tearmed, A dwarfish untowardnesse. This smalnesse in trees may come, by the manner of planting them, as well as by cutting and keeping them downe. The first man that devised to shred and cut arbours, was one *Cn. Martius*, a gentleman of Rome, and a favourer of the Emperour *Augustus*: and this invention hath not been knowne above 80 yeeres.

CHAP. III.

¶ Of Trees that be strangers in Italie: and namely, of the Citron or Limon tree.

C **H**errie-trees, Peach-trees, and generally all that either have Greeke names or any other but Latine, are held for aliens in Italie. Howbeit some of them now are enfranchised and taken for free denizens among us: so familiar they be made unto us, and they like the ground so well. But of them, we will speake in the ranke of those trees that beare fruit. For this present, we are to treat of those that be meere forrainers: and for good lucke sake, begin wee will with that, which of all others is most holefome; to wit, the Citron tree, called the Assyrian tree; and by some, the Median Apple-tree: the fruit whereof is a countrepoison and singular Antidote against all venome. The tree it selfe, beareth a leafe like unto an Arbut tree; many it hath certaine pricks among. The Pomecitron is not so good to be chewed and eaten of it selfe: howbeit very odoriferous it is: as be the leaves also thereof, which are used to be laid in wardrobes among apparell; for the smell thereof will passe into the clothes, and preserve them from the moth, spider, and such like vermine. This tree beareth fruit at all times of the yeere: for when some fall for ripenesse, others wax mellow; and some againe, begin then but to shew their blossome. Many forainers have assaied to transplant them, and set them in their own countries, in regard of their excellent vertue to resist poisons. And for this purpose they have caried yong quickets, or plants of them, in earthen pots made for the purpose, and enclosed them well with earth: howbeit the roots had libertie given them to breath (as it were) at certaine holes for the nones, because they should not bee clunged and pent in prison. Which I rather note, because I would have it knowne once for all, and well remembered, That all plants which are to be remooved and carried farre off, must be set very close, and used in the same order most precisely. But for all the care and pains taken about it, for to make it grow in other countries, yet would it not forget Media and Persia, nor like in any other soile, but soon die. This is that fruit, the kernels whereof (as I said before) the lords and great men of Parthia use to seeth with their meat, for to correct their soure and stinking breaths. And verily there is not a tree in all Media, of better respect than is the Citron tree. As for those trees in the region of the Seres (which beare the silke woll or cotton) we have spoken thereof in our Cosmographie, when we made mention of that nation.

CHAP. IIII.

¶ Of Indian Trees: and when the Ebene was first knowne at Rome.

F **I**N like manner, discoursed we have of the talnesse and greatnesse of Indian trees. Of all those trees which be appropriate to India, *Virgill* hath highly commended the Ebene above the rest:

rest: and hee affirmeth, That it will not grow elsewhere. But *Herodotus* assigneth it rather to *Æthiopia*; and saith, That every three yeares the *Æthiopians* were wont to pay by way of tribute unto the kings of *Persia*, * 100 billets of the timber of that tree, together with gold and yvorie. Moreover, I must not forget (since that mine author hath so expressly set it downe) that the *Æthiopians* in the same regard were bound to pay in like manner, twentie great and massie Elephants teeth. In such estimation was Ivorie then, namely in the 310 yeere after the foundation of *Rome*; at what time as *Herodotus* put forth that Historie at *Thurij* in *Italy*. The more mervaile it is, that we give so much credit to that writer, saying as hee doth, How that in his time and before, there was no man knowne in *Asia* or *Greece*, nor yet to himselfe, who had not so much as seene the river *Po*. The Card or Map of *Æthiopia*, which lately was presented and shewed to the Emperor *Nero* (as we have before said) doth sufficiently testifie, That from *Syene* (which consisteth and boundeth the lands of our Empire and dominion) as farre as to the Iland *Meroc*, for the space of 996 miles, there is little *Ebene* found: and that in all those parts betweene, there be few other trees to be found, but *Date* trees. Which peradventure may be a cause, That *Ebene* was counted a rich tribute, and deserved the third place, after *Gold* and *Ivorie*. Certes, *Pompey* the Great, in that solemnitic of triumph for the victorie and conquest of *Mithridates*, shewed one *Ebene* tree. *Fabianus* is of opinion, that it will not burne: howbeit, experience sheweth the contrarie, for take fire it will, yea and cast a pleasant and sweet perfume. Two kinds there be of *Ebene*: the one, which as it is the better, so likewise it is rare and geason; it carrieth a trunk like another tree, without knot; the wood thereof is blacke and shining; and at the very first sight, faire and pleasant to the eye, without any art or polishing at all. The other, is more like a shrub, and putteth forth twigs as the *Treffolie*. A plant this is, commonly to be seene in all parts of *India*.

CHAP. V.

Of certaine Thornes and Fig-trees of India.

Here groweth also among the *Indians*, a Thorne resembling the latter kind of *Ebene*; and found to serve for the use of candles: for no sooner commeth it neare unto the fire, but it catcheth a flame, and the fire leapeth presently unto it. Now it remaineth to speak of those trees, which set *Alexander* the Great into a wonder at what time as upon his victorie hee made a voiage for to discover that part of the world. First and formost, there is a *Fig-tree* there, which beareth very small and slender figges. The propertie of this Tree, is to plant and set it selfe without mans helpe. For it spreadeth out with mightie armes, and the lowest water-boughes underneath, doe bend so downward to the very earth, that they touch it againe, and lie upon it: whereby, within one yeares space they will take fast root in the ground, and put forth a new Spring round about the Mother-tree: so as these branches thus growing, seeme like a traile or border of arbours most curiously and artificially made. Within these bowers the shepheards use to repose and take up their harbour in Summer time: for shade and coole it is, and besides well fenced all about with a set of young trees in manner of a pallaisado. A most pleasant and delectable sight, whether a man either come neare, and looke into it, or stand a farre off: so faire and pleasant an harbour it is, all greene, and framed arch-wise in just compasse. Now the upper boughes thereof stand up on high, and beare a goodly tuft and head aloft like a little thicke wood or Forrest. And the bodie or trunk of the Mother is so great, that many of them take up in compasse threecore paces: and as for the foresaid shadow, it covereth in ground a quarter of a mile. The leaves of this Tree are very broad, made in forme of an *Amazonian* or *Turkish* Targuet: which is the reason, that the figges thereof are but small; considering, that the leafe covereth it, and suffereth it not to grow unto the full. Neither doe they hang thicke upon the tree, but here and there very thin, and none of them bigger than a beane. Howbeit, so well and throughly ripened they bee with the heat of the Sunne, notwithstanding the leaves are betweene, that they yeeld a most pleasant and sweet rellice in tast, and are a fruit for a king, answerable to the mightie, huge, and prodigious tree that beareth it. These fig-trees grow abundantly about the river *Acetine*.

CHAP. VI.

¶ Of the tree named Pala: of other Indian trees, whereof the names be unknowne. Also of those that beare Wooll or Cotton.

A Nother tree there is in India, greater yet than the former, bearing a fruit much fairer, bigger, and sweeter than the figs aforesaid; and whereof the Indian Sages and Philosophers do ordinarily live. The leafe resembleth birds wings, carrying three cubits in length, and two in breadth. The fruit it putteth forth at the bark, having within it a wonderfull pleasant juice: inso-much as one of them is sufficient to give four men a competent & full refection. The trees name is Pala, and the fruit thereof is called Ariena. Great plentie of them is in the country of the Sydraci, the utmost limit of *Alexander* the Great his expeditions and voiages. And yet is there another tree much like to this, and beareth a fruit more delectable than this Ariena, howbeit the guts in a mans belly it wringeth, and breeds the bloudie flux. Whereupon *Alexander* made open proclamation and streightly forbad, That no man should tast thereof. As for the Macedonian souldiers, they talked much of many other trees, but they described them in generall tearmes only, and to the most of them they gave no names at all. For one tree there is besides, in other respects resembling the Terebinth, and it carrieth a fruit much like to Almonds; only it is lesse, but of a most sweet and toothsome tast. In *Bactriana* verily, some take it to be a speciall kind of the Terebinth indeed, rather than a tree like unto it. But that tree which carrieth a fine flaxe, whereof they make their daintie linnen and lawne, it hath leaves like to those of a mulberrie tree, and beareth a red berrie like to the hips of an Eglantine. They plant and set these in their fields and plaines: and surely, standing as they doe in such order, there are no rows of any trees that yeeld a fairer sight and prospect. The Olive tree of India is but barren, save that it bringeth a fruit much like the wild Olive.

CHAP. VII.

¶ Of Pepper trees: of the Clove tree, and many other.

D **T**He trees that beare Pepper every where in those parts, be like unto our Juniper trees. And yet some have written, That they grow onely upon the front of the hill *Caucasus* on that side which lieth full upon the Sunne. The cornes or graines that hang thereupon, differ from Juniper berries: and those lie in certaine little huskes or cods like to the pulse called Fafels or Kidney beanes. If that be plucked from the tree before they gape and open of themselves, they make that spice which is called Long-pepper: but if as they do ripen, they cleave & chawne by little and little, they shew within, the white pepper: which afterwards beeing parched in the Sunne, chaungeth colour and waxeth blacke, and therewith riveled also, Peppers be subject to the injurie of the weather as well as other fruits: for if the season be unkindly and untemperate, they will catch a blast, and then the seeds will be deafe, void, light, and naught. This fault is called among the Indians, *Brechmasis*, which in their language signifieth, an abortive or untimely fruit. This pepper of all other kinds is most biting and sharpe, but it is the lightest, and pale of colour withall. The blacke is more kindly and pleasant: and the white is more mild in the mouth than both the other. Many have taken Ginger (which some call *Zimbiperi*, & others *Zingiberi*) for the root of that tree: but it is not so, although in tast it somewhat resembleth pepper. For Ginger groweth in *Arabia* and *Troglodytica* in medows about the villages: and it is a white root of a certaine little heart. And howsoever it be very bitter and biting, yet it quickly meeteth with a worme, and rotteth. A pound of Ginger is commonly sold at Rome for six deniers. Long pepper is soone sophisticated, with the *Senvie* or mustard-seed of *Alexandria*: and a pound of it is worth fifteen *Romane* deniers. The white costeth seven deniers a pound, and the blacke is sold after foure deniers by the pound. As for Pepper, I wonder greatly that it should be so much in request as it is: For whereas some fruits are sweet and pleasant in tast, and therefore desired; others beautifull to the eye, and in that regard draw chapmen: pepper hath neither the one nor the other. A fruit or berrie it is (call it whether you will) neither acceptable to the tongue nor delectable to the eye: and yet for the biting bitterness that it hath, we are pleased therewith, and we must have it set forsooth from as farre as *India*. What was he, gladly would I know, that ventured

tured first to bite of pepper and use it in his meats? Who might he be, that to provoke his appetite and find himselfe a good stomacke, could not make a shift with fasting and hunger onely? Surely Ginger and Pepper both, grow wild in those countries where they doe like, and yet wee must buy them by weight, as we doe gold and silver. Of late daies here in Italie, wee have made meanes to have the Pepper tree grow among us: and verily a little scrubbie plant it is, or shrub rather; bigger somewhat than the Mirtle, and not farre unlike. The graine that ours beareth, carrieth the very same biternes that the Greene pepper of India is thought to have before it be full ripe. For here it wanteth the due parching and ripening against the sunne: and by that meanes commeth short of the rivels and blacknesse that the outlandish pepper hath. Sophisticated it is, by entermingling with it the graines or berries of Iuniper: for surely, they doe marveilous soone take the tast and strength of Pepper. And as for the weight, there be divers wayes to deceive the chapman therein. G

Over and besides, there is another fruit that commeth out of India, like unto pepper cornes, and it is called Cloves, but bigger somewhat and more brittle. And they say, that it groweth in a certaine grove consecrated to their gods in India. Transported over it is unto us for the sweet sinell that it casteth. H

Moreover, the Indians have a thornie and prickie plant, which beareth a fruit like to pepper, and passing bitter. The leaves bee small and grow thicke after the manner of Privet: it putteth forth braunches three cubits long: the barke is pale, the root broad and of a woodie substance, resembling the colour of boxe. Of the infusion of this root in faire water, together with the seed, in a brasen vessell, is made that medicine or composition which is called Lycium. A bush there groweth likewise upon mount Pelion [like Pyxiacantha, i. the Berberrie bush] whereof is made a counterfeit Lycium. In like manner, the root of the *Daffodill*, with an Oxe gall, Wormwoot, Frankincense, and the mother or lees of Oile, will doe the same. But the best Lycium and most medicinable, is that which doth yeeld a great froth or scum. The Indian merchants doe send it over in bags made of the skins either of Camels or Rhinocerotes. In some parts of Greece they name the very bush whereof this Lycium is made, *Pyxacanthum Chironium*. I

CHAP. VIII.

Of Macir, Sugar, and the trees of the region Ariana.

THe Macir likewise is brought out of India. A reddish barke or rind it is, of a great root; and beareth the name of the tree it selfe: but the forme of that tree I know not how to describe. K

This rind sodden in hony, & so condit as a Succade, is a singular good medicine for those that be troubled with the Dysenterie or bloudie flux. As for Sugar, there is of it in Arabia; but the best commeth out of India. * A kind of honey it is, gathered and candied in certaine canes: white this is like gum [Arabicke] and brittle betweene a mans teeth. The graines hereof when they are at the biggest, exceed not a filberd nut, and serve only for Physick. In the realme of Ariana (which confineth and boundeth upon the Indians) there is a certaine thornie plant, so full of sharpe pricks, that it is comberous to them who come about it; which yeeldeth a pretious liquor issuing out thereof, like unto Myrrhe. In the same province there groweth a pestilent venomous shrub called Rhaphanus, bearing leaves like the Bay tree, which with their fragrant sinell traine horses thither to eat thereof; but they are so good for them, that they left not *Alexander* the Great scarce one horse of all his Cavallerie, they dyed so fast of that food at his first entrance into the countrey. The like accident befell unto him also among the Gedrosians. In like manner, there is another thornie plant (by report) in that region, leaved like the Laurell: the juice and liquor whereof, if it be sprinkled or dashed in the eyes of any living creature whatsoever, putteth them quite out and makes them blind. Moreover, they have an herb there, of a singular pleasant favor, but covered all over it is with litle venomous serpents; their sting is present death. *Onesicritus* reporteth, That in the vales of Hircania there be trees like figtrees, which the Hircanians call *Occhi*, out of which there distilleth or droppeth hony every morning for the space of two hours. L

CHAP. IX. *Of Bdelium: and the trees growing by the Persian gulse.*

NEare to these parts lyeth Bactriana, wherein is the most excellent Bdelium. The tree that beareth it is blacke, of the bignes of an Olive, with leaves like an Oke; and the fruit resembleth M

* White Sugar
candied.

A bleth wild figs, and is of the same nature. The gum thereof, some call Brochos; others, Malachra: and there be againe that name it Maldacon. Howbeit, when it is blacke, and brought into roles or lumpes, they give it another name, and call it Hadrobolon. But indeed the right Bdellium when it is in the kind, should be cleare, as yellow as waxe, pleasant to smell unto, in the rubbing and handling faticke, in tast bitter and nothing soure. Being washed and drenched with wine (as they use it in sacrifices) it is more odoriferous. There is found of it in Arabia, India, Media, and Babylon. As for that which is brought out of Media, they call it Peraticum: this is more tractable and gentle in hand, more crustie and bitter than the rest. But the Indian Bdellium is the moister and more gummie: this is sophisticated with Almonds, whereas the other kinds be made counterfeited with the barke of Scordastus, a tree that yeeldeth the like gum. But this trumperie and deceit is found by the smell, colour, weight, tast, and fire. And let this one word for all, serve as a generall rule to proove all such drugs and spices by. The Bactrian Bdellium when it is in the fire, yeeldeth a drie and smokie fume, and hath many white markes in it resembling the nailes of ones fingers: besides, it hath his just poise and weight that it ought to have, neither more nor lesse; for as it should not be over weightie, so it may be too light. Commonly the price goeth after this rate, to wit, three deniers a pound.

B Vpon these regions above-named, confineth Persis, whereas the red sea (which we named in our Geographie, the Persian gulf) floweth at certaine tides far into the land, and in these sands and downes are to be seene divers trees of straunge natures: for when the tide is past, you shall see at a low water some trees with their roots bare, as if they were eaten with the salt water; and a man cannot tell whether they were brought thither with the tide, or left in the ebbe: but surely the naked roots seeme to clasp and take hold of the barren sands, as if they were Polype fishes should cling to any thing. And yet the same, when the sea floweth againe, notwithstanding they be beaten upon with the waves, stand fast and stirre not. Againe, at some high water and spring-tide, they be covered all over with water: and by good arguments it is evident to the eye, That nourished they be with the roughnesse of the surging sea-water. Their heights is wonderfull: and fashioned they be in forme of an Arbut tree: the fruit without-forth like to Almonds, but the kernels within be writhed.

CHAP. X.

¶ The trees of the Iland Tylos within the Persian sea. Moreover, of those trees that beare Wool or Cotton.

Within the same gulf of Persia, there lyeth an Iland full of woods to the East side, even upon that coast which is overflowed with the tide. Every tree within, is equal in bignes to the figtree: the blossomes that they carrie, are so sweet, as it is wonderfull and unspeakeable: the fruit like a Lupine, yet so rough and prickly, as no beast will gladly touch it. In the highest part and knap of the same Iland, there be trees bearing Wool, but not in such sort as those of the Seres: for whereas the leaves of those doe carrie a downe or cotton, these are altogether without and barren thereof: and but that they be somewhat lesse, they might seeme to be vine leaves. Howbeit they beare a fruit at the last, like Gourds in fashion, and as big as Quinces: which when they be full ripe, doe open and shew certaine balls within of downe: whereof they make most fine and costly linnen clothes.

CHAP. XI.

¶ Of the Gossampine trees: as also of other Cotton or Bombase trees, whereof clothes be made. In what manner divers trees do yeeld their fruit.

There is a lesser Iland named Tylos, ten miles from the other, where be trees called Gossampines, which yeeld more cotton than those in the greater. King Iuba saith, that this Cotton groweth about the branches of the said trees, and that the linnens made thereof be farre better than those of the Indians. As for those trees in Arabia whereof they make their linnen cloth, he affirmeth that they be called Cynæ, and have leaves like the Date tree. Thus you see, how the Indians be clad with trees of their own. In those Ilands called Tyli, there is another tree which beareth a blossome much like the flower of a white Violet, or Cock-gilloffe, but four times

as big, which may seeme straunge in that tract. And yet there is another Tree not unlike to it, howbeit fuller of leaves, and bearing a blossome like to a damaske or incarnate rose. This flower shutteth close in the night, beginneth to open in the morning at the Sun-rising, and by noone sheweth out at the full. The inhabitants have a by-word and saying among them, That it sleepest all night, and wakes in the morning. The same Island bringeth forth Date trees, Olive trees, Vines, and among other fruits, Figges also. No trees there, doe shed their leaves: for the Island is well watered with cold and quicke springs: and besides it hath the benefite of raine. As touching Arabia, which lyeth neere and bordereth upon these Islands, the spices and odoriferous fruits that be therein, are to be treated of with distinction: for their merchandise doth consist of roots, braunches, barke, juice or liquor, gums and rofins, wood, twigs, flowers, leaves, and apple. G

CHAP. XII.

Of Costus, Spike-nard, and the diuers kinds of Nard.

BVt the root and leafe be of greatest price in India. And first and formost the root of Costus, biteth and burneth in the mouth; and is of a most excellent and soveraign smell: for otherwise the braunches or bodie of the shrub is good for little or nothing. In the Iland Patale (which lyeth at the verie first fosse and mouth where the river Indus falleth into the sea) there be found two kinds thereof: namely, the black; and the white, which is counted the better. A pound of Costus is held at sixteen Romane deniers. H

As touching the leafe of Nardus, it were good that wee discoursed thereof at large, seeing that it is one of the principall ingredients aromaticall that goe to the making of most costly and precious ointments. The plant it selfe Nardus hath a massie, heauey, and thicke root; but short, blacke, and brittle, notwithstanding that it be fattie and oleous. Soone it vinoweth and catcheth a kind of mustines; and like unto the *Cypresse it hath a sharpe tast, rough and small leaves, but comming thicke. The head of Nardus spreadeth into certaine spikes or eares, whereby it hath a twofold use, both of spike and also of leafe; in which regard it is so famous. A second sort there is of it growing along the river Ganges, condemned altogether as good for nothing, for it hath a strong and stinking savour; whereupon it is called Ozænitis. There is an hearb growing every where called Pseudonardus, or bastard Nard, which is obruded unto us and sold for the true Spikenard. A thicker leafe it hath and a broader than the other: the colour is more pallat and weake, inclining to white. Also the very root of the right Nard, for to make the better weight, is mingled with gums, with Litharge of silver, Antimonie, or the rind of Cyperus. But the good, sincere, and true Nard is known by the lightnes, red colour, sweet smell, and the tast especially: for it drieth the tongue and leaveth a pleasant rellish behind it. The Spike carrieth the price of an hundred Romane deniers a pound. As touching the leaves, the diversitie thereof maketh difference also in the price: for that which hath the larger leaves, and thereupon is called Hadrosphærum, is worth thirtie deniers a pound. A second sort there is with a smaller leafe, and of a middle size, named therefore Mesosphærum: and that is bought after sixtie deniers the pound. But the best of all is that with least leaves, and carrieth the name of Microsphærum: and that the merchant selleth for 75 deniers the pound. What kind soever it be, the greener and newer it is, the better it is reputed, and more odoriferous, than that which hath been long kept. Yet say it be old gathered, if the colour hold and keepe well, men preferre it before the blacker, though it be new. With us in Italie, and in this part of the world, the leafe of Nardus comming from Syria, is esteemed best: next unto it the Celticke, out of Fraunce; and in the third place that of Candie, which some name Agrion, [i. the wild] others Phu: and this hath a leafe resembling Loveach or Alefanders; a stalke a cubit long, full of joynts and knots, of a weake whitish & light purple colour; the root groweth crooked, full of strings and haire hanging to it, and is much like to birds claws or feet. As for Baccharis, it is called likewise Rustick-nard: but of it will wee speake among other flowers. All these kinds of Nardus are to be reckoned hearbs, save that only of the Indians: of which, the Celticke or French Nard, is plucked and gathered together with the root: and for the better preparing thereof, it ought to be well washed and soked in wine, and so dried in the shade out of the sunne. Then is it made up into certaine bundels of an handfull apiece, bound up in papers, & differeth not much in goodnes from the Indian Spikenard: howbeit I

* or, Cyperus.

K

L

M

beit

A beir, lighter it is than that of Syria. A pound of it is worth at Rome thirteene deniers. The onely prooffe and triall of all their leaves is this, That they bee not brittle, and rather ripe drie, than fere or rotten-drie, That they breake not and fall in peeces. With the Celticke or French Nard there evermore groweth another hearbe, called Hirculus, and it taketh that name of a strong and Goatish smell which it yeeldeth : besides, so like it is unto the other, that it is foisted in amongst the good, and so sold with it. Yet herein is the difference ; for that this hath no stemmie or stalke at all ; the leaves thereof also are lesse : and last of all, the root is neither bitter in tast, nor sweet in smell.

CHAP. XIII.

B Of *Asara-Bacca, Amomum, Amomis, and Cardamomum.*

A Sarum or Fole-foot, called otherwise, Asara-Bacca, hath the verie properties and vertues of Nard : and therefore some have called it Wild Nard. An hearbe it is, carrying leaves like to yvie, save that they bee more round and softer : it putteth foorth a purple flower, and hath a root like unto the French Nard. The flower is full within of seeds like grape kernels, of an hote tast, and resembling wine. In shadowie mountaines it floureth twice a yeare. The best groweth in Pontus, the next to it for goodnesse is found in Phrygia : that of Illyricum is of a third ranke. The root is digged up when it beginneth to put forth leaves. They use to drie it in the Sunne : soone it will vennow and be mouldie ; quickly also it waxeth old, and looseth the strength. Of late daies there was an hearbe found in Thracia, the leaves whereof differ in nothing from the Indian Nard.

C As for the grape of Amomum, which now is in use and much occupied, some say it groweth upon a wild vine in India. Others have thought, that it commeth from a shrub like Myrtle, and carieth not above a hand breadth, or foure inches in height. Plucked it is together with the root : and gently must it be laid and couched in bunches by handfuls, for if great heed bee not taken, it will soone burst and breake. The best Amomum and most commendable, is that which carrieth leaves like to those of the Pomgranate, without rivels and wrinkles, and besides, of a red colour. The next in goodnesse is that which is pale. The greene or grasse coloured is not all out so good, but the worst of all is white : and that colour commeth by age, and long keeping. A pound of these grapes entire and whole in the cluster, is worth threescore Romane deniers. But if they bee crumbled and broken, it will cost but eight and fortie. This Amomum groweth likewise in a part of Armenia named Otene, also, in the kingdomes of Media and Pontus. It is sophisticated with the leaves of the Pomgranate, and with some other liquid gum besides, that it may hang united together, and roll round into the forme of grapes.

D Now as touching that which is called Amomis, it is lesse full of veines, and nothing so sweet smelling : but harder than Amomum : wherby it appeareth, that it is either a divers plant from it, or els if it be the same, it is gathered before it be full ripe.

E Cardamomum is like to these above rehearsed, both in name, and also in making and forme : but it beareth a longer graine for seed. The manner also of gathering and cutting it downe, in Arabia, is the same. Foure kinds there be of it. The first is most greene and fattie withall : having foure sharpe corners, and if a man rub it betweene his fingers, he shall find it very tough & stubborne : and this is most esteemed of all the other. The next to it is somewhat reddish, but enclining to a whitish colour. A third sort is shorter, lesse, and blacker than the rest. Howbeit, the worst is that which hath fundrie colours, is pliable and gentle in the rubbing, and smelleth but a little. The true Cardamomum ought to come near in resemblance to Costus. And it groweth in Media. A pound of the best will cost twelve deniers.

F The great affinitie or kinred rather in name, that Cinnamon hath with these spices before rehearsed, might induce me to write thereof in one suite, even in this place : but that more meet it is to shew first the riches of Arabia, and to set downe the causes why that countrie should be surnamed Happie and Blessed. We will begin therefore with the cheefe commodities thereof, namely, Frankincense and Myrrhe : and yet Myrrhe is found as well in the Troglodites countrey, as in Arabia.

THERE is no region in the whole world that bringeth forth Frankincense, but Arabia and yee is it not to be found in all parts thereof: but in that quarter onely of the *Araramites*. Now these *Araramites* inhabite the very heart of Arabia, and are a continie of the *Sabaei*. The capitall citie of the whole kingdome is called *Sabota*, seated upon an high mountain: from whencee unto *Saba*, the only countrey that yeeldeth such plentie of the said incense, it is about eight daies journey. As for *Saba*, (which in the Greeke tongue signifieth, a secreet mysterie) it regardeth the Sunne rising in Summer, or the Northeast; enclosed on every side with rockes inaccessibile: and on the right hand it is defended with high cliffes and crags that beare into the sea. The soile of this territorie (by report) is reddish and inclining to white. The Forrests that carie these Incense trees, lie in length twentie *Schaenes*, and beare in breadth halfe as much. Now that which we call *Schaenus*, according to the calculation of *Eratosthenes*, containeth fortie *stadia*, that is to say, five miles: howsoever some have allowed but two and thirtie *stadia* to every *Schaenus*. The quarter wherein these trees doe grow, is full of high hills: howbeit, goe downe into the plaines and vallie beneath, yee shall have plentie of the same trees, which come up of their owne accord, and were never planted. The earth is fat, and standeth much upon a strong clay, as all writers do agree. Few Springs are there to be found, and those that be, are full of Nitre. There is another tract by it selfe confronting this countrey, wherein the *Minæans* doe inhabite: and through them there is a narrow passage, by which the frankincense is transported into other parts. These were their first neighbours that did trafficke with them for their incense, and found a vent for it: and even so they doe still at this day, whereupon the Frankincense it selfe is called of their name, *Minæum*. Setting this people of the *Sabeans* aside, there be no Arabians that see an Incense Tree from one end of the yeare to another: neither are all these permitted to have a sight of those Trees. For the common voice is, that there bee not above three thousand families which can claime and challenge by right of succession that priviledge, to gather Incense. And therefore all the race of them is called Sacred and Holy: for looke when they goe about either cutting and slitting the trees, or gathering the Incense, they must not that day come near a woman to know her carnally; nay they must not be at any funerals, or approach a dead corps, for being polluted. By which religion, and ceremonious observation, the price is raised, and the Incense is the dearer. Some say, that these people have equall libertie in communc; to goe into these woods for their commodities when they will: but others affirme, that they be divided into companies, and take their turns by yeares. As concerning the very Tree, I could never know yet the perfect description of it. We have maintained wars in Arabia, and the Romane armie hath entred a great way into that countrey. *C. Caesar*, the adopted sonne of *Augustus*, wan great honour and glorie from thence: and yet verily, to my knowledge, there was never any Latine Author, that hath put downe in writing the forme and fashon of that Tree which carieth Incense. As for the Greeke writers, their bookes doe varie and differ in that point. Some give out, that it hath leaves like to a Peare-tree, only they be somewhat lesse: and when they come forth, they be of a grassie-greene colour. Others say that they resemble the *Lentiske* Trees, and are somewhat reddish. There bee againe who write, that it is the very *Terebints*, and none else, that giveth the Frankincense: of which opinion king *Antigonus* was, who had one of these shrubs brought unto him. King *Iuba* in those bookes which hee wrate and sent unto *C. Caesar*, sonne to the Emperour *Augustus* (who was enflamed with an ardent desire to make a voiage into Arabia, for the great name which went thereof) saith, That the Tree which beareth Frankincense, hath a trunk or bodie writhen about, and putteth forth boughs and branches, like for all the world to the *Maple* of *Pontus*. Item, that it yeeldeth a juice or liquor, as doth the *Almond* tree: and such are seen commonly in *Carmania*: as also those in *Ægypt* which were planted by the carefull industrie of the *Ptolomees*, kings there. How ever it be, this is received for certaine, that it hath the very bark of a *Bay* tree: Some also have said, that the leaves be as like. And verily, such kind of Trees were they which were scene at *Sardis*: for the kings of *Asia* likewise were at the cost and labour to transplant them, & desirous to have them grow in *Lydia*. The Embassadors who in my time came out of Arabia to Rome, have made all that was delivered as touching these Trees, more doubtfull and uncertaine than before. A straunge matter and wonderfull indeed, considering, that twigs and branches of the Incense tree have passed betweene:

A by the view of which impes, we may judge what the Mother is : namely, even and round in the bodie, without knot or kniar, and from thence she putteth out shoots.

They used in old time to gather the Incense but once a yeare; as having little vent, and small returne, and lesse occasion to sell than nowadaies: but now, since every man calleth for it, they feeling the sweetnesse of the gaine, make a double vintage (as it were) of it in one year. The first, and indeed the kindly season, falleth about the hottest daies of the Summer, at what time as the Dog daies begin: for then they cut the Tree where they see the barke to be fullest of liquor, and whereas they perceive it to be thinnest and strut out most. They make a gash or slit onely to give more libertie: but nothing doe they pare or cut cleane away. The wound or incision is no sooner made, but out there gusheth a far forme of froth: this soon congealeth and groweth to be hard:

B and where the place will give them leave, they receive it in a quilt or mat made of Date-tree twigs, plaited and wound one within another wicker wise. For els where, the floore all about is paved smooth, and rammed downe hard. The former way is the better to gather the purer and clearer Frankincense: but that which falleth upon the bare ground, proveth the weightier. That which remaineth behind, and sticketh to the Tree, is pared and scraped off with knives, or such like yron tooles; and therefore no marvell if it be full of shavings of the barke. The whole wood or Forrest is divided into certaine portions: and every man knoweth his owne part: nay, there is not one of them will offer wrong unto another; and encroch upon his neighbours. They need not to set any keepers for to looke unto those Trees that be cut, for no man will rob from his fellow if he might, so just and true they be in Arabia. But beleve me, at Alexandria where Frankincense is tried, refined, and made for sale, men cannot looke surely ynough to their shops and work-houses,

C but they will be robbed. The workman that is employed about it, is all naked, save that hee hath a paire of trouses or breeches to cover his shame, and those are sewed up and sealed too, for feare of thrusting any into them. Hood-winked he is sure ynough for seeing the way too & fro, and hath a thicke coife or maske about his head, for doubt that hee should bestow any in mouth or eares. And when these workmen bee let forth againe, they be stripped sturke naked, as ever they were borne, and sent away. Whereby we may see, that the rigour of justice cannot strike so great feare into our theeves here, and make us so secure to keepe our owne, as among the Sabaeans, the bare reverence and religion of those woods. But to returne againe to our former cuts. That Incense which was let out in Summer, they leave there under the Tree untill the Autumne, and then they come and gather it. And this is most pure, cleane, and white.

A second Vintage or gathering, there is in the Spring: against which time, they cut the bark before in the Winter, and suffer it to run out untill the Spring. This cometh forth red, and is nothing comparable to the former. The better is called Carpheotum, the worse, Dathiathum. Moreover, some say, that the gum which issueth out of young trees is the whiter: but that which cometh from the old, is more odoriferous. There be others also of opinion, That the better Incense is in the Islands. But king *Izba* doth avouch constantly, that there is none at all in the Islands. That which is round like unto a drop, and so hangeth, we call the male Incense; whereas in other things lightly wee name no male, but where there is a female. But folke have a religious ceremonie in it, not to use so much as the tearme of the other sexe, in giving denomination to

E Frankincense. Howbeit, some say, that it was called the Male, for a resemblance that it hath to cullions or stones. In very truth, that is held for the cheefe and best simply, which is fashioned like to the nipples or teats that give milke, standing thicke one by another: to wit, when the former drop that distilled, hath another presently followeth after, and so consequently more unto them, and they all seeme to hang together like wigs. I read, that every one of these were wont to make a good handfull, namely, when men were not so hastie and eager to carie it away, but would give it time and leasure to drop softly. When it is gathered in this sort, the Greekes use to call it Stagonias and Atomus: but the lesser gobbets they name Orobias. As for the small crums or fragments which fall off by shaking, we called Manna, [*i. Thuris.*] And yet there be found at this day drops of Incense that weigh the third part of a pound, that is to say, about *39 Romane deniers.

F It happened on a time, that king *Alexander* the Great being then but a very child, made no spare of Incense, but cast still upon the altar without all measure when hee offered sacrifice. Whereupon, *Leontides* his tutor and schoolemaister, by way of a light reproofe, said unto him thus, Sir you should in that manner burne Incense when you have once conquered those nations where there groweth Incense. Which rebuke and checke of his tooke so deepe a print in *Alexanders*

* or rather 33, and 2 scruple.

and's heart, and so well he caried it in memorie, that after he had indeed made conquest of Arabia, he sent unto the said *Leonides* his Tutor, a ship full fraught and charged with Incense, willing him not to spare, but liberally to bestow upon the gods when he sacrificed. To returne again unto our historie. When the Incense is gathered (as is beforesaid) conveighed it is to Sabota, upon Cammels backes; and at one gate (set open for that purpose) is it brought into the citie. For by law forbidden it is upon paine of death, to take any other way. Which done, the Priests there of the god whom they call *Sabis*, take the disme or tenth part of the Incense, by measure, and not by weight, and set it apart for that god. Neither is it lawfull for any man to buy or sell, before that dutie be paid: which serveth afterwards to support certain publicke expenses of the eittie. For all strangers and travellers within the compasse of certaine daies journey, if they come to the eittie, are courteously received, and liberally entertained at the cost and charges of the said god *Sabis*. Caried forth of the countrey it cannot be, but through the Gebanites: and therefore there is a custome paid unto their king. The head citie of that kingdome, Thomna, is from Gaza (the next port-towne in Iudæa toward our coast) seven and twentie miles fourescore times told: and this way is divided into threescore and two daies journies by Cammels. Moreover, besides the rith beforesaid, there be certaine measures bestowed upon the Priests, to their owne use: & others likewise to the kings Secretaries and Scribes. And not onely these have a share, but also the Keepers, Sextons, and Wardens of the temple, the Squires of the bodie, the Guard and Pensioners, the kings officers, the Porters, Groomes, and other servitours pill and poll, and every one hath a snatch. Moreover, all the way as they travell: in one place they pay for their water, in another for fodder and provender, or els for their lodging and stable-roume, and every where for one thing or other they pay toll: so as the charge of every Camell from thence to the sea upon our coast, commeth to 688 deniers: and yet we are not come to an end of payments. For our Publicanes and customers also belonging unto our Empire, must have a fleece for their parts. And therefore a pound of the best Incense will cost 16 deniers: of the second 15: and the third 14. With us it is mingled and sophisticated with parcels of a white kind of Rosin which is very like unto it: but the fraud is soone found, by the meanes above specified. The best Incense is tried and knowne by these marks, *viz.* If it be white, large, brittle, and easie to take a flame when it comes neare a coale of fire: last of all, if it will not abide the dent of the tooth, but flie in peeces and crumble sooner than suffer the teeth to enter into it.

CHAP. XV.

Of Myrrhe, and the Trees that yeeld it.

Some have written, That the Trees which beare the Myrrhe, doe grow confusedly here and there in the same woods, among the Incense Trees: but more there are who affirme, That they grow apart by themselves. And in truth, found they are in many quarters of Arabia, as shall be said when we treat of the severall species of Myrrhe. There is very good Myrrhe brought out of the Ilands: and the Sabæans passe the seas, and travell as far as to the Troglodites countrey for it. There is a kind of Myrrhe tree planted by mans hand in Hort-vards, and much preferred it is before the wild that groweth in the woods. These Trees love to bee raked, bared, and cleafed about the rootes: they delight (I say) to have the superfluous spurnes rid away from the root: and the more that the root is cooled, the better thriveth the Tree. The plant groweth ordinarily five cubites high, but not all that length is it smooth and without prickes: the bodie and trunke is hard and wrythen, thicker than the Incense trees: it is greatest toward the root, and so ariseth smaller and smaller, taperwise. Some say, that the barke is smooth and even, like unto that of the Arbut Tree: others againe affirme, that it is prickly and full of thornes. It hath a leafe like to the Olive, but more crisped and curled, and withall it is in the end sharpe-pointed like a needle. But king *Inba* writeth, that it beareth the leafe of Loveach or Alifanders. There be who write, that it resembleth the Juniper, save onely that it is more rough and beset with sharp prickes. And some let not to dreame and talke, that both Myrrhe and also Incense came from one and the same Tree. Indeed, the Myrrhe trees are twice cut and launced in one yeare, and at the same seasons, as well as the Incense trees: but the slit reacheth from the very root up to the boughes, if they may beare and abide it. Howbeit, before that incision be made, they sweat out of themselves a certaine liquor called *Stacte*, which is very good Myrrhe, and none better. As well of this

franke

A franke & garden Myrrhe tree, as of the wild in the woods, the Myrrhe is better that is gathered or runneth in Summer time. There is no allowance of Myrrhe offered and given to the god *Sabis*, as there was of Incense, because it is found in other countries. Howbeit, the king of the Gebanites hath paid unto him for toll and custome, a fourth part of all that passeth through his kingdome. To conclude, whatsoever is bought in any market or place abroad, they put and thrust it hard together in leather bags one with another: but the Druggists and Apothecaries can soone separate the better from the worse, and be very cunning and readie to digest them accordidg to the markes that they goe by, as well of smell as fattinesse.

CHAP. XVI.

☞ *Diverse kinds of Myrrhe. The nature, vertue, and price thereof.*

MAny sorts there be of Myrrhe. Of all the wild kinds, the first is that which groweth in the Troglodites country. Next to it is *Minæa*, in which ranke you may place *Attramitica* and *Aufaritis*, which both come out of the realme of the Gebanites. In a third place reckon that which they call *Dianitis*. A fourth sort is gotten here and there in all parts, and hudled together. In the first raunge is *Sembracena*, so called of a citie within the kingdome of the *Sabæans*, and is next unto the sea. The sixth they name *Dufaritis*. Besides all these, a white Myrrhe there is, found but in one place, which ordinarily is brought to the citie *Messalum*, & there sold.

The Trogloditike Myrrhe they chuse by the fattinesse thereof, and for that it seemeth to the eye greener: it sheweth also foule, rude, and illfavoured: but sharper it is, and more biting in mouth than the rest. The *Sembracene* hath none of these faults, but is pleasant and chearefull to see to: howbeit, of small operation & strength. But to speake in a word, & once for all, the best Myrrhe is knowne by little peeces which are not round: and when they grow together, they yeeld a certaine whitish liquor which issueth and resolvethe from them, and if a man breake them into morsels, it hath white veines resembling mens nailes, and in tast is somewhat bitter. A second degree there is in goodnesse, when it sheweth sundrie colours within. And the worst of all is that which within-forth is black; and the same is worse yet, if it be as blacke without. As touching the price of Myrrhe, it altereth as it is more or lesse in request, and according as it meeteth with many or few chapmen. For yee shall have *Stacte* sold sometimes for fixe deniers a pound, and otherwhiles for fiftie.

DThe greatest price of the garden frank-Myrrhe, or that which is set by mans hand, is two and twentie deniers. The red called *Erythrea*, is never above sixteene: and this is taken to bee the true Myrrhe of Arabia. The kernell within of the Trogloditike Myrrhe, will cost thirteene deniers the pound. But that which they call **Odoraria*, is sold for foureteen. All kinds of Myrrhe be mingled and sophisticated with peeces of *Masticke* comming from the *Lentiske*, and with other gums: *Item*, with *Elaterium*, [i. the juice of the wild Cowcumber] to make it more bitter: as also (that it might seem weightier) with the some of lead, or litharge of silver. And surely setting aside these two corruptions, all the rest are found by the very tast of the gum, which also will sticke unto the teeth in the chewing. But the craftiest & finest devise to counterfeit it, is with Indian Myrrhe, which is gathered there from a certaine thornie plant that groweth among them. This is the only thing that India bringeth forth worse than other countries. And verily so bad it is, that soone it may bee knowne from other Myrrhes.

**or, Adonitide,
i. Sopyxale,
which serveth
for perfuming
in temples.*

CHAP. XVIII.

☞ *Of Masticke, Ladanum, and Bruts of Enhamus, Strobis, and Styrax.*

FROM the foresaid Myrrhe therefore last named, let us for the affinitie passe to *Masticke*: which commeth also of another thornie tree in India, and likewise in Arabia, which they call *Lama*. Howbeit, of *Masticke* there bee two sorts: for both in Asia, and also in Greece, there is found an hearb, which directly from the root putteth forth leaves: and it beareth a bur or thistle-head like an apple, full of seeds. Cut the top of this hearbe, and there will issue forth a certain liquor, so like unto the right & true *Masticke*, that hardly a man shall know the one from the other. Over and besides, there is a third sort of *Masticke* in *Pontus*, more like to *Bitumen*. Howbeit, the very best *Masticke* is brought out of the Island *Chios*, and the same is white, and a pound of it is worth at Rome twentie deniers: but the blacke yee shall buy for twelve. As for the *Chian Masticke*,

sticke, it issueth forth as a gum out of the Lentiske tree. Mingled this is also, like as Frankincense, with Rosin. G

Moreover, Arabia doth glorie even yet in their Ladanum. And many have reported, that this commeth by fortune or chauce, and by occasion of violence and wrong done to an odoriferous plant that yeeldeth it in this manner following. The Goats they say (harmefull creatures as they be to all plants, but more desirous to be brousing of sweet and aromaticall shrubs, as if they knew how precious they were) use to crop the sprouts and twigs of this plant which beareth Masticke; which being so full of this odoriferous and sweet liquor, that they swell againe, doe drop and distill the said moisture, which the shrewd & unhappie beast catcheth among the shag long haire of his beard. Now by reason of dust getting among, it baltereth and cluttereth into knots and bals, and so is concocted into a certaine consistence, in the Sunne. And hereupon it is, that in Ladanum are found Goats haire. But this happeneth by their saying, in no other place but among the Nabataeans in the frontiers of Arabia toward Syria. The later moderne writers call the plant which yeeldeth Ladanum, Strobos: and they affirme, That in the Forrests of Arabia where these doe grow, the boughes are much broken by the brousing of these Goats, and so the juice and liquor sticketh to their lockes and beards. But the true Ladanum (say they) is peculiar to the Island Cyprus (for, give me leave I pray you, to speake by the way of every kind of spice and aromaticall drugs, and not strictly to keepe and observe the order and consequence of places where they be found.) And, by report, after the same manner as this Ladanum in Arabia; there hangeth and cleaveth to the beards and shag-haired legs and flanks of the Goats there also, a certaine greafe and fattinesse called Oesypus: but, according to them, it must bee gotten, when they crop off the floures and leaves of the hearbe Cistus, in a morning for their breakfast, at what time as the Island Cyprus standeth all with a dew. Now when the morning mist is dispatched by the heat of the Sunne, there gathereth dust among these moist and wet haire of theirs, and sticketh too: and then the Islanders come and comb from their beards and flanks, that which they call Ladanum. Some call that plant in Cyprus whereof it is made, Ledon: and in truth thereof it taketh the name of Ledanum, among them. For by their report this hearbe hath a fattie substance settling upon it, and the peasants of the country roll the hearbes together into bals or rundles with small cords, and so make up those little lumpes which ye see. Whereby we may perceive, that as well in Arabia as Cyprus, there bee two kinds of Ladanum: the one mixed with earth, and naturall of it selfe: the other brought into bals and artificiall. The earthie is brittle and will crumble: the Artificiall is tough, clammy, and will cleave to ones fingers. Moreover, it is said that there be certaine shrubs in Carmania that beare Ladanum, as also about Aegypt, by occasion of plants thither brought by the *Protophates*, kings of Aegypt: or, as some say, it is the Incense tree that bringeth it forth: and is gathered after the manner of a gum, issuing out of the tree by incision made in the barke, and is received in Goat skins. The best Ladanum is worth fortie Asses a pound. Sophisticated it is with Myrtle berries, and with other filth of beasts. The good Ladanum indeed, which is of it selfe without other mixture, ought to have a wild and savage smell with it, as if it came out of a wildernesse. Greenish it is, and drie to see to: but handle it never so little, and presently it doth relent and waxe soft: set it on fire, and it burneth bright and cleare, and then it casteth a sweet and pleasant odour. But all that is counterfeit and mixed with Myrtle berries, may soone be known, for they will crackle in the fire. Besides, the true Ladanum hath rather stonie grit comming from the rockes, mingled with it, than dust. H

In Arabia, the Olive tree also hath a kind of liquor which issueth out of it: and thereof is compounded a certaine soveraigne salve, named of the Greekes Enhaimon, which is singular good to draw up wounds, and to heale them cleane. In the maritime parts and sea-coasts, the said Olive trees at some tides are overflowed with the waves. Yet receive the Olive berries no hurt thereby: notwithstanding it bee certaine, that the sea doth leave salt upon the leaves. Thus you see what bee the peculiar commodities as touching trees, proper unto Arabia. True it is, that it hath others besides: but because they bee found elsewhere, and knowne to bee better in other places than in Arabia, I will treat of them in their course and ranke, when it cometh. And yet Arabia it selfe, as fruitfull and happie as it is in this behalfe, is wonderous eager to seeke after forraigne spices, and send for them into straunge countries. So soone are men gluttoned, and have their fill of their owne: and so greedie and desirous be they of other countries commodities. M

A They send therefore as far as the Helymæans, for a tree named Bruta, like to a spreading Cypresse, having boughes covered with a whitish barke, casting a pleasant smelling perfume when it burneth, and highly commended in the chronicles and historie of *Claudius Caesar* for straunge vertues and wonderfull properties. For he writeth, That the Parthians use to put the leaves thereof in their drinke, for to give it a good tast and odoriferous smell. The odour thereof resembleth the Cædar very much: and the perfume is a singular remedie against the stinking and noisome fumes of other wood. It groweth beyond the great channell of the river Tigris, called Pasitigris, upon the mount Zagrus neare unto the citie Citaca.

B They send moreover to the Carmanians for another tree called Strobos, and all to make sweet perfumes: but first they infuse the wood thereof in Date-wine, and then burne it. This is an excellent perfume: for it will fill the whole house, rising up to the chambers aloft to the arched feelings of the rouse, and returning downe againe to the very floore and ground beneath, most pleasantly. But it stuffeth a mans head, howbeit without any paine or ach at all. With this perfume they procure sleepe to sick persons. And for the traffick of this commoditie, the merchants meet at the citie Carras, where they keepe an ordinarie faire or mart; and from thence they went customably to Gabba, twentie daies journey off, where they were wont to have a vent for their merchandise, and to make returne: and so forward into Palestine of Syria. But afterwards (as *K. Iuba* saith) they began to goe to Charace, and to the kingdome of the Parthians, for the same purpose. For mine owne part, I thinke rather with *Herodotus*, That the Arabians transported these odours and spices to the Persians first, before that they went therewith either into Syria or *Ægypt*: and I ground upon the testimony of *Herodotus*, who affirmeth, That the Arabians paid every yeare unto the KK. of Persia the weight of a talent in Frankincense, for tribute

C Out of Syria they bring backe Storax, with the acrimonie & hot smell whereof, being burne upon their herths, they put by and drive away the loathsomnesse of their owne odors, wherewith they are cloyed: for the Arabians use no other fuell at all for their fires, but sweet wood. As for the Sabæans, they seeth their meats in the kitchin, some with the wood of the Incense tree, and others with that of Myrrhe: insomuch as both in citie and countrey their houses bee full of the smoke and smell thereof, as if it came from the sacrifices upon the altars. For to qualifie therefore this ordinarie sent of Myrrhe and Frankincense wherewith they are stuffed, they perfume their houses with Storax, which they burne in Goats skins. Loe, how there is no pleasure whatsoever, but breederh lothsomnesse, if a man continue long to it. The same Storax they use to burne for the chafing away of Serpents, which in those forrests of sweet trees, are most rife and common.

CHAP. XVIII.

Of the felicitie of Arabia.

E N Either Cinamon nor Casia doe grow in Arabia, and yet is it named Happie: unworthie countrey as it is, for that surname, in that it taketh it selfe beholden to the gods above therefore, whereas indeed they have greater cause to thanke the infernall spirits beneath. For what hath made Arabia blessed, rich, and happie, but the superfluous expenle that men be at, in funerals? employing those sweet odors to burne the bodies of the dead, which they knew by good right were due unto the gods. And verily it is constantly affirmed by them who are acquainted well with the world, and know what belongeth to these matters, That there cometh not so much Incense of one whole yeeres encrease in Saba, as the Emperour *Nero* spent in one day, when he burnt the corps of his wife *Poppea*. Cast then, how many funerals every yeere after were made throughout the world: what heapes of odours have been bestowed in the honour of dead bodies: whereas we offer unto the gods by crums and graines onely. And yet when as men made supplication unto them with the oblation of a little cake made of salt and meale, and no more; they were no lesse propitious and mercifull, nay they were more gracious and favourable a great deale, as may appeare by histories. But to returne againe to Arabia, the Sea enricheth it more than the land, by occasion of the orient pearles that it yeeldeth and sendeth unto us. And surely our pleasures, our delights, and our women together, are so costly unto us, that there is not a yeare goeth over our heads, but what in pearles, perfumes, and silkes; India, the Seres, and that demy-land of Arabia, standeth us at the least in an hundred millions of Sesterces, and so much fetch they from us in good money, within the compasse of our Empire. But of all this masse of Spice

Spice and Odors, how much (I pray you) commeth to the service of the cœlestiall gods, in comparison of that which is burnt at funerals, to the spirits infernall?

CHAP. XIX.

Of Cinamon, and the wood thereof called *Xylocinnamomum*.
Also of Canell or Casia.

FAbulous antiquitie, and the prince of Iyers *Herodotus*, have reported, That in that tract where *Bacchus* was nourished, Cinamon and Canell either fell from the nests of certaine fowles, and principally of the Phoenix, through the weight of the venison and flesh which they had preyed upon and brought thither where as they builded in high rockes and trees; or els was driven and beaten downe, by arrowes headed with lead. Also that Canell or Casia was gotten from about certaine marishes, guarded and kept with a kind of cruell Bats, armed with terrible and dreadfull tallons, and with certaine flying Pen-dragons. And all these devises were invented onely to enhaunce the price of these drugs. And this tale is told another way, namely, That in those parts where Canell and Cinamon grow (which is a country in manner of a demy-land, much environed with the sea) by the reflection of the beames of the Noon-sun, a world of odoriferous smels is cast from thence, in such sort, that a man may feele the sent at one time of all the aromaticall drugs as it were met together, and sending a most fragrant and pleasant savour farre and neare: and that *Alexander* the Great sailing with his fleet, by the very smell alone discovered Arabia a great way into the maine sea. Lies all, both the one and the other: for Cinamome, or Cinamon, call it whether you will, groweth in Æthiopia, a countrey neare unto the Troglodites, who by mutuall marriages are linked together in great affinitie. And in very truth, the Æthiopians buy up all the Cinamon they can of their neighbours, and transport it into other straunge countries over the vast Ocean, in small punts or boats, neither ruled with helme and rudder, nor directed too and fro with ores, ne yet caried with sailes or any such means of navigation: one man alone shall you see there in a boat, armed and furnished with boldnes only in stead of all, to hazard himselfe and his goods in the surging sea. These fellows, of all times of the yeere, take the dead of the winter, and then (to chuse) they will venter to crosse the seas for their voyage, when the Southeast winds are aloft and blow lustily. These winds set them forward in a streight and direct course through the gulfes; and after they have doubled the point of Argeste, and coasted along, bring them into the famous port or haven-towne of the Gebanites, called Ocila. And albeit this voiage be long and dangerous (for the merchants hardly can return in five yeeres, and many of them miscarrie by the way) yet by report, they are nothing dismaied and daunted therewith, but willingly adventure still. And beeing at Ocila, what thinke you doe they exchange for, and wherewith freight they their vessels back againe homeward? even with glasse, vessels of copper and brasse, fine cloth, buckles, claspes, and pincers, bracelets and carcaners, with pendant jewels: so as a man would verily thinke, that this traffick were maintained and the voiajes enterprised under the credit and for the pleasure of womankind especially. Now as touching the plant that beareth Cinnamon, the tallest is not above two cubits high above-ground, nor the lowest under one hand-breadth or foure inches: in compasse about foure fingers thicke: immediatly from the earth it putteth forth twigs, and is full of braunches of sixe fingers length, but it looketh as if it were drie and withered: whiles it is greene it yeeldeth no smell at all: and the leafe resembleth Origan: it loveth drought, for in rainie weather it is lesse fruitfull; and yet it is of this nature, To be cut as a coppis. It will grow verily in plaines, but gladly it would lodge among the thickest rough of bushes, greeves, and bryers that are to be found: so as men have much adoe to come by it and to gather it: but never is it cut or cropped without especiall permission of a certain god, which they take to be *Iupiter*; and this patron of the Cinamon tree, they call *Assabinus*. To obtaine leave and license so to do, they are glad to sacrifice the inwards of 44 Kine or Oxen, Goats also and Rams: and when they have all done, yet permitted they be not to goe about this businesse either before the Sunrising, or after his setting. Now when these twigs & branches be cut, the Sacrificer or Priest divideth & parteth them with a javelin, and setteth by one portion for the god abovesaid: the rest doth the merchant put up & bestow in paniers for the purpose. This manner of division is otherwise reported; namely, That the whole heap is cast into three parts, whereof the Sunne hath one for his share: but they draw lots first for every one

A one of these three severall bundles or parcels of Cinamon stickes; and that which falleth to the Sun, is let alone and left behind: but of the owne accord it catcheth a light fire and burneth. The best Cinamon is thought to be that which groweth about the slenderest sticks, for the length of an handbreadth from the upper end. The second sort in goodnes, is that which is next it and somewhat lower, but it beareth not full so much as an hand-breadth; and so consequently in order by degrees downward: for the worst and of least price is that which is neere to the root, because there is least barke, the principall and chiefe thing required in Cinamon: which is the cause that the twigs in the tree top are preferred before the rest, for that in them there is most barke. As for the very wood it selfe, which is called Xylocinamomum, there is no reckoning made of it, because of the acrimonie and sharpenesse which it hath, resembling Origan. A pound thereof is worth 20 deniers. Of Cinamon, there be (according to some) two kinds; to wit, the whiter, and the blacker. In times past, the white was in more request; but now adaies the black is most set by: yea and that of divers colours, is better esteemed than the white. But the truest marke indeed to chuse the best, is to see that it be not rough, and that it crumble not quickly if one peece be rubbed against another. That which is tender and soft, and hath besides a white barke, is not regarded at all, but condemned for the worst. Moreover, this is to be noted, that the King only of the Gebanites, setteth the price and sale of Cinamon: he it is that selleth it in open market according as it is by him taxed. In old time, a pound of it was sold for 1000 deniers: and this price afterward rose higher by one half, by reason that the Forrests of Cinamon were (as men say) burnt by the barbarous Troglodites their neighbours, in their furious wrath. Now why it should be so deere, no man certainly knoweth; whether it were through the great rich merchants, who ingrossed all into their hands by way of monopoly, or by some such casualtie and chaunce of fire aforesaid. But true it is and well knowne by that we find in divers writers, That there be such hot Southerne winds blowing in those parts, that in summer many times they set the woods on fire. *Vespasian Augustus* the Emperor, was the first that dedicated in the temples of the Capitoll and goddesse *Peace*, guirlands and chaplets of Cinamon, enclosed within fine polished gold. In that temple which the Empreffe *Augusta* caused to be built in the pallace upon mount Palatine, for the honour of *Augustus Caesar* late Emperor her husband, I have my selfe seene a Cinamon roor of great weight, set in a cup of gold, which yearely did put forth certaine drops that congealed into hard graines. That monument remained there to be seene, untill the temple and all was consumed by fire.

D As concerning *Casia* or *Canell*, a plant it is, which groweth neare to the plains from whence the Cinamon commeth; but it loveth to live upon mountaines, and beareth a bigger and rounder wood in the braunches than the Cinamon; and hath a thin rind or skin, more truly than a barke: and the slenderer that the same is and lighter, the more reckoning is made of it; cleare contrarie to the Cinamon. This shrub that beareth *Casia*, groweth to the height of three cubits: & three colors it carrieth: for when it commeth up first, for a foot from the root, it is white: then, as it shooteth halfe a foot higher, it waxeth red: but as it riseth farther, it is blackish: and this part is held for the best: and so the next to it, in a degree lower: but the white is of no regard at all: and therefore they never cut the twigs and braunches neare the root, nor above two cubits in length. And when they have cut them in this manner, they presently sow them up in greene skins of fourfooted beasts, killed new and fresh for that purpose, that of their corruption and putrefaction there might breed certaine worms, to eat out the wood within the barke, & so make it hollow; for the barke is so bitter, that the worme will not touch it. The newest and freshest *Canell*, is reputed best, and that which hath a most delicate smell; very hot in the mouth, and burning the tongue, rather than gently warming it without any great biting. Such *Canell* is of a purple colour, and very light in hand; which seeming much to the eye, yet weigheth little: besides, the pipes be but short, and the outward rind or coat is not brittle and easie to fall in peeces. This elect and choise *Canell*, the barbarous people call *Lacta*. Another sort there is, named *Balsamodes*, because it hath a smell resembling Balme: bitter it is in the mouth, and therefore of more use in Physicke; like as the blacke is most employed in sweet perfumes and oynments. There is no druggs that varieth more in price than the *Canell*: for whereas the best will cost fiftie deniers *Romane* a pound; all the rest a man may buy for five.

CHAP. XX.

Of *Isocinnamon, Cancamum, and Tarum.*

THe hucksters and regraters that buy & sell again, have another kind, which they call Daphnoides, & they surname it Iso-cinnamon: and surely they hold it at 300 deniers the pound. Mingled it is and made counterfeit with Storax: with the smallest and tenderest branches also of Lawrell, for the likenes that it hath to the barke thereof. Moreover, it is set and planted in our part of the world here in Italie: also in the utmost marches and confines of our Empire, along where the river Rhene runneth, it liveth, being set neare unto Bee-hives. Howbeit, because it wanteth the parching heat of the Sunne, it is nothing so deepe coloured: and thereupon also it commeth short of the smell that the other hath. Out of the regions which bound upon those parts where Casia and Cinamon doth grow, there are brought over unto us two other Spices, called Cancamum and Tarum; but by the way of the Troglodyte Nabathæans: who onely of the auncient Nabathæans, there settled and remained.

CHAP. XXI.

Of *Serichatum, Gabalium, or Myrobalanum, [i. Ben.]*

IN the same countrey, the Arabians come charged also with Serichatum and Gabalium: but they make an hand with it among themselves, and spend it quite: in such sort, as their druggs are knowne only in name to us in this part of the world, albeit they grow together with Cinnamon and Casia. And yet otherwhiles there is Serichatum brought unto us, which some perfumers use to put into the composition of ointments. And a pound of it is commonly exchanged for six deniers.

As for Myrobalanon, [*i. Behen*] it groweth ordinarily in the regions of the Troglodytes, about Thebais, and that part of Arabia which divideth Iurie from Ægypt: a drugg that Nature hath brought forth onely for ointment, as the very name giveth it. Whereby it appeareth also, that it is a very nut of a certaine tree, which beareth leaves like to Heliotropium: whereof we will speake among other hearbs. The fruit that this plant beareth, is about the bignes of a filberd nut. That which groweth in Arabia, and yet called Syriaca, is white: but contrariwise that about Thebais, is blacke. The former of these two, is commended for the goodnes of the oile which is pressed out of it: but the Thebaicke Ben is in greater request for the plentie that it yeeldeth. As for the Troglodyticke, it is the worst of all, and the cheapest. And yet some there be, who prefer the Æthiopian Ben before all other. The Nut or fruit thereof, is blacke and fat, with a small and slender kernell within: howbeit the liquor pressed forth of it, is more odoriferous: and it groweth in champion countries and plains. It is affirmed moreover, that the Ægyptian Ben is more oleous and fat, having a thicker shell, and the same red. And albeit that it grow in marish grounds, yet it is a shorter plant and more drie than the others. But contrariwise they say, that the Arabicke is greene of colour, and thinner in substance: and for that it groweth upon the mountaines, it is more massie and weightie. But the best simply by many degrees, is that Ben which is called Petraea, comming from about the towne above said, with a blackish rind, and white kernell. Now the Perfumers and Apothecaries, doe presse onely the huskes and shells; but the Physicians extract an oile out of the verie kernels, which as they stampe, they poure hot water ever and anon unto it, by little and little.

CHAP. XXII.

Of *Phœnicobalanus, Calamus odoratus, and Squinamb.*

THe Date in Ægypt, called Adipos, hath the like use in ointments, and is next in request for such odoriferous compositions, as the Myrobalanus or Ben aforesaid. Greene it is in colour, it smelleth like unto a Quince, and hath no woodie stone within. But to serve for those purposes above recited, it must be gathered somewhat before that it beginneth to ripen. That which is left behind ungathered, is called Phœnicobalanus: this waxeth black, and maketh them drunke that eat thereof. As for Myrobalanus, or Ben, it is worth two Romane deniers a pound.

A pound: The occupiers and shopkeepers call the very setting and grounds of their ointment and compositions, by the name of Myrobalanon.

Moreover, within Arabia there groweth also the sweet Calamus, which is common to the Indians and Syrians likewise. That of Syria passeth all the rest, and cometh up in a tract of that country, distant from the coast of our Sea fiftie Stadia. Betweene mount Libanon, and another mountaine of no account [for it is not Antilibanon as some have thought] in a little vale beneath neare unto a lake, the marshes and flats whereof are drie in Summer for the space of thirtie Stadia, there grow both sweet Calamus, and also Squinanth or Iuncus Odoratus, [i. the Sweet-rush.] For let us speak also in this place of the said Scænanth; & although it be but a rush, and another booke is appointed for the treatise and historie of such Hearbes, yet because wee

B handle the *Species* that goe to the composition of sweet Perfumes, Pomanders, and Ointments, I cannot passe it over. Well then, neither the one nor the other of these twaine, differ in sight from the rest of that kind. But Calamus is the better of the twaine, and hath a more pleasant smell; for a man may wind the sent of it presently a great way off: besides, it is softer in hand: and better is that which is lesse brittle, and breaketh in long spils and shivers, rather than knappeth off like a Radish root. Within the pipe of this reed, there lieth a certain matter like unto a Spiders web, which the Apothecaries call the flower of it: and that Calamus is counted the better, which hath more in it of these flowers. There is another marke also of good Calamus, namely if it be blacke: and yet in some place, they make no reckoning of the blacke Calamus. But in a word, the shorter and thicker that the reed is, the better is the Calamus: and the same is more

C supple and pliable when a man would breake it. As for Calamus, it is worth eleven deniers the pound: but Squinanth is sold for fiftene. Moreover, some say that there is a sweet rush or Squinanth found in Campania. And now are wee gone from those lands that coast upon the deepe Ocean, and come to those that confront and lie upon our Mediteranean seas.

CHAP. XXIII.

§ Of *Hammoniacum*, and *Sphagnum*.

D **T**O begin withall, in the sands of those parts of Affricke which lie under Æthiopia, there is a liquor distilleth, called in Greeke *Hammoniacum*, of *Hammon*, which signifieth Sand; and the Oracle of *Iupiter Hammon*: for neare unto the temple where the said Oracle returneth Answers, there grow certaine trees within the sands, which they call *Metopia*, from which, *Hammoniacum* droppeth in manner of a rosin or gum: and of it there be two kinds: the one is named *Thrauston*, like unto the male or better *Frankincense*, and is most esteemed: the other is fat and full of rosin, and they call it *Phyrama*. The manner to sophisticate *Hammoniacum*, is with sand, to make men beleeve that it grew among the sands, & gathered it in the growing and coming up: and therefore the good *Ammoniacum* is knowne when it is in least morcels, and those very cleare. The price of the best is after fortie asses the pound.

E Beneath these quarters, and within the province *Cyrenaica*, there is found a passing sweet Mosse, called *Sphagnos*; and of some Bryon [aromaticum.] Of all such Mosses, this is thought to be the best. Next unto it, is that of *Cyprus*: and in a third ranke, the Mosse which groweth in *Phœnicia*. There is such Mosse (by report) in *Ægypt*, and likewise in *Fraunce*: whereof, for my part, I make no doubt: for they be nothing else but the grey and whitish haire that we see hang to trees, and about the oke especially, called commonly *Mosse*; but only that these be sweet and odoriferous. The chiefe praise is of the whitest and lightest: a second commendation belongeth to that which is red: but the black is worth nothing: neither is there any reckoning made of that which groweth in Islands and rocks, and (to conclude) all those that smell not as *Mosse* should, but rather like to *Dates*, or the plants whereof they come.

CHAP. XXIIII.

§ Of *Cyprus*, *Aspalathus*, and *Marum*.

F **T**Here is a tree in *Ægypt* called *Cypros*, bearing leaves like to *Ziziphus* or the *Injube* tree, and a graine resembling *Coriander* seed, with a white flower very pleasant and sweet. These flowers be steeped and sodden in common oile: out of which is afterwards pressed medi-

cinable oile called Cyprus, or Cyprinum. A pound of it will cost five Romane deniers. The best G
commeth from that tree which groweth upon the bankes of that river Nilus about Canopus,
which is the first mouth where it dischargeth it selfe into the sea. The second in goodnes groweth
about Ascalon a citie of Iudæa. The third in worth for smell and sweetnes, is had from the Iland
Cyprus. Some take this Cyprus to be the plant, which in Italy is called Ligustrum, [i. Priver.]

In the same tract groweth Aspalathus: a white thornie shrub it is, of the bignesse of a small
tree, and beareth a flower resembling a rose. The root of it is in request for the making of sweet
perfumes and ointments. There goeth a common speech, That every plant over which the rain-
bow is scene bent, will cast the same sent that Aspalathus doth: but if it chauce that the rainbow
settle over Aspalathus, then it will yeeld a sweet favour incomparable, and such as cannot be ex-
pressed. Some call it Erysisceptrum, others Sceptrum, simply. The good Aspalathus is red, or H
rather of a fiery colour, massie and heaue in hand, with a smell of Castoreum. It is sold for fif-
teene deniers the pound.

In Ægypt likewise there groweth Marum, but it is not so good as that of Lydia; for it hath
greater leaves, and those spotted with sundrie colours; whereas the other hath little short leaves,
but they smell passing sweet.

CHAP. XXV.

Of Baulme, as well the liquor thereof called Opobalsamum, as the wood named
Xylobalsamum. Also of Storax [Calamita] and Galbanum.

BVt the Baulme is that sweet and odoriferous liquor that goeth beyond all others. The tree
that yeeldeth it, Nature hath bestowed onely upon the land of Iurie. In old time it was not
to be found but in two parkes or hortyards, belonging both to the kings of Iurie: wherof the
one contained not above twentie jugera or acres, the other not so much. The Emperours *Vespa-*
sians, both father and son, brought one of those little Balme trees to Rome, and shewed it open-
ly to the whole citie. *Pompey* the Great likewise made proud boast and vaunted much, when hee
said, That trees also by him were borne in triumph. Now this Baulme tree serveth and doth ho-
mage, yea is tributarie with the whole nation where it groweth: but it is of a nature farre different
from that which both our Latine writers, and those also of forrein countries, have described: for
more like it is to a vine than a Myrtle. It is planted by slips and branches, as the vine: and of late K
dayes bound and tyed also like a young vine. It spreadeth and filleth the hills where it is set, after
the manner of those vines in vineyards, which without any helpe of props, support and beare up
themselves. Cut likewise it is, pruned, and cleansed, from those superfluous shoots that it putteth
out. It loveth to bee well husbanded, digged about, raked, and trimmed; and with this ordering,
groweth apace, so as within three years it is fruitfull. It beareth a leafe much like to Rue, and cou-
tinueth with a greene head all the yeare long. At the sacking and destruction of Ierusalem, the
Jewes in a furious rage both against their owne persons & their goods, would needs have wreaked
their anger and been revenged upon the poore Baulme trees, and have spoiled them for ever:
but the Romans on the other side stood in their defence, so as about this very plant, there was a
cruell battaile fought. But now these trees are united unto the domaine of our Empire: and by L
order from the state, are set and maintained: so as never at any time before, were they more in
number, or taller of growth: howbeit the highest exceedeth not two cubits. And three sorts
there be of them. The first hath slender braunches and small, like haire; whereupon it is called
Eutheristos, [i. easie to be cut or lopt.] The second, rough and tugged to see to, bowing and ben-
ding forward, full of twigs and braunches; sweeter also than the other to smell unto, and this
they name *Trachy* in Greeke, which is as much to say as Rough. The third they call *Eumeces*,
because it is higher than the rest, and it hath besides a smooth barke: this in goodnes is the se-
cond; and the first, named *Eutheristos*, is the worst. The fruit or seed that the Baulme tree bea-
reth, resembleth wine in tast, of colour red, and it is not without a certaine veine of fat. The
worst part of the graine or fruit, is the lighter in weight, and the greener. It is clad with boughes M
and leaves thicker than the Myrtle. Now, for to draw the precious liquor out of it called Balme,
incision ought to be made in the barke, with glasse-knives, with sharpe flint stones, or lancets of
bones. For it may not abide, that any instrument of yron or steele should come neare unto the
quicke; it dieth presently if you touch the heart of it therewith: and yet the same will suffer all
superfluous

- A** superfluous boughes and branches to be cut off and pruned. But hee that launceth and maketh incision, must guide and gage his hand very artificially in the cutting, that he go not too deepe, nor peirce a jot farther than the barke. This feat being wrought, there issueth out of the wound a juice or liquor, which they call Opobalsamum, of an excellent and surpassing sweet smell: but it commeth forth by small drops: and as it thus weepeth, the teares ought to be received in wooll, and then afterwards it is gathered and laid up in small hornes. Out of which it is poured into new earthen pots that never were occupied. This Baulme when it is fresh and new, may be likened to Oile, in thicknesse and consistence, but in colour it is white; in time it groweth reddish, and hard withall, howbeit, cleare & transparent, that a man may see through it. During the wars that *Alexander the Great* waged in Iurie, it was ordinarie in a summers day to gather one spoonefull of this liquor, & that was all that might be done. And when the season served best for this purpose, and that it was counted a plentifull yeare, the greater hort-yard or parke of the kings abovesaid, never yeelded in all above six gallons, and the lesser but one: fold it was commonly for the double weight in silver. But at this day, every tree that may beare it, and hath a larger veine to abide incision, is launced thrice in a summer time: and after that, it is lopt and thread. And those cuttings are good chaffer, and sold very well to the merchant. For being thus lopped once in five yeares at the furthest, they yeeld in braunches for wood onely, eight hundred deniers. This is called Xylobalsamum, & it goeth into odoriferous compositions: for in default of the right Baulm liquor, the Apothecaries make a shift to serve their turne with the wood alone, called Xylobalsamum. As for the very barke, it entrencheth also into many medicinable confectiions: no marvell therefore if it carie some price. But it is the liquor onely that is so precious, the liquor it is which yeeldeth that most fragrant smell; then followeth the graine or fruit in a second degree, the barke in a third, and the wood as it is last, so it hath least grace and credite. Of the wood, the best is that which in colour resembleth Box, and giveth sweetest sent. But of the fruit, the greatest graines and the weightiest, be most esteemed; such bite at the tongues end, and bee hote in the mouth. Howbeit, this is adulterated with the seed of *Hypericum, that commeth from the cittie Petra. But the deceit is soone detected and found, for that seed is not so big, so massie and full, nor so long as the true graine of Baulme: besides, it hath but a dull flavour or none at all, and in tast resembleth pepper. The liquor is known to be right or good, if it be oleous and fat, thin, & sheere, somewhat enclining to red; and, if in rubbing betweene your fingers, it rendereth a pleasant favour. The white Baulme may be raunged in a second place of goodnesse: the greene and the thicke is not so good as it: but the blacke is worst. For Baulme as well as Oile, will be stale & worse for the age, if it be kept too long. This is moreover observed, that in every incision, that which flowed forth before the seed is ripe, is most precious. Over and besides, this Baulme may be sophisticated with the owne seed: and hardly can this counsage bee found out, but that it hath a bitterer tast than that which is naturall. For the good Baulme should be pleasant and delicate in the mouth, not soure nor tart at all: onely in smell it should have an harsh verdeur. Corrupted it may be otherwise, with Oile of Roses, of Cyperus, of Lentiske or Masticke, of Ben, of Terebinth, and Myrtles; also with Rosin, Galbanum, and Cyprian wax, as occasion serveth, and according as men list to sophisticate it. But the greatest knaverie of all, is to mingle gum among it: for being so handled, it will sticke and cleave to the palme or inside of a mans hand, nay, it will sinke in water to the bottome, which are two principall properties of the right Baulme. For the very pure and perfect Baulme ought to cleave too: but when it hath gum mingled among, stick it will likewise, but it will gather soone a brittle rouse or crust upon it, which quickly cracketh and breaketh. Also this sophistication is found out by the tast. But in case there bee any trumperie of Wax or Rosin, the fire will soone bewray it; for when it burneth, it will yeeld a more muddie and blacke flame. As for the sophistication made with honie, it may soone bee knowne: for presently the flies will take it, and gather thick about it. Over & besides, put a drop of pure Baulme into warme water, it will settle to the bottome of the vessell, and congeale: but contrariwise, the counterfeit Baulme, will flore and swim above like oile. Againe, if it have Galbanum in it, yee shall see a white streake or circle round about it. To conclude, would you know in a word the right Baulme indeed? It will turne milke, and cruddle it: and it will not staine a cloth. In summe, there is no marchandise and commoditie in the world, wherein there is practised more fraud and deceit, than in the trafficke of Baulme. For a Sextare or wine quart of Baulme will cost a thousand Roman deniers by retaile, which was bought for three hundred & no more at the hands

*S. Ioh. wort.

of the factors under the Emperour, who sold it first. Whereby a man may see how gainfull it is to increase this liquor by sophistications. As for the Baulme wood *Xylobalsamum*, the price of it is six deniers a pound. G

Now it remaineth to speake of Storax [*Calamita*] comming out of that part of Syria, which above Phoenice, confronteth & bordereth next to Iurie: and namely, about Gabala, Marathus, and the mount Casius in Seleucia. The tree that yeeldeth this gum or liquor, is also named Stryrax, like unto a Quince tree. It hath at first a rawish austere tast, which afterwards turneth to bee more sweet and pleasant. There is found within a resemblance of canes and reeds, full of this juice. Howbeit, about the rising of the Dog star there be certaine winged wormes settle upon the said reeds, creepe in and eat away the marrow (as it were) which lay within: so as a man shall find nought left behind but a mouldie dust or rotten powder, good for nothing. Next to this Storax of Syria, great account is made of that which commeth out of Pisidia, from Sidon, Cypres, and Cilicia: but least reckoning is made of that which Candie sendeth us. That which is brought from the mount Amanus in Syria, is good for the Physicians, but better for the perfumers and confectioners. From what nation soever that it commeth, the best Storax is that which is red, somewhat glutinous besides by reason of the fattines. The worst is that which hath no consistence and tenacitie, but crumbleth like bran, and is so mouldie that it is overgrowne with a white hoarie mosse. The pedlers and such like petie marchants can skill how to sophisticate this drug also, with the rosin of cedar and gum: otherwhiles also with honie, or bitter almonds. But all these deceits are knowne by the tast. The price of the best is 19 deniers a pound. There is a Storax besides which Pamphylia doth yeeld, but drier it is, and nothing so full of moisture. H

Moreover, we have from Syria out of the same mountaine Amanus, another kind of gum called Galbanum, issuing out of an hearbe like Fenell-geant, which some call by the name of the said Rosin, others, *Stagonitis*. The best Galbanum, and which is most set by, is griftly and cleare withall, resembling *Hammoniæcum*, without any spils of wood in it. For in that wise the hucksters use to deceive their chapmen by mingling beanes with it, or the gum *Sagapenum*. The right Galbanum, if you burne it, chafeth away Serpents with the strong perfume or smoke thereof. It is sold for five deniers the pound: and is used onely in Physicke for medicines. I

CHAP. XXVI.

Of Panaces, Spondylium, and Malobathrum. K

THE same perfumers seeke also into the same Syria for Panaces growing there, and yet it is to be found likewise about Psophis, a citie in Arcadia; and the fountaines from whence floweth the river Erymanthus; yea, and in Affricke besides, and Macedonie. This Panax is an hearbe with a tall stalke and round tuft in the head like Fennell, and yet it is a plant by it selfe, growing to the height of five cubits. At the first it putteth out foure leaves, and afterwards six. They be very large and round withall, lying upon the ground: but toward the top they resemble the leaves of an Olive: it beareth seed in the head hanging within certaine round tufts, as doth the *Ferula*. Out of the stalke of this hearbe there is drawne a liquor by way of incision, made in harvest time: and likewise out of the root in Autumne, or the fall of the leafe. And this is called *Opopanax*. The best looketh white when it is gathered and congealed. The next in worth and weight, is that which is yellow. As for the blacke, it is of no account. The better *Opopanax* costeth not above two Asses a pound. L

Another hearbe there is of this Fennell kind, named *Spondylium*, somewhat different from the former, but in leaves only; because they be lesse than those of Panax, and devided after the manner of the Plane leaves. This *Spondylium* groweth no where but in cold and shadowie places. It carieth a fruit or graine called also *Spondylium*, which resembleth the forme of Sil or *Siler Montanum*, and serveth for no use but Physicke.

We are beholden moreover to Syria for *Malobathrum*. This is a tree that beareth leaves rolled up round together, and seeming to the eye withered. Out of which there is drawne and pressed an Oile for perfumers to use. Egypt is more fruitfull of this hearbe than Syria. And yet there commeth a better kind thereof from India than both those countries. It is said, that it groweth there in meeres and standing waters swimming aloft, after the manner of Fen-lentils or Duckes mear, more odoriferous than Saffron: enclining to a black colour: rough in handling, and in tast salt M

A falt or brackish. The white is not so well esteemed. It will soone be mouldie when it is stale. The rellish thereof ought to resemble Nardus at the tongues end. The perfume or smell that *Malobathrum or the leafe yeeldeth when it is boiled in wine, passeth all others. It is straunge and monstros, which is observed in the price: for it hath risen from one denier to three hundred a pound, whereas the Oile it selfe doth cost threescore.

CHAP. XXVII.

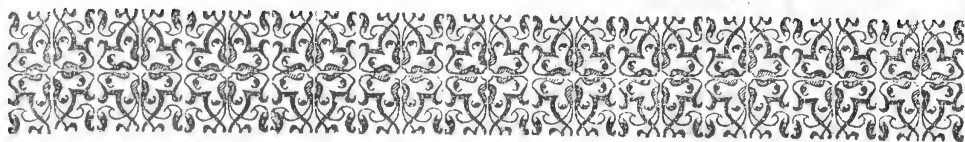
Of Oile Olive, made of greene Olives, likewise of Grape Verjuice.

B **F**Or the mixture and composition of ointments, the Oile of unripe Olives and Verjuice is very good. And verily, made it is in two kinds, and after two sorts, to wit, of the Olive and the Vine. Of the Olives, if yee would have good, they ought to be pressed whiles, they bee yet white. For if they turne colour once and be blackish, the worse is the Oile or Verjuice that cometh thereof. And such kind of Olives bee called *Drupæ*, namely, before they be fully ripe and good to eat, and yet have lost their colour. And herein is the difference, for that the Oile of this latter sort is greene, the other is white. Now as touching grape Verjuice, it should be made of the Vine *Psythia* or *Amminea*, and before the canicular daies, when as the grapes be but new knit, and no bigger than cich-peafe. The grapes (I say) must be gathered for this purpose, at the beginning before they change colour, and the juice thereof ought then to be taken. Then should the Verjuice that cometh from it, be funned: and heed must be taken in any case, that no dewes by night doe catch it, and therefore it would stand in covert. Now when this juice or Verjuice is gathered, it is put up in earthen pots: and otherwhiles kept also in vessels of copper. The best grape Verjuice, is red, sharpe, and soure in tast, drie withall and scypticke. A pound or a pint of such Verjuice is worth sixe deniers. It may bee made in another sort: namely, by punning and stamping unripe grapes in morters: drying it afterwards in the Sunne, and so made up into certaine rolls or trochisks.

CHAP. XXVIII.

Of Bryon and Oenanthe: of the tree Elate, and Cinnamon Caryopus.

D **T**He mosse of the white Poplar or Aspe, which is reputed as the grape therof, is used likewise in these odoriferous and sweet compositions. The best groweth about *Cnidos* or *Caria*, in thirstie, drie, and rough places. A second sort is that which is found upon the Cedar of *Lycia*. To this pertaineth *Oenanthæ*, which is no more but the grapes of the wild vine called *Labrusca*. Gathered it is when it floureth, that is to say, when it smelleth best. It is dried in the shade upon a linnen sheert lying under it, and then put up into little barréls. The cheefe cometh from *Parapotamia*: the second from *Antiochia* and *Laodicea* in *Syria*: and a third sort from the mountaines of *Media*: and this is best for medicine. Some preferre before all these, that which groweth in the Island *Cypros*. As for that which is made in *Affricke*, it is meet for Physicians onely, and is called *Massaris*. Now, the better ever is that which they gather from the white wild vine, than from the blacke. Moreover, there is another Tree which serveth for perfumes: some call it *Elate*, and we *Abies*, [i. the Firre] others *Palma* or the *Date*, and some againe *Spathe*. That which groweth about the sands of *Affricke*, where *Jupiter Hammons* temple standeth, is highly commended above the rest: and after it, that in *Ægypt*. Next thereto is the *Syrian*. This tree is odoriferous when it groweth in drie places onely: it hath in it a certaine fat liquor or *Rosin*, and entreth into compositions of sweet ointments, for to correct and mitigate the other oile. In *Syria* there is a drug which they call *Cinnamum Caryopon*. A juice or oile this is, pressed out of a certaine nut. This *Cinnamon* differeth much in forme from the sticke of true *Cinnamon* indeed above specified: although in smell it cometh neere unto it. A pound thereof is worth to be bought and sold 40 Asses, [i. 2 shil. 6 d.]



THE XIII. BOOKE OF
THE HISTORIE OF NATVRE,
WRITTEN BY C. PLINIVS
SECVNDVS.

¶ The Preface.



Hus farre forth the woods and Forrests are of estimation, in regard of the pleasure they doe unto us for perfumes and sweet odours: and in truth, if wee consider duly these aromaticall plants, admirable they be every one in their kind, even as they bee weighed apart by themselves alone. But such is the riot and superfluitie of man, that being not content with that perfection of Nature shining in those plants and trees above rehearsed, he hath not ceased to mingle and compound them, and so of them all together ser to make one confused smell: and thus were our sweet ointments and precious perfumes devised, whereof we purpose to write in this booke next ensuing.

CHAP. I.

¶ Of Ointments, Perfumes, and their compositions: and when they came into knowledge first at Rome.



As touching the invention of Ointments, it is not well knowne who was the first that devised them. Certaine it is, that during the reigne of the Trojans, and whiles Ilium stood, men knew not what they meant: nay, they used not so much as Incense in sacrifice and diuine service. The fume and smoke of the Cedar and the Citron trees only, the old Trojans were acquainted with, when they offered sacrifice: their fuming and warming steame (more truly I may so tearme it, than any odoriferous perfume) they used: which they might easily come by, since they were plants growing among them, and so familiar; notwithstanding they had found out the iuice of Roses, wherewith yet they would not correct the foresaid strong fumes in those daies; for that also was known to be a commendable qualitie of Oile Roseate. But the truth is, The Persians and none but they ought to be reputed the inventors of precious perfumes and odoriferous ointments. For they to palliate and hide the ranke and stinking breath which commeth by their surfet and excesse of meats and drinkes, are forced to helpe themselves by some artificiall meanes, and therefore goe evermore all to be perfumed and greased with sweet ointments. And verily, so far as euer I could find by reading histories, the first prince that set such store by costly perfumes, was king *Darius*, among whose coffers (after that *Alexander* the Great had defeated him and woon his campe) there was found with other roiall furniture of his, a fine casket full of perfumes and costly ointments. But afterwards they grew into so good credite even among us, that they were admitted into the ranke of the principall pleasures, the most commendable delights, and the honestest comforts of this life. And more than that, men proceeded so farre, as therewith to honour the dead: as if by right that dutie belonged to them. And therefore it shall not be amisse to discourse of this theame more at large. Wherein I must advertise the Reader by the way, that for the present I will but only name those ingredients that goe into the composition of these ointments: such I meane as came not from hearbs and trees, shrubs and plants; reseruing the treatise of their natures, vertues, and properties, unto their due place.

A First and formost therefore, all perfumes tooke their names either of the countrie where they were compounded, or of the liquors that went to their making, or of the plants that yeelded the simples and the drugs: or else of the causes and occasions proper and peculiar unto them. And here it would be noted also principally, that the same ointments were not alwaies in like credite and estimation: but one robbed another of their honour and worth: insomuch, as many times upon sundrie occasions, that which was lately in request and price, anone gave place to a new and later invention. At the first in auncient time, the best ointments were thought to come from Delos; but afterwards, those that were brought out of Ægypt: no talk then but of Mendesium, compounded at Mendes, a cittie there. And this varietie and alteration was not occasioned alwaies by the diversitie of composition and mixture, but otherwhiles by reason of good or bad drugs: for ye should have the same kind of liquors and oiles better in this countrey for one purpose, and in that for another: yea, and that which in some place was right and true, the same did degenerate and grow to a bastard nature, if you chaunged once the region. For a long time, the oile or ointment of Iris or the Floure de-luce root made at Corinth, was in much request, and highly praised: but afterwards that of Cizicum woon the name & credite, for the artificiaall composition thereof. Semblably, the oile of Roses that came from Phafelus, was greatly called for: but in processe of time, Naples, Capua, and Præneste, stole that honour and glorie from thence in that behalfe. The ointment of Saffron, confected at Soli in Cilicia, imported for a good while and caried the praise alone: but soone after, that of Rhodes was every mans money. The Oile drawne out of the flowers of the wild vine in Cyprus, bare the name once; but afterwards that of Ægypt was preferred before it: and in the end the Adramyrtians gained the credite and commendation from both places, for the perfect & absolute confectiō thereof. The ointment made of Marjoram, gave credite for a certaine time to the Isle Coos: but not long after, their name was greater for another made of Quinces. As for the oile Cyprinum, which came of Cypros, the best was thought to be made in Cyprus: but afterwards there was a better supposed to be in Ægypt: where the ointments Metopium and Mendesium all of a suddaine were better accepted than all the rest. It was not long first, but that Phœnice put Ægypt by that credite for those two singular compositions, and left the Ægyptians the name alone for the foresaid Oile Cyprinum. The Athenians were renowned for their auncient Panathenaicum, and ever held their owne. There was in old time a notable composition named Pardalium, made in Tharsus: but now the mixture and making thereof is quite lost. The ointment likewise Narcissimum, where the flower of the Daffadill was the Basis, is now forgotten, and no more made of it. The manner of compounding all these ointments, was two-fold, to wit, either of the juice and liquor, or els of the very substance and bodie of the simples. The former sort resemble the nature rather of Oiles: but the latter of Ointments. And these the Greekes call either Strymmata, which yeeld the consistence and thickenesse to ointments; or Hedy smata, which serve to aromatize and give a compleat perfection unto them. There is a third thing between these, requisite also to the full making of these sweet ointments, namely, the colour: although many take no regard at all of it. And for this purpose, the perfumers put into their compositions Cinnabaris [i. Vermillion or Sanguis Draconis] and Orcanet. The salt moreover that is strewed among, serveth to repress and correct the nature of the oile that uniteth all the ingredients besides. But those that have the root of Orcanet in them, need no salt at all to be put in besides. As for Rosin and Gum, they are mingled with the rest to incorporate the drugs and spices, and to keepe in the sweet odour thereof, which otherwise would evaporate and soone be lost. We are to presume by all likelyhood, that the first composition of ointments, and soonest made, was of the odoriferous mosse Bryon, and the oile of Ben onely: whereof we have written in the former booke. Then came in place a more compound ointment called Mendesium, and that received Rosin also to the foresaid oile of Ben. And more than that, another besides named Metopium. Now is this Metopium an oile compounded, which the Ægyptians doe presse out first of bitter Almonds, but they added thereto for to incorporate the better, grape Verjuice: and the ingredients besides, were Cardamanum, Squinanth, sweet Calamus, Honnie, Wine, Myrrhe, the graines or seeds of Baulme, Galbanum, Rosin, and Terpinine. One of the meanest and basest ointments now adaies, and therefore thought to be as auncient as any other, is that which consisteth of the oile of Myrtles, sweet Calamus, Cypressse, and Cypros [Squinanth] Lentiske, and the rind of the Pomgranate. But I would thinke verily, that Ointments came to be so divulged and common every where abroad, by meanes of Roses most

of all: considering, that nothing groweth more ripe in all places. Which was the cause, that the simple mixture of Oile Rosate, without any sophistication besides, continued for a long time, having the addition of grape Verjuice, the flower of Roses, the Saffron, Cinnabaris or ^{Sinopum} Sinopum, Calamus, Honie, Squinanth, the flower of salt called Sperma-ceti, or els in lieu thereof the root of Orcanet, and Wine. The oile or ointment of Saffron was after the same sort made, by putting thereto Cinnabaris, Orcanet, and Wine. Semblably is to be said of the oile of the sweet lesse majoran, wherein was mixed grape Verjuice and sweet Calamus. This composition was singularly well made in Cyprus and at Mitylene, where great store of sweet *Majoran groweth. There bee other oiles likewise which are not of so good reckoning, namely, of Myrtles and Baies, which receive a mixture with the addition of Majoran, Lillies, Fenigreek, Myrrhe, Casia, Spikenard, Squinanth, and Cinnamon. Moreover, of great Quinces and the lesse called Mala Struthea, is made the oile Melinum, whereof we will speake hereafter: which the perfumers use in their ointments, by putting thereto grape Verjuice, the oile Cyprinum, the oile Sefamine, Baulme, Squinanth, Casia, and Sothernwood. As touching the oile of *Lillies, which is the most subtile and thinnest of all other, it is made of Lillies, Ben, sweet Calamus, Honie, Cinnamon, Saffron, Myrrhe, & Aspalathus. Also the foresaid oile Cyprinum is made of the flowers of Cypros, of Verjuice, Cardamonum, Calamus, Aspalathus, and Sothernwood. Some there be that put moreover unto this oile, Myrrhe and Panace. The Sidonians are excellent at the making of this composition: & after them the Ægyptians, so that they put not in Sefamium oile. For it will last & keep good full four years: and if it begin to loose the smell, it is quickened and refreshed again with Cinnamon. Now as touching the ointment of *Feni-greeke, it is made of fresh oile, Cyperus, Calamus, Melilot, Feni-greeke, Honie, oile of Quinces, the greater & the lesse sweet Marjaram. This was of highest reputation, in the daies of *Menander* the Comicall poet. But long after there succeeded into the same place of credit, the ointment Megalium; so called for the great glorie that it caried: and this was compounded of the oile of Ben, of Baulme liquor, sweet Calamus, Squinanth, Balme-wood, Casia, and Rosin. In the making hereof, this propertie it had by it selfe, that all the while it was a compounding and seething, it should ever and anon be vented, and shifted out of one vessell into another, untill the smell of it were gone. Which neverthelesse it would recover againe after it was once cold. Moreover, some liquors there be of themselves, that without any other mixtures may serve and go for noble sweet ointments. Among which, that of Malabathrum is the cheefe: next to it the Flower de Luce of Slavonia, and the great sweet Marjaram of Cyzicum. Howbeit the Hearbarists love to be putting in some few spices besides, as well in the one as the other: but some make choise of one thing, some of another to entermingle withall. They that take delight to have their mixtures most compound, adde unto either of those abovenamed, Honie, the flour of Salt, grape Verjuice, the leaves of Agnus Castus, and Panace, and generally all that be strange and forraine, to make their compositions seeme more wonderfull. To the oile or ointment of Cinnamon, there goeth the oile of Ben, Baulme wood, sweet Calamus, Squinanth, the *fruit or seeds of Ballamanum, Myrrhe, and Honie Aromaticall. This is of all other the thickest ointment in substance. The price of this, is from 35 deniers to 300 the pound. As for the ointment Nardinum or Foliatum, it is composed of the oile of Greene Olives or grape Verjuice, of the oile of Ben, of Squinanth, Costus, Spikenard, Amomum, Myrrhe, and Baulme. Howbeit, this point would not be forgotten in the making of this composition, that it is a very easie matter to sophisticate it, by reason that there be no fewer than nine hearbes or simples which we have declared, that come neare to the Indian Spikenard, and may bee taken for it. Finally, to quicken and fortifie the sent of all these ointments, there must no spare bee made of Costus and Amomum, which of all other drugs pierce into the nostrils, and cast a strong smell. To make them thicker and more pleasant, there would be good store of Myrrhe put in: but to have them better for the use of Physicke, and more medicinable, it is good to season them well with Saffron. As for Amomum, of it selfe alone it causeth all ointments where it commeth to bee most quicke and penetrative: inso much as it causeth headach. Some for to spare cost, thinke it sufficient to aromatize onely these ointments with those drugs which are so deare and precious, either by strewing the powder, or sprinckling their liquors among, whereas the rest of the ingredients be boiled: but such compositions bee nothing so effectually, as when all be sodden and fermented together. As for Myrrhe it selfe, it maketh alone a precious ointment without any other oile, I mean that onely of the liquor Staete: for otherwise it is exceeding bitter and unpleasant. If it bee mingled with

* *Sansuchus.** *Sisimum.** *Telinum.** *Xylobalsamum.*
* *Carpobalsamum.*

A with the oyle Cyprinum, it looketh greene; if with the oyle of Lillies, it will bee fattie and unctuous; if with Mendesium, blacke; with oyle Roser, white; with that of Myrhe, pale. Lo what were the inventions in old time of aromaticall and odoriferous ointments: loe what were the devises afterwards of the shopkeepers and perfumers, to picke pence out of our purses, and to rob us. It remaineth now to speake of the parangon indeed of all these pleasures and delights: of that I say wherein consisteth the very height and cheefe point of this argument in hand.

CHAP. II.

Of the Oyntment called Royall: of drie Perfumes, Powders, and Pomanders: and how they be kept.

B **T**He Royall Ointment therefore (which the Parthian Kings used ordinarily, and of whome it tooke that name to be called Royall) is tempered and composed in this manner: to wit, of Ben, Costus, Amonium, Cinamon, the Arbut or Comarus, Cadamonum, Spikenard, Marum, Myrre, Casia, Storax Calamita, Ladanum, Baulme liquor, sweet Calamus, Squinanth of Syria, the flower of the wild Vine, Malabathrum, Serichatum, Cyperus, Aspalathus, Panace, Saffron, Cypros, Marjoram the greater, clarified or purified Honey, and Wine. As for Italic, (the ladie and conqueresse of all other nations) there groweth nothing in it good to make ointments; no nor nothing throughout all Europe, unlesse it be the Floure-deluce root, & the Celticke Spikenard: for Wine, Roses, Myrtle leaves, and Oile, are well knowne to be common for all countries.

C As for those mixtures which be called Diapasmata, they consist of drie spices and drugs. Also the dregs or grounds of Ointments, they call Magma. Moreover, this is to be observed in the mixture and composition of those Ointments, That the drugs which be put in last, are ever the strongest and most effectuall.

Now as touching the keeping of Ointments, they are best preserved in pots or vessels of Alabastr: and Odors are surest maintained and continue longest, being incorporate in oile: which the fatter that it is, serveth better for a continuance of their sent; as a man may see very well in the oyle of Almonds. And to say a truth, the older that an oyntment is, and the longer fermented, the more vertue it hath for the age. The sunne is an enemy unto them, and therefore they must incorporate and unite together in the shade, and be put up in vessels of lead. The trial of them is taken with the back-part of the hand, for fear least that the heat of the fleshie side within, should corrupt and marre them.

CHAP. III.

Of the superfluitie in expence at Rome, about these Ointments: and at what time they were first used there.

E **A**T this day there is not in Rome anything wherein men more exceed, than in these costly and precious Ointments: and yet of all other, they are most superfluous and may be best spared. True it is, that much money is laid out upon Pearles and precious stones; but these are in the nature of a domaine and inheritance, and fall to the next heire in succession. Againe, rich and costly apparell stand us in a great deale of coine; howbeit they are durable and last a long time: but Perfumes and Ointments, are soon done and gone; they exhale and breath away quickly; they are moimentanie, they serve but for the present, and die sodainly. The greatest matter in them, and their commendation is this, To cause a man (what busines soever he hath otherwise) to cast his eye and looke after a gentlewoman as she passeth by perfumed in the streets, and sendeth a smell from her as she goeth. This is all the good they doe: and yet forsooth a pound of this ware must cost 400 deniers: so deer is the pleasure that passeth from our selves and goeth to another: for the partie himselfe that carrieth the perfume about him, hath little or no delight at all in it; others they be that reape the benefit and pleasure thereof. And yet among these odoriferous compositions, there is choise and difference betweene one and another. We find in the writings of *M. Cicero*, that hee made more account of those ointments which favoured of the earth, than those which smelled all strong of Saffron: as if hee meant thereby, That in this excessive disorder and most corrupt enormitie of all others, a certaine moderation yet and sad delay would

would doe well; and that a feveritie (if I may so say) in the vice it selfe, were better to be liked. But some take delight especially in thick and grosse ointments, and are not content to be perfumed, yea and bathed all over, unlesse they be besmeared, greased, and dawbed also therewith. I have my selfe seene some of them to annoint the very soles of their feet with these pretious baulmes: and (by report) it was *M. Otho* that first taught the Emperour *Nero* this wanton delicacie. But I would gladly know, and some good bodie tell me, I pray, How he could feele the smell thereof, and what delight or contentment it might yeeld from that part of the bodie? I have heard say besides, by some of the inward familiars and speciall favorites of this prince, That he commanded the very walls of his baines and stouves to be perfumed with pretious ointments: and that *C. Caligula* the Emperour, caused the very vessels and seats wherein he used to sit when hee bathed or swet in his hothouse, to be in that manner annointed. And because this might not seem to be a speciall pleasure fit for an Emperour onely, I knew one of *Neroes* servants afterwards, who used so to doe as well as his lord and master. But I muse and marveile at nothing so much, as that this wanton delight should find the way and enter so farre as into the mids of the campe. For wot ye what? I assure you the very standers and ensignes, the *Ægles* (I say) and *Minotaures*, so dustie as they be otherwise, so foule and ill-favoured, as being kept so long, and standing by unoccupied, are wont forsooth to be annointed and perfumed upon high and festivall daies. And, so god helpe me, I would I knew who it was that first brought up this fashion and needlesse superfluitie: Certes, I would not defraud him of his due honor: I would (I say) recommend his name unto all posteritie. But thus it is (no doubt) and it cannot otherwise be; Our *Ægles* and standers (bribed, hired, and corrupted with this so good a reward) have therefore in recompense conquered the whole world. Vnder such colours and pretences (indeed) wee deceive our selves, and cloake the vice and riot of our times: and thus having so good a reason as this, to induce and draw us on, we may not sticke to have pretious baulmes upon our heads, so it be under our fallats and mourrons.

To say for certieintie and precisely, when this enormitie entred first into Rome and began there to raigne, I am not able. Sure it is, as appeareth upon record, That after the subduing of *K. Antiochus* and the conquest of Asia, which was about the 565 yeere from the foundation of Rome, *P. Licinius Crassus*, and *L. Iulius Cesar* the Censors, published an edict, prohibiting and forbidding to sell any forrein or strange ointments within Rome: for so they termed these sweet mixtures and compositions. But (believe me) now adaies, some there be so wanton and delicate, that there is no wine or other drinke good with them, nor will goe downe their throat, unlesse it be spiced and aromatized with these baulmes: and so little passe they for the bitterness of these odours and smells, that they are well content to waite and spend a deale thereof, without and within, behind and before, above and beneath, to enjoy the perfume thereof in all parts of the bodie wheresoever. Well knowne it is, that *L. Plotius*, brother to *L. Plancus*, a man of great credit and authoritie, as having been twice Consull, and Censor besides, being outlawed and proclaimed a banished person by the decree of the* *Triumvirs*, was discovered within a certain cave at *Salernum*, where he lay close hidden and sure enough otherwise, by the very smell onely of a pretious ointment that he had about him: and so by that meanes (besides the shame and disgrace that he received, thus to detect himselfe and be found of his enemies) the rigour of the act and arrest that passed against him, was executed and performed upon his bodie. And who would ever pitie such persons, & not judge them worthie to come to so bad an end? But to conclude all this discourse, There is not a country in the world that yeeldeth such plentie and varietie of drugs fit for these compositions, as *Egypt*: and next to it, *Campaine* in *Italie* may carrie the name, for the store of *Roses* there growing.

* *Antonie, Lepidus, & Octavianus.*

CHAP. IIIII.

Of Dates, and Date trees: their nature and severall kinds.

THE land of *Iurie* is as much renowned, or rather more, for the abundance of *Palmes* or *Date trees* which it affourdeth: the discourse whereof we now will enter into. True it is, and it cannot be denied verily, that there be of them found in *Europe*, & namely, every where in *Italy*; but such, be all of them barren. Also in the maritime parts and sea-coasts of *Spaine*, ye shall meet with *Palmes* that beare *Dates*, but they are but tart and unpleasant, and indeed never come

A come to their maturitie and ripenessse. Those of Affrick, I must needs say, bring forth a sweet and pleasant fruit, but it will not last, and soone is gone: whereas contrariwise, in the East parts the people make wine thereof; and in some countries they use it for bread, yea the very bruit & four-footed beafts doe ordinarily feed of Dates: and therefore we hold and conclude, that Dates may be truly called, Forrein fruits; and their Trees, Meere strangers in this part of the world. For in Italy a man shall not find so much as one Palme tree that commeth up of it selfe, without it be set or planted by mans hand: neither in any other region whatsoever, unlesse it lie under some hote climat: but to beare fruit ye shall never know it in any countrey, if the same be not extreme ardent and scorching. Date trees love a light and sandie ground, and specially (for the most part) if it stand much upon a veine of Nitre besides. And yet contented will they be to grow by some river side, where they may have as it were, one foot in the water, and be ever drinking all the yeer long, especially in a drie season. Somethinke, that dung is as contrarie and hurtfull unto them, as to some kind of Citron trees in Assyria, unlesse it be mingled and tempered with water, or the trees planted neare to some running river. Moreover, many kinds there be of Date trees: and the first are small, and exceed not the bignesse of shrubs: these in some parts are barrein, and in others fruitfull: they shute out little short branches round about, but very full of leaves, the which in most places serve in stead of parget & rough-cast, to defend walls of houses against the weather and drifts of raine. Howbeit a second sort there be that are much taller, and whole Forrests stand onely upon those trees: they put forth leaves sharpe pointed, and they grow round about disposed one close unto another in manner of comb-teeth: and these must of necessitie be taken for wild, and no better: and they love here and there as it falleth out, to be entermingled among those of the tamer kind, as if they tooke I wot not what pleasure in their companie. The rest growing in the East parts, be streight, round, and tall, environed about the bodie with circles or houpes made of the very barke it selfe, and they are of the thicknes of a mans thumbe, set in order one above another like steps and greeces neare together, in such sort that the people of the East may easily climbe them, by the meanes of the said barke, which serveth not only for a vestiment to the tree, but also for staires to him that would mount up, so that it is a wonder to see how nimbly a man will run up to the top. These Date trees beare all their braunches toward the head; and their fruit commeth not forth among the leaves as in other trees, but hangeth to certaine braunches and twigs of the owne between the boughs like clusters of grapes: insomuch as it resembleth partly the nature of a grape, and partly of an apple. The leaves made in forme of a knife blade sharpe toward the point, slit as it were and cloven in the edge along both sides, make shew at the first of certain faire and beautifull gemmes: and now they serve instead of cords, and to bind vines together: also being divided and sliced into flakes, they are good to plait for hats and light bongraces for the head, against the heat of the sunne. Moreover, all learned men who are deeply studied in the secrets of Nature, be of opinion and doe teach us, That in all trees and Plants, nay rather in all things that proceed out of the earth, even in the very Hearbs, there are both sexes. Let it suffice therefore to have spoken thus much once for all in this place. But there is no tree whatsoever, in which this distinction of male and female appeareth more, than in Palme trees: for the male putteth forth his bloomie in the braunch; but the female sheweth no flower at all, but sprouteth and shooteth out buds in manner of a thorne: howbeit both in the one and the other, the pulpe or flesh of the Date commeth first, & after it the woodie stone within, which standeth in stead of the graine and seed of the Date. And this appeareth evidently by a good token, for that in the same braunch there be found little young Dates without any such stone at all. Now is the said stone or kernell of the Date, in forme long, nor so round and turned like a ball as that of the Olive. Besides, along the back it hath a cut or deepe slit chamfered in (as it were) betweene two pillowes; but in the mids of the belly on the other side, for the most part, it hath a round specke formed like a navill, wherat the root or chit beginneth first to put forth. Moreover, for the better planting of Dates, they set two together of their stones in a ranke with the bellies downward to the earth, and as many over their heads: for if one alone should come up, it were not able to stand of it selfe, the root and young plant would be so feeble; but foure together so joyne, claspe, and grow one to another, that they do well enough and are sufficient to bear themselves upright. The kernell or woodie substance within the Date, is divided from the fleshie pulpe and meat thereof, by many white pellicles or thin skins betweene: neither lyeth it close thereto, but hollow a good distance from it, save that in the head it is fastened thereunto by a thred or

string: and yet there be other pellicles that cleave fast and sticke to the substance of the Date within. The Date is a yeere in ripening. Howbeit in certaine places, as namely in Cyprus, the meat or fleshie pulpe thereof is sweet and pleasant in tast, although it bee not come to the full ripenessse: [where also the lease of the tree is broader, and the fruit rounder than the rest:] many then you must take heed not to eat and swallow downe the very bodily substance of it, but spit it forth after you have well chewed and sucked out the juice thereof. Also they say, that in Arabia the Dates have but a faint & weake sweetness with them: and yet *K. Iuba* maketh greatest account of those which the region of the Scenites in Arabia doth yeeld, where they be called *Dabula*: and he commendeth them for their delicate and pleasant tast, before all others. Moreover, it is constantly affirmed, That the females be naturally barrein, and will not beare fruit without the companie of the males among them to make them for to conceive: yet grow they will neverthelesse and come up of themselves, yea and become tall woods: and verily a man shall see many of the femals stand about one male, bending and leaning in the head full kindly toward him, yeelding their branches that way as if they courted him for to win his love. But contrariwise, he a grim fir and a coy, carrieth his head aloft, beareth his bristled & rough arms upright on high: and yet what with his very lookes, what with his breathing and exhalations upon them, or else with a certain dust that passeth from him, he doth the part of an husband, inso much as all the females about him, conceive and are fruitfull with his onely presence. It is said moreover, That if this male tree be cut downe, his wives will afterwards become barrein and beare no more Dates, as if they were widdowes. Finally, so evident is the copulation of these sexes in the Date trees, and knowne to be so effectually, that men have devised also to make the femals fruitfull, by casting upon them the bloomes and downe that the male beareth, yea and otherwhiles by throwing the powder which he yeeldeth, upon them. Besides the manner abovesaid of setting Date stones for increase, the trees may be replanted of the very truncheons of two cubits long, sliced and divided from the very braine (as it were) of the greene tree in the top, and so couched and interred, leaving onely the head without the ground. Moreover, Date trees will take againe and live, if either their slips be plucked from the root, or their tendrils and small branches be set in the earth. As for the Assyrians, they make no more adoé, but if it be a moist soile, plash the very tree it selfe whole as it standeth, and draw it along and so trench it within the ground, and thus it will take root and propagate: but such will never prove faire trees, but skrebs onely. And therefore they devise certaine Seminaries or Nource-gardens of them, and no sooner bee they of one yeares growth, but they transplant them; and so againe a second time when they be two yeares old: for these trees love alone to be remooved from one place to another. But whereas in other countries this transplantation is practised in the spring, the Assyrians attend the very mids and heat of Summer, and in the beginning of the Dog-daies use to replant them. Moreover, in that country they neither cut off the heads, ne yet shred the branches of the yong plants with their hooks and bills; but rather bind up their boughes, that they may shoot up in height the better. Howbeit when they are strong, they cut their branches, for to make the bodies burnish and waxe thicker, but yet in the lopping they leave stumps of boughes halfe a foot long, to the very tree: which if they were cut off, in other places, would be the death of the mother stocke. And forasmuch as Date trees delight in a salt and nitrous soile, [according as hath been before said] the Assyrians therefore when they meet not with a ground of that nature, strew salt, not close about the roots, but somewhat farther off. In Syria and Ægypt, there be some Date trees that divide themselves and are forked in twaine, rising up in two trunks or bodies. In Crete, they have three, and some also five. The nature of the Palme or Date tree, is to beare ordinarily when they be three yeares old: howbeit in Cyprus, Syria, and Ægypt, it is foure yeares first ere some bring fruit; yea and five yeares before others begin: and such never exceed a mans heigh; neither have they any stone or woodie kernell within the Date so long as they be young and tender: during which time they have a pretie name for them, and call them *Gelded Dates*: and many kinds there be of these trees. As for those that be barrein and fruitlesse, all Assyria and Persia throughout, use them for timber to make quarters and pannels for seeling, wainescor, and their fine joyned workes. There be also of Date trees coppey woods, which they use to fell and cut at certaine times: and evermore they put forth a young spring from the old root and stocke. These have in the very head and top, a certaine pleasant and sweet marow, which they tearme, *The braine*: and therefore those that love to eat it, will cut and take it away, and yet the tree will live neverthelesse:

a thing

A a thing that ye shall not lightly see in any others of that kind. As for those Date trees which have broader leaves, & the same soft and pliable, very good to make windings to bind vines and such like, they be named by the Greekes *Chamaropes*. Great abundance there is of them in Creta, but more in Sicily. The wood of Date trees yeeldeth coales, that in the burning will keepe fire long: howbeit a dead flame it is that they make, and nothing quicke. As touching those that be fruitfull, some beare Dates with a short stone or kernell within; others with a longer: these are more soft, those be harder. Some carie a kernell of a bonie substance, like the moone croissant, which many are wont to polish with some tooth, and in a kind of religion are persuaded, that it is good against witchcraft, and is of vertue to procure womens love. Some of these stones be clad and covered with many skins or pellicles, and others with fewer: ye shall have in this Date, those

B tunicles thicke and grosse; in that, thinner and more fine. In summe, if a man would search into them particularly, he should find fiftie sundrie sorts of Dates save one, with severall strange, and barbarous names, & as many different wines made of them. But the principall & most excellent of all the rest, surnamed *Roiall Dates*, for that they were reserved for the kings owne mouth of Persia, were known to grow no where els but in Babylon, and in one hortyard or parke only of a *Bagous* (for so they use to call their eunuches or guelDED persons, and such in times past reigned as *kkk.* over them:) and this parke was evermore annexed to the crown, and went with the *Roiall* scepter, as a chiefe demaine of the Empire, and passed from one prince to another by succession. But in the South countries and meridionall parts of the world, the Dates surnamed *Syagri* are highly commended above all others, and most esteemed: and next to them, those which be

C called *Margarides*, are in account and good request: These be short, white, and round, more like in forme to berries and little buttons, than to mast-fruit and Dates indeed: wherupon they took their name of Pearls, which they do resemble. It is reported, that in the cite *Chora*, there is one of these trees which beareth Dates like to Pearles; as also another that catcheth the Dates *Syagri*. I my selfe verily have heard straunge things of this kind of tree, and namely in regard of the bird *Phoenix*, which is supposed to have taken that name of this Date tree [called in Greek *φοινίξ*] for it was assured unto me, that the said bird died with that tree, and revived of it selfe as the tree sprung againe. Now at the very time that I wrote this Historie of Natures workes, I saw the same tree with fruit upon it: the Date that it beareth is great, hard, rough in handling, and in tast resembling some harsh and wild fruit, same different from other kinds of Dates: in such sort, as I

D wondred not at the name of *Syagros*, so like it tasted to the flesh and venison of a wild *Bore* in the Forrest, that commeth to our board. In a fourth rank of Dates for goodnes, are to be raunged those which they call *Sandalides*, for the resemblance of slippers or pantofles which they used in old time, named *Sandalio*. But in these daies they bee as rare, as otherwise pleasant; so that within the bounds of *Aethiopia* (a wonderfull matter) there be not above five of them to be found. After the *Sandalides*, the Dates *Caryotæ* are in greatest request: for they bee not onely good to eat, but also a wine is made of their juice, which they yeeld in great abundance: for all the people of the East make their speciall drinke thereof. But true it is, that this kind of wine is hurtfull to the head, and therupon the Greeks gave it that name. Now as these countries above-said doe affourd plentie of Date trees, and the same fruitfull enough, so *Iurie* alone carrieth the name and the praise for goodnes of Dates; and not all *Iurie* neither, but the territorie about *Iericho* especially: and yet I must needs say, that there be gathered very good Dates in the vales of *Iury*, which be named *Archelais*, *Phafelis*, and *Livias*. And these Dates of *Iurie*, have this especiall propertie above all others, To be full of a fat white liquor resembling milke, which hath a certaine tast of wine, and is exceeding sweet and pleasant withall like honey. The drier kind of these Dates be those that tooke name of one *Nicolas*, and were called *Nicolai*: passing faire and great they be above all others by farre; for foure of them laid in a ranke one at the end of another, will make a cubit in length. Other Dates there be, not so faire to the eye as these *Caryotæ*, but surely for pleasant tast they may be well their sisters, like as they bee called thereupon *Adelphides*. And a third kind there be of the same *Caryotæ*, which they commonly call *Pateton*: over-full they are of liquor, and so drunke (as a man would say) with their owne juice, that they burst even as they hang upon the tree their mother, yeelding their wine in that manner of their owne accord, as if they were troden with mens feet in a wine-presse; and thereupon they got that name. Another kind there is yet by it selfe, of those Dates that be drier than the rest, and they be very long and slender, yea and otherwhiles not streight, but bending and crooked. As for those

which we dedicate to holy uses, and namely, when wee sacrifice and offer oblations to the gods, the Iewes (a nation above all others noted for contempt and mockerie of the gods) their worship and divine service) doe name Chydæi, [*i. vile and of no price.*] The Dates in Ægypt called Thebaides, as also those in Arabia, be all over-drie and withered, poore, leane, and thin. Parched as they be continually with the heat of the Sunne, a man would deeme they were covered with a crust or shell, rather than with a skin or pill. Goe further into Æthiopia, there they be so drie that they will soone crumble into powder like meale; and indeed they make therof their bread, when it is tempered and wrought with water. These Dates be round, and bigger than a good apple; and they grow upon a plant or shrub which spreadeth branches of a cubit length: and the Greekes call them Cycæ. They hang three yeares before they be ripe: and evermore you shall see upon the tree Dates ripe, when others come new forth greene and small. As for the Dates of Thebais in high Ægypt, so soone as they be gathered, presently they are put up into barrels, whiles their naturall heat is in them; for if that course were not taken with them, it would soone exhale and vanish away: yet will they decay and rot, if they be not baked againe in the oven. As touching all other Dates, they seeme to be the common and vulgar sort, simply called Dates: and yet both the Syrians and King *Iuba*, hold them for junkets and banketting dishes. For as in some part of Phœnicie and Cilicia, they bee called Balani, [*i. glands or mast*] so we at Rome rearme them by the very name of their owne countrey Phœnicie, and by no other. And even of them there be many kinds; and those different one from another, either in forme, for that some be round, others long; or else in colour, whiles there be of them red and blacke: in which regard, a man may observe in them (by report) as great varietie as in figs: howbeit the whitest be the best and most commended. Great diversitie there is also among them in quantitie and bignesse, inso much as ye shall have many of them that want nothing of a cubit; and other for them againe no bigger than a beane. Now as touching the Dates that be barrelled up and kept, they be such onely as come from salt and sandie grounds, as in Iurie, and Cyrenaica in Affricke: for those of Ægypt, Cyprus, Syria, and Seleucia in Assyria, will not keepe and be preserved: and therefore they must be spent out of hand: for which, they take good order to franke their swine and feed other cattaille fat with them. The true signe to know a faultie or a stale Date, is this, If a certaine white specke or wart which stucke upon it when it grew on the branch, be shed and false off. Now to conclude this treatise, I think it not amisse to let downe for an example, what did be-ride the souldiers that were of *Alexander's* armie, who with eating of greene Dates new ripe, were choked, and so died. In the Gedrosians countrey, this accident befell unto them, onely by the nature of the fruit it selfe, eat they of it as moderately as they could: but in other parts, their greedie and over-liberall feeding upon them, was their bane. For surely new Dates as they come from the tree, are so exceeding pleasant and delicious, that a man can hardly forbear and make an end in good time, before he surfet of them and catch a shrewd turne.

CHAP. V.

Of the trees in Syria.

Besides the Date tree, there be other especiall trees in Syria proper unto that countrey: for in the first place there are a kind of Nuts there growing, commonly knowne and called *Fistricks*. And (by report) this vertue they have, either taken as meat or drunk in drinke, To resist the sting and biting of serpents. Also our drie * Figs, and a lesser sort than they named *Cortana* come from thence. Also the Damascene prunes, growing upon the mount Damascus; as also the fruit *Sebesten*, are the commodities of Syria: howsoever they are now familiar here with us in Italy. As for *Sebesten*, there be wines made thereof in Ægypt. Also the Phœnicians have a lesse kind of Cedars much like to the Juniper: and two sorts there be thereof, the Lycian and the Phœnician, which differ in the leafe: for that which hath an hard, sharpe, and prickie leafe, is called *Oxycedrus*: full of branches it is besides, and so knurrie, that it is troublesome to the hand. As for the other Cedar, it hath an excellent smell. Both twaine doe beare a fruit of the bignesse of Myrtle leaves, and sweet in tast. Moreover, of the greater Cedar there be two kinds: that which doth blossome, beareth no fruit: and contrariwise, that which is fruitfull, theweth no blossome: and in this, the new fruit commeth forth alwaies before the old of the former yeare be ripe and gathered: also the seed of it is like that of the Cypresse. Some call this Cedar,

* called Len-
ten figs.

A Cedar, Cedrelate: whereof commeth the best Rosin. And the timber of it is everlasting: wherefore in old time they were wont to make the images of the gods, of this wood, as it appeareth by the statue of *Apollo Sossianus*, made of Cedar wood, brought from Seleucia. In Arcadia there is a tree like the Cedar, but in Phrygia it is called a shrub.

CHAP. VI.

Of the Terebinth.

B **M**oreover, in Syria groweth the Terebinth or Terpentine tree. The male beareth no fruit. The females be of two sorts: the one carieth red graines of the bignesse of Lentils, the other bring forth pale seeds. This fruit of the Terebinth ripeneth with grapes. Upon the mountaine Ida near Troas, it is as big as a Beane, more pleasant to smell unto, and glutinous like Rosin, if a man handle it. But in Macedonie the tree is but short, and spreadeth branches like a shrub: contrariwise, about Damascus in Syria, it is very great and tall. The timber of it is verie rough, continueth a long time, and never shrinketh for age: of colour blacke, but passing faire, and resplendent withall. It putteth forth flowers in clusters after the manner of the Olive, but it is red: and the leaves otherwise grow very thicke. It beareth also certaine small cods or bladders full of a gummie and clammy moisture (which also is sueth out of the barke) and out of those bladders there come forth little flies like gnats.

C Also the male Rhus or Sumach of Syria doth beare fruit: whereas the females is barren. This plant putteth forth leaves like to the Elme, but that they be somewhat longer, and full of haire, and evermore the steles of the leaves grow contrarie one against the other. As for the branches, they be slender and short, good for curriers to dresse their skins and make leather white. The seed or graine thereof resembleth Lentils: and being ripe, it is red, and commonly with the grape. The which is called Rhus or Sumach, even as the tree: a necessarie fruit for many medicines.

CHAP. VII.

Of the Egyptian and Cyprian Sycomores or Fig-trees.

D **I**N Egypt likewise there be found many trees which grow not elsewhere: and principally the Sycomore, which thereupon is called the Egyptian Figtree. The tree for leafe, bignesse, and barke, is like unto the Mulberie tree. It beareth fruit not upon the branches, but out of the very bodie of the stocke. And the same is a passing sweet fig, but without any graines at all within. It doth increase in exceeding great abundance, so it be scraped and clawed only with yron hooks: for otherwise it will not ripen. Come then foure daies after to gather it, you shall not misse but find it ripe, and new comming up in the place. Thus in every summer you shall have a sevenfold encrease, and the same in much plentie, yeelding also great abundance of milke. And say that you doe not use the scraping or paring abovenamed, yet shall you be sure of four fruits in a summer, one under another; but so as the new will drive the old before it, and cause it to shed and fall before it bee well ripe, for want of that handling before said. The timber of this tree is counted right good and profitable; having one singular propertie by it selfe. No sooner is it hewed, but presently it is cast into standing pooles, and there drowned. This is the only way to season, & drie it. At the first (I say) it sinketh downe to the bottome: but afterwards it beginneth to stote above: and without all question, the water which useth to wet and drench all other trees, soketh and sucketh forth the sap and humiditie of this wood. Now when it beginneth once to swim aloft, it is a signe that it hath the full seasoning, and is good for building and other workes.

E Like to this Sycomore in some sort is a certaine tree in Candie, which is called the Cyprian fig-tree. For this likewise beareth fruit comming out at the very stocke, or the maine armes and boughes thereof, when they be growne to any thickeesse: but it putteth forth certain sprigs without any leaves at all, and they resemble roots. Now this tree is in bodie much like to the Poplar, but in leafe, to the Elme. It beareth fruit foure times a yeare, and as often doth it bud. But the greene figs will hang so still and never ripen, unlesse they be scarified and skiced so, as the milkie substance may run out. The fruit within, is made like a fig, and hath the same pleasant tast: but it is no bigger than the Sorvis.

CHAP. VIII.

¶ Of the cod or fruit called *Ceraunia Siliqua*, [i. *Carob*.]

There is a kind of coddie shrub, which the Ionians call *Ceraunia*, not unlike to the Ægyptian *Sycamore* abovesaid, for the fruit thereof commeth likewise forth of the stocke, but yet it is contained within a cod. And thereupon it is, that some have called it the Ægyptian fig-tree: but they are grossely deceived. For it doth not so much as grow in Ægypt: but in Syria and Ionia, also about *Gnidos* and *Rhodes*. The tree hath greene leaves all the yeare long: it putteth forth white flowers of a strong sinell. From the root there spring shoots, and about the foot of the tree it beareth many young impes, which are such suckers of the sap, that they draw away all the goodnesse, and rob the parts above of their nourishment, whereby the head is yellow, and nothing fresh and greene, but fadeth in the top. The fruit of the former yeare is gathered about the rising of the *Dog-starre* the next yeare after: and then presently it bringeth forth new. Afterwards commeth a blossome, and the fruit thriveth and waxeth all winter untill the occultation of *Arcturus*.

CHAP. IX.

¶ Of a tree in Ægypt called *Persica*: of *Cucus*, and the Ægyptian thorne *Acacia*.

There is found in Ægypt a certaine kind of tree by it selfe called *Persica*, like to a *Peare-tree*, but that it is greene all the yeare long, and sheddeth not the leaves: also it beareth fruit continually: for gather to day, and yee shall find new to morrow growing forth in the place. The fruit is ripe about the canicular daies when the *Etesian* winds doe blow. It resembleth a *Peare*, save that it is longer, and inclosed with a shell or greene huske like the *Almond*: but where the *Almond* hath an hard shell without, as a nut, this is soft in manner of a *Peare* or *Plum*, containing the stone within: and yet it differeth somewhat both in shortnesse and tendernesse. The fruit is very good meat: and although the exceeding sweetnesse thereof entice one to eat still and not give over, yet no daunger of surfer ensueth thereupon. As touching the wood of this tree, it is durable, hard, strong, and blacke withall, in which respects it resembleth the *Lote-wood* very much. They used in times past to make images and statues thereof, not so beautifull altogether, nor of so fine a graine as some others; but for the timber thereof, which continueth sure, and lasteth long, as that of the tree which we called *Balanus*. Much wherof doth grow curbed and crooked: and therefore is good onely for shipwrights to make keeles. But contrariwise, the wood of *Cucus* is highly esteemed.

A tree this is, not unlike to the *Date tree*, in this regard especially, that the leaves be good to twist and plait for mats and such like: herein is the difference, for that it spreadeth into arms and great boughes. The fruit which it beareth, is as much as a man may well hold in his hand: of colour reddish or deepe shining yellow, and the tast very commendable: for it yeeldeth a juice betweene soure and sweet, and therefore wholesome for the stomacke. The woodie stone within, is great, massie, and exceeding hard, whereof they use to turne for courtaine rings and saile pulleys. In the bellie of it there lieth a sweet kernill, whiles it is fresh and new. But if it bee once dried, it passeth for hardnesse: insomuch as no tooth can chew it, unlesse it be steeped in some liquor many daies before. As for the wood and timber of the tree, it hath a most daintie, fine, and curled graine: in which regard the *Persians* set much store by it.

In the same countrey there groweth a thornie plant, which the inhabitants make great account of: and especially that which is in colour blacke, because it will abide the water, and never rot nor putrifie in it: and therefore excellent good for the ribs and sides of ships. As for the white thorn of this kind, it will soone corrupt and be rotten. But both the one and other, is full of prickes even to the very leaves. The seed lieth in certain cods or huskes, wherewith curriers use to dresse their leather in stead of gals. The flower that this thorne beareth, is beautifull, whereof folke make faire guirlands and chaplets; profitable also besides and good for many medicines. Out of the barke of this tree there commeth a gum likewise. But the cheefest commoditie and profite that it yeeldeth is this, Cut it down when you please, it will be a big tree againe within three yeares. It groweth

A growth plentifully about Thebes in Ægypt, among Okes, Olives, and Peach-trees, for the space of three hundred stadia from Nilus: where the whole tract is all woods and Forrests, and nathelesse well watered with fountains and springs among.

CHAP. X.

§ Of the Ægyptian Plum-tree, and other trees about Memphis.

B I N those quarters groweth likewise the Ægyptian Plum-tree, not unlike to the thorne of Aca-
cia next before described: and this bringeth forth a fruit as big as a Medler, which never is ripe
before mid-winter, when the daies be at shortest. The tree is alwaies Greene, and sheddeth not
the leaves all the yeare long. Within the fruit aforesaid, there is a big stone: but the substance
C otherwise and bodie thereof is naturally so good, and so plenteous withall, that the inhabitants
make their harvest of it. When they have gathered it, they cleanse it, stampe it, make it up into
bals and lumps, which they preserve and keepe. The countrey about Memphis in times past,
was all woodie and full of Forrests, wherein grew so mightie big trees; that three men were not
able to fatham them about. But among the rest there was one by it selfe most wonderfull, not for
any straunge fruit that it bare, nor yet for any singular use or employment: but in regard of an
accident observed in it, and a speciall qualitie that it had. For the tree (forfooth) outwardly re-
sembleth a thorne, but the leaves are made like feathers for all the world. Let a man shake the
boughes never so little, shread they will and fall incontinently, but soone after there spring up
new in their stead.

CHAP. XI.

§ Sundrie sorts of gum. Also of the cane Papyrus.

D T He best gum in all mens judgement, is that which commeth of the Ægyptian thorne A-
cacia, having veines within of checkerworke, or trailed like wormes, of colour greenish,
and cleare withall: without any peeces of barke intermingled among, and sticking to
the teeth as a man cheweth it. A pound thereof is commonly sold at Rome for three deniers.
The gum that issueth from the bitter Almond trees and the Cherie-trees is not so good: but the
worst of all is that which the Plum-tree yeeldeth. There runneth likewise out of vines a certaine
gum, which is passing good for the bleach, scabs and scals in little children. And otherwhiles yee
shall find some in Olive trees: and that cureth the tooth-ach. Moreover, the Elme growing upon
Corycus, a mountaine in Cilicia, and the Juniper there, have a gum, but good for nothing. As
for that of the Elme, it breedeth gnats there. Moreover, of Sarcocolla, [a tree this is, so called]
there destilleth a gum of that name, which painters and Physicians both, have great use of. Like
it is to Manna Thuris, which is the powder of Incense: and therefore the white is better than the
red. Sold it is at the same price that the other abovenamed. And thus much concerning the trees
growing upon mountaines and plaines.

E Now albeit we are not entred yet into the treatise of those plants and shrubs which grow either
in marsh grounds, or by river sides: yet before we depart out of Ægypt, wee must not forget the
plant Papyrus, but describe the nature thereof, considering, that all civilitie of this our life, the
memoriall and immortalitie also of men after death, consisteth especially in paper which is made
thereof. *M. Varro* writeth, that the first invention of making paper was devised upon the conquest
of Ægypt, atchieved by *Alexander* the great, at what time as he founded the citie Alexandria in
Ægypt, where such paper was first made. For before that time there was no use at all (saith he) of
paper: but men used to write in Date tree leaves first, and afterwards in the rinds and barks of
certaine trees. Then in proceesse of time they began to register publicke records in rols & sheets
of lead: and soone after private persons set downe their owne affaires in linnen bookes, or els in
tables covered with waxe. For wee read in *Homer*, that before the war of Troy there was use of
writing tables. And at the very time when he wrate, Ægypt was not all continent and firme land,
F as now it is. For, as he saith, all the Papyrus wherof the paper is made, grew in that arm or branch
of the river Nilus which answereth onely to the tract or territorie within the jurisdiction Seben-
nitis: but afterwards that part also was laid to Ægypt, by the shelves and bankes made with the in-
undation of the said river. For, from the Island Pharos, which now joineth close unto Alexan-
dria,

dria by a bridge or narrow causey betweene, it was a day and nights sailing, with a good forewind at the poupe unto the maine land, as *Homer* hath reported. But afterwards, as *Varro* hath written, by occasion of a certaine envious strife and emulation that arose betweene one of the *Ptolomees* king of Ægypt, & *Enmenes* king of Pergamus, about the erecting of their great Libraries; when *Ptolomeus* suppressed and kept in all the paper made in Ægypt, there was parchment devised by the said *Enmenes* to be wrought at Pergamus, of skins. And finally, the use was commonly taken up of both, to wit, Paper and Parchment, which continueth the perpetuities and everlasting remembrance of men, and their affaires. But to returne unto our plant Papyrus, it groweth in the marshes of Ægypt, or els in the dead standing waters of Nilus, namely, in certaine plasches and pits whereas the water did overflow, and remained still after the river was fallen and down again: and namely, such holes and ditches which are not above two cubites deepe. The root is wythen and crooked, of the thickeesse of a mans arme: and the scape or stalke that ariseth from it, hath three sides with three corners triangle-wise, not above ten cubites in heighth, growing taper-wise, small and sharpe in the top, where it beareth an head enclosed and round, in manner of a cabbage. Howbeit, no seed it carieth within: neither serveth the flower for any purpose but onely for chaplets to adorne the images of the gods. The inhabitants of Ægypt doe use the root in stead of wood, not for fewell onely, but also to make thereof sundrie vessels and utensils in an house. The very bodie and pole of the Papyr it selfe, serveth very well to twist and weave therewith little boats: and the rinds thereof be good to make saile-clothes, curtains, mats, and coverlets, clothes also for hangings, and ropes. Nay, they use to chew and eat it both raw and foddren: but they swallow the juice onely downe the throat, and spit out the grosse substance. Moreover, there is Papyrus found in Syria, about that very lake and meere whereas the sweet Calamus abovenamed doth grow. Neither used king *Antigonus* any other ropes about the tackling of his ships, but such as were made hereof. For as yet, the use of Spartum was not common. Moreover, it is not long since, that there was found growing in Euphrates about Babylon, this plant Papyrus; and knowne to serve for Paper, as well as the other in Ægypt. And yet for all that, the Parthians will not leave their old custome to weave and purple letters in their cloths, after the manner of embroderie. Now as touching the writing Paper made of Papyrus. After that they have cut it into certaine trunkes, as long or as short as the size of their Paper, they doe deuide and slice it with the point of a needle or bodkin for the purpose, into very thin plates or leaves, but they drive them as broad and large as possibly they can.

CHAP. XII.

Of divers kinds of Paper: and how writing Paper is made: also the triall of good or bad Paper: and the glue or past belonging thereto.

THE best sheets or leaves of Paper bee those which are set out of the very middest and heart of the stem or stalke of Papyrus: and so consequently better or worse, according as they be nearer or farther from it. In auncient time the principall Paper and the largest, was called Hieratica, [i.e. sacred or holy] because it was employed onely about religious & divine bookes. But afterwards the flatterers of the Emperour *Augustus*, named those of the best sort Augustæ: like as the second *Livia*, after the name of his wife. And hereupon it came, that the Paper Hieratica was set in a third ranke. Next to them in goodnesse was reputed the Paper Amphitheatrike, which name was given unto it of the place where it was made. The polishing and trimming of this Paper, *Fannius* tooke in hand, who set up a shop at Rome for the selling of it: and so skilfull was he and curious in the handling and dressing thereof, that by the time hee had done withall and brought it to a perfect finenesse, he made the same of a course and common Paper to be roiall and fit for the best persons that should use it: in such sort, as there was none in any request to speake of, but it: & called after his name it was, Fanniiana. As for that which passed not through his hands, nor had his workmanship, it retained still the old bare name Amphitheatrica. After this kind of Paper, followed that which they called Saitica, of a towne or cite in Ægypt, where great abundance was made thereof with the courser peeces and refuse of the said Papyrus. And yet there was another Paper, to wit, Taniotica, so called of a place neare adjoining; and made of the grosser part neare to the barke & the outside: and this they sold for the weight, and no other goodnesse that it had besides. As for the merchant Paper or shop-paper, called Emporetica, it

was

A was not for to write in, onely it served as wast Paper for sarpplers to wrap and packe up wares in: also for coffins or cornets to lap spice and fruits in, and therupon merchants and occupiers gave it that name. And with this, the very cane it selfe is to be seene clad outwardly: and the utmost coat thereof is like to a reed or bulrush, fit for no purpose but to make cardage of: and not very good for that use neither, unlesse it be for the water onely, which it will abide very well. Now the making of all these Papers, was in this sort, namely, upon a broad bord wet with the cleare water of Nilus. For the fattie and muddie liquor thereof serveth in stead of glew, wherewith at the first the thin leafe of the cane Papyrus, sliced from the rest, and laid upon the bord to the full length (in manner of the warpe) according as the trunk will give leave, being cut off at both ends, namely, toward the top and the root, is wet and besmeared: then is there another laid overthwart it,

B after the order of the woofe, with a crosse graine to the other: and so is the web (as it were) of the Paper performed. Pressed afterward it is in certaine presses, that both leaves may stick together: and then the whole sheets are dried in the Sunne. Which done, they bee so couched together, that the best and largest lie first, and so consequently in order as they be worse and of lesse size, untill you come to the worst. And one scape or trunke lightly of the cane Papyrus, yeeldeth not above twentie such sheets. Great difference there is in them for the breadth, notwithstanding the length be all one. The best, namely which were taken out of the heart of the cane, beare thirteen fingers in breadth. The Hieratica Paper wanteth two of that number. The Fannian is but tenne fingers broad. The common Paper Amphitheatrica, but nine. Saitica yet fewer, and will not beare the stroke of the hammer. And as for the merchants Paper, it was so short and narrow,

C that it went not above sixe fingers. Moreover, in Paper these foure things must bee considered, that it be fine, well compact, white, and smooth. Howbeit, *Claudius Caesar* the Emperour abated the credite of the Paper Augusta, that it was no more accounted the best: for indeed so thin it was, that it would not abide the dent of the pen: besides, it would not hold inke, but shew the letters on the other side; and was evermore in daunger of blurring and blotting, especially on the backe part: and otherwise, unlightly it was to the eie, for that a man might so easily see through it. And therefore hee devised to fortifie and strengthen the said Paper, and laid another course or coat (as it were) over the former, in manner of a double woofe. Hee enlarged also the breadth of the Paper: for he caused it to be a foot broad, yea, and some a foot and an halfe, I meane that kind which was called Macrocola, or large Roiall Paper. But herein was a fault, & reason found it out:

D for if one leafe of this large Paper were plucked off, the more pages tooke harme thereby, & were lost. And therefore the former Claudian Paper, which had but three leaves of Papyrus, was preferred before all the rest. Howbeit, that which was named Augustane bare the name for letters missive, and the Liviane continued still in the owne credite, having no propertie of the first and principall, but all in a second degree. The roughnesse of Paper is polished and smoothed either with some tooth, or els with a Porcellane shell: but the letters in such slicke Paper, will soon fade and decay. For by the polishing, it will not receive the inke so deepe as when it is not smoothed, although otherwise it will shine the better. Moreover, it falleth out many times, that if the humor be not artificially laid, the Paper is very stubborne: but this fault is soone found at the very first stroke of the hammer, or els discovered by the smell, especially if good heed were not taken in the tempering thereof. As for the spots & speckles, the eie will quickly spie them: but the long streaks and veines lying close couched betweene the pasted places, can hardly be discerned before that the letter runneth abroad, and sheweth how in the spongeous substance of the Paper wanting that past, the inke will sinke through, and make blots; so deceitfull is the making of this Paper. What remedie then? but to be at a second labour to past it new againe another way, to wit, with the common past that we use, made with the finest flower of wheat, and tempered with hote scalding water, and a little vinegre mingled therewith. For the joiners glue and that made of gums, is brittle, and will not abide the rolling up of these sheets into quiers. But they that will go more surely to worke, and make an exquisite past indeed, boile the soft and tender crums of leavened bread in seething water, & then let it ran through a strainer, which they use to this purpose. For besides that the Paper hereby will be more firme, and have lesse flaws, it surmounteth also in sweetnesse the water of Nilus. Moreover, all kind of past whatsoever, for this effect, ought neither to be staler than a day old, nor yet fresher and under that age. After that it is thus pasted, they beat it thin with the hammer: and a second time runne lightly over with new past: and then being thus knit and bound fast againe, it is made smooth and void of wrinkles, and finally beaten even with

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the hammer, and driven out in length and breadth. After this manner was that Paper made, wherein were written the bookes and records of the two *Gracchi*, *Tiberius* and *Caius*, with their owne hands, long agoe: the which I saw in the house of *Pomponius Secundus*, a noble citizen of Rome, and a renowned Poet, almost two hundred yeares after their death. As for the writings of *Cicero*, of *Augustus* late Emperour of famous memorie, and of *Virgill*, wee daily see and handle them, by the meanes of Paper so good and durable.

CHAP. XIII.

Of the bookes of *Numa*.

WE find many examples in stories, which very directly and mightily doe testifie against *M. Varr*, as touching Papers. For *Cassius Hemina* (a most faithfull and auncient writer) in the fourth book of his *Annales*, hath reported, That one *Cn. Terentius* a scribe or publick Notarie, as he digged and delved in a ground which he had neare to *Ianiculum*, light upon a chist, wherein lay the bodie of *Numa*, sometime king of Rome. In the same also were found the bookes of the said king. And (as he affirmeth) this happened in that yeare, when *Pub. Cornelius* the sonne of *Lucius*, surnamed *Cethegus*, and *M. Baebius* sonne of *Quintus*, surnamed *Pamphilius*, were Consuls of Rome: betweene which time and the raigne of *Numa*, by just computation are reckoned 535 yeeres. He saith moreover, That those bookes were made of the Paper abovenamed. The greater wonder it was, how such kind of bookes should last so long, especially within the earth, and not putrifie? The thing therefore being so strange, and in manner miraculous, that Paper should continue all that time, I thinke it not amisse to set downe the very words of *Hemina* himselfe, as he delivereth them. The world made a wonder (quoth he) how those bookes could possibly endure so many yeares? but the partie who found them yeilded this reason: That within the said coffer about the middest of it, there was a stone foure-square, lapped all about and bound every way with [waxe] candles in manner of a ferecloth: upon which stone, the foresaid bookes were laid: and therefore it was (as he supposed) that they did not rot. Moreover, the bookes also were embalmed with the rosin or oile of Cedar, which might be a good reason in his conceit, that the moths came not to them. Now these bookes contained the Philosophie and doctrine of *Pythagoras*: and for that they treated of that Philosophicall argument, burnt they were, by order from *Q. Petilius* the Pretour for that time being. The same storie in effect doth *C. Piso Censorinus* (a man who had been Censor) report in the first booke of his *Commentaries*: howbeit, he setteth downe their number withall: and saith they were foureteene in all, whereof seven treated of the Pontificall law, and matters of religion; and as many discountred of *Pythagoras* his Philosophie. But *Tuditanus* in the thirteenth booke of the *Annales* affirmeth, That they were the decretals onely of *Numa*, and contained his ordinances. As for *Varro* himselfe, he writeth in the fift booke of *Humane Antiquities*, that they were in all but twelve. And *Antias* in his second booke reporteth, That two of them were written in Latine, and contained the Pontificall divinitie and church-matters: and other twaine penned in Greeke, were full of precepts in Philosophie. He also affirmeth in his third booke, for what cause the said bookes by vertue of a publicke decree were consumed with fire. But all Historiographers agree in this, That one of the *Sibyls* brought unto *Tarquinius* the proud three bookes: of which, two were burnt by her own selfe: and the third likewise perished with fire, together with the *Capitol*, during the troubles of *Silla*. Over and besides, *Mutianus*, a man who had ben thrice Consul of Rome, hath left upon record, that of late, while he was lord governour of *Lycia*, hee red in a certaine temple an Epistle written by prince *Sarpedon* in Paper, and bearing date from *Troy*. And I wonder the rather at this, if so be that when *Homer* lived and wrote his Poëme, there was no land of *Ægypt* as now there is: or why, in case there was such use of Paper then, himselfe should write, that in the very same *Lycia*, *Bellerophon* had writing tables given him to deliver as touching his owne death, and not rather letters missive written in Paper? Well, howsoever that bee, this is certaine, that there is a scarcitie otherwhiles of Paper also, as well as of other commodities: and this cane or reed Papyrus doth many times faile. For not long since, even in the daies of *Tiberius* the Emperour, in a dearth and want of Paper, there were commissioners deputed and appointed by the Senate of Rome, for the dispensing and distribution of it among the people: otherwise there had been a great mutinie and tumult at Rome about Paper.

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CHAP. XIII.

Of the trees in Æthiopia.

AS touching Æthiopia, and namely that quarter which confineth upon Ægypt, it hath in manner no trees at all of any name, save those that beare wooll or cotton: concerning the nature of which trees, we have sufficiently spoken in the description of the Indians, and of Arabia: and yet in very truth, the cotton that is brought from these trees in Æthiopia, commeth nearer to wooll than any thing els; howsoever the trees be otherwise like to the rest of that kind: and the burse or cod wherein this woollie substance lyeth, is greater, and as big as a Pomegranat. Besides these, there be Date trees also, like to such as we have before described. As touching other trees, and especially the odoriferous woods within the Isles that lie upon Æthiopia round about, we have said enough in the treatise of those Ilands.

B

CHAP. XV.

Of the Trees growing in mount Atlas: of Citron tables: of the commendable perfections, and contrariwise of the defaults thereof.

THe mountaine Atlas (by report) hath a wood in it of peculiar trees that elsewhere grow not, wherof we have already written. The Mores that border upon it, are stored with abundance of Citron trees: from whence commeth that excessive expense and superfluitie about Citron tables made thereof. And our dames and wives at home (by way of revenge) use to twit us their husbands therewith, when we would seeme to find fault with the costly pearls that they doe wear. There is at this day to be seene a board of Citron wood, belonging sometimes to *M. Tullius Cicero*, which cost him ten thousand Sesterces: a strange matter, considering he was no rich man: but more wonderfull, if wee call to mind the severitie of that age wherein he lived. Much speech there is besides of *Gallus Asinius* his table, sold for eleven thousand Sesterces. Moreover, there are two other, which *K. Iuba* sold: the one was prised at 15000 Sesterces, and the other held little under. Not long since, there was one of them chanced to be burnt, and it came with other household stufte but from the cottages in Mauritania, which cost 140000 Sesterces: a good round summe of money, and the price of a faire lordship, if a man would be at the cost to purchase lands so deare. But the fairest and largest table of Citron wood, that to this day hath beene seene, came from *Prolomae* king of Mauritania, the which was made of two demie-rounds or halfe circles, joyned together so artificially, that for the closeness of the joynt (which could not be discerned) it was more admirable than possibly it could have beene if it had beene naturally of one entire peece: the diameter of it carried foure foot and a halfe, and three inches thicke it was. Likewise another such table there was, surnamed *Nomien*, of one *Nomius* a slave, enfranchised by *Tyberius* the Emperour: the square or diametre whereof, was foure foot within three quarters of an inch; and the thicknes halfe a foot lacking so much. And here I cannot forget and overpasse, how that the Emperour *Tyberius* himselfe had a table, which being two inches & three quarters above four foot in the diametre, & an inch and an halfe thick throughout, he caused to be plated all over, for that *Nomius* his freed servant had one so rich and magnificent, made altogether of a knot: a knot (I say) or a knur in the root of the tree, which is the very beautie of the wood, and giveth all the grace to the tables made therof; and namely, if this knot lie altogether within ground, it is without comparision excellent, and farre more rare and singular than any of the timber above, either in the trunke and bodie, or in the armes and boughes of the tree. So that (to say a truth) this costly ware bought so deare, is no better than the superfluous excrescence of trees: the largeness whereof, as also of their roots, may be esteemed by the roundnes that they carrie. Now are these Citron trees much like to the female Cypresse (especially that of the wild kind) in lease, in smell, and in bodie. A mountaine there is in high Mauritania, called *Anchorarius*, which was wont to yeeld the best and fairest Citron trees, although now it be naked and despoiled of them. But to return to our tables aforesaid; the principall be they which are either crisped in the length of the veine, or beset here and there with winding spots. In the former, the wood curleth in and out along the graine; and therefore such be named *Tigrinae*, [*i. Tigre-tables.*] In the other, there be represented sundrie tufts as it were en-

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folded

folded and enwrapped round, and those they call Pantherina, [*i. Panther, or Luzerne tables.*] There be againe, whereof the worke in wainescot resembleth the waves of the sea: and the better grace they have, and bee more esteemed, if they make a shew of the eies appearing in Peacocks tailes. Next in request and account to these abovenamed, bee those that are frilled with small spots standing thicke, as if many graines were gathered together, which they call thereupon (of some resemblance of litle bees or flies) *Apiata*, as if they were speckled and filed with their dung. But be the worke and grain of the wood what it will, the colour maketh all. Here at Rome wee see most store by that colour which is like to mead or honied wine, shining and glittering in the veines of the wood. After which considerations, men regard much the breadth and largenes of the whole plant, standing of one entire peece which maketh the table. Some take a great pleasure to see in one Citron board many of those faults which bee incident to trees, to wit, the Lignum, for so they call the simple, plaine, and bare wood and timber without any branched or curled graine at all, without a shining lustre and glittering glosse, without worke to be seene in any order digested, or at the most (if any bee) representing the leaves of a Plane tree. Againe, the resemblance either of the veine or colour of a kind of Oke wood called *Ilex*. Moreover, the rifts and chinkes which timber is subject unto, by reason principally of wind and Sunnes heat: or else hairie streakes that be like to such clifts and crevisses. Afterwards men were delighted with a kind of Lamptrey veine traversing and running over a blacke crosse way: and with an outward skin or coat marked with speckes or knottic knurs, like to Poppie heads: and generally with a colour all over, comming neare to blacke, or at leastwise bespotted with sundrie colours. The Barbarians for to season the wood of this Citron tree, use to burie the greene boards or planks thereof within the ground, and besmeare them all over with waxe. But the artificers and workemen doe put them for seven daies within heapes of corne, and stay seven daies more ere they be wrought: and a wonder it is incredible, how much of the weight the wood loseth by this meanes. Moreover, of late daies wee have found the experience by shipwrackes, that this timber also will by nothing in the world be sooner dried nor hardened to last a long time without corruption, than by seawater. Howbeit, to maintaine these tables best, and to cause them for to shine bright, the way is to rub them with a drie hand, especially after that a man is newly come out of the baines or hot house. Neither catch they any harme or staine, if wine bee spilt thereupon: so as it should seeme they were naturally made for wine. To conclude, a tree this is serving for the ornaments of this life, and the trim furniture of our house, few or none like to it: and therefore me thinks I do not amisse to continue the discourse thereof somewhat longer than ordinarie.

CHAP. XVI.

Of the tree *Thya*, what it is.

Well knowne unto *Homer* was this Tree, which in Greeke is named * *Θύον*, but some call it *Thya*: for among other daintie odors and sweet woods, he reporteth, That dame *Circe* (whome he would have to be reputed as a goddesse) burnt of this *Thyon*. And therefore much deceived are they, who understand by that word *Thyon*, perfumes and odoriferous spice, considering that in one and the very same verse, the Poët maketh mention of the Cedar and Larch tree together with *Thyon*, whereby it appeareth plaine, that he spake of trees only. *Theophrastus*, who after the daies of *Alexander* the Great, was the first that wrote the history of those acts which happened about the 440 yeere from the foundation of Rome, gave great honour even then to this Tree, and reported, That all carpenters worke of temples in old time, was made of the same; as of a timber everlasting, and which in rouses would continue without all putrefaction and corruption whatsoever. Moreover, he writeth, That the wood of the root is so cutled and frilled, as none more; and that of no timber besides are more curious peeces of workes made, nor of greater price. Over and besides, he saith, That the fairest and goodliest trees of this kind, doe grow about the temple of *Jupiter Hammon*: and some of them also within the countrey *Cyrenaica* toward the inland parts. But all this while not a word of the foresaid costly tables speaketh he in his whole historie: and verily before that of *Ciceroes*, there is no record in writers of any such tables: whereby it appeareth, that they be come up but of late daies. Another tree there is likewise of that name, bearing an apple or fruit, which some cannot abide for the strong favour and bitternes withall, others againe like and love it as well. This tree also beautifieth and setteth out the house, but I purpose not to bestow many words more thereof.

CHAP. XVII.

Of the tree Lotus.

IN the same coast of Africk which regardeth Italie, there groweth Lotos, which they call Celtis. A notable tree it is and of speciall marke: found also here among us now in Italy; but together with the soile, it hath chaunged the nature. The fairest and goodliest of them be about the Syrtes and the Nasamones: they be as big and tall as Peare trees, howsoever *Nepos Cornelius* saith, they are but little and low. The leaves bee thicke cut and endented: otherwise they were like to those of the Ilex or Holme tree. Many sorts there be of the Lote tree, and those for the most part according to their divers and severall fruits. Howbeit ordinarily the fruit is as big as a Beane, and of yellow colour as Saffron; yet before it is full ripe, it chaungeth into sundy colors, like as grapes doe. It groweth thicke among the branches of the tree, in manner of Myrtle berries, and not like to the cherries of Italie: and in those plants above-named, the meat thereof is so sweet and pleasant, that it hath given the name both to a nation and a country, insomuch as the people be called Lotophagi: and withall, so welcome be all strangers thither, and so well contented with their entertainment, that they forget their own native soile, for the love they have to this fruit, when they have once taken to it. By report, whosoever eateth thereof, is free from the diseases of the bellie. This fruit is counted the better, which hath no kernell within; for there is another kind wherein the said kernell seemeth as hard as a bone. Moreover, out of this fruit there is pressed a wine like to Mede, which the above-named *Nepos* saith, will not last above ten daies: who reporteth besides, That the inhabitants doe stampe the berries thereof with wheat or frumentie into a past, and so put it up in great barrels and such like vessels for the provision of their food. Moreover, we have heard say, that whole armies passing too and fro through Africk, have fed thereof, and had no other meat: the wood is blacke of colour, and much sought for it is to make Pipes and Fifes: of the root thereof, the hafts of daggers and knives be made, besides other pretie devises of small use. Thus much as touching the nature of the Lote tree in those parts: for there is an herb also of that name [called Melilote.] As for the Ægyptian Lotus it is a plant bearing a stalke, and groweth in the marishes of Ægypt. For when the waters of Nilus are fulne, which drenched the country, this plant commeth up in the flat & waterie leuell along the river, with a stemme like unto the [Ægyptian] Beane, with leaves thrust close and thicke together, howbeit shorter and lesse than those of the Beane: in the top of which stalke, it beareth fruit in manner of an head, for cuts and chamfres and every thing else like to those of the Poppie: within which, there be contained certain graines or seeds resembling Millet. The inhabitants of that country doe pile together in heapes, those heads, and so let them putrifie: afterwards, they separate them, wash them faire, and when they be drie, stampe and mould them, and thereof make their bread. A strange and wonderfull thing it is that is reported besides; namely, That when the Sunne goeth downe, those heads close up and be covered with leaves, and remaine shut untill the morning; at what time they open againe: and thus continue this course untill they be ripe, and that the flower which is white, doth fall of it selfe.

CHAP. XVIII.

Of the very stalke, scape or stemme, and root of Lotus.

IT is said moreover as touching this Ægyptian Lotus, that in Euphrates the very head of the stalke together with the flower, useth in the evening to be plunged and drowned under the water untill midnight, and so deepe to settle toward the bottome, that a man with his hand cannot reach thereto, nor find any part of it: but after that time, it beginneth to rise by little and little, and by Sun-rising appeareth above water, and openeth the flower, & still mounteth higher and higher a good height from the water. This Lotos hath a root as bigge as a Quince, covered with a blacke rind or barke, much like to the huske of a Chestnut. The substance within, is white and delectable to eat, but more pleasant beeing either sodden in water, or roasted under embres, than raw: and Hogs will feed fat with nothing better, than with the pills and parings of this root.

CHAP. XIX.

☞ *Of Paliurus, the Pomegranate, and the flower of the Pomegranate.*

THe region Cyrenaica in Affricke, maketh more account of their Paliurus than of Lotus: for the Paliurus shooteth forth more twigs and branches, and hath a redder fruit than the Lotus. Besides, the fruit and the kernell be eaten apart: and in truth, pleasant it is of it selfe alone, but more pleasant with wine; yea and the juice thereof giveth a better tast to wine, if it be put into it. The inland parts of Affricke (as farre as to the Garamants and the deserts) bee well planted with Date trees faire and great, bearing goodly and pleasant Dates, and those especially in that quarter of Barbarie which lieth about the temple of *Jupiter Hammon*. But the territorie of Carthage challengeth to it selfe the Punicke apple: some call it the Pomegranat: and they have made severall kindes thereof, calling that Apyrinon, which hath no woodie or hard kernell within: and indeed, these Pomegranats are naturally more white, the graines within more pleasant, and divided with membranes and pellicles betweene, nothing so bitter as the other: for in both forts they bee framed and fashioned within, like to honey-combes. As for those Pomegranates which have such kernels or stones, there bee five kinds of them, to wit, sweete, sower, temperate betweene both, stypticke or austere, and tasting of wine. But the Pomegranats of Samos and Ægypt, have this difference one from another, That some have red flowers on the head, and be therefore called Erythrocoma: others are white, and such they name Leucocoma. The rind of sower Pomegranats, is better for tanners and curriours to dresse their leather with, than of the rest. The flower is called Balaustium, both medicinable and also good for to die cloth; and hereof commeth the colour Puniceus [*i. a light red or a bay*] taking the name of the apple Punicke or Pomegranate.

CHAP. XX.

☞ *Of the Shrubs in Asia and Greece.*

IN Asia and Greece there grow certaine shrubs, to wit, Epipactis, which some call Elleborine, with small leaves, which being taken in drinke are good against poison, like as the leaves also of * Erice withstand the stinging of serpents.

* i. Heath, or
Lings.

CHAP. XXI.

☞ *Of Thymelæa or Chamelæa, Tragacanth, of Tragium or Scorpio.
Also of Myrice, Brya, and Galla.*

THe shrub or bush which beareth the graine Gnidium, that some call Linum, is after some writers named Thymelæa, according to others Chamelæa: there bee that call it Pyrosachne: some againe give it the name of Cneston, others of Cneoros. This plant howsoever it be named, resembleth the wild olive, but that the leaves be narrower and gummie to the teeth, if a man bite them: for height and bignes answerable to the Myrtle: the seed thereof is for colour and fashion, like to the graine of wheat, and serveth onely for Physicke.

As touching the plant Tragium, it is to be found in the Iland Candie only. It hath a resemblance of the Terebinth, like as the seed also, which (by report) is most excellent and effectuall to heale wounds made by darts or arrowes. The same Iland hath the bush Tragacanth growing in it, the root whereof is like to that of Bedegnar: and the same Tragacanth is much preferred before that which groweth either in Media or Achaia. A pound of Tragacanth is worth thirteen deniers Romane. As for the plant Tragium or Scorpio, it groweth likewise in Asia. A kind of bramble or brier it is without any leaves, bearing fruit of berries much like to red grapes, whereof there is good use in Physicke.

Touching Myrice, which others call Tamarix; and Achaia Brya the wild; Italie bringeth it forth: this speciall propertie it hath, that the same kind thereof only, namely that which groweth in gardens, beareth a fruit like the galls. In Syria & Ægypt this groweth plenteously, & the wood thereof we call Vnhappie: but the more unluckie & unfortunate be those of Greece: for there groweth Ostrys, named also Ostria, a solitarie tree about waterie and moist rocks, having barke
and

A and branches like to the Ash, but Peare-tree leaves, save that they be somewhat longer & thicker, with long cuts or lines wrinkled and riveled throughout: and the seed in forme and colour is like to barley. The wood of it is hard and strong: and some say if any peece thereof be brought into an house where a woman is in travaile of child-birth, shee shall have difficult labour, and hardly be delivered: and whosoever lyeth sicke there, shall die a miserable death.

CHAP. XXII.

Of *Euonymus* or the *Spindle tree* of *Adrachne*, *Congyria*, and *Thapsia*.

B **I**N the Iland Lesbos, there groweth a tree named *Euonymos*, no better nor more luckie than *Ostrya* before said. Much unlike it is not to the *Pomegranate* tree. As for the leafe that it beareth, it is of a middle size betweene that of the *Pomegranat* and the *Bay*; otherwise for shape and softnesse, it resembleth that of the *Pomegranat*: the flower is whiter; the sinell & tast whereof is pestiferous and menaceth present death: it beareth cods like to *Sesama*, within which be graines or seeds foure square and thicke, but deadly unto all creatures that eat them. The leafe also is as venomous as the graine, yet otherwhiles there ensueth thereof a fluxe and gurie of the belly, which saveth their life, or else there were no way but one.

Alexander Cornelius called that tree **Eone*, whereof the famous ship *Argo* was made; and like it was (by his saying) to the Oke that carrieth *Misselto*, the timber whereof neither water will putrifie, nor fire consume, no more than the *Misselto* it selfe. But so farre as ever I could learne, no man knew that tree but himselfe. * Or, *siama*.

C As for the tree *Adrachne*, all the Greekes in manner take *Porcellaine* for it; whereas indeed *Porcellaine* is an herbe, called in Greeke *Andrachne*; so as they differ in one letter: but *Adrachne* is a tree of the wild Forrests growing upon mountaines, and never in the plaines beneath; resembling the *Arbut* or *Strawberrie* tree, save that the leaves be lesse, and never fade nor fall. And for the barke, rough and rugged indeed it is not, but a man would say it were frozen and all an yce round about, so unpleasant it is to the eye....

Like in leafe to *Adrachne*, is the tree *Congyria*, but otherwise it is lesse and lower. This propertie it hath, To loose the fruit wholly, together with the soft downe that it beareth, which they call *Pappus*; a qualitie that no other tree hath, beside it. Like to *Adrachne* also is *Apharce*, and beareth fruit twice in one yeere, as well as it. The former is ripe, when the grape beginneth to bud and bloom; the latter, in the beginning of winter: but what manner of fruit this should be, I have not found written.

As touching the *Ferula*, it will not be amisse to speake thereof among forrein plants, yea and to raunge it among trees: for (as hereafter we will distinguish in the division of trees) some plants are of this nature, To shew all the wood they have, where the barke should be; that is to say, without forth: and where the heart of the wood ought to be, they have nought but a light and spongeous pith, as the *Elder*; or els nothing at all, as *Canes* and *Reeds*. But to come to our *Ferula* before-named, it groweth in hot countries beyond-sea, with a stalke or stem full of knottie joints.

E Two kinds be knowne of them: for that which the Greekes call *Narthex*, groweth tall; but *Narthecia* is alwaies low. The leaves that put forth at the joynts, be ever biggest toward the ground: this plant otherwise is of the nature of *Dill*, and the fruit is not unlike. There is not a plant in the world lighter than it for the bignesse: being easie therefore to weld and carrie, the stem thereof serveth old men in stead of staves, to rest upon. The seed of this *Ferula* or *Fenell*-gyant, some have called *Thapsia*, but herein they be deceived, for that *Thapsia* doubtlesse is a kind of *Ferula* by it selfe, leaved like *Fenell*, with an hollow stalke, and never exceedeth in height the length of a walking-staffe: the seed is like to that of the *Ferula*, and the root white: cut it, there issueth forth milke; stampe it, you shall see it yeeld plentie of juice. Neither is the barke of the root rejected and cast aside, although both it, the milke, and the juice, be very poisons: for surely the root is

F hurtfull to them that digge it up; and if never so little of the aire thereof breath upon them (so venomous it is) their bodies will bolne and swell, their faces will be all overrun with a wild-fire: to prevent which mischiefs, they are forced to annoint their bodies with a *fecul*. Howbeit as dangerous as they be, Physicians make use thereof in the cure of many inward diseases, so they be well corrected and tempered with other safe medicines. In like manner they say, that the juice of

Thapsia is singular good for the shedding and falling of the haire; also against the blacke and blew marks remaining after stripes: as if Nature furnished not Physicians sufficiently with other holefome remedies, but that needs they must have recourse to such poisonfull and mischievous medicines. But this is the cast of them all, to pretend such colourable excuses, for their handling of poisons: and so impudent and shamelesse are some besides, that they bash not to avow the use of them, bearing us in hand, that Physicke cannot stand without poison. The Thapsia in Affricke is the strongest of all others. Some use to slit or cut the stem about harvest, and in the very root make an hollow trough to receive the juice that runneth downe, and when it is dried, they take it away. Others againe doe bruise and stampe in a mortar, both leafe, stalke, and root; and when the juice that is pressed there-from, is throughly dried in the Sunne, they reduce the same into certaine Trochisques. *Nero Caesar* the Emperour in the beginning of his Empire, gave great credit unto Thapsia: for using (as he did) to be a night-walker, and to make many ryots and much misfule in the darke, he met otherwhiles with those that would so beat him, as that hee carried away the markes blacke and blew in his face: but (as he was subtile & desirous to avoid the speech of the people) an ointment he had made of Thapsia, Frankincense, and Waxe, wherewith hee would annoint his face, and by the next morning come abroad with a cleare skin, and no such markes to be scene; to the great astonishment of all men that saw him. To conclude, the Ferula maketh the best matches to keepe fire, by all mens confession: and those in Ægypt excell the rest, for that purpose.

CHAP. XXIII.

☞ *Of Capparis, or Cynosbatos, or Opheostaphyle: and of Sari.*

Likewise in Ægypt groweth Capparis, a shrub of a harder and more woodie substance: well knowne for the leed and fruit that it carrieth, commonly eaten with meats, and for the most part the Capres and the stalke are plucked and gathered together. The outlandish Capres (not growing in Ægypt) wee must take good heed of and beware: for those of Arabia be pestilentiall and venomous: they of Affricke be hurtfull to the gumbs, and principally the Marmarike are enemies to the mattice, and breed ventosities. The Apulian Capres cause vomit, and make lubricitie both of stomach and bellie. Some call the shrub Cynosbatos: others, Opheostaphyle. Moreover, there is a plant of shrubs kind, called Sari: it groweth along Nilus, almost two cubits high, it beareth an inch in thicknesse, and hath leaves like to Papyr-reed, and men do chew and eat it after the same manner. As touching the root, it is singular good for Smithes cole to burne in their forges, so hard it is and durable.

CHAP. XXIIII.

☞ *Of the Royall thorne of Babylon: and of Cytisus.*

I May not over-passe that plant, which about Babylon is sowed upon Thornes onely: for otherwise it knoweth not how to live no more than Misselto, but upon trees: howbeit this plant that I speake of, is sowed upon that Thorne alone called the Royall Thorne. And a straunge thing it is of this plant, That it springeth and groweth the very same day that it is set or sowed. Now the seasonable time of sowing it, is at the very rising of the Dog-starre: and notwithstanding the Sunnes heat, right quickly overspreadeth it the tree or shrub, on which it is cast. The Babylonians use to aromatize their wine therewith; and for that purpose are they so carefull to sow it. But the foresaid I horn tree groweth also about the long walls of Athens [reaching from the tower to the haven Pyraeum.]

Moreover, a shrub there is, called Cytisus, highly commended and wondrous much praised by *Aristomachus* the Athenian, for feeding of sheep; as also for fattening of swine, when it is drie: and he promiseth and assureth, That an acre of land sowed therewith, although it be none of the best soile, but of a meane and ordinarie rent, will yeeld yeerely [communibus annis] 2000 Sesterces to the master. As great profit commeth thereby, as of the pulse like Vetches, called Ervum: but sooner will a beatt be satisfied therewith, and a very little thereof will serve to fat the same: insomuch as if horses or any such labouring cattell may meet with that provender, they will not care for barley: neither is there any other grasse or foddere, that yeeldeth more or better milke,

- A** milke than it: but that which passeth all, the pasturage of Cytifus, preserveth Sheepe, Goats, and such like cattell, sound and safe from all diseases whatsoever. Over and besides, if a nource want milke, *Aristomachus* prescribeth her to take Cytifus drie, and seeth it in water, and so to drinke it with wine: whereby not onely her milke will come againe in great plentie, but the babe that sucketh thereof, will bee the stronger and taller. Hee giveth it also to hens and pullein whiles it is greene, or steeped and wet, if it chance to bee drie. *Democritus* and *Aristomachus* both doe promise and assure us, that Bees will never miscarie nor faile, if they may meet with Cytifus to feed upon. And yet there is not a thing of lesse charge to maintaine than it. Sowne it is commonly in the Spring with Barley, I meane the seed thereof, as they use to sow leekes or porret seed: or else they set plants and slips thereof from the stalke, in Autumne before midwinter. If the seed be sowne, it ought to be steeped and moistened before: yea, and if there fall no store of raine after it is in the ground, it had need to be watered. As for the plants when they be a cubite long, are replanted in a trench a foot deepe. Otherwhiles the tender quicksets are planted about the *Æquinoxes*, to wit, in mid-March and mid-September. In three years they come to their full growth. They use to cut it downe in the Spring-*Æquinox*: when it hath done flouring: a worke that a very lad or old woman may doe, even such as can skill of nothing els besides. This Cytifus is in outward hew white: and in one word, if a man would pourtray the likenesse thereof, it resembleth for all the world a shrub of Trifolie or Clavergrasse, with narrower leaves. Being thus gathered, it is ever given to beasts once in three daies. And in winter, that which is dried ought to be wet before they have it. Ten pound of it is a sufficient foddering for an horse: and for other small cattell according to the proportion. But by the way, this is not to be omitted, that it is good to set Garlicke and sow Onions seed betwene the rowes and rankes of Cytifus where it groweth, and they will thrive more plenteously. This shrub was first discovered and knowne in the Island Cythnus, and from thence translated into all the other Islands Cyclades: and soon after brought to all the cities of Greece; whereupon followed great increase of milke, and plentie of cheefe. I marvell therefore very much, that it is so geason and rare in Italie: and a plant it is that feareth neither heat nor cold; no injurie of haile, nor offence by snow; and as *Hyginus* saith, it is not afraid so much as of the enemy; the reason is, because the wood thereof is nothing beautifull to the eye.

D CHAP. XXV.

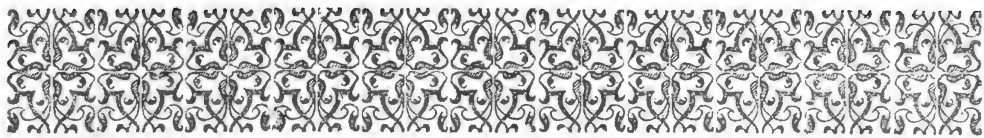
Of shrubs and trees growing in our Mediterranean sea; in the red sea, and the Indian sea.

- E** Ven the very sea affourdeth shrubs and trees: but those of the Mediterranean sea bee farre lesse than of other seas: for the red sea and all the Levant Ocean is full of woods. That which the Greekes call *ορνθος*, hath no other name in any language. As for *Alga*, is a word appropriate rather to weeds or sea-herbes, called *Reik*: but this *Phycos* is a very shrub, bearing broad leaves of a greene colour, which some call *Praon*, others *Zoster*. A second kind there is of *Phycos*, with an hairie leafe like to Fennell, and groweth upon rockes. As for the former called *Zoster*, it is found among the shelves and shallow waters not farre from the shore: both the one and the other appeare in the Spring, and be gone in the Autumne. That of this kind which groweth in Candie about the rockes, is much used of diers for the purple colour: and namely, on the North part of that Island, and among sponges, for that is most commendable for this purpose. A third sort there is like unto the grasse called *Coich* or *Dent-de-chien*, having a root full of joints and a stalke likewise, in manner of a reed.

- Another shrub there is in that sea called *Bryon*, with leaves of Lettice, save onely that they be more wrinckled and crumpled together: but this groweth more inward and farther into the sea. *Marie* in the deepe, groweth both *Fiire* and *Oke* to the height of a cubite. Among these braunches, the *Cockles* and *Muskles*, and such like shell-fishes doe settle and sticke unto them. As for that kind of sea *Oke*, some say it is of good use to die wooll withall: as also that it beareth mast or acornes in the deepe: the knowledge of all which we come unto by those that dive into the bottome of the sea, and such as have suffered shipwacke and escaped. Moreover (by report) there be other exceeding great trees, and namely about *Sycione*. As for the sea vine, it groweth every where: but the fig-tree there is without leaves, & hath a red barke. There be also *Date trees* found

in the sea: but as little as shrubs. Without *Hercules* pillars, or the streight of Gebraitar, there are shrubs to bee seene, bearing leaves resembling Leeke blades: and others leaved like to the Bay tree, or to the hearbe Thyme: and both kinds being cast up a land, turne into the pumish stone. But in the East parts it is a wonderous matter to thinke, that so soone as ever a man is past *Coptus*, he shall find nothing to grow in all the wildernesse, but onely a kind of thorne or thistle, called the thirstie or drie thorne, and the same but here and there, in very few places: whereas in the red sea, whole woods doe live, and namely, of Baies and Olives bearing their berries: also when it raineth, certaine Mushromes, which no sooner bee caught with the Sunnes heat, but they turne into the pumish stone. As touching the shrubs there growing, they be commonly three cubites high, and those so full of sea dogs and cures, that a man shall hardly looke out of the ship in safetie, for that many times they will take hold of the very oares, and assaile them. The soldiers of *Alexander* the Great who sailed into India, made report, That the branches and leaves of the sea trees, so long as they were under the water looked greene, but when they be taken forth, presently dried with the heat of the Sunne, and became salt. Also that about the shore they found stonie rushes and reeds, like unto naturall rushes indeed. Moreover, in the deepe sea they light upon certaine little trees branched and full of boughes, in colour of an Oxe horne, but the head or top of them was red: handle them in your hand, they were as brittle as glasse: put them into the fire, they would bee red hote like yron: quench them againe, they returned to their former colour. In the same tract, there bee some tides so high, that the sea overfloweth and covereth the woods growing within the Islands, although there be trees in them taller than the highest Planes or Poplars. And those trees bear leaves like Lawrell, and flowers for smell and colour resembling the Violet. Their berries bee like to Olives, and those of a pleasant and sweet savor, which they bring forth in the Autumne: and their leaves never shed but continue all the yeare long. The lower sort of these trees the floud covereth all and whole: but the greatest beare up their heads above the sea, whereunto the mariners doe fasten and tie their vessels, at a high water: but when it is ebbe, at the very root. Moreover, by their saying they saw other trees in the same sea, with leaves ever greene upon them, carrying a fruit like to Lupines. King *Tuba* reporteth, That about the Islands of the Troglodites there groweth a shrub within the sea, called *Isidos Plocamos*, [*Isis haire*] resembling corral, and void of leaves: cut a branch of it from the stock, it becometh hard, changeth colour and is blacke: if it fall, it is so tender, that it will breake like glasse. Hee speaketh moreover of another called *Charito-blepharon*, which is of great force in amatorious matters to procure love: And thereof women (quoth hee) make them carkaners and pendant ornaments to hang about their neckes. To conclude, he affirmeth, that this shrub hath a certaine intelligence when a man would take hold of it, and therefore waxeth as hard as an horne, insomuch as it is able to turne the edge of a knife or bill, that unneath or hardly it may be cut: but in case it be entrapped and drawne up with cords without any edge toole, it presently turneth to be a stone.





THE XIII. BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS

SECVNDVS.

Containing the Treatise of Trees bearing fruit.

The Proëme.



E Thus farre forth have wee discoursed of all forraigne and straunge trees in a manner, such I meane as know not how to live in any other places but where they naturally first did grow, and which willingly goe not into other countries, nor can abide their soile or aire. Good leave may I now have to write of Plants and Trees common to all lands, and namely, to ours of Italie, which may seeme to bee the very Hort-yard and naturall garden that bare them all. This onely would I advertise the readers and learners to remember, that for this present we purpose to describe their natures and vertues onely, leaving out the manner of husbandrie that belongeth unto them: albeit in their tending and keeping appeareth the greatest part of their properties, and of Natures workes. And verily, I cannot chuse but marvell still and never give over, how it comes to passe, that the remembrance, yea, and the very names of some trees which auncient writers have delivered in their bookes, should bee quite gone and abolished. For who would not thinke, that our life should ere this have gained much by the majestic of the Roman Empire; have discovered all things by the means of the commerce we have had with the universall world, by the trafficke, negotiation, and societie I say that we have entred into during the blessed time of peace which we have enjoyed? considering that by such trade & intercourse, all things heretofore unknown, might have come to light. And yet for all this, few or none (beleeve me) there are who have attained to the knowledge of many matters which the old writers in times past have taught and put in writing. Whereby we may easily see, that our auncestors were either farre more carefull and industrious, or in their industrie more happie and fortunate. Considering withall, that above two hundred years past Hesiodus (who lived in the very infancie of learning and good letters) began his worke of Agriculture, and set downe rules and precepts for husbandmen to follow. After whose good example, many others having travelled and taken like paines, yet have put us now to greater labour. For by this meanes we are not onely to search into the last inventions of later writers, but also to those of auncient time, which are forgotten and covered with oblivion, through the supine negligence and generall idlenesse of all mankind. And what reasons may a man alledge of this drowsinesse, but that which hath lulled the world asleepe? The cause in good faith of all, is this and none other, Wee are readie to forgoe all good customes of old, and to embrace novelties and change of fashions: mens minds now adaies are amused and occupied about new fangles, and their thoughts bee rolling; they wander and rove at random; their heads be ever running; and no arts & professions are now set by and in request, but such as bring pence into our purses. Heretofore whiles kings and potentates contained themselves within the dominion of their owne nations, and were not so ambitious as now they bee, no marvell if their wits and spirits kept still at home: and so for want of wealth and riches of fortune, were forced to employ and exercise the gifts of their mind: in such sort as an infinite number of princes were honored and renowned for their singular knowledge and learning. Yea, they were more brave in port, and carried a goodlier shew in the world for their skill in liberall sciences, than others with all their pompe or riches: being fully persuaded and assured, that the way to attaine unto immortalitie and everlasting fame, was by literature and not

by

by great possessions and large seignories. And therefore as learning was much honoured and rewarded in these daies, so arts & sciences tending to the common good of this life daily encreased. But afterwards when the way was once made to enlarge their territories farther in the world, when princes and states began to make conquests and grow rich and mightie, the posteritie felt the smart and losse thercoy. Then began men to chuse a Senatour for his wealth; to make a iudge for his riches; in the election of a civile magistrate and martiall captaine, to have an eye and regard onely to goods and substance, to land and living: when rents and revenues were the cheefe and onely ornaments that made men seeme wise, just, politique, and valiant. Since time that childlesse estate was a point looked into, and advanced men into high place of authoritie and power, procuring them many favourites in hope of succession; since time I say that every man aimed and reached at the readiest means of greatest lucre and gaine, setting their whole mind, and reposing their full content and joy in laying land to land, and heaping together possessions; downe went the most precious things of this life, and lost their reputation: all these liberall arts which tooke their name of libertie and freedome, (the soveraigne good in this world which were meet for princes, nobles, gentlemen, and persons of great state) forwent that prerogative, and fell a contrarie way, and ran quite to wracke and ruine: so as in stead thereof, base slaverie and servituae be the onely waies to arise and thrive by: whiles some practise it one way, some another, by flattering, admiring, courting, crouching, and adoring: and all, to gather good and get money. This is the only marke they shoot at, this is the end and accomplishment: of all their vowes, prayers, and desires. In so much as we may perceive every where, how men of high spirit and great conceit are given rather to honour the vices and imperfections of others, than to make the best of their owne vertues and commendable parts. And therefore we may full truly say, that Life indeed is dead; Voluptuousnesse and Pleasure alone is alwaies, and begueth to beare all the sway. Neverthelesse, for all these enormities and hinderances, give over will not I to search into those things that bee perished and utterly forgotten, how small and base soever some of them be, no more than I was affrighted in that regard, from the treatise and discourse of living creatures. Notwithstanding that I see Virgil (a most excellent Poet) for that cause onely forbare to write of gardens and hort-yards, because he would not enter into such pettie matters: and of those so important things that he handled, he gathered only the principall flowers, & put them down in writing. Who albeit that he have made mention of no more than 15 sorts of grapes, three kinds of Olives, and as many of Peares, and setting aside the Citrons and Limons, hath not said a word of any apples; yet in this one thing happie & fortunat he was. For that his worke is highly esteemed, and no imputation of negligence charged upon him. But where now shall we begin this treatise of ours? what deserueth the cheefe & principall place, but the Vine? In which respect Italie hath the name for the very soveraigntie of Vineyards: in so much, that therein alone, if there were nothing els, it may well seeme to surpassse all other lands, even those that bring forth odoriferous spices and aromaticall drugs. And yet to say a truth, there is no smell so pleasant whatsoever, that outgoeth Vines when they bee in their fresh and flourishing time.

CHAP. I.

Of Vines, their nature, and manner of bearing.



Vines in old time were by good reason for their bignesse reckoned among trees. For in Popalonia, a citie of Tuscan, wee see a statue of *Jupiter* made of the wood of one entire Vine, and yet continued it hath a world of yeares uncorrupt and without worme. Likewise at Massiles there is a great standing cup or boll to be seene of Vine wood. At Metapontum there stood a temple of *Iuno*, bearing upon pillars of Vine wood. And even at this day there is a ladder or paire of staires up to the temple of *Diana* in Ephesus, framed of one Vine tree, brought (by report) out of the Island Cypres, for there indeed Vines grow to an exceeding bignesse. And to speake a truth, there is no wood more durable and lasting than is the Vine. Howbeit, for my part I would thinke that these singular peeces of worke before named, were made of wild and savage Vines: for that these our tame and gentle Vines here planted among us, are by cutting and pruning every yeare kept downe: so as all their whole strength is either drawne without-forth into branches, or els downward into the root for to put out new shoots ever fresh out of the ground; and regard is onely had of the fruit and juice that they doe yeeld diverse waies, according to the temperature of the aire & climate, or the nature of the soile where in they be planted. In the countrey of Campaine about Capua, they bee set at the roots of Poplers, and (as it were) wedded unto

A unto them: and so being suffered to wind and claspe about them as their husbands, yea, and with their wanton armes or tendrils to climbe aloft, and with their joints to run up their boughes, they reach up to their head, yea, and overtop them: insomuch as the grape-gatherer in time of Vintage, putteth in a clause in the covenants of his bargaine when hee is hired, that in case his foot should faile him, and he breake his necke, his maister who sets him aworke should give order for his funerall fire and tombe at his owne proper cost and charges. And in truth Vines will grow infinitely: and impossible it is to part them, or rather to plucke them from the trees which they be joined and coupled unto. *Valerianus Cornelius* making mention of many properties and singularities of a Vine, thought this among the rest worthie of especiall note and remembrance, That one onely stocke of a Vine was sufficient to compasse and environ round about a good ferme-house or countrey messuage, with the branches and pliable shoots that it did put forth. At Rome there is one Vine growing within the cloistures of the porches and galleries built by the Empreffe *Livia*, which running and trailing upon an open frame of railes, covereth and shadoweth the ouert allies made for to walke in: and the same Vine yeeldeth one yeare with another a dosen Amphores of good new wine yearely. An ordinarie thing it is, that Vines will surmount any Elmes wheresoever, be they never so tall and loftie. It is reported, that *Cyneas* the Embassadour of king *Pyrrhus*, wondering at the Vines of Aricia, for that they grew and mounted so high; would needs tast of the wine that came of their grapes: and finding it to bee hard and tart, merrily skoffed and said, That by good right and justice they had done well, to hang the mother that bare such unpleasent wine, upon so high a gibbet. Beyond the river Po in Italie, there is a tree growing which the peasants there call *Rumbotinus*, and by another name **Opulus*; it putteth forth great ^{*Opus.} armes and boughes, and those spread broad and beare a round compasse, howbeit, the Vines that be planted at the root of these trees, doe fill and cover the said boughes: for yee shall have the very old crooked braunches of the Vine (bare as they be and naked of leaves) to wind about the armes, and crawl in manner of a serpent or dragon along the broader and flatter base of the boughs, and then the new shoots, toptwigs, and tendrils, will devide themselves to the utmost branches and shoots of the tree, that they will node and clog her withall. These Vines again grow sometime no taller than the ordinarie height of a man of middle stature, and being supported and underpropped with stakes and forkes, cleave and cling thicke together, and in this order fill whole Vineyards. Others also there bee, which with their excessive creeping upon frames, with their overgrowne braunches, and some artificiaall helpe of the maisters hand, spread so far every way, that they take up wide and large courts, overspreading not onely the sides, but the very mids thereof. See what sundrie sorts of Vines even Italie alone is able to affourd! But in some provinces without Italie, ye shall see a Vine stand of it selfe without any prop or stay at all, gathering and drawing in her boughes and braunches together: thus indeed she groweth but short, howbeit so close couched and trusted round, that the thickeesse makes amends for all. And yet otherwhiles in some coasts the winds are so big and boisterous, that they will not suffer them thus to grow upright; as namely in Affricke, and Languedoc, the province of Narbon. Vines being thus debarred to run up in height, resting upon their owne joints and braunches, and ever like to those that be laid along whiles they are a trimming, by delving about their roots, and pruning their superfluous branches, traile and creepe too and fro along the ground, as weedes and hearbes; and all the way as they spread, sucke the humor of the earth into their grapes: by which meanes, no marvell it is, if in the inland parts of Affricke there bee found some of those grapes bigger than pretie babes. And in no countrie are the grapes of a thicker skin than those of Affricke, whereupon it may well be, that they tooke the name **Duracina* [*i.* having hard skins.] For infinite sorts ^{* Quasi duræ acinis.} there be of grapes, according to the difference observed in their quantitie and bignesse, in their colour, tast, stones or kernils: and yet more still, in regard of the divers wines made of them. In one place they are of a fresh and bright purple, in another, of a glittering, incarnate, and rosate colour: and yee shall have them of a faire and lively greene. As for the white and blacke grapes, they be common every where. The grapes *Bumasti* have their name, for that they bee so swelling and round, like strutting paps or dugs. The Date-grapes *Dactyli*, are long, both grape and kernill, fashioned in manner of fingers. Moreover, Nature seemeth to take her pleasure and make good sport in some kind of them; where ye shall find among them some that be exceeding great, others againe that be as small, howbeit pleasent they are, and as sweet as the rest: and such be called *Leptorrhagæ*. Some last all winter long being knit in bunches together, and so hanged aloft

arch-wife in maner of a vault: with others they make no more ado, but put them up presently as they come from the Vine, into earthen pots, whiles they be fresh & in their vigor; and afterwards they are bestowed, well lapped over with their leaves, in other greater vessels over them; and for to keepe them better, they be stopped close with kernels heaped and piled upon, sweating round about, to condite and preserve them in their naturall heat. Others they suffer to be dried in the smoake of smiths forges, wherby they get the very tast of ensumed wine, so ordered in the smoake. And in truth *Tiberius Casar* the Emperour gave especiall credite and name by his example to such grapes dried in the furnaces of Affricke. For before his time, the Rhetian grapes and those that came out of the territorie of Verona, were ordinarily served up to the table first, for the very best. As for the Raisins called Passæ, they tooke that name in Latine of their patience to endure their drying and confiture. Some grapes there be that are condite in Must or new wine, and so they drinke their owne liquor wherein they lie soking, without any other seething. Others againe are boiled in Must above said, untill they loose their owne verdure, and become sweet and pleasant. Moreover, yee shall see old grapes hang still upon the Vine their mother, untill new come: but within glasses, that a man may see them easily through: howbeit, to make them to last and continue in their full strength, as well as those which bee preserved in barrels, tuns, and such like vessels aforesaid, they use the helpe of pitch or tarre, which they poure upon the stalkes that the cluster hangeth to, and wherewith they stop close the mouth of the said glasse. It is not long since that there was a devise found, that wine of it selfe (as it came naturally from the grape growing upon the Vine) should have a smacke and sent of pitch. And surely this kind of *Pitch-wine, brought the territorie about Vienna into great name and reputation: and before that this Vine was knowne, those of Auverne, Burgundie, and the Helvij, were in no request at all. But these devises as touching Vines and Wines, were not in the daies of the Poët *Virg. l.*, who died about ninetie yeares past. But behold what I have to say more of the Vine tree: the Vine wand is now entred into the campe, and by it our armies are raunged into battailons: nay, upon the direction thereof dependeth the maine estate of our soveraigne Empire: For the Centurion hath the honour to carie in his hand a Vine-rod: the good guidance and ordering wherof advanceth after long time the Centeniers (for a good reward of their valorous and faithfull service) from the leading of inferiour bands, to the captainship of that regiment and cheefe place in the armie, unto which the maine standard of the *Ægle* is committed: yea, and more than that, the Vine wand chastiseth the trespasses and lighter offences of the souldiors; who take it for no dishonour nor disgrace to be thus punished at their Centurions hand. Over and besides, the planting of Vineyards hath taught martiall men how to approach the walls of their enemies, to give an assault under a frame devised for the purpose, which thereupon took the name of *Vinea*. Last-ly, for medicinable vertues in Physicke, the Vine is so profitable to mans health, that the use of it alone is a sufficient remedie for the disemperature of mans bodie, caused by wine it selfe.

CHAP. II.

Of the diverse kinds of Vines.

D*emocritus* was the onely Philosopher ever known, who made profession to reduce all the sorts and kinds of Vines to a certaine number, and indeed he vaunted and made his boast that he had the knowledge of all things that were in Greece. All others besides himselfe, and those comming nearer to the truth, (as shall appear more evidently by the varietie of wines) resolutely have set downe, that there be infinite sorts of Vine trees. Looke not therefore at my hands, that I should write of them all, but onely of the principall: for that in truth there bee in manner as many and as sundrie kinds of them, as are of grounds. Wherefore I will content my selfe, and thinke it sufficient to shew those that bee singular and most renowned among them, or such as have some secreet proprietie worth admiration. And first to begin with the Aminean Vines, all the world giveth them the cheefe praise and greatest name; as well for their grapes, of so lasting and durable a nature, as for the wine made thereof, which in all places continueth long in vigor, and is ever the better for the age. And hereof there be five sundrie sorts. Of which, the kindly Vines named *Germanæ*, have both lesse grapes and grains within, but they burgen and bloume better than others: and after the flower is gone, they can abide both raine and tempest. But the second kind (which is the greater) is not so hardie: howbeit, lesse subject to wind & weather

Ather when they be planted to run up a tree, rather than to creepe upon a frame. A third sort are called Gemellæ, for that their grapes grow double like twins; and they be very harsh and in tast untoothsome, howbeit their vertue and strength is singular. The smaller sort of these take harm by the South wind: but all other winds nourish them, as we may see in the mount Vesuvius, and the little hills of Surrentum: for in all other parts of Italie, yee shall never find them but wedded to trees, and growing upon them. As for the fift kind of these Amminean Vines, they bee called Lanatæ, so freezed they are with a kind of downe or cotton, inso much as we need not wonder any more at the Seres or Indians for their cotton and silken trees. The first kind of these Amminean grapes come soonest to their ripenesse and perfection, and most quickly do they rot and putrifie. Next to these Amminean Vines, those of Nomentum are in most account: and for that their wood is red, some have called them Rubellæ. These grapes yeeld no great plentie of wine, but in stead thereof their stones and kernils, and other refuse remaining, grow to an exceeding big cake: howbeit, this propertie they have. The frost they will endure passing well, lesse harme they take also by raine than drought, and thrive better in cold than heat: and therefore in cold and moist grounds they excell and have no fellow. Of these Vines, they are more plentifull which beare grapes with smaller stones, and leaves with lesse cuts and jags ended. As touching the Muscadell Vines, Apianæ, they tooke that name of Bees, which are so much delighted in them, and desirous to fettle and feed of them. Of two sorts they are: and both carie cotton and down. Howbeit, this difference is betweene them, that the grapes of the one will bee sooner ripe than the other, and yet there is neither of them both but be hastie ynough. These Muscadell grapes like well and love cold countries: and yet none sooner rot than they, if showers take them. The Muscadell wines are at the first sweet: but with age become harsh and hard, yea, and red withall.

C And to conclude, there is not a grape that joiethe more to hang upon the vine, than it doth. Thus much of the very flower of Vines, and the principall grapes that be familiar and proper unto our cuntry of Italie, as their native soile.

The rest be strangers come out of Chios or Thasos. As for the Greeke grapes of Corinth, they be not in goodnesse inferior to the Amminean aforesaid. They have a very tender stone within: and the grape it selfe is so small, that unlesse the soile be exceeding fat and battle, there is no profite in planting and tending such Vines. The quicke sets of the Vine Eugenia were sent unto us from the Tauromitane hills in Sicilie, together with their surname pretending a noble and gentle race. Howbeit, they are never in their kind with us, but onely in the Albane cuntry: for if you transplant them, they prove very bastards and changelings presently. And in faith, some Vines there be that take such an affection and love to a place, that all their goodnesse and excellencie they will leavethere behind them, and never passe into another quarter whole and entire as they be in their owne nature. Which evidently is to bee seene in the Rhetian Vine, and that of Savoy and Dauphinie, of which in the chapter before we said, that it gave the tast of pitch to the wine made thereof: for, these Vines at home in those countries are much renowned for the said tast: but elsewhere if they be transplanted, they loose it whole, and no such thing may a man acknowledge in them. Howbeit, plentifull such are, and for default of goodnes, they make amends and recompence in abundance of wine that they yeeld. As for the Vine Eugenia, it taketh well in hote grounds. The Rhetian likerh better in a temperate soile. The Allobrogian Vine of Savoy and Daulphine delighteth most in cold quarters: the frost it is that ripeneth her grapes, & commonly they are of colour blacke. Of all the grapes above rehearsed, the wines that be made, the longer they be kept, the more they change colour, & in the end become white, yea, though they came of blacke grapes, and were of a deepe colour at first. Now for all other grapes whatsoever, they are reckoned but base in comparison of the former. And yet this is to bee noted and observed, that the temperature of the aire may be such, and the soile so good, that both the grapes will endure long, and the wine bear the age very well. As for example, the Vine Fecenia, and likewise Biturica, that bloumeth with it, which beare grapes with few stones within: their flowers never miscarie, for they ever prevent and come so timely, that they be able to withstand both wind and weather. Howbeit, they doe better in cold places than in hote: in moist also, than in drie. And to say a truth, there is not a vine more fruitfull, and yeelding such store of grapes growing so thicke together in clusters: but of all things it may not away with variable and inconstant weather: let the season be staid and settled, it matters not then whether it bee hot or cold, for well it will abide the one and the other alone, hold it never so long. The lesser of this kind is held for the better.

Howbeit

Howbeit, in choosing of a fit soile for this vine, it is much adoe to please and content it: in a fat ground it soone rotteth; in a light and lean, it will not grow at all: very choise it is therefore, daintie, and nice, in seeking a middle temper betweene, and therefore it taketh a great liking to the Sabine hills, and there it loves to be. The grapes that it beareth, be not so beautifull to the eye, but pleasant to the tooth: if you make not the more hast to take them presently when they be ripe, they will fall off, although they bee not rotten. This vine putteth forth large and hard leaves, which defend the grapes well against hailestones.

Now there are besides, certain notable grapes of a middle colour between black and purple, and they alter their hue oftentimes; whereupon some have named them *Varianæ*: and yet the blacker they be, the more they are set by: they beare grapes but each other yeare, that is to say, this yeare in great plentie, the next yeare very little: howbeit, their wine is the better when they yeeld fewer grapes. Also there be two kinds of vines called *Pretiaë*, differing one from the other in the bignesse of the stones within the grape: full of wood and braunches they are both: their grapes are very good to be preserved in earthen pots: and leaved they be like to *Smallach*. They of *Dyrhachium* doe highly praise the Roiall vine *Basilica*, which the Spaniards call *Cocolobis*. The grapes grow but thin upon this plant: they can well abide all South winds, and hote weather: they trouble and hurt the head, if a man eat much of them. In Spaine they make two kinds of them; the one having a long stone or grain within, the other a round: these be the last grapes that are gathered in time of vintage. The sweeter grape that the *Cocolobis* beareth, the better is it thought: howbeit that which was hard and tart at the first, will turne to bee pleasant with keeping; and that which was sweet, will become harsh with age: and then they resemble in tast, the *Albane* wine: and men say, there is an excellent drinke made thereof, to helpe diseases and infirmities of the bladder. As touching the vine *Albuëlis*, it beareth most grapes in the tops of trees, but *Visula* is more fruitfull beneath toward the root: and therefore if they be set both under one and the same tree, a man shall see the diversitie of their nature, and how they will furnish and enrich that tree, from the head to the foot. There is a kind of blacke grape, named *Inerticula*, as a man would say, dull and harmelesse; but they that so called it, might more justly have named it *The sober grape*: The wine made thereof is very commendable when it is old, howbeit nothing hurtfull * for never maketh it any man drunke: and this propertie hath it alone by it selfe. As for other vines, their fruitfulness doth commend them; and namely above all, that which is called *Helvenaca*: whereof be two kinds; the greater, which some name *The long*: and the smaller, called *Area*: not so plentifull it is as the former, but surely the wine thereof goeth downe the throat more merrily. It differeth from the other in the perfect and exquisite wondrous of the leafe, as it were drawne by compasse: but both the one and the other is very slender, and therefore of necessity they must be underropped with forkes, for otherwise they will not beare their own burden, so fruitfull they be. They delight greatly to grow neare the sea side, where they may have the vapours of the sea to breath upon them: and indeed their very grapes have a sent and smell of a brackish dew. There is not a vine can worse brooke *Italie*. Her grapes are small, they hang thin, and rot even upon her: and the wine made thereof, will not last above one Summer: and yet on the other side there is not a vine that liketh better in an hungrie and leane ground. *Gracinus* (who otherwise compiled his worke out of *Cornelius Celsus* in manner word for word) is of this opinion, That this vine could love *Italie* well enough, and that of the owne nature it misliketh not the countrey; but the cause why it thriveth no better there, is the want of skill and knowledge to order and husband it as it ought to bee; for that men strive to overcharge it with wood, and load it with too many braunches: and were it not that the goodnes of a fat and rich soile maintained it still, beginning to faint and decay, the fruitfulness thereof were enough to kill it. This vine (by report) is never blasted: a singular gift verily of Nature, if it be true, That any plant or tree should bee so exempt from the jurisdiction (as it were) of the heavens, that they had no power to doe it harme. The vine *Spionia*, which some call *Spinea*, feareth no extremity of heat: her grapes prosper well in Autumne and much abundance of raine: This is the only grape that is nourished with foggie mists, and therefore it liketh no place well but the territory of *Ravenna*. The vine *Venicula* (which is counted one of the best for kindly blooming and shedding the flowers, and for grapes most meet to be preserved and kept in pots) the *Campaines* rather name *Sirculus*; others *Stacula*: and they of *Tarracina* call it *Numisiana*: and as they say, the grape thereof hath no singularitie nor vertue in it selfe, but only according to the soile where

* *Amethylos*,
Columell.

A it groweth: howbeit those that grow about Surrentum, have the most strength, and are excellent to bee preserved in vessels; I meane, as farre as up to the hill Vesuvius: for there also is the vine Murgentina, the best of all those that come out of Sicilie, which some call Pompeiana, of Pompeij, a towne within the kingdome of Naples: & being gotten once into Latium, it beareth grapes abundantly: like as the vine Horconia in Campaine, yeeldeth plentie of grapes with the best, but good they are for nothing save only to be eaten at the table. As for the grape Marica, it will last and endure a long time; it feareth neither wind nor tempest, nor any blast of planet: blacke it is, and hath blacke stones: howbeit the wine that it maketh, waxeth red with age, namely, if it be long kept.

CHAP. III.

Of the divers kinds likewise of wines according to the proprietie of the places and regions where they grow.

Hitherto have we treated of the fundtie sorts of vines in generall: now will we write of them according to the nature of the places and regions, which are proper and familiar unto them; or, as they be mingled one with another, by transplanting or grafting. And first and formost, the vine Tudernis; also Florentia (bearing the name of the citie Florence) are peculiar to the Tuscans: but about Aretium, there is no talke both for plentie and goodnesse, but of the Talpana, Etesfiaca, and Confemina. The Talpane grape is blacke as the Mouldwarpe, whereof it taketh the name, but yet doth it yeeld a white wine. The Etesfiacke vine [so called of the wines Etesfiæ] is a deceitfull plant, and often misseth and faulteth; but the more grapes it beareth, the better wine it yeeldeth and more commendable: mary this is straunge and wonderful in it, In the mids of this fruitfulnessse of hers, the giveth over sodainly and dieth. The vine Confemina, bringeth blacke grapes: the wine will not last, but the grapes will keepe and continue passing long: the vintage thereof is fifteene daies after all other: it beareth ordinarily her full burden, but the fruit is onely good for meat to be eaten, and not for wine to be drunke. The leaves of this vine (in manner of the wild vine Labrusca) before they fall, become as red as bloud. This proprietie happeneth to some others besides; but take it for a certaine token of the worst vines. The vine and grape Irtiola, is proper unto Umbria, to the territorie of the Mevenates, and the Picene countrey: like as that which they call Pumula, to the Amiternine region. They have among them also another kind named Bannanica: and although it oftentimes doth not take, yet they love the plant and cherish it. There is a grape which they call the Burrough or Burgeois grape, after the name of the burrough towne Pompeij; and yet there is more plentie of them about the citie Clusium. The Tiburtines also, named their grapes after their town Tybur: yet of late daies they have found another sort, which of the resemblance of Olives, is called the Olive grape: and in truth, this is the last grape of any account, to this day knowne to have been found out. The Sabines and Laurentines only are acquainted with the grape Vinaciola: for well I wot, that the vines Gauranæ came first out of the territorie of Falerij, and thereupon were named Falernæ: but transplant them from thence whithersoever you will, they will very quickly degenerate in all places, & prove bastard. Moreover, some have made a severall kind by it selfe of the Tarentin vine, which bringeth forth an exceeding sweet grape. As for the grapes called Capnias, Bucconiatis, and Tarrupia, there is no vintage of them in the vineyards of the hills about Thurnum, before the cold frost. As for the citizens of Pisæ, they set great store by the grapes Phariæ: like as Modenna by those called Prusiniæ; which are very black, stone and all: yet the wine therof, within foure yeeres will turne to a paller and whitish colour. A straunge thing it is which men report of a certaine grape, that evermore will turne with the Sunne; and thereupon it is called Streptos: as also that we in Italie are delighted with the French grapes: and they in Fraunce beyond the Alpes, are as much in love with ours in the Picene countrey. *Virgill* hath made mention of other grapes, namely, Thasiæ, Marcotides, and Lageæ, besides many other outlandish plants, not at this day to be found throughout all Italy. Howbeit there be yet many vines of good marke & well accepted of, not for any wine that they yeeld, but only for their grapes which they carie; to wit, Ambrosiaca, and Duracina, which may be kept hanging still upon the vine, without any vessell to enclose them: so durable be they and hardie, against cold, heat, wind, and rain, or any weather whatsoever. As for the vine Orthampelos, it needs neither tree to climb on, nor

forkes to support it, but is able to maintaine and uphold it selfe upright. But the Dactylides (so called for that they beare not wood above a finger thicke) cannot so doe: for they must be shored and underpropped. Of all vines, the Columbine yeeld most gleaning, for that the gatherers leave behind them greatest store of small grapes: and so doe the purple grapes, named also Bimammix (as one would say, with two teats or bigs) more than the rest; seeing that they beare not small grapes, but put forth new great ones indeed, after the other be gathered and gone. In like manner, the vine Tripedanea, which tooke that name of the measure of three foot. Semblably the vine Scirpula, the grapes wherof seeme as if they were Raisons of the Sunne, dried alreadie. Moreover, in the maritime Alpes toward the sea side, there is a kind of Rhetian vine, but far inferiour to that other above-mentioned and so much commended for the rellish of pitch that it giveth to the wine made of her grapes: for these about the Alpes be little and small; and albeit they beare grapes thicke, yet the wine thereof commeth farre short of the other, and is more degenerate: howbeit the skin of the grapes is of all other the thinnest, having but one kernell within, which they call Gigarton, and the same very small; and a man shall not find a bunch, without one or two passing great grapes above the rest. There is also a kind of blacke Aminean grape, which some name Syriaca: likewise the grape of Spaine, which of the base and common kinds carrieth the greatest credit, and is most commended. As touching both vines and grapes that run and traile upon frames; there be those which are called Escariæ, good only for to eat, and namely those which have graines or stones like to Ivie berries, as well white as black. Grapes resembling great dugs, named thereupon Bumasti, both blacke and white, are caried upon frames in like sort. But all this while we have not spoken of the Ægyptian and Rhodian grapes, ne yet of the Ounce-grapes, wherof every one weigheth a good ounce, and thereupon rooke that name. *Item*, the grape Pucina, the blackest of all others: the Stephanitis also, wherein Nature hath seemed to disport her selfe, for the leaves runne among the grapes in manner of a guirland plaited with them. Moreover, the market-grapes called Forenses, they grow and are ripe with the soonest; vendible at the very first sight, and sold with the best, and most easie to be carried from market to market. But contrariwise, the ash-coloured grape Cinerea, the silke-ruffet grape Ravuscula, the asse-hued grape Asinifca, please not the eye, but are presently rejected: and yet the fox-tailed grape Alopecis (for that it resembleth Rainards-taile) is not so displeasent nor so much discommended as the former. About a cape or crest of the hill Ida, which they call Phalacra, there is a vine named Alexandrina, small of growth, and putteth forth braunches of a cubit in length: the grapes be blacke, as big as beans; the pepin or kernell within, soft, tender, and exceeding small; the bunches are crooked, full of grapes, passing sweet; & finally, the leaves little, round, and not cut or jagged at all. Within these seven yeeres last past, about Alba Elvia, a citie in Languedocke or the province of Narbon, there was found a vine, which in one day both flowered and shed her flowers: by which meanes most secured it was from all daungers of the weather. They call it Narbonica, or the vine of Languedoc: and now it is commonly planted all that province over, and every man desireth to store his vineyard therewith.

CHAP. IIII.

¶ *Notable considerations about the husbandrie and ordering of Vineyards.*

That noble and worthy *Cato*, the first of that name, renowned among other dignities for his honorable triumph, and the incorrupt administration of his Censorship; & yet more famous and renowned to posteritie for his singular knowledge and learning; and namely for the good precepts and ordinances tending to all vertues and commendable parts, which hee left in memorie for the people of Rome; and principally as touching agriculture [as he was by the common voice and generall accord of that age wherein hee lived reputed for an excellent husbandman, and one who in that profession had neither peere nor second that came near unto him.] This *Cato* (I say) hath in his workes made mention but of a few kinds of vines: and yet some of them alreadie be growne out of knowledge, so as their very names are quite forgotten. Yet neverthelesse his opinion and judgement would be set downe in particular, as it may be gathered out of his whole treatise: to the end that we might both know in every kind of vine which were of most account in his daies (to wit, in the 600 year after the foundation of Rome, about

- A** the time that Carthage and Corinth were forced and woon, when hee departed this life :) and also learne how much we have profited and proceeded in good husbandrie and agriculture, from his death unto this present day; namely for the space of 230 yeares. As concerning vines and grapes therefore, thus much hath *Cato* delivered in writing, and in this manner following. *All places or grounds* (quoth he) *exposed to the Sun-shine, and which in other regards shall be found good for to plant vineyards in, see they be employed for the lesse Aminean, for both the Eugeanian vines, and the smaller Helvine. Item, In every tract that is more grosse, thicke, and misty, looke that you set the greater Aminean, or the Murgentine: the Apician also, and the Lucane &c. All other vines, and the common mingled sort especially, will agree well enough with any ground. The right keeping of grapes, is in a small thin wine of the second running. The grapes Duracina, and the greater Amineans, are good to be hanged, or else dried before a black-smithes forge, and so they may be well preserved, and goe for Raisons of the Sunne.* Loe what the precepts of *Cato* be; neither are there any of this argument more auncient, left unto us written in the Latine tongue. Whereby we may see, that wee live not long after the very first rudiments and beginnings of knowledge in these matters. [But by the way, the Amineans last named, *Varro* calleth *Scantians*.] And in very truth, few there be even in this our age, who have left any rules in forme of Art, as touching the absolute skill in this behalfe. Yet such as they be, and how few soever, wee must not leave them behind, but so much the rather take them with us; to the end it may be known, what reward and profit they meet with, who travailed in this point of husbandrie: reward, I say, and profit, which in every thing is all in all.
- C** To begin therefore with *Acilius** *Sthenelus*, (a meane commoner of Rome descended from the race of Libertines or Slaves newly enfranchised) he attained to the highest glory and greatest name of all others: for having in the whole world not above fixtie acres of land lying all in vineyards within the territorie of Nomentum, he plaid the good husband so well therein, that he sold them againe at the price of 400000 Sesterces. There went a great bruit and fame likewise of one *Verulenus Aegialus*, in his time a man but of base condition by birth, and no better than the former (namely, come of the stocke of freed-men) who by his labour and husbandrie, greatly enriched a domaene or living at Liternum in Campaine: and the more renowned hee was by occasion of the favour of so many men affectionate unto *Africanus*, whose very place of exile he held in his hands and occupied so well: for unto *Scipio*, the abovesaid Liternum appertained. But the greatest voice and speech of men was of *Rhemmius Palamon* (who otherwise by profession was a famous and renowned Grammarian) for that hee by the meanes and helpe of the foresaid *Sthenelus*, bought a ferme within these twentie yeares for 800000 Sesterces in the same territorie of Nomentum, about ten miles distant from Rome, lying somewhat out of the high way. Now it is well knowne farre and neare, of what price and account all such fermes are, and how cheape such ware is lying so neare to the city side: but among the rest, this of *Palamons* in that place was esteemed most cheape and lowest priced, in this regard especially, That he had purchased those lands, which through the carelesnesse & bad husbandrie of the former owners, lay neglected and fore-let, and were not of themselves thought to be of the best soile, chosen and piked from among the worst. But beeing entred once upon these grounds as his owne livelode and possession, he set in hand to husband and manure them, not so much of any good mind and affection that he had to improve and better any thing that he held, but upon a vainglorie of his owne at the first, whereunto he was wonderously given: for he makes fallows of his vine-plots anew, and delveth them all over againe, as he had seene *Sthenelus* to do with his before: but what with digging, stirring, and medling therewith, following the good example and husbandrie of *Sthenelus*, he brought his vineyards to so good a passe within one eight yeeres, that the fruit of one yeares vintage was held at 400000 Sesterces, and yeilded so much rent to the lord: a wonderfull and miraculous thing, that a ground should bee so much improved in so small a time! And in verie truth, it was straunge to see what numbers of people would run thither, only to see the huge and mightie heapes of grapes gathered in those vineyards of his: and all idle neighbours about him, whose grounds yeilded no such encrease, attributed all to his deepe learning, and that he went to it by his booke, & had some hidden speculation above other men; objecting against him, that he practised Art Magicke, and the blacke Science. But last of all, *Annerus Seneca*, esteemed in those daies a singular clerke, and a mightie great man, (whose overmuch learning and exceeding power cost him his overthrowing in the end) one who had good skill and

* or, *Selenius*

judgement in the world, and used least of all others to esteeme toies and vanities, brought this ferme into a greater name & credit: for so farre in love was he of this possession, that he bought out *Palemon*, and was not ashamed to let him goe away with the prick and praise for good husbandrie, and to remoove him into other parts where he might shew the like cunning: and in one word, paid for these foresaid vineyards of his four fold as much as they cost, not above ten years before this good husbandrie was bestowed upon them. Certes, great pitie it is, that the like industrie was not shewed and employed in the territories about the hills *Cecubus* and *Setinus*, where (no doubt) it would have well quit all the cost, considering that many a time afterwards, every acre of vineyard there, yeilded seven Culei, that is to say, 140 Amphores of new wine one year with another. But least any man should thinke, that we in these daies have surpassed our auncestors in diligence, as touching good husbandrie; know he, that the abovenamed *Cato* hath left in writing, How of an acre of vineyard there hath arisen ordinarily * ten Culei of wine by the yeare. Certainly these be effectually examples and pregnant proofes, that the hardie and adventurous voiajes by sea, are not more advantageous; ne yet the commodities and merchandise, and namely Pearles, which be fet as farre as the red sea and the Indian ocean, are more gainfull to the merchant, than a good ferme and homestall in the cuntry, well tilled and carefully husbanded.

As touching the Wines in old time, *Homer* writeth, that the Maronean wine made of the grapes growing upon the sea-coast of *Affricke*, was the best and most excellent in his daies. But my meaning is not to ground upon fabulous tales and variable reports, as touching the excellencie or antiquitie of wine. True it is, that *Aristeus* was the first, who in that very nation mingled honey with wine; which must needs be a passing sweet and pleasant liquor, made of two natures so singular as they bee of themselves. And yet to come againe to the foresaid Maronean wine, the same *Homer* saith, That to one part thereof, there would be put twentie parts of water: and even at this day, that kind of wine continueth in the said land of the same force, and the strength thereof will not be conquered nor allaid. For *Mutianus*, who had been thrice Confull of Rome, and one of those that latest wrote of this matter, found by experience (being himselfe personally in that tract) that every sextar or quart of that wine, would beare eight of water: who reporteth moreover, that the wine is of colour blacke, of a fragrant sweet sinell, and by age cometh to be fat and unctious. Moreover, the *Pramnian* wine, (which the same *Homer* hath so highly commended) continueth yet in credit and holdeth the name still: it cometh from a vineyard in the cuntry about *Smyrna*, neare to the temple of *Cybele* the mother of the gods. As for other wines, no one kind apart excelled other.

One yeare there was, when all wines proved passing good; to wit, when *L. Opimius* was Confull, at what time as *C. Gracchus* a Tribune of the Commons (practising to sow sedition within the citie among the common people) was slaine: for then such seasonable weather happened, and so favourable for all fruit, that they called it (*Coctura*) as a man would say, the ripening time; so beneficiall was the Sunne to the earth: and this fell out in the yeere after the nativitie & foundation of the citie of Rome, 634.

Moreover, there be some wines so durable, that they have been knowne to last two hundred yeeres; and are come now by this time to the qualitie and consistence of a rough, sharpe, and austere kind of honey: and this is the nature of all when they bee old: neither are they potable alone by themselves, unlesse the water be predominant; so tart they are of the lees and so mustie withall, that they are bitter againe. Howbeit a certaine mixture there is of them in a very small quantitie with other wines, that gives a pretie commendable tast unto them. Suppose now, that according to the price of wine in those daies of *Opimius*, every Amphore were set but at an hundred Sesterces, yet after the usurie of six in the hundred yeerely (which is the ordinarie proportion and a reasonable interest among citizens, for the principall that lyeth dead and dormant in stocke) by the hundred and sixtieth yeere after the said Amphore was bought (which fell out in the time that *C. Caligula Caesar* the sonne of *Germanicus* was Emperour) no marveile if an ounce in measure of the same wine (to wit, the twelfth part of a Sextarius) cost * so many Sesterces: for as we have shewed by a notable example, when we did set downe the life of *Pomponius Secundus* the Poët, and the feast that he made to the said prince *Caligula*, there was not a * Cyathus of that wine drawne, but so much was paid for it. Loe what a deale of money lieth in these wine-cellars, for keeping of wine! And in very truth, there is nothing more gainfull nor groweth to a better

* 15, according to *Ful. Virgilius*.

* *End.* 22 *Sest.*

* 2. an ounce and a halfe.

A better reckoning than it, for twentie yeares space after it is laid up: neither is there greater losse againe by any thing, if ye passe that tearme; by reason that the price will not grow and arise accordingly: for seldome hath it been knowne to this day, (and never but at some excessive ryot and superfluous expence of wine) that an Amphore hath been sold for a thousand Sesterces: True it is indeed, that they of Vienna only have made a better reckoning of their wines, and sold them deerer; I meane those that give a tast of pitch, (the severall kinds whereof we have delivered before:) but they are thought so to doe among themselves onely, and for the love of their country, that it might have the name of wines, so deere and costly. To conclude, this wine of Vienna, is reputed colder than the rest; when the question is of cold drinke, and that the bodie is to be cooled.

CHAP. V.

Of the nature of Wine.

THe nature and propertie of wine, is to heat the bowels within, if it be drunke; and to coole the exterior parts, if it be applied outwardly. And here it shall not be amisse to rehearse in this very place, that which *Androcydes* (the noble, sage, and wise Philosopher) wrote unto King *Alexander* the Great, for to correct and reforme his intemperate drinking of wine, where-to he was very prone and over-much given: *My good lord* (saith he) *remember when you take your wine, that you drinke the very blood of the earth: Hemlocke (you know Sir) is poison to man, even so is wine to Hemlocke.* Now if that Prince had been so wise as to have obeyed these precepts of his, certes, he could never have killed his best friends as he did, in his fits of drunkenness. In summe; this may be truly said of wine, That being taken soberly and in measure, nothing is more profitable to the strength of the bodie; but contrariwise, there is not a thing more dangerous and pernicious, than the immoderate drinking thereof.

CHAP. VI.

Of kindly Wines made of the best Grapes.

WHo doubteth, that some wines be made more pleasant and acceptable than others? nay out of the very same var ye shall have wines not alike in goodnes, but that some go before their brethren, pressed though they be at one time, and from the same kind of grape: which may be long either of the vessell whereinto they be filled, or of some accidental occasion: and therefore as touching the excellencie of wine, let every man be his own taster and judge. The Empresse *Iulia Augusta* would commonly say, That she was beholden to the Pucine wine for living as she did 82 yeares: for she never used to drinke any other. This wine came of the grape that grew along the Adriaticke sea, or Venice gulfe, upon a stonie and raggie hill, not farre from the source or spring of the river *Timavus*, nourished with the vapours breathed from the sea; and many Amphores there were not drawne thereof at a vintage: and by the judgement of all men, there is not a wine more medicinable than it is. I would thinke verily therefore, that the wine *Pyctanon* (which the Greekes so highly praise) is the very same; for it commeth from the coasts of the Adriaticke sea. The Emperor *Augustus Caesar* preferred the *Setine* wine before all others: and after him in manner, all the Emperours his successours, for the ordinarie experience they found thereby, That lightly the liquor of that wine would not hinder digestion nor breed raw humors in the stomacke: and this wine commeth of the grape about the towne *Forum Appij*. Before that time, the wine *Cæcubum* was in best account; and the vines which yeelded it, grew to the *Poplars* in the marish grounds within the tract of *Amyclæ*. But now is that wine cleane gone, as well through the negligence of the paisants of that country, as the streights of the place: and so much the rather, by reason of the ditch or trench which *Nero* caused to be made navigable, beginning at the lake or gulfe *Bajanus*, and reaching as farre as to *Ostia*. In the second degree of excellencie, are ranged the wines of the *Falern* territorie, and principally that which came from the vineyards *Faultian*: and this excellencie it grew unto by passing good order & carefull husbandrie. Howbeit this wine also in these daies beginneth to grow out of name and request, whiles men love rather to have plentie from their vines, than otherwise lay for the goodnes thereof. Now these *Falern* vineyards, begin at the *Campaine* bridge on the left hand as men go to the city-colonie erected by *Sylla*, and lately laid to *Capua* & under the jurisdiction

thereof. But the Fauſtian vineyards lie about foure miles from a village neare Cedia, which vil- G
 lage is from Sinueſſa ſix miles diſtant . And to ſay a truth, this Fauſtian wine is inferiour to none
 in reputation : ſo piercing and quicke it is, that it will burne of a light flame ; a propertie that you
 ſhall not ſee in any other wine. Three ſorts there be of theſe Falerne wines: the firſt be hard and
 harſh ; the ſecond, ſweet and pleaſant ; the third, thin and ſmall . But ſome have diſtinguiſhed
 them in this wiſe : Thoſe that come from the top of the hills, be called Gaurane wines ; from the
 mids, Fauſtian ; and laſt of all from the bottome and ſoor thereof, the Falerne . But by the way
 this would not be forgotten, That the grapes whereof be made theſe wines ſo ſingular and ex-
 cellent, are nothing pleaſant to the taſt for to be eaten. As touching the Albane wines from a-
 bout Alba neare the citie of Rome, they reach to the third ranke in goodnes, for a certaine va-
 rietie they have in their taſt: ſweetiſh they be, and yet otherwhiles they have an unripe and harſh H
 rellith of the wood, & taſt like the hedge-wine. In like manner the wines of Surrentum, & namely
 thoſe of grapes growing onely in vineyards, are excellent good for weake perſons that be newly
 recovered of ſickeſſe ; ſo ſmall they are, and holeſome withall. And in truth, *Tyberius Cæſar* was
 wont to ſay, That the Phyſicians had laid their heads together, and agreed to give the Surren-
 tine wine ſo great a name ; for otherwiſe it was no better than a very mild and pleaſant vinegre:
 and *C. Caligula* (his ſucceſſor in the Empire) uſed to ſay of it, That for a wine that had loſt the
 heart and was a going, it was verie good. The Maſſike wines, which come from the Gaurane
 hills looking toward Puteoli and Bajæ, come nothing behind the reſt, but ſtrive to match them
 every way. For as touching the Statane vineyards, that confine and border upon the Falerne,
 their wines doubtleſſe are now come to be the principall and chiefe of all the reſt: whereby it I
 is evidently ſeene, that every territorie and vine-plot hath their times and ſeaſons, like as all o-
 ther things in the world, one while riſe and another while fall. For in times paſt, the Calene wines
 made of the grapes growing hard by Rome, were wont to goe before all others: as alſo the Fun-
 dane vines had their time, as well thoſe that are planted in vineyards, as they which run upon
 trees: like as thoſe of the other ſide, neare alſo to the citie of Rome, and namely from Veliter-
 num and Privernum. For as touching the wine of Signia, it is held for a medicine onely ; and by
 reaſon of an aſtringent verdure that it hath, it is excellent good to ſtay the flux of the belly. In
 the fourth place of this race of vines, *Iulius Cæſar* (late Emperour of famous memorie) hath
 raunged (for to ſerve the publicke and ſolemne feaſts of the cittie) the Mamertine wines, from
 about Meſſana in Sicilie: for he was the firſt (as appeareth by his letters miſſive) that gave credit K
 and authoritie unto them. And of thoſe, the Potulane wines (ſo called of them who firſt planted
 the vines wherof they came) are moſt commended, & namely thoſe that are upon the next coaſt
 of Italy. Within the ſame Sicilie, the Taurominitane vines are highly eſteemed, inſomuch as
 many times they goe for Meſſana wine, and are ſo ſold by whole potties. Now for all other wines
 from about the coaſt of the Tuſcane ſea Northward, good reckoning is made of the Prætutian
 and ſuch as come from Ancone: alſo of the Palmefian wines, which haply tooke that name, for
 that the firſt plant of that vine came from a Palme or Date tree. But in the midland parts of Ita-
 lie within the firme land, good regard there is of the Ceſenatian and Mecænatian wines. With-
 in the territorie of Verona, the Rhetian wine carrieth the price: which *Virgill* ranged next after
 the Falerne wines. Anon you come to the wines Adriane, and thoſe that grow far within the tract L
 of the Venice gulfe. Now from the nether ſea about Lions, ye have the Latiniſian, the Gra-
 viſcane, and the Statonian wines. Throughout all Tuſcane, the wines about Luna beare the
 name: like as thoſe of Genes, for Liguria. Betweene the Pyrenæan hills and the Alpes, Maſſiles
 hath the commendation for wines of a double taſt: for the vines there, do yeeld a certain thicke
 and groſſe wine, which they call Succoſum, [*i.* full of juice and liquor] good to ſeaſon other
 wines, and to give them a pretie taſt. When ye are paſſed once into Fraunce or Gaule, the wine of
 Beterræ is in chiefe requeſt. As for the reſt within Languedoc and the province of Narbon,
 I am not able to avouch any thing for certaintie, ſuch a brewing and ſophiſtication of them
 they make, what with fuming, perfuming, and colouring them: and would God they put not
 in ſome hearbs and drugs among, that be not good for mans bodie. For certaine it is, that they M
 commonly buy Aloë to give the wine both another taſt and alſo a counterfeit color. Moreover,
 in the farther and more remote coaſts of Italie toward the Auſonian ſea; there be wines which
 are not without their praiſe and commendation, and namely thoſe of Tarentum, Servitium,
 and Conſentia: likewiſe of Tempſa, Bavia, and Lucania: howbeit the Thurine wine goeth be-
 fore

A fore them all. As for the wines of Lagaria, which bee made of the grapes not farre from Grumentum, there goeth a right great name of them, by reason that *Messala* used ordinarily to drinke thereof, and thereby was supposed to preserve his health so well. Of late daies there bee certain wines in Campaine growne into credite (like as they have gotten new names) by good ordering and husbandrie, or by chaunce, I know not whether; namely, those of Trebellia, foure miles from Naples; of Caulium neare to Capua: and last of all, the Trebulaine wines within their own territorie: for beforetime they were ever counted no better than common wines for every man to drinke, no more than the Trifolines, from whence they vaunt of their descent. As for the wine of Pompeij, a towne in the kingdome of Naples, neither it nor the Vine whereof it cometh, will last above ten years at the most: after which tearme, the elder they both bee, the worse they are. Besides, they are found by experience to cause the headach, insomuch, as if a man drinke thereof over night, hee shall be sure not to have his head in good tune untill noone the morrow after. By which examples above rehearsed, it is plaine in my conceit, that the goodnesse of the wine standeth much upon the soile and the climate, and not in the grape: so as a needlesse and endlesse matter it is to reduce all kind of wines to a certaine number, considering, that one and the selfesame Vine planted in diverse places, hath sundrie operations, and maketh varietie of wines. Now as concerning the wines of Spaine, the Laetane vineyards are much spoken of for the plentie and abundance of wine that they yeeld: but those of Tarracon, Arragon, and Laurone, are much praised and renowned for the fine and neat wines which they make. As for the wines that come out of the Islands, and namely, the Baleares, they are comparable to the very best in Italie.

C I am not ignorant, that most men who shall read this Treatise, will thinke that I have omitted and overpassed many wines: for every man liketh his owne; and as ones fancie leadeth, so goeth the voice and the crie, and there runs the Hare away. It is reported, that one of *Augustus Cæsars* freed men (reputed for the finest taster that hee had about his court, and who knew best what would content his pallat, and please his tooth) upon a time when he tasted the wine that was for the Emperours board, at what time as he made a feast, said to one of the guests at the table, That the said wine indeed had a new and straunge tast, and was none of the best, and those that were in name; howbeit (quoth he) this is for the Emperours cup, and willingly will he drinke of no other, notwithstanding it be but a homely wine made hereby in the countrey, and not far fetched. And now for a finall conclusion of this matter, I cannot denie but that there bee other wines which deserve to bee numbred among those that are right good and commendable, howbeit, suffice it shall to have written of these, which by the common opinion and consent of the world are held for the better.

CHAP. VII.

Of Wines beyond-sea.

E I remaineth now to speake of outlandish Wines beyond the sea. First and formost therefore, next to those wines renowned by the Poët *Homer*, and whereof we have written before, best esteemed alwaies were the wines of the Islands Thasos and Chios: and namely that of Chios which they call Arusium or Aruifium. *Erasistratus* the most famous Physician of his time, matched with these the Lesbian wine; and his authoritie gave credite unto it: & this was much about the sixe hundred yeare after the foundation of Rome. But in these daies there is no wine to that of Clazomene, ever since that they began to put thereto lesse sea-water for to season it, than their custome was. As for the wine of Lesbos, it hath a sent and rellish of the salt water naturally of it selfe. Neither is the wine that cometh from the hill Tmolus in any regard, as a wine to be drunk alone, but it serveth as a sweet cuit to mingle with other wines that bee hard: for thereby their greene verdure will seeme more mild and pleasant, yea, and withall to have their ripe age: for no sooner is it tempered therewith, but they tast presently elder than they bee. Next after these for goodnesse, follow in their course the wines of Sycione, Cypres, Telmessus, Tripolis, Berytus, Tyrus, and Sebennys. As for this wine last rehearsed, it is made in Ægypt, a countrey much renowned for three kinds of grapes there, to wit, Thasia, Æthalos, and Peuce. Next in price & account be these following, the Hippodomantian, the Mylticke, Cantharite, and the Gnidian wine of the first running and unpressed, also that of Catacecaumene, a region so called, for that it seemeth

meth

meth all burnt; of Petra, and Mycone. As for the wine Mesogites, it is knowne to make head-
 ach: neither is the wine of Ephesus holosome & healthfull, because it is sophisticated with a kind
 of cuit halfe sodden, called Defrutum, and sea-water. As for the wine of Apamea, by report it
 commeth very neare to a kind of Mede, and will very well agree withall, like as Præutium in Ita-
 lie. For otherwise, this is the propertie in generall of all sweet wines, that they will not well sort
 together, & be good still. Touching the wine Protadium, it is now growne out of remembrance:
 and yet the Physicians of *Asclepiades* his sect and schoole, gave praise unto it next the Italian
 wines. The learned Physician *Apollodorus*, in his treatise that he compiled of good wines, which
 he recommended unto king *Prothomachus* for to drink; as meet for the health of his person, (for de-
 fault of Italian wines then unknowne) highly praised the wines in Pontus, and principally that
 which is called Naspercenites: next to it the Orceotické, the Oeneates, that of Leucadia, of Am-
 bracia; and (which he preferreth above all the rest) the wine of Peparethus: and yet hee said, that
 there went the lesse name and opinion of it, because after fixe yeares it looseth the strength and
 pleasant tast that it had.

CHAP. VIII.

§ Seven kinds of salt wine.

THUS farre forth have we discoursed of the very flower of good wines, according to the regi-
 ons where naturally they come of the grape. Now are wee to treat of wines compounded.
 And first, among such wines is that, which they called Biæon (an invention of the Greeks)
 which above all others was most esteemed: and great reason, for devised it was for the cure of ma-
 ny maladies, as we shall shew hereafter in our treatise of Physicke. The making whereof is in this
 manner: Take grapes gathered somewhat before they bee ripe: let them lie to drie and parch in
 the hot Sunne for three daies, and be turned duly thrice a day: upon the fourth day presse them
 forth for wine, put the liquor up in barrells, and so let it worke in the Sunne. Howbeit, hereto they
 put a good quantitie of salt sea-water. But this devise was learned first of a false theevish knave,
 who having robbed his maister and drunke up a good deale of his wine, filled up the vessell again
 and made just measure with sea-water. White wine if it bee ordered in this sort, is called Leuco-
 chrum by the Greekes: but in other nations the like wine so made is named Tethalassomenon.
 As for Thalassites, it is a kind of wine so called, for that the vessells when the wine is new tunned,
 be cast into the sea, and there let to remaine for a time, by which meanes the wine will soon seeme
 old and readie to be drunke. Furthermore, *Cato* also here among us hath shewed the way how to
 make the Greekish wine Coum, of our owne Italian wine: but above all hee hath set downe an
 expresse rule, to let it first take the maturitie and perfection foure yeares in the Sunne. As for the
 wine of Rhodes, it is much like to that of Coos. But the Phorinean wine is more salt than the
 wine of the Isle Coos. Finally, all transmarine or beyond-sea wines are thought in seven or fixe
 yeares at the least, to come unto their middle age.

CHAP. IX.

§ Fourteene sorts of sweet wines.

ALwaies the sweeter that they be in tast, the lesse fragrant & odoriferous they are: the thin-
 ner and smaller that they be, the more ever they smell to the nose. Of wines there be foure
 principall colours, white, yellow, red, and blacke. As for Psythium and Melampythium,
 they be certaine kinds of cuit, having a severall tast apart by themselves, not resembling wine in-
 deed. And for Cicibelites made in Galatia, it tasteth alwaies like new wine: so doth Halyntium
 in Sicilie. For as touching Syraum, which some call Hepsema, and we in Latine Sapa [*i. Cuit*] it
 is a meere artificiaall thing, the devise of mans wit, and no worke of Nature: namely, when new
 wine is sodden away a third part: for when it boileth to the halfe, we then call it Defrutum. And
 in very deed, all these bee inventions to sophisticate and counterfet honie. But those before na-
 med retain the naturall tast of the grape and the soile whereof they doe consist. Next to these
 cuit-wines of Candie; those of Cilicia, Affrick, Italie, and the provinces confronting thereupon,
 are held for the best. Certaine it is, That they be made of one grape, which the Greekes call Su-
 ca, and we Apiana [*i. the Muscadell*] and of another named Scirpula: the which have been suf-
 fered

A fered a long time to hang in the Sunne upon the Vine untill they bee scorched and parched: or elle over the vapour of scalding oile. Some there be that make them of any sweet grapes whatfoever, so that they be let to concoct before in the Sunne, untill they be white and drie, so farre forth, as little lesse than halfe of their weight be consumed: which done, they stamp them and so gently presse them. Then looke how much liquor they have pressed foorth, so much pit water they put to the cake that is pressed, that thereof they may have a cuit of a second running. But they that be more curious & take upon them to make a daintier cuit, drie the grapes in manner aforesaid, but they take forth the stones and graines within: they strip them also from the steeles and tailes that they hung by: and so after they bee well drenched and infused in some excellent wine, untill they bee swelled and plumpe, they presse them. And certainly this fashion is simplie the best of all others. Put to the cake thereof, water as before, and after the same manner yee shall have a cuit of a second sort. Now there is a kind of wine which the Greekes call Aigleuces, that is to say, alwaies sweet like new wine, of a middle nature betweene the common simple wine and the sweet: and this commeth not unto it by kind, but by heed taken in the boiling; for it is not suffered to seeth and worke: and this is the tearme, wherby is signified the alteration of new Must into wine. To hinder therefore that it worke not, (as naturally it will) they have no sooner tunned or filled it out of the Vat, but immediately they douffe the vessels full of new Must in the water, and let them there continue untill mid-December be past, and that the weather be settled to frost and cold, and likewise the time expired of the working within the said vessels. Moreover, there is another kind of wine naturally sweet, which in Provance & Languedoc is called Dulce [*i. sweet*] and namely, in the territorie of the Vocontians. For this purpose they let the grapes hang a long while upon the Vine, but first they wryth the Steele that the bunch hangeth to. Some make incision into the very Vine branch, as farre as to the pith and marrow within (to divert the moisture that feedeth the grape:) others lay the clusters a drying upon tile-houses: and all this is done with the grapes of the Vine Helvenaca. There be that range in a ranke of these sweet wines, that which they call Diachyton. For which effect, they drie the grapes against the Sunne (howbeit in a place well enclosed) for seven daies together, upon hardles, seven foot likewise from the ground: in the night season they save them from all dews, and so upon the eight day they tread them in the wine presse: and thus they draw forth a wine of an excellent favor and tast both. A kind of these sweet wines, is that which they name Melitites, [*in manner of a Brager, Meade, or Metheglin.*] Howbeit, different it is from meade or honied wine which the Latines call Mustum; made of old wine that is hard, and a little honnie: whereas the foresaid Melitites consisteth of five gallons of new tart wine still in the verdure, whereto is added one gallon of honie, and a *cyath of salt, and so boiled all tog: ther. But I must not forget to place among these sundrie kinds of drink, the liquor Protropum, for so some call new wine running it selfe from the grapes, before they bee troden and pressed. But to have this good, and so to serve the turne, so soone as it is put up into proper vessels for the purpose, it must be suffered to worke: and afterwards to reboile and worke againe for fortie daies space the Summer following, even from the very beginning of the dog daies, and so forward.

* an ounce and a halfe.

E

CHAP. X.

Of weake and second Wines, three kinds.

THE second Wines (which the Greekes call *Dexteria*, *Cato* and wee Romanes name *Lora*) cannot properly and truly be called Wines, being made of the skins and seeds of grapes steeped in water: howbeit, reckoned they are among course household wines for the hines and meinie to drinke. And three kinds there be of them. For sometime to the tenth part of the new wine that hath beene pressed out, they put the like quantitie of water, and suffer the foresaid refuse of the grapes to soke therein a day and a night: which done, they presse it forth againe. A second sort there is, which the Greekes were wont to make in this manner: They take a third part of water in proportion of the wine that was pressed forth, and after a second pressing, they seeth it to the waisting of the third part. The third is that which is pressed out of the wine lees, and this *Cato* calleth *Fœcatum*, [*i. Wine of lses.*] But none of these wines or dringes will endure above one year.

CHAP. XI.

What neat wines began of late to be in request in Italie.

IN this treatise of wines I cannot omit this observation: That whereas all the good wines, properly so called and knowne in the whole world, may bee reduced in fourescore kinds or thereabouts; two parts of three in this number, may well be counted wines of Italie: which in this regard farre surpasseth all other nations. And hereupon ariseth another thing more deeply to be noted, That these good wines were not so rise nor in such credite from the beginning, as now they be.

CHAP. XII.

Observations touching wine.

TO say a truth, Wines began to grow into reputation at Rome, about sixe hundred yeares after the foundation thereof, and not before. For king *Romulus* used milke when hee sacrificed to the gods, and not wine: as may appeare by the ceremoniall constitutions by him ordained, as touching religion; which even at this day bee in force, and are observed. And king *Numa* his successour made this law Posthumia in his latter daies, LET NO MAN DESPRINC-
KLE THE FUNERALL FIRE WITH WINE. Which Edict no man doubteth but he published and enacted in regard of the great want and scarcitie of wine in those daies. Also by the same Act hee expressly did prohibite to offer in sacrifice to the gods, any wine coming of a Vine plant that had not ben cut and pruned: intending by this devise and pretence of religion, to enforce men to prune their Vines, who otherwise would set their minds upon husbandrie only and plowing ground for corne, and bee slow ynough in hazarding themselves for to climbe trees, whereunto Vines were planted. *M. Varro* writeth, That *Mezenius* the king of Tuscane aided the *Rutilians* of Ardea in their wars against the Latines, for no other hire and wage but the wine and the vines which then were in the territorie of Latium.

CHAP. XIII.

Of the auncient usage of wine: and the wines in old time.

IN auncient time, women at Rome were not permitted to drinke any wine. We read moreover in the Chronicles, That *Egnatius Mecennius* killed his owne wife with a cudgell, for that he tooke her drinking wine out of a tun; and yet was hee cleared by *Romulus*, and acquit of the murder. *Fabius Pictor* in his Annales reporteth, That a certaine Romane dame, a woman of good worship, was by her owne kinsfolke famished and pined to death, for opening a cupbord, wherein the keies of the wine-fellar lay. And *Cato* doth record, that hereupon arose the manner and custome, That kinsfolke should kisse women when they met them, to know by their breath whether they finelled of Temetum: for so they used in those daies to tearme Wine: and thereof drunkennesse was called in Latin Temulentia. *Cn. Domitius* (a iudge in Rome) in the like case pronounced sentence judicially against a woman defendant, in this forme, THAT IT SEEMED SHE
HAD DRUNKE MORE WINE WITHOUT HER HUSBANDS KNOWLEDGE, THAN VVAS
NEEDFULL FOR THE PRESERVATION OF HER HEALTH, and therefore awarded definitively, That she should loose the benefit of her dowrie. Certes, the Romans for a long time made great spare of wine. *L. Papyrius* lord Generall of the Romane armie, when he was at the point to joine battell with the Samnites, made no other vow, but this, That he would offer unto *Iupiter* a little cup or goblet of wine, in case hee atchieved the victorie and woon the field. Over and besides, we find in histories, that among donatives and presents, certaine sextars or quarts of milke have been many times given, but never any of wine. The same *Cato* abovenamed, after his voiage into Spaine (from whence he returned with victorie and triumph) in a solemne speech that hee made unto the people, protested in these words and said, *No other wine have I drunke since I went, than the very marriners have.* How farre unlike was he to men in these daies, who sitting at the table, have their cup of strong wine by themselves, and give to their guests other small wines to drinke: or if they suffer them to drinke all one and of the best at the beginning of the feast, they will

A will be fure to change and to serve them with worse soone after. In old time, the best wines used at feasts were aromatized and spiced with sweet Myrrhe: as appeareth in the Comœdie of *Plautus* entituled *Perfa*. And yet it should seeme there, that sweet Calamus was to be added besides. And hereupon it commeth, that some have thought, how our forefathers in times past tooke most delight in such spiced cups and Ippocras wines. But *Fabius Dorſenus* the Poet, sufficiently declareth and decideth this point in these verses, when he saith:

Mittebam vinum pulchrum, Murrhinam.

I sent neat wine,
Which hight Myrrhine.

B And againe in his Comedie *Acharistio*:

Panem & Polentam, vinum Murrhinam.

Both bread and grewell I did present,
And Myrrhine wine of pleasant sent.

I see moreover, that *Scævola*, *Laelius*, and *Atteius Capito* were of the same mind. For in the Comedie of *Plautus* entituled *Pseudolus*, thus it is written:

*Quod si opus est ut dulce promas
Indidem, ecquid habet? Char. Rogas?
Murrhinam, passum, Defrutum, mella.*

Of dulcet wine if there be need,
What hope is there from thence to speed?
Char. Why aske you that? he furnish'd is
With Murrhin, Cuits, and Meade ywis.

By which a man may see evidently, that Murrhina was not only counted a wine, but reckoned also among the sweet and delicate wines.

D

CHAP. XIII.

Of wine store-houses: and of Opimian wine.

E **T**HAT there were wine-fellars at Rome, and that they used there to tun up wine in the 633 yeare after the foundation thereof, appeareth plaine by a good prooffe of the Opimian wine: and even in those daies Italie knew her owne good, and what it was to maintain vineyards. Howbeit, as yet were not those wines in credite, which now are so ripe and in so great account. And therefore it is, that all the wines of that time beare the onely name of that one Conſull, and be called Opimian. And thus afterwards also in proceſſe of time, the wines that came from beyond the seas for a long ſpace, were in much request, even untill our grand-fathers daies: yea, and after that, the Falerne wines were in name and called for, as may appeare by that verſe of the Comickall Poët:

Quinque Thasi j vini inde depromam, Falerni bina.

To measures five of Thasian wine,
I will draw twaine of Falerne fine.

F In the 675 yeare after the building of Rome, *Pub. Licinius Crassus* and *L. Julius Cæsar*, Censors for the time being, published an edict and proclaimed, THAT NO MAN SHOULD SELL ANY GREEKE WINE OR AMINEAN, BUT AFTER EIGHT ASSES THE AMPHOR OR QUADRANTUM. For these be the very expresse words of the said Edict. Now was Greeke wine of so great price and estimation, that a man was but allowed one draught thereof at a meale, were the cheare never so great, and the feast right sumptuous. But what wines were in request ordinarily at the bord, *M. Varro* sheweth in these words: *L. Lucullus* (quoth he) while he was a boy, never saw at his

his fathers boord Greek wine served up but once at a meale, how good soever the fare was otherwise. Howbeit, himselfe when he returned out of Asia, in a congiarie or largesse that hee gave unto the people, made a dole and distribution of more than an hundred thousand measures, of gallons apeece. *C. Sentius*, whom of late daies we saw Pretour of Rome, testified, that hee never saw any wine of Chios brought into his house, before that the Physician prescribed and set it downe for the *Cardiaca passio*, or the trembling of the heart, whereunto hee was subject. But contrariwise *Hortensius* when he died, left above ten thousand barrels full of that wine to his heire. And thus much out of *M. Varro*.

CHAP. XV.

¶ Of Casars bountie and liberalitie in wine.

BUt what should wee say of *C. Julius Caesar* Dictatour? In that solemne feast of his which hee made at his triumph, did not he distribute among his guests Falern wines by the whole barrels, and Greeke wine of Chios by the rundlets? After his returne out of Spaine with victorie and triumph, he likewise gave away a largesse of wine as well Chian as Falerne. But at the roiall dinner which he made when he entred upon his third Consulship, he caused all the ball to be served throughout with Falerne, Chian, Lesbian, and Mamertine wines: which was the first time that ever any man saw the service of foure severall wines at one feast. Now in farther processe of time, and namely about the 700 year after Rome citties foundation, all other wines began to beare a name and come in request.

CHAP. XVI.

¶ Of artificall or made wines.

Considering all that hath bene written, I nothing marvell at such an infinite numbers of compound and artificall wines devised in old time, all for the use of Physicke, whereof wee will now treat in more ample manner. To begin therefore with Wine-verjuice called Omphacium, how it should be made (for perfumes and odoriferous ointments) wee have shewed in the former booke. As for the wine named Oenanthinum, it is made of Labrusca, that is to say, the wild Vine, in this wise: Take two pound of the flowers of the wild Vine aforesaid; let the same be steeped in a measure of new wine, containing about twelve *gallons, for the space of thirtie daies, and then be changed out of that vessell into another. Moreover, the root and the grapes of the said wild Vine, are good for curriers to dresse their leather. The same grapes a little after they have done blooming, are taken to be a singular remedie for to coole those that be troubled with hote and ardent diseases, for naturally they be (as men thinke) exceeding cold: and indeed many of these grapes die in the hote time of Summer before the rest which are called Solstitiales: but all of them never come to full and perfect ripenesse. Now if you would keepe Pullein from pecking grapes, take these of the wild Vine before they be thoroughly ripe, mingle & seeth them with their meat: for this will take away all their appetite that way, and breed a loathing after all grapes.

To come now unto the artificall wines beforenamed: the first of them, namely that which they call Adynamon, [i. without strength] is made of very wine in this manner: Take of new white wine twentie Sextars [i. quarts:] of water halfe as much: let them boile together untill the measure of water before said be consumed. Some take of sea-water ten Sextares, of raine water as much: and when they be mingled together, suffer them to worke in the hote Sunne for the space of fortie daies. This drinke they use to give unto patients, for such maladies as they feare wine would be hurtfull to. A second made wine there, is called Millet wine, after this sort: Take of Miller seed that is ripe, huske, head and all, a pound and a quarter, put it into two gallons of Must or new wine: after that it hath lien there infused seven moneths, let the liquor run from it into another vessell, and keepe it for your use. As touching the wines of Lotus, as well the tree and shrub, as the hearbe, wee have shewed sufficiently how they ought to be made. Moreover, there be many wines made of fundrie fruits, which wee will write of hereafter more at large: with a supplement and addition of such interpretations onely as be necessarie. And in the first place commeth the Date-wine, which the Parthians, Indians, and all the nations of the East in generall

*12 congios.

A nerall doe ordinarily use. A Modius or pecke of ripe and sweet Dates, which they call Chydeæ, they let lye to steepe in three gallons of water, and so presse for a liquor for the Date wine. Also the Figge-wine Sycites, of the figge which some call Palmiprium (as a man would say, Dares fellowes, or next to Dates) others Catorchites, is made after the same fashion. But if a man list not to have it so sweet, in stead of water they use to put as much of the stones, skins, and seeds of grapes. Of the Figge of Cypresse there is an excellent vinegre made: yea and a better than it of the Alexandrine figges, to wit, growing upon the Sycomore. Likewise a wine is made of the fruit in Syria, called Siliquæ; as also of peares and all kind of apples. As for the wine of Pomegranates, the Greekes name it Rhoites: besides the fruit of the Corneil or wild Cherric-tree; Medlars, Cervises, drie Mulberries, and Pine-nuts, doe yeeld severall sorts of wines. As for these Pine-nuts, they must lie steeped in new wines before the wine be pressed out of them. The rest all be pleasant enough of themselves, and will serve alone for to make wines. The manner of making Myrtle wine (according to the receipt and prescription of *Cato*) wee will declare soone hereafter. For the Greekes have another way of their owne, to wit, when they have sodden in white Must or new wine, the tender braunches of the Myrtle, together with the leaves, and then stamped the same, they put a pound thereof in three gallons more of Must, and cause it to boile untill such time as a third part of the wine be consumed. Now that which is made after the same manner of the wild Myrtle-berries, they call Myrtidanum; and this will colour and staine ones hands blacke.

C Furthermore, the hearbs of the garden doe affourd us many wines, namely Radish, Sparage, Savorie, and Majoran, Origan, Smallach seed, Southernwood, wild Mints, Rue, Nep or Calaminth, running Thyme, and Horehound. To make these wines, take of the hearbs above-said, two handfuls, and when they be stamped, put them into a little barrell of new wine containing twelve or thirteene gallons, together with a wine quart of Cuit sodden to the thirds, and a pint of sea water. But for the wine of Navewes, you must take eleven drams of them, and two quarts of new wine, and so put them together in manner afore-said. In like sort also the wine Squiliticum is made of the the root of Scilla, or the sea Onion.

To proceed unto wines made of flowres, you have first and foremost wine Rosar, after this manner: Take the weight of fortie deniers [*i. eight ounces*] of Rose-leaves well stamped, put them into a linnen cloth, together with a little weight, that they may settle downward and not flote aloft; let them hang thus in twentie Sextars [*i. three gallons*] and two wine quarts of Must; keepe the vessell close stopped in any case for three moneths, then open it and straine the said flowres unto the liquor. In like manner is there a wine made of the Celticke Spikenard, as also of the Nard-savage. I find also, that they use to make a kind of spiced wine or Ipocras, not for sweet perfumes and ointments onely, but also for to drinke. At first (as I have shewed) they made these aromaticall wines with myrrhe only, but soone after they added thereto Nard Celtick, sweet Calamus, and Aspalathus: either slicing these drugs, or putting them by gobbets into new Must or some dulcet wine. Some aromatize their wine with Calamus, Squimanth, Costus, Spikenard, Amomum, Cassia, Cinamon, Saffron, Dates, and Azara-bacca, put thereto in like manner by gobbets. Others take Spikenard and Malabathrum, of each halfe a pound to two gallons of new wine. Much after the same manner we spice our wines now adades also, but that we adde pepper and honey thereto: which some call Condite, others Pepper-wines. Moreover, there is devised a wine called Nectarites, made of Elecampane, named by some Helenium, of others Medica, Symphyron, Idæa, Orestion: and there be also that rearme this hearb Nectarea. Now the order of it, is to take of the root fortie drams to six Sextars of Must or new wine, and hang it in a cloth together with a weight, in manner above-said. Moreover, there be wines made of other hearbs, to wit of Wormwood, in this sort: Take of Ponticke wormwood one pound, seeth it in fortie Sextars [about six gallons and a halfe] of new wine, untill a third part bee consumed: or without boiling, put certaine handfuls or bunches thereof into a vessell of wine, and so let it lye infused. After the same sort is Hyssope wine made, to wit, of three ounces (which is a quarter of a pound) of Cilician Hyssope cast whole as it is into two gallons of Must, and so let them worke together: or else stampe the Hyssope, and so put it into wine: but both these wines are made another manner of way, namely, by sowing or setting Wormwood and Hyssope at the verie root of the vine-plant: for so *Cato* teacheth us to make Ellebore wine, of blacke Ellebore or Bearefoot growing at the vine root. And in like manner also is made the Scammonite wine.

A wonderfull nature and propertie that these vines have, To draw and sucke into them the very G
 tast of other hearbs and plants that are set neare unto them: for even so all the grapes about
 Padua have a rellish of the Willowes and Ofiers that grow there in the marish grounds. In this
 wise the men of Thasos doe plant and sow either Ellebore or wild Cucumber, or els Scammo-
 nea, about their vines, to make thereof their devilish wine Pthorium, so called, becaute it causeth
 a slip and procureth untimely birth. Of more hearbs besides, there bee other wines made: the
 vertues of which hearbs, we will set downe elswhere in place convenient: and namely, of Stœ-
 chos, the root of Gentian, of Tragoriganum, of Dictamum, Asarabacca, of Daucus or yellow
 Carot, Sauge, Panace, Acorus or Galangal, Conyza or Cunilago, Thyme, Mandragoras, and
 Squinanth. More such wines there were yet, which the Greeks called Scyzinum, Itæomelis, and
 Lectispagites; but as they be growne now out of use, so the manner of making is unknowne. H

As touching wines made of trees and shrubs, their manner was to seeth the berries or the
 greene wood of both the Cedars, the Cypresse, the Bay, Juniper, Terebinth, Pine, Calamus,
 and Lentiske, in new wine. In like manner, the very substance of Chamelæa, Chamæpithys, and
 Germander. Last of all, the flowers also of the said plants serve to make wines, namely by putting
 in to a gallon of new wine in the vat, the weight of ten deniers or drams of the flowers.

CHAP. XVII.

☞ *Of Hydromel, and Oxy mel: [i. honyed water, and honyed vinegre.]*

There is a wine called Hydromel, made of water and honey onely: but to have it the better, I
 some doe prescribe raine water, and the same kept five yeeres for that purpose. Others who
 are more wise and skilfull herein, doe take raine water newly falne, and presently seeth it un-
 till a third part be boiled away; then they put thereto a third part also of old hony in proportion
 to it: and so let them stand together in the Sunne for fortie daies together, from the rising of the
 Dog. starte. Others, after they have remained thus mingled and incorporate together ten daies,
 put it up and reserve it close stopped for their use; and this is called Hydromel: which when it
 is come to some age, hath the very tast of wine: and no place affourdeth better than Phrygia.

Moreover, vinegre was wont to be tempered with honey, [See how curious men have been to
 trie conclusions in every thing!] which they called Oxy mel, and that in this manner: *Recipe*, of
 honey, ten pounds or pints; of old vinegre, five pints; of sea salt, one pound; of raine water, five K
 Sextares [i. a gallon within one quart:] Boile them all together at a soft fire, untill they have had
 ten plawes or waulmes: which done, poure them out of one vessell into another, and so let the
 liquor stand & settle a long time, untill it be stale. All these wines and compositions thus brued,
Themison (an Author highly renowned) hath condemned and forbidden expressly to be used.
 And to say a very truth, it seemeth that the use of them was never but in case of necessitie: un-
 lesse a man would beleve and say, that Ipocras, spiced wines, and those that be compounded of
 ointments, are Natures worke; or that thee brought forth plants and trees to no other end, but
 that men should drinke them downe the throat. Howbeit, the knowledge surely of such experi-
 ments, be pleasant and delectable unto men of great wit and high conceit, whose noble spirits L
 cannot be at rest, but ever inventive and searching into all secrets. Now to conclude this point,
 certaine it is and past all question, that none of all these compositions (unlesse it be those which
 come to their perfection by age and long time) will last one yeere full out: nay most of them will
 not keepe good one moneth to an end.

CHAP. XVIII.

☞ *Certaine strange and wonderfull kinds of wine.*

Wine also hath prodigious and miraculous effects: for (by report) in Arabia there is a
 wine made, which being drunke will cause barrain women to beare children; and con-
 trariwise drive men into madnes. But in Achaia principally about Carynia, the wine M
 maketh women fall into untimely travell: nay if a woman great with child doe eat but the very
 grapes, they will slip the fruit of their wombe before their time: and yet both grape and wine
 differ not in tast from others. They that drinke the wine comming from the cape of Troezen, are
 thought unable for generation. It is reported, that the Thasiens doe make two kinds of wine of
 contrary

A contrary operations; the one procureth sleepe, the other causeth watching. Among them there is a vine called Theriace, the grape whereof, as also the wine, cureth the stings and biting of serpents, as it were a most especiall Treacle. As for the vine Libanios, it carrieth the odor and smell of Frankincense, and therefore is used in sacrifices to the gods. But contrariwise another named Aspendios, is utterly condemned for that purpose, and no wine thereof is employed at the altar: they say also, that no Foule will touch the grapes thereof. There is a kind of grape in Ægypt, which they call Thasia, exceeding sweet it is, and looseth the bellie. But contrariwise there be in Lycia, that bind as much and cause costivenesse. The grapes Echolides in Ægypt, if they bee eaten, cause women with child to be delivered before their time. Some wines there be, that as they lie in the verie cellar, will turne and proove sower about the rising of the Dog-starre; but afterwards will recover their verdure, and become quick and fresh againe. In like manner there be wines, that upon the sea will change: howbeit the agitation thereof, causeth those wines that endure it to the end, to seeme twice as old as they be indeed.

CHAP. XIX.

¶ *What Wines they be that may not be used in Sacrifices: and what waies there are to sophisticate new wines.*

FOrasmuch as our life standeth much upon religion and divine service, we are to understand; That it is held unlawful to offer unto the gods before sacrifice, the wine of any vine that hath not been cut and pruned; or that hath been smitten and blasted with lightning; or standing neare to a jebbit or tree whereon a man hath hanged dead; or the grapes whereof have been troden by men whose leggs or feet have been wounded; neither is that wine allowable for this purpose, which hath been pressed and run from the refuse of grape-stones and skins once bruised and crushed in the presse; or last of all, if the grapes have been filed by any ordure or dung false from above thereupon. Moreover, Greeke wines are rejected from this holy use, because they have water in them. Furthermore the vine it selfe is holden good to be eaten, namely, when the burgens and tendrils bee first sodden, and afterwards preserved and kept in vinegre, brine, or pickle. Over and besides, it were very meet and convenient to speake also concerning the manner of preparing and ordering wine, seeing that the Greekes have travailed in that point severally, and reduced the rules thereto belonging, into the forme of an Art; and namely, *Euphronius*, *Aristomachus*, *Comiades*, and *Hicesius*, are therein great professors. The Africans use to mitigate and allay the tartnesse of their wines with plastre, yea and in some parts of their countrey, with lime. The Greeks contrariwise doe fortifie and quicken them with clay, with powder of marble, with salt, or sea water. And in some places of Italy, they use (to the same effect) the shavings and scrapings of stone-pitch. Also it is an ordinarie thing in Italy and the provinces thereto confining, for to condite their new wines and to season them with rosin: yea and in some places they mingle therewith the lees of other old wine or vinegre. Oftentimes also they make slobberfauces of it selfe without any other mixture; namely, when they boile new wine sufficiently to the proportion of the strength, untill the hardnesse do evaporate, and that it wax mild and sweet: but being thus ordered, it will not last (they say) above one year. In some countries they use to seeth their new wine to the consumption of a third part, and make it cuit, with which they are wont to delay the sharpnesse and strength of other wines, and make them pleasant. But both in this kind of wine and in all others, the vessels ought to be prepared for the purpose, and seasoned with pitch: the treatise of which, we will put off unto the next booke, where wee purpose to treat thereof, and the manner of making it.

CHAP. XX.

¶ *Of divers kinds of Pitch and Rosins. The manner of the seasoning and consecrure of new Wines. Also of Vinegre and Salt.*

AMong trees that yeeld from them a liquid substance, some there be in the East countries, and others in Europe, which ingender Pitch and Rosin. Asia likewise between both, hath of either side of it, some such trees. As for the East, the Terebinths put out Turpentine, the best and cleereft Rosin of all others: next to them, the Lentiskes also have their Rosin, which

they call Mastick. After which, the Cipresse bringeth forth a third rosin, but it is of a most sharp and biting tast. All these trees (I say) carie a rosin only, and the same thin and liquid: but the Cedar sendeth out a thicke substance, and good to make pitch and tarre. As for the rosin or gum Arabicke, it is white of colour, strong in smell, untoward & troublesome to him that shall boile it. That of Iurie is harder, yea, and of a stronger favour than Turpentine. The Syriacke gum resembleth the honie of Athens. The Cyprian excelleth all others: of a fleshie substance it is, and like in colour to honie. The Colophonian is deeper of colour, and reddish: beat it to powder in a mortar, it proveth white: but it carrieth a strong smell with it; which is the reason, that the perfumers and makers of ointments have no use thereof. As for that which the Pitch trees of Asia doe yeeld, it is passing white, and the Greekes call it Spagas. All rosins generally will dissolve in oile. Some thinke verily, that potters clay will likewise doe the same. But I am abashed and ashamed to report, how in these daies the same pitch whereof we speak, should be in so great account as it is, for making of pitch plaisters, to fetch off the haire of mens bodies, and all to make them more smooth and effeminate. Howbeit, the manner of seasoning new Must therewith (that when it is perfect wine it may smell of pitch, and bite at the tongues end) is to bestrew it with the powder of pitch at the first working, the heat whereof is commonly past and gone in nine daies. And some thinke, that the wine will bee the stronger, if the raw and greene flower of the rosin, as it issueth fresh out of the tree, bee put therein; for it will quicken a small and weake wine. Now this mixture and medicine of wine [called Crapula] made thus of rosin, hath contrarie effects: for if the wine be over-headie and strong, it allaieth and mortifieth the hurtfull force thereof: but if it be too weake, or drinke dead and flat, it reviveth againe, and giveth it a strong tast. In Liguria, and principally along the Po, they use to season their wines, and bring them all to their severall perfections in this manner. If the wine when it is new, be mightie and strong, they put in the more of this medicine or collection called Crapula: if it be mild and small, then the lesse goes into it: and keeping this gage with their hand, they make both good. Some would have one wine brued with another, the weaker with the stronger, and so (forsooth) there must needs arise a good temperature of both together: and verily there is not a thing in the world againe, which hath in the nature thereof so great varietie.

In some countries, if new wine worke of it selfe a second time, it is thought to bee a fault and meanes to corrupt it: and indeed, upon such a chauce and unhappie accident it loseth the verdure and quicke tast: whereupon it getteth the name of Vappa, and is cleane turned to bee dead or soure: in which regard also, we give a man that name by way of scorne and reproch, calling him Vappa, when he is heartlesse, void of reason and understanding. If it were vinegre indeed, it were another matter: for surely although wine degenerat into it by way of corruption and putrifaction, yet a vertue and force it hath, good for many speciall uses, and without which it were not possible to live so delicately at our table as we doe. Moreover, the world is so much given to keepe a bruing, tempering, and medicining of wines, that in some places they sophisticate them with ashes, as it were with plaister: in other, they fortifie, recover, and make them again by such devices as are before specified. But to this purpose they take the ashes to chuse, of vine cuttings, or of the oke wood, before any other. And forsooth if there be occasion to occupie sea-water for this business, they prescribe them to fetch it far from land in the deep sea; & kept besides from mid March or the spring Æquinox, or at leastwise from mid-June or summer sunne-stead, and drawne in the night season, and when the North wind doth blow: but if it bee gotten neare the time of vintage, then it ought to be well boiled before it will serve the turn. As for the pitch in Italie, that of Bruttium or Calabria is reputed for the best, to trim those vessels which are to keep wine. There is made of the rosin of the tree Picea (as also in Spain there commeth from the wild Pines) a certain pitch, which of all other is worst: for the rosin of those trees is bitter, drie, and of a strong favor. The difference and sundrie kinds of pitch, as also the manner of making the same, we will set down in the booke next following, in the treatise of wild & savage trees. The faults & imperfections of pitch, over and besides those even now rehearsed (to wit, bitternesse, drinessse, & strong sent) are knowne by the sourenesse, by the stinking smoke, and the very adustion thereof. But yee shall know good pitch by these experiments, If the peeces broken from it doe shine, if betweene the teeth it relent and be clammy like glew, and have a pleasant sharpenesse and soure tast withall of the vinegre. In Asia the pitch is thought best which commeth of the trees in mount Ida. The Greeks esteem the trees of the hill Pieria cheefe for this purpose: and *Virgil* commendeth that of Narycia before all.

But

A But to returne againe to our ^{ruke} burning and soppification of wines, they that would seeme to be cunninger, or at leastwise more curious than their fellows, doe mingle therewith blacke Masticke, which is engendred in Pontus, and is like to Bitumen; and thereto adde the root of Iris or the flower de Luce, and oile. For this is found by experience, That if the vessels be sered with wax, the wines therein will not hold, but turne soure quickly. Moreover, we daily see, that better it is to put up wine into those vessels, wherein vinegre hath been kept afore, than into such as had dulcet or honied wine. *Cato* setteth down a receipt to trim and concinnate wine (for that is the very tearm which he useth) in this manner: Take of lie ashes sodden with cuit boiled to the haife, one fortieih part; temper it with a pound and a halfe of peniroiall, or salt, and otherwhiles with marble braied and beaten into pouder among. Hee maketh mention also of brimstone, but rosin hee nameth with the last. But above all he willeth to refresh & renue the wine when it now beginneth to come unto maturitie & perfection, with new wine which he calleth Tortivum; & I take it, that he meaneeth that which ran last out of the wine-presse: which hee prescribeth also to bee put unto new wines for to get them a fresher colour, as the very tincture of wine: and so it will be also of a more fattie substance, and goe downe more glib and merrily. See, see, how many devises of medicines and slobber-sauces the poore wine is forced to endure, and all to please our pallat, our eie, and other senses: and yet ywis we marvell that it is so hurtfull to our bodies. Well, would you have an experiment to know when wine is going, or enclining to be dead and souredip therein a thin plate of lead; if it chaunge colour, take it for a signe, that it is in the way of decaying. Of all liquors, wine hath this proprietie to vinew, to pall, and to change into vinegre. But a thousand medicines it doth affoord, and bookes of Physicke are full thereof. Moreover, wine lees being dried, will serve as a match to keepe fire: and without any other fewell to feed it, yee shall have it burne and flame of it selfe. The ashes thereof is of the nature of Nitre, and hath the same vertues: and in this regard somewhat more, for that it is found to be more fattie and unctuous.

CHAP. XXI.

Of wine-cellars.

D NOW when wine is made and tunned up in manner aforesaid, there is as great difference and diversitie in the bestowing of it in cellars. They of Piemont about the Alpes, doe put up their wines in wooden barrels, bound well with hoopes, for warmth: and moreover, if the winter be very cold, they make fires in their cellars or butteries, to keep them for being frozen. I will tell you a strange wonder, yet true and to be verified, nor by hearesay but plain eyesight. There were seene upon a time whole heapes and huge lumpes of wine congealed into ice, by occasion that the hoopes of the hogshheads burst that contained the wine: and this was held for a prodigious token. For indeed wine of it owne nature will not congeale and freeze, onely it will loose the strength, and become appalled in extremitie of cold. In warmer climates and more temperate, they fill their wines into great stands and steanes of earth, which they set into the ground, either over the head all whole, or els by halfe; deeper or shallower, according to the situation and temperature of the region. Likewise they give the wine open aire in some places: whereas in other

E they keepe it close within house in tavernes and cellars. And thereto belong these and such like rules. First, that one side of the wine-cellar, or at leastwise the windowes, ought to stand open to the North, or to the East in any wise, where the Sunne riseth at the time of the *Æquinoctiall*. *Item*, that there be no muckhills nor privies neare: no roots of trees, nor any thing of a strong and stinking favor: for that wine is of this nature, to draw any smell very quickly into it: and above all, Fig-trees (as well the wild as the tame) be hurtfull to wine-cellars. *Item*, as touching the order of placing the wine vessels, they ought to stand a pretie distance one from another: for feare of contagion, for that wine is alwaies most apt to catch infection very soone. Moreover, it mattereth much of what proportion and fashion the pipes, tubs, and such vessels be made. Those with great bellies and wide mouths, are not so good. Also they must bee nealed with pitch, presently upon

F the rising of the dog starre: afterwards doufed and washed all over either in the sea or els salt water, then to bee seasoned and strewed with vine ashes or cley: and when they bee scoured, they ought to sweeten them with a perfume of Myrrhe; which were good to be done also unto the very cellars oftentimes. Furthermore, if the wines be weake and small, they had need to be kept in tubs and hogshheads, let downe within the ground: but the strong and mightie wines may lie above

ground in the open aire. Provided alway, that wine vessels bee never filled top full: but the void part that is left, and standeth above the wine, would be throughly dight with thicke wine made of withered grapes, or foddren wine to the halfe, and saffron mingled withall, yea, and old pitch, together with cuit. Thus also ought the lids and bungs of the vessels to bee ordered, with an addition besides of masticke and pitch. In the deepe of Winter they must not be unstopped and opened in any case, unlesse the weather bee faire and cleare. Neither when the wind is Southerly, or the Moone in the full. This also is to be noted, that the flower or mantle which the wine casteth up to the top, is good when it is white: if it be red, it is a very bad signe, unlesse the wine it selfe bee of that colour. Moreover, if the vessels bee hote, or the lids doe sweate, it is no good signe. Note also, that the wine which soone beginneth to mantle and cast up a floure incontinently, or to yeeld another smell than the owne, will not continue long good. As for the cuits, whether they be foddren to the halfe or the thirds, they ought to be boiled & made when the skie is without a Moon, that is to say, in the change, and upon no day els. Moreover, the decoction must be in leads, and not in coppers; with walnuts among to receive all the smoke, which otherwise might infect the cuit. In Campaine they let their best wines lie abroad in vessels, even in the open aire, to take the Sunne, the Moone, raine, and wind, and all weathers that come: and this is thought to bee best for them.

CHAP. XXII.

Of avoiding Drunkenesse.

IF a man marke and consider well the course of our life, we are in no one thing more busie and curious, nor take greater pains, than about wine: as if Nature had not given to man the liquor of water, which of all others is the most wholesome drinke, and wherewith all other creatures are well contented. But we thinking it not sufficient to take wine our selves, give it also to our Horses, Mules, and labouring beafts, and force them against Nature to drinke it. Besides, such paines, so much labour, so great cost and charges we are at, to have it; such delight and pleasure wee take in it; that many of us thinke, they are borne to nothing els, and can skill of no other contentment in this life: notwithstanding, when all is done, it transporteth and carrieth away the right wit and mind of man, it causeth furie and rage, and induceth, nay, it casteth headlong as many as are given thereto, into a thousand vices & misdemeanors. And yet forsooth, to the end that we might take the more cups, and poure it downe the throat more lustily, we let it run through a strainer, for to abate and gould (as it were) the force thereof: yea, and other devises there be to whet our appetite thereto, and cause us to quaffe more freely. Nay, to draw on their drinke, men are not afraid to make poisons, whiles some take hemlocke before they sit down, because they must drinke perforce then, or else die for it: others, the powder of the *pumish stone, & such like stuffe, which I am abashed to rehearse and teach those that bee ignorant of such leaudnesse. And yet wee see these that bee the stoutest and most redoubted drinkers, even those that take themselves most secured of daunger, to lie sweating so long in the baines and brothel-houses for to concoct their surfer of wine, that otherwhiles they are caried forth dead for their labour. Yee shall have some of them againe when they have been in the hot house, not to stay so long as they may recover their beds, no not so much as to put on their shirts: but presently in the place, all naked as they are, puffing and labouring still for wind, catch up great cans and huge tankards of wine (to shew what lustie and valiant champions they bee) set them one after another to their mouth, poure the wine downe the throat without more adoe, that they might cast it up againe, and so take more in the place; vomiting and revomiting twice or thrice together that which they have drunke, and still make quarrell to the pot: as if they had bene borne into this world for no other end but to spill and marre good wine: or, as if there were no way els to spend & wast the same, but through mans bodie. And to this purpose, were taken up at Rome these forraine exercises, of vaulting and dancing the Moriske; from hence came the tumbling of wraстlers in the dust and mire together; for this, they shew their broad breasts, beare up their heads, and carie their neckes farre backe. In all which gesticulations, what doe they else but professe that they seeke means to procure thirst, and take occasion to drinke? But come now to their pots that they use to quaffe and drinke out of: are there not graven in them faire pourtraits thinke you of adulteries? as if drunkenesse it selfe were not sufficient to kindle the heat of lust, to pricke the flesh, and to teach them wantonnesse. Thus is wine drunke out of libidinous cups: and more than that, he that can quaffe best and play the

*Videlib. 36.
cap. 21.

A drunkard most, shall have the greatest reward. But what shall we say to those (would a man think it?) that hire one to eat also as much as hee can drinke, and upon that condition covenant to yeeld him the price for his wine drinking, and not otherwise. Yee shall have another that will enioyne himselfe to drinke every denier that hee hath woon at dice. Now when they are come to that once, and be thoroughly whited, then shall ye have them cast their wanton eyes upon mens wives; then fall they to court faire dames and ladies, and openly bewray their folly even before their jealous and sterne husbands; then (I say) the secrets of the heart are opened & laid abroad. Some ye shall have in the mids of their cups, make their wills, even at the very board as they sit: others againe cast out bloudie and deadly speeches at randon, and cannot hold but blurt out those words which afterwards they eat againe with the swords point: for thus many a man by a lavish tongue in his wine, hath come by his death and had his throat cut. And verily the world is now growne to this passe, That whatsoever a man saith in his cups, it is held for sooth; as if Truth were the daughter of Wine. But say they escape these daungers: certes speed they never so well, the best of them all never seech the sun rising, so drowse and sleepe they are in bed everie morning; neither live they to be old men, but die in the strength of their youth. Hence cometh it, that some of them looke pale, with a paire of flaggie blaodd cheekes; others have bleared and sore eyes: and there be of them that shake so with their hands, that they cannot hold a full cup, but shed and poure it down the floore. Generally they all are meare fearfully (which is the very beginning of their hell in this life) or els have restlesse nights: and finally, if they chaunce to sleepe (for a due guerdon and reward of their drunkenesse) they are deluded with imaginary conceits of *Venus* delights, defiled with filthie and abominable pollutions: and thus both sleepeing and waking they sinne with pleasure. Well, what becomes of them the morrow after? they belch sowre, their breath stinketh of the barrell, and telleth them what they did over night; otherwise they forget what either they did or said, they remember no more, than if their memorie were utterly exinct and dead. And yet our jollie drunkards give out and say, That they alone enjoy this life, and rob other men of it. But who seeth not, that ordinarily they loose not onely the yesterday past, but the morrow to come? In the time of *Tiberius Claudius* the Emperour, about fortie years since, certain out-landish Physicians and Monte-banks, who would seem to set themselves out by some strange novelties of their owne, and so get a name, brought up at Rome a new devise and order, to drinke fasting; and prescribed folke to take a good heaume draught of wine before meat, and to lay that foundation of their dinner. Of all nations, the Parthians would have the glory for this goodly vertue of wine-bibbing: and among the Greekes, *Alcibiades* indeed deserved the best game for this worthy feat. But here with us at Rome *Novellius Torquatus* a Millanois, wan the name from all Romans & Italians both. This Lombard had gone through all honourable degrees of dignitie in Rome; he had been Pretor, and attained to the place of a Proconfull. In all these offices of state he woon no great name: but for drinking in the presence of *Tiberius*, three gallons of wine at one draught and before he tooke his breath againe, he was dubbed knight by the surname of *Tricongius*, as one would say, *The three gallon knight: and the Emperour, sterne, severe, and cruell otherwise though he was, now in his old age (for in his youthfull daies hee was given overmuch to *drinking of wine) would delight to behold this renowned and worthie knight, with great wonder and admiration. For the like rare gift and commendable qualitie, men thinke verily that *C. Piso* first rise: and afterwards was advanced to the Provostship of the citie of Rome, by the said *Tiberius*: and namely, for that in his court being now Emperour, he sat two daies and two nights drinking continually, and never stirred foot from the board. And verily *Drusus Caesar* (by report) in nothing more resembled his father *Tiberius*, than in taking his drinke. But to return againe to noble *Torquatus*, herein consulted his excellencie, That he did it according to art [for this you must take withall, there is an art of Drinking, grounded upon certaine rules & precepts.] *Torquatus* (I say) drank he never so much, was not known at any time to falter in his tongue, never eased himselfe by vomiting, never let it go the other way under board: how late soever he sat up at the wine overnight, he would be sure to relieve the morning watch & sentinell.

F He drunke most of any man at one entire draught before the pot went from his head; and for smaller draughts besides, he went beyond all other in number; his wind he never tooke while the cup was at his mouth, but justly observed the rule of drinking with one breath; he was not known to spit for all this: and to conclude, he would not leave a drop behind in the cup, not so much as would dash against the pavement, & make the least sound to be heard: a speciall point & precise law

*not The thrice-gallant knight.
* Whereupon he was called *Eiberius Nero*, for *Tiberius Nero*.

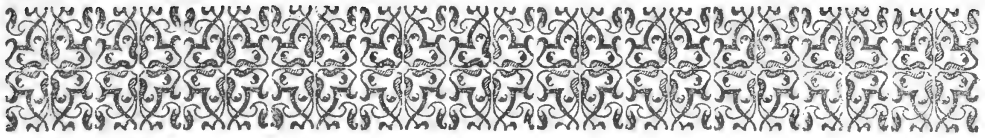
to prevent the deceit of those that drinke for a wager. A singular glorie no doubt in him, and a rare felicitie. *Tergilla* challenged *M. Cicero* the younger, sonne to that *M. Cicero* the famous Orator, and reproched him to his face, that ordinarily he drunke two gallons at ones: and that one time above the rest when he was drunke, he flung a pot at *M. Agrippa* his head. And truly this is one of the fruits and seats of drunkenesse. But blame not young *Cicero*, if in this point yet hee desired to surmount him that slew his father, *M. Antonius* I meane; for he before that time strained himselfe, and strove to win the best game in this feat, making profession thereof, as may appeare by a booke that he compiled and set forth with this title, *Of his owne drunkenesse*: wherein he was not ashamed to avow and justifie his excesse and enormities that way: and thereby approved (as I take it) under pretence and colour of his drunkenesse, all those outrages of his, all those miseries and calamities that hee brought upon the whole world. This treatise he vomited and spued out a little before the battell of *Actium*, wherein he was defeated: whereby it may appeare very plainly, that as hee was drunken before with the bloud of citizens, so still hee was the more bloud-thirstie. For this is a propertie that necessarily followeth this vice, That the more a man drinketh, the more he may, and is alwaies drie. And herein spake to good purpose a certaine Embassadour of the Scythians, saying, That the Parthians the more they drunke, they thirstier they were.

*Malt.

*Zythas and Curru Ale and Beere.

As touching the nations in the West part of the world, they have their drinckes also by themselves made of *corne steeped in water, whereof they will drinke to the utterance, and be drunke: and namely in Spaine and Fraunce, where the manner of making the same is all one, howsoever they have *divers names. And in Spain they have devised means that these drincks (Ale or Beere) will abide age, and continue stale. In *Ægypt* likewise they have invented such kind of drincks made of corne: so that no part or corner of the world there is, but drunkenesse reigneth. And verily these liquors howsoever they bee named, they use to drinke entire as they bee, and made of the very strength of Malt: never delaying the same with water, as we doe wines. But it may bee said, That Nature hath endowed and enriched those countries with abundance of corn, and therefore they may well doe it. Oh how industrious we are to maintaine our vices! There is a devise found, (would ever any man have thought it?) how water also should make men drunke. Two liquors there be, most pleasing and acceptable to mens bodies, Wine within, & Oile without. Both proceed from two speciall trees, howbeit, of the twaine, Oile is necessarie, and Wine may be better spared. And verily, men have not been idle in the making of good Oile: howbeit, they have been more addicted and given to make Wines for drinke; as may appeare by this, that reckoning but the generall kinds thereof, a man may find 195 sorts of wine: but if a man would subdivide and distribute those heads into their braunches, hee should meet almost with twice as many: but of Oiles there bee not so many kinds by farre. Whereof wee purpose to treat in the booke next following.





THE XV. BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECVNDVS.

CHAP. I.

☞ The natures of Trees that beare Fruit.



Here were no Olive trees grew in Italie, but upon the coast side, and that within fortie miles of the sea, about the 440 yeare after the foundation of the citie of Rome; if it bee true that *Theophrastus* saith, who was one of the most famous and renowned Authors among the Greekes. *Fenestella* writeth moreover, and affirmeth, That during the reign of *Tarquinius Priscus* (which was much about the 183 yeere from the foundation of the citie of Rome) there were no Olive trees at all to be found, either in Italie, Spaine, or Africk: whereas now at this day they are seene all Italie over, yea and bee come as farre as the regions beyond the Alpes, even into the mids and very heart of Fraunce and Spaine. Indeed, in the yeare after the foundation of Rome 505 (which was when *Appius Claudius*, the nephew of that great *Appius Claudius* surnamed The blind, and *L. Junius* were Consuls together) a pound of the oyle was sold for twelve asses: and not long after (namely, in the 680 yeere) *M. Seius* the sonne of *Lucius* (one of the *Ædiles-Curule* for the time beeing) brought downe the market so well, that a man might have bought ten pound for one As; and at that price he served the people of Rome throughout all that yeere. Lesse cause therefore a man hath to marveile hereat, who knoweth how not past 22 yeeres after that, (namely when *Cn. Pompeius* was the fourth time Consull) Italy was able to furnish other nations and provinces with oile of Olives. *Hesiodus* also (who was especially addicted to the studie of husbandrie, and of all things thought it most necessarie to be taught and published for the good of mankind) wrate thus much concerning the Olive, That never a man was knowne to that day for to have gathered the fruit of that Olive tree, which himselfe had planted: so late of growth were those trees in his time, and so slowly came they forward. But nowadaies they come up of kernels and stones set in plots of ground for the purpose: and being transplanted againe, they beare Olives the second yeare after. *Fabianus* saith, That Olives love not to grow either in the coldest or the hottest grounds.

Virgill hath set downe three kind of Olives, to wit, *Orchitæ* [i. the great round Olives:] *Radij* [i. the long Olives:] and those which are called *Pausiæ*. He saith moreover, That the Olive trees require no tending or dressing at all, and need neither the hooke to be pruned, nor the rake and harrow to be moulded, ne yet the spade to be digged about. Doubtlesse, the goodnesse of the soile, and the temperature of the climat especially, are very requisite and much materiaall alone, without farther helpe: howbeit they use to be cut and pruned, yea they love also to be scraped, polished, and cleansed betweene where the branches grow over-thick, even as well as vines, and at the same season.

The time of gathering Olives ensueth presently upon the vintage of grapes: but greater industrie and skill is required to the making and tempering of good oile, than about new wine: for ye shall have one & the selfesame kind of Olive to yeeld a different juice, and divers oiles. First and foremost, of the greene Olive and altogether unripe, there is drawne the Oile-olive; which hath of all other the best verdure, and in tast excelleth the rest: and of this oile, the first running that commeth from the presse, is most commended: and so by degrees better or worse, as the oile

oile is drawne before or after, out of the presse: or, according to a late invention, by treading them with mens feet in little paniers, and upon hardies made of small and fine osiers. This is a rule, The riper that the Olive is, the fatter will the oile bee, and more plentiful; but nothing so pleasant in tast. And therefore the best season to gather Olives, both for goodnesse and abundance of oile, is when they begin to shew blacke. And such halfe-ripe Olives wee in Latine call *Drupæ*, & the Greekes *Drypetæ*. To conclude, it skilleth very much whether the berries ripe upon the tree, or mellow within their presse: also whether the tree bee watered, that is to say, the Olives hanging thereupon be drenched and refreshed with sprinkling water, or have no other moisture than their owne, and that which they receive by dewes and raine from heaven.

CHAP. II.

Of Oile.

Oile-Olive commeth to have a ranke and unpleasent tast if it be old kept and stale, contrarie to the nature of wine, which is the better for age. And the longest time that oile will continue good, is but one year. Wherein surely if a man would well consider, hee may observe the great providence of Nature. For seeing that wines are made to serve for intemperance and drunkenesse, there is not that necessitie to drinke much thereof, and to spend them out of hand: and more than so, the daintie tast that they have when they be stale, induceth men to lay them up and keepe them long. But contrariwise, she would not have us make such spate of oile: and therefore by reason of the generall use and need thereof, she hath made it vulgar and common to all.

As touching this benefite and gift of Nature bestowed upon mankind, Italie of all other nations in the world carieth the name for the goodnesse thereof: but principally the territorie or countie of *Venafrum*, and namely, that quarter lying toward *Licina*, which yeeldeth the oile called *Licinianum*: wherupon there be no Olives comparable to them of *Licina*, both for to serve the perfumers, in regard of the pleasent smell which that oile doth give, so appropriat unto their ointments; as also to furnish the kitchin and the table (as they say that be fine-toothed, and have a delicate tast:) which is the cause (I say) that this oile carieth the onely name. And yet these Olives of *Licina* have this priviledge besides, that birds love not to come near unto them. Next to these *Licinian* Olives, the question is betwene them of *Istria* and *Batica*, whether of them should go away with the price for their goodnesse? and hard it is to say, which is the better of the twaine. A third degree there is under those two abovenamed, namely, of the Olives that come from all other provinces, setting aside the fertile soile of that tract in *Affricke*, which yeeldeth so great increase of corne. For it should seeme that Nature hath set it apart for graine onely, seeing it so fruitfull that way: and hath not so much envied it the benefite of wine and oile, which shee hath denied those parts, as thought it sufficient that they might glory, & have the name for their harvests. As for other points belonging to Olives, men have erred and ben deceived very much: neither is there in any part concerning our life, to be found more confusion, than is therein: as we will shew and declare hereafter.

CHAP. III.

The nature of the Olive berries: also, of young Olive plants.

This fruit called the Olive, consisteth of a stone or kernill, of oile, a fleshie substance, and the lees or dregs: now by these lees (called in Latine *Amurca*) I meane the bitter liquor of the grounds that the oile yeeldeth. It commeth of abundance of water: and therefore as in time of drought there is least thereof, so in a rainie and waterie constitution, you shall have store and plentie. As for the proper juice of the Olive, it is their oile: and the cheefe is that which commeth of those that are unripe, like as wee have shewed before, when wee treated of *Ompharium*, or the Olive verjuice. This oile substance doth increase & augment within the Olive untill the rising of the star *Arcturus*, to wit, sixteene daies before the Calends of October; after which time, their stones and carnous matter about them doe rather thrive. But marke, when there followeth a glut of raine and wet weather presently upon a drie season, the oile in them doth corrupt & turne all (well neare) into the trees abovesaid, which may easily be perceived by the colour: for it causeth

A seth the Olive berrie to looke blacke. And therefore when this blacknesse beginneth to appeare, it is a sign that they have somewhat (although very little) of the lees: but before that, they had none at all. And herein are men foulely deceived, taking this marke for the beginning of their ripenesse: which blacke hew indeed is a signe of their corruption, and betokeneth that then they are in the way to be starke naught. They erre also in this, that they suppose an Olive the more growne it is in carnositie, to be the fuller of oile: whereas in very truth, all the good juice in them is converted then into the grosse and corpulent substance thereof, and thereby also the stone and kernill come to bee big and massie: which is the cause, that they had need of watering at that time, most of all. Which being done by great paine and labour of man, or happening through raine and plentie of shewers; unlesse there ensue a drie season & faire weather to extenuate that grosse substance into which the Olive had turned the foresaid juice and humor, all the oile is consumed and lost. For it is heat and nothing els (as *Theophrastus* saith) which engendreth oile: and therefore both about the presse at first, and also in the very garneres where Olives be laid after, they use to keepe good fires, by that meanes to draw the more oile forth. A third default there is in oile, and that commeth of two much sparing and niggardise: for some men there are, who being loth to be at cost to plucke and gather Olives from the tree, wait still and looke that they should fall of themselves. And such folke as would seeme yet to keepe a meane herein, namely, to take some paines and be at a little cost; beat and pell them downe with perches and poles: whereby they doe offer wrong to the poore trees, yea, and hinder themselves not a little the yeare following, when they shall find how much it is out of their way, thus to breake their boughes and branches.

C Whereupon the law in old time provided well for this inconvenience, by an expresse inhibition to all gatherers of Olives, in these words, **N O M A N S O H A R D I E A S T O B R E A K E, S T R I K E, A N D B E A T T H E O L I V E T R E E.** But they that goe most warily and gently to worke, stand under the tree, and with some canes shake the boughs and branches therewith, or lightly smite them: but in no case let drive and lay at them either with full down-right or crosse-blowes. And yet, as heedfull as they be in so doing, this good they get by striking and knapping off the young shoots and sprigs which should beare the next year, that they have the trees carie fruit but once in two yeares for it. The like happeneth also, if a man stay till they fall of themselves: for by sticking on the tree beyond their due time, they rob the Olives to come after, of all their nutriment wherewith they should be fed, and deteine the place likewise where they should come forth and grow. An evident prooffe hereof is this, That Olives unlesse they be gathered before the ordinarie and yearely Westerne winds doe blow, they gather heart againe upon the tree, and will not so easily fall as before. Men use therefore to gather the Pausian Olives first after Autumne, which are fullest of carnositie, not so much by nature as by misgovernment and disorder; soone after, the round *Orchitæ*, which have plentie of oile; and then the Olives *Radij*: and these, for as much as they be most tender, & soonest overcome with abundance of the lees (which we called before *Amurca*) are therby forced to fall. Howbeit, such Olives as be thick skinned and hard; tough also & admitting no wet and raine (by which means they are the least of all others) will abide on the tree untill March: and namely, the *Licinian* Olives, the *Cominian*, *Contian*, & *Sergian*, which the Sabins call *Roiall*: all which change not colour & look black before the foresaid Westerne wind bloweth, that is, about the sixt day before the Ides of Februarie; for by that time folke think they begin to ripen. Now for as much as the best & most approved oile is made of them, it seemeth that reason also being conformable to this defect of theirs, justifieth & approveth the same in the end. And this is commonly received and held among them, that cold winters breed scarfitie and dearth: but full maturitie brings plentie, namely when they have leisure to ripen upon the tree: howbeit this goodnes is not occasioned by the time, but by the nature rather of those kind of Olives, which bee long ere they turn into the foresaid dregs *Amurca*. Men are likewise as much deceived in this, that when Olives be gathered, they keep them upon boured floores in follars and garneres, & will not presse them before they have sweat: whereas, in truth, the longer they lie, the lesse oile they yeeld, & the more dregs of lees. For by this meanes the ordinarie proportion they say is, to presse out of every *Modius* of Olives, not above sixe pound of oile. But no man maketh any reckoning of the lees, how much it increaseth in measure day by day, in one and the very same kind of Olives, the longer that they be kept ere they be pressed. In one word, it is a common error setled every where, that men do think the abundance of oile is to be esteemed according to the bignes of the Olives: considering that the plentie of oile consisteth not in the greatnesse of the fruit: as may appear by those which

The fifteenth Booke of

of some are called Roiall, of others Majorinæ, and Phauliæ, which every man knoweth, are the biggest and fairest Olives to see to, and yet otherwise have least oile in them of any others. Likewise in Ægypt the Olives are most fleshie & full of pulpe, howbeit, least oileous. As for the countrie Decapolis of Syria, the Olives indeed be very small there, & no bigger than Capers; yet commended they are for their carnositie. And for that cause, the Olives from the parts beyond sea are preferred before the Italian, for goodnesse of meat, and as better to be eaten; yet those of Italie yeeld more oile. And even within Italie, the Picene and Sidicine Olives surpass the rest. For in truth, these are first confected and seasoned with salt: or els (as all others) prepared and condite either with lees of oile, or wine-cuit. Some Olives there bee, which they suffer to swim alone as they be, in their own oile, without any helpe and addition of other things; and such be called Colymbades. And the same they use otherwhiles to bruise and cleanse from their stones, and then confect them with greene hearbs, which have some pleasant & commendable tast. Others there are, which being otherwise very greene and unripe, are presently brought to maturitie, and made mellow, by lying infused and soking in hote scalding water. And a wonder it is to see, how Olives will drinke in a sweet liquor, and how by that meanes they may be made toothsome, yea, and to carie the tast of any thing that a man would have them. Among Olives there be also that are of colour purple, like to thole grapes which change colour when they begin to ripen. Moreover, besides the abovenamed sorts of Olives, there be some named Superbæ [*i. proud.*] Also there are Olives to be found, which being dried by themselves onely, are passing sweet, yea, and more delicate than raisins: marie these are very geason, and yet such are in Affricke and about the cite Emerita in Portugall.

As touching the very oile it selfe, the way to preserve it from being overfat and thicke, is with salt. If the barke of an Olive tree be slit and cut, it will receive the rellice and smell of any medicinal spice, and the oile thereof will seeme aromatized: otherwise pleasant in tast it is not, like as wine is: neither is there such difference in so many kinds of Olives as there is in wine: for surely we cannot at the most observe above three degrees in the goodnesse of oiles, namely, according to the first, second, and third running out of the presse. Finally, the thinner that oile is, and the more subtile, the finer and daintier is the smell thereof: and yet the same sent, in the very best of them all, continueth but a small time.

CHAP. IIII.

☞ *The nature of oile Olive.*

THe propertie of Oile, is to warme the bodie, and to defend it against the injuries of cold: and yet a soveraigne thing it is to coole and mitigate the hote distemperature of the head.

The Greekes, whom we may count the very fathers and fosters of all vices, have perverted the true and right use thereof, to serve for all excesse and superfluitie; even as farre as to the common anointing of their wraistlers with it, in their publicke place of exercise. Knowne it is for certaine, that the governours and wardens of those places, have sold the oile that hath been scraped from the bodies of the said wraistlers for 80 Sesterces at a time.

But the stately majestie of Rome contrariwise hath done so great honour to the Olive tree, that every yeare in Iulie, when the Ides come, they were wont to crowne their men of armes and gentlemen marching by their troupes and Squadrons in solemne wise, with chaplets of Olive; yea and the manner was of captaines likewise to enter ovant in petie triumphs into Rome, adorned with Olive coronets. The Athenians also honoured their conquerors with Olive guirlands. But generally the Greekes did set out their victors at the games of Olympia, with branches of the wild-Olive.

CHAP. V.

☞ *The manner how to order Olives.*

NOW will I report the precepts and rules set downe by *Cato*, as touching Olives. His opinion is, that the greater long Olive Radius of Salentum, the big Orchites, the Pausia, the Sergiana, Cominiana, and the Albicera, should be planted in hote and fat grounds. Hee addeth moreover (as he was a man of singular dexteritie and prudent spirit) which of them in the neigh-

A neighbour territories and places adjoyning, were taken for the best. As for the Licinian Olives, he saith, They would be planted in a weclie and cold hungrie ground : for if it be a fat soile and a hot, the oile will be corrupt and naught, and the very tree it selfe will in short time be killed with overmuch fertilitie and bearing too great a burden. Moreover, they will put forth a red kind of mosse, which eateth and consumeth the tree. To conclude, his mind is, that Olive hort-yards should be exposed to the sunne, yet so, as they regard the West wind also in any case, for otherwise he commendeth them not.

CHAP. VI.

§ How to keepe Olives, and the way to make oile of them.

B

C *Atto* alloweth of no other means to keepe and preserve Olives (and specially the great ones made like cullions, named thereupon *Orchita*, and the *Pautia*) but either in brine and pickle when they are greene, or else among *Lentiske* braunches when they are bruised and broken. The best oile is made (saith he) of the greenest and sowerest Olives. Moreover, so soon as ever they be false, they must be gathered from off the ground; and if they be fouled and berayed with the earth, they ought to be washed clean, and then laid to dry three daies at the most. Now if it fall out to be weather disposed unto frost, they should be pressed at foure daies end. He giveth order also, to bestrew and sprinkle them with salt : saying moreover, That if they be kept in boarded sollars or garneres, the oile will be both lesse in quantitie, & worse withall. So it will be also, if it be let lie long in the lees, or together with the cake and grounds, when they be brused & beaten :

C for this is the very fleshie and grosse substance of the Olives, which cannot chuse but breed tilthy dregs. And therefore he ordaineth, that oftentimes in a day it should be poured out of one vessell into another, and so by setling clarified from the grounds; and then to put it up afterwards into pans and panchions of earth, or els into vessels or kinnels of lead, for brasse metall will marre oile. All this should be done within close presses and rowmes, and those kept shut, where no aire or wind may come in, that they might be as warme and hot as stouves. He forbiddeth also to cut any wood or fuell there, to maintain fire; for that the fire made of their stones & kernels, is most kindly of any other. To the end also that the grounds and lees should be liquified and turne into oile, even to the very last drop, the oile should be let run out of those vessels or kinnels aforesaid

D into a vat or cistern : for which purpose the vessels are often to be cleansed, and the oiler paniers to be scoured with a sponge, that the oile might stand most pure and cleare. But afterward came up the devise to wash Olives first in hot water, and then immediatly to put them whole as they are, into the presse; for by that means they squeeze forth lees and all: and then anon to bruse and crush them in a mill, & so presse them in the end. Moreover, it is not thought good to presse the second time above 100 Modij, which is the full proportion of one pressure, & it is called *Factus*. That which after the mill cometh first, is named *The floure of the oile*, or the *Mere-gout*. Last of all, to presse 300 Modij, is thought to be foure mens worke ordinarily in one night and a day.

CHAP. VII.

§ Of Oile artificiall.

E

IN *Cato* his time there was no artificiall Oiles, I meane, no other but that of the Olive; and therefore I suppose it was, that he made no mention thereof; but now adaies there bee many kinds. First will we treat of those that are made of trees, and principally before all the rest, of the oile of the wild Olive: Thin it is, and much more bitter than that of the other gentle & true Olive, but good for medicines only.

Very like to it, is that which is made of *Chamelæa*, an herb or shrub growing in stonie places, to the heigth of a span and no more, with leaves and berries resembling those of the wild Olive.

The next is that which cometh of *Cici*, or *Ricinus*, [*i. Palma Christi*] a plant which groweth plentifully in *Ægypt*, which some call *Croto*, others *Trixis* or wild *Sesame*; but long it hath not been there. In *Spain* likewise this *Ricinus* is found of late to rise sodainly to the heigth of an Olive tree, bearing the stalke of *Ferula* or *Fenell-geant*, clad with leaves of the vine, and replenished with seed resembling the graines or kernels of small and slender grapes, and of a pale colour withall: wee in *Latine* call it *Ricinus*, of the resemblance that the seed hath to a ticke,

which is a vermin that annoieth sheepe. For to gather an oile thereof, the manner is to seeth the feeds in water; the oile will swim aloft, and so it is scummed off. But in Ægypt (where there is a bundance thereof) they never use any fire or water about it; only they come it well with salt, and then presse out the oile, which is very fulsome and naught to be eaten, good only for lamps. G

The oile of Almonds, which some call Metopium, is made of the bitter Almonds dried, stamped, and reduced into a masse or lumpe, which being sprinkled and foked with water, and then beaten againe in a mortar, is put into a presse or mill, and the oile drawne thereout.

There is an oile made also of the Bay, together with the oile of ripe olives readie to drop from the tree. Some take the Bay berries onely, & thereout presse oile de-Bayes: others use the leaves and nothing els: and there be againe, who with the leaves take also the rind of the Bay berries; yea and put thereto Storax Calamita, and other sweet odors. Now for this purpose, the Lawrell with broad leaves, growing wild, and bearing blacke berries, is the best. H

Like unto this oile, is that which they make of the blacke Myrtle; and the broad leaved kind thereof is the better: the berries of it ought to lie infused first in hot water, and afterwards to be boyled. Some seeth the tenderest leaves that it hath in Oile-olive, and then presse them forth. Others put the leaves first in the oile, and then let them stand conected in the sunne, and there take their ripening.

After the same manner is the oile made of the garden Myrtle; but that of the wild which hath the smaller seed is the better: and this Myrtle some call Oxymyr sine, others Chamæmyrsine; and some againe name it for the finalnesse, * Acaron, for short it is and full of little branches. I

Moreover, there be oiles made of the Citron and Cypresse trees: likewise of wallnuts which they call Caryinon: also of the fruit of the Cedar, named Cedrelaxon.

Seemably of the graine called Gnidium, to wit, the seed of Chamelæa and Thymelæa, well cleafed and stamped. In like manner of the Lentiske. As for the oile Cyprinum, how it should be made of the Ægyptian nut and of Ben for to serve perfumers, hath been shewed before. The Indians (by report) doe make of Chestnuts, of Sesame seed, & Rice. The people Ichthyophagi as they live by eating fish only, so they make oile of fishes. And in case of necessitie, otherwhiles men use to draw an oile out of the berries of a Plane tree also, beeing steeped in water and salt, which serveth for lamp oile. Yea and there is an oile made of the wild vine Oenanthe, as we have said already in the treatise of Ointments. K

As touching the oile which the Greekes call Gleucinum, it is made with new wine and oile-olive, boyled at a soft fire. Others there be that let the wine consume all into oile, and without any fire at all, doe compass the vessell wherein this composition is made, with the cake and the refuse of grapes when they be pressed, and cover it all over for the space of 22 dayes, so as twice a day they be all mixed thoroughly together. Some there be who put thereto not only Majoram, but also the most precious and exquisite odours that they can meet withall: and our common fencing-halls and places of publicke exercises be perfumed with these sweet oiles, and doe smell of them; but such they be as are the cheapest of all other.

Over and besides, there is made an oile of Aspalathus, sweet Calamus, Baulme, Iris or flour-de-lis, Cardumome or graines of Paradise, Melilot, French Nard, Panace, Marjoram, Elecampane, and the root of Cinamon, taking all these and letting them lie infused in oile, and so pressing out the juice thereof. So is oile Rosat made of Roses: the oile of Squinanth of the sweet rush, which is most like to the oile Rosat. Likewise of Henbane, Lupines, and the Daffadill. The Ægyptians get great store of oile out of Radish seed, or the grasse called Gramen (which is Dent-de-chien or Quich-grasse) and this oile they call Chortinon. After the same manner the Sesame-seed doth yeeld an oile; as also the Nettle, which in Greeke they call Cnecinon, or rather Cnidinum. As for the oile of Lilies, it is made in some places, where they feare not to let it stand abroad in the aire infused to take both sunne and moon-shine, yea and frostie weather. L

They that inhabit between Cappadocia and Galatia, do compound a certaine oile of hearbs growing among them, which is a soveraigne remedie for sinewes either wounded or otherwise grievied, and they call it Selgiticum: it is much in effect like to that oile which is made in Italic of Gums, by the people Eguini. M

Now for the oile of Pitch, which they call Picinum, it is made of the vapours and smoke that arise from Pitch whiles it boileth, and received in fleeces of wooll spread over the pots mouth wherein

* In livible, or, so final that it cannot be cut.

A wherein the said Pitch is foddren: which fleeces are afterwards well wrung, and the oile is pressed out therof. The best oile is that which commeth from the Brutian or Calabrian Pitch: the same is most fat of all others, and fullest of Rosin. The colour of the oile is reddish.

Vpon the coasts and maritime parts of Syria, there is an oile engendred of it selfe, which the Greekes call *Elæomeli*: a fattie and greasie substance it is, thicker than honey, and thinner than Rosin, of a sweet tast, issuing out of trees; and is onely medicinable and good in Physicke.

As touching old oile, it servert in right good stead for sundrie sorts of maladies. It is thought also very singular for to preserve Iuorie from putrefaction: for this is certain, that the image of *Saturne* at Rome is full of oile-olive all within.

CHAP. VIII.

Of the lees or dregs of Oile-olive, called Amurca.

Cato hath highly commended above all, the lees of Oile-olive: for he would have the barrels, hogheads, and other vessels which hold oile, to bee therewith besmeared, that they should not drink up the oile. He devised also, that the threshing floors should be wrought and tempered with oile lees, that they might not chaw and gape, nor no Ants breed within the chinkes and cranies thereof. Moreover, he thinketh it very good that the mortar, plastre, and parget used about the walls of corne-barnes, as also their floores, should be well sprinckled and tempered with the said lees: yea and the presses and wardrobes where apparell is kept, ought to be rubbed therewith to keepe our mothes, wormes, spiders, and such vermine that doe hurt to clothes. He affirmeth besides, that it is good against certaine diseases of foure-footed beasts, as also to preserve trees, yea and excellent for inward ulcers of a mans bodie, but especially those of the mouth. Being foddren, it is singular good (as he saith) for to annoint and make gentle and supple all bridle reines, leather thongs, shoes, and axeltrees of carts and wagons: likewise to keepe all vessels of brasse from rust, and also to give them a bright and pleasant colour: moreover, all the wooden implements of an house generally throughout, and vessels made of earth and clay, wherein one would keepe drie figges in their verdure, would bee annointed therewith: or if one were desirous to preserve the Myrtle, leaves, fruit, and all, upon the braunches, or any such thing, there is nothing better than the said Amurca. Last of all, he saith, that what wood soever for fewell is dipped in these lees, it will burne cleare without any smoke.

M. Varro affirmeth, that if a Goat chaunce to licke with his tongue, or to brouse an Olive when it buddeth the first spring, the same tree will surely be barrain and lie in great daunger to miscarrie and die. Thus much of the Olive tree, and of the oile of Olives.

CHAP. IX.

All kinds of Fruit good to eat, and their nature.

EAS for all other fruits of trees, they are hardly to be numbred and reckoned by their forme and figure; much lesse by their sundrie tastes and divers juices that they yeeld, so intermingled they are together by varietie of graffing one into another.

CHAP. X.

Of Pine-nuts or Pine-apples, foure sorts.

THE Pine nuts (which are the biggest of that kind and hanging highest upon the tree) doe contain and nourish slender kernels enclosed within certain hollow beds full of holes, and besides clothed and clad with another coat or huske of a dark murrey colour: wherein may be seene the wonderfull care and providence of Nature, to bestow the seeds so soft. A second kind there be of these nuts called *Terentines*, having a shell or huske very brittle and easie to be crushed betweene ones fingers; and as soone are they pecked through with birds bills, who after that manner filch and steale them from off the tree. A third sort yet there is of them, which come of the gentle Pitch trees, having their kernels couched within a thin huske or skin more like than a shell, and the same so soft, that it may bee chewed and eaten together with the kernell. Now there is a fourth fruit growing of the wild Pine, and called those Nuts are of the Grecians, *Pitydia*;

dia; and these be singular good against the cough. The Taurines in Calabria, have a device to confect Pine-nut kernels, by seething them in honey; and being thus condite, they call them Aquiceli. To conclude, at the solemne and festivall games holden at Isthmus, they who win the best prize, are wont to be crowned with a chaplet of the Pine.

CHAP. XI.

¶ *Of the Quince.*

NEXT to Pine apples, for big and large, are the Quinces, which we call Cotonea, the Greeks Cydonea, because they were first brought out of Candie. So heavie and massie they be, that they bend the boughs to the ground as they hang upon the tree, and will not suffer their mother to grow.

Many kinds there be of Quinces, to wit, Chrysomela, of a colour inclining to gold, & divided by certain cut lines. Secondly, there be the Quinces of our owne country, and so called: these be whiter, & of an excellent smell. They also that come out of the realm of Naples, be highly esteemed. Now there be a smaller sort of the same kind called Struthea [i. the Peare-quince] & those doe cast a more odoriferous smell: late they be ere they come to ripeness or perfection; whereas contrariwise the greene Quinces called Mustea, be as hastie and soone melow. Now if a man doe graffe the great Quinces upon the Struthea, the tree will bring forth a kind of Quinces by themselves called Mulviana; and these ate the Quinces alone of all other that may be eaten raw. In summe, all the sort of these are come now adaires to be entertained within the waiting or presence chambers of our great personages; where men give attendance to salute them as they come forth every morning; and in bed-chambers also they are to garnish the images standing about the beds head and sides.

There are besides small wild Quinces, next to the Peare-quince Struthea, for pleasant and odoriferous smell; and they grow commonly in hedge-rows.

Moreover, as well Peaches as Pomegranats, notwithstanding they be of a divers kind, yet we call Mala [i. Apples.] As for the Pomegranats, we have spoken of nine sorts of them in our treatise of their trees, and others in Affricke: and these are full of certaine graines or kernels Tying enclosed under their rind; whereas Peaches have in stead thereof, a grosse stone or woodie substance within the carnous pulpe of the fruit. To conclude, there be certaine Peares weighing a pound, in regard of which poise and bignesse that they beare, called they are Libralia.

CHAP. XII.

¶ *Of the Peach, and foure kinds thereof.*

OF all Peaches, the principall be those which are named Duracina, for the solide substance of the meat within them. As for the French and Asiaticke Peaches, they beare the name of the regions and nations from whence they come. This fruit ordinarily waxeth ripe after the fall of the leafe, or Autumne: but the Abricofts are readie to be eaten in Summer. These have not been knowne full thirtie yeares, and at their first comming up, were sold for Romane deniers apeece: whereof there be two sorts; Supernatia, which we have from the high countries, and namely the Sabines; and Popularia, which grow common every where. These fruits bee harmlesse, and much desired of sicke folke: and for that they are in such request, there would be given otherwhiles thirtie Sesterces for one of them; which is a price as high as of any other fruit whatsoever: whereat we may marvell the rather, for that there is not any sooner gone, and lasteth lesse while than they: for being once gathered from the tree, they will not be kept above two daies at the most, and therefore must of necessitie be sold and spent out of hand.

CHAP. XIII.

¶ *Of the Plum-tree, eleven kinds of them.*

TO come now to Plums, there is a world of them: some of sundrie colours, others blacke, and some againe white. There be that are called Hordearia, because they be ripe in barley-harvest: and some there be of the same colour, yet later ere they ripen, and bigger besides; and

A and for that they be of small reckoning, named they are *Afinina* [*i. *Affe-plums.*] Ye shall have of them that be black, howbeit the yellow wheat-plum like virgin wax, and the purple, are better esteemed. Moreover, there are a kind of *Abricots* come from a forraine nation, and they be called thereupon *Armeniaca*, which alone for their smell also, are commendable. But there is a peculiar braverie and a shamelesse, which those *Plums* have by themselves that are grafted in Nut-tree stocks; they retain the face and forme still of the mother grasse, but they get the tast of the stocke wherein they are set, as it were by way of adoption: of them both they carrie the name, and are called *Nut-plums*. Now, as well these, as *Peaches*, yellow wheat-plums, and the wild *Bullaife*, may be kept and preserved as grapes in Autumne, within certaine barrells or earthen vessells, and so they will continue good till new come. As for all other *Plums*, as they be soon ripe, so they are as soone gone.

* As our best-plums.

B It is not long since, that in the realme of *Granado* and *Andalusia*, they began to graffe *plums* upon apple-tree stocks, and those brought forth *Plums* named *Apple-plums*: as also others called *Almond-plums*, grafted upon *Almond* stocks; these have within their stone a kernell like an *Almond*: and verily there is not a fruit againe wherein is seene a wittier devise to conjoyne and represent in one and the same subject, two divers sorts.

C As for *Damascene-plums* (taking name of *Damasco* in *Syria*) wee have sufficiently spoken thereof in our treatise of straunge trees: and yet long since they have been knowne to grow in *Italy*: which although they have a large stone and little carnositie about them, yet they never wither into wrinkles and rivels when they be drie, for that they want the full strength of the kind sunne which they had in *Syria*.

D We should do well to write together with them, of the fruit *Sebesten*, which also come from the same *Syria*, albeit now of late they begin to grow at *Rome*, beeing grafted upon *Sorvices*. As touching *Peaches* in generall, the very name in *Laine*, whereby they are called *Perfica*, doth evidently shew that they were brought out of *Persis* first; and that it is a fruit not ordinarie either in *Greece* or *Natolia*, but a meere straunger there. Contrariwise wild *plums* (as it is well known) grow every where. I marvell therefore so much the more, that *Cato* made no mention thereof, considering that of purpose he shewed the manner, how to preserve and keepe divers wild fruits, untill new came: for long it was first ere *Peach* trees came into these parts, and much adoe there was before they could be brought for to prosper with us, seeing that in the *Iland Rhodes* (which was their place of habitation next to *Ægypt*) they beare not at all, but are altogether barraine.

E And whereas it is said, That *Peaches* be venomous in *Persia*, and do cause great torments in them who doe eat thereof; as also that the *KK*. of *Persia* in old time caused them to be transported over into *Ægypt* by way of revenge to plague that country; and notwithstanding their poisonous nature, yet through the goodnes of that soile they became good and holefome: all this is nothing but a meere fable and a lowd lie. True it is indeed, that the best writers who have been painfull above others to search out the truth, have reported so much concerning the tree *Persea*; which is far different from the *Peach* tree *Perfica*, & beareth fruit like unto *Sebesten*, of colour red, and willingly would not grow in any country without the East parts. And yet the wiser and more learned *Clarks* do hold, That it was not the tree *Persea* which was brought out of *Persis* into *Ægypt*, for to annoy and plague the country, but that it was planted first by king *Perses* at *Memphis*. Whereupon it came, that *Alexander* the Great ordained, That all victors who had woon the prize at any game there, should be crowned with a chaplet of that tree, to honour the memoriall of his great grandfathers father. But how ever it be, certain it is that this tree continueth green all the yeare long, and beareth evermore fruit one under another, new and old together. And to returne againe to our *Plum*-trees, evident it is that in *Catoes* time they were not knowne in *Italie*, but all the *Plum*-trees which we now have, are come since he died.

CHAP. XIII.

Of nine and twentie kinds of Fruits, contained under the names of Apples.

F **O**f *Apples* (that is to say, of fruits that have tender skins to be pared off) there be many sorts. For as touching *Pome-citrons*, together with their tree, we have already written. The *Greekes* call them *Medica*, according to the name of the country from whence they first came in old time. As for *Injubes*, as also the fruit *Tuberes*, they be likewise straungers as

well as the rest: and long it is not since they arrived first in Italie; the one sort out of Affricke, G the other (namely Injubes) out of Syria. And *Sextus Papinius* (whome my selfe in my time saw Confull of Rome) was the first man that brought them both into these parts; namely, in the latter end of *Augustus Caesar* the Emperour, and planted them about the rampiers of his camp for to beautifie the same: howbeit (to say a truth) their fruit resembled rather berries than apples; yet they make a goodly shew upon the rampiers: and no marveile, since that now adaies whole groves of trees begin to over-top and surmount the houses of privat persons.

Concerning the fruit Tuberes, there be two sorts thereof, to wit, the white, and the reddish, called also Sericum, of the colour of silke.

The apples named Lanata, are held in manner for strangers in Italie, and are known to grow but in one place thereof, and namely within the territorie of Verona. Covered they be all over with a kind of down or fine cotton, which albeit both Quince and Peach be clad and overgrown with in great plentie, yet these alone carie the name thereof: for otherwise no speciall proprietie are they knowne by, to commend them. H

A number of apples there are besides that have immortalized their first founders and inventors, who brought them into name, & caused them to be known abroad in the world; as if therein they had performed some worthy deed beneficiall unto all mankind. In which regard, why should I thinke much to rehearse and reckon them up particularly by name? for if I be not much deceived, thereby will appeare the singular wit that some men employed in grafting trees; and how there is not so small a matter, so it be well & cunningly done, but it is able to get honor to the first author, yea and to eternize his name for ever. From hence it cometh, that our best apples take their denominations, of *Marius*, *Cestius*, *Mantius*, and *Claudius*. I As for the Quince-apples (which come of a Quince grafted upon an apple stocke) they are called Appiana, of one *Appius* who was of the *Claudian* house, and first devised and practised that feat. These apples carrie the sinell with them of Quinces: they beare in quantitie the bignesse of the *Claudian* apples, and are of colour red. Now least any man should thinke, that this fruit came into credit by reason onely of partiall favour, for that the first inventor was a man descended from so auncient and noble a familie, let him but thinke of the apples *Sceptiana*, which are in as great request as they, for their passing roundnesse; and they beare the name of one *Sceptius* their first inventor, who was no better than the sonne of a slave lately enfranchised. *Cato* maketh mention of apples called *Quiriana*, as also of *Scantiana*, which he saith the manner is to put up in vessels, and so to keepe them. K But of all others, the last that were adopted and tooke name of their patrons and inventors, be *Petisia*: little though they be, yet are they passing sweet and pleasant to be eaten.

Others apples there are that have ennobled the countries from whence they came, and caried their names, to wit, *Camerina* and *Græcula*. All the rest tooke name, either upon some occasion or proprietie that they have: to wit, of brotherhood, as the twin-apples *Gemella*, which hang one to another by couples, and never are found single, but alwaies grow double: of their colour, as the *Serica*, which for their fresh hew be so called: of kinred and affinitie, as the *Melapia*, for their resemblance and participation of apples and Peares together; as a man would say, *Pearc-apples*, or *Pom-poures*: of their hastie ripenesse, as the *Multea*, [*i. hastie-apples*;] which now of their sweet tast of hony, are called *Melimela*, [*i. hony-apples*;] also of their exquisite roundnesse like a ball, as the *Orbiculata*, [*i. the round-apples*.] L That these apples came first from their native countrey *Epirus*, appeareth by the *Greeks* who call them *Epirotica*. Againe, some there be that take their denomination of their forme, resembling womens paps or breasts, as namely, *Orthomastica*, [*i. the Brest-apples*.] Others, for that their condition is to have no pepins or seed within them, be called of the *Belgians*, *Spadoma*, as one would say, *Guelded-apples*. As for the *Melofolia*, [*i. the Lease-apples*] they be so called, because they have one lease and otherwhile twaine breaking foorth of their side in the very mids. The ragged apples *Pannucea* take this name, for that of all others they soonest be riveld. The Puffes named *Pulmonea*, are hoven foolishly, and swell I cannot tell how, with little or nothing in them. Some in colour resemble bloud, they are so red, because at first they were grafted upon a mulberry. But all apples ordinarily M are red on that side that regardeth the sunne.

As for Wildings and Crabs, little they be all the sort of them, in comparison: their tast is well enough liked, and they carie with them a quicke and sharp smell: howbeit this gift they have for their harsh sournesse, that they have many a foule word and shrewd curse given them, and that they

A they are able to dull the edge of any knife that shall cut them. To conclude, the Dacian Apples are of all others in manner least accepted, notwithstanding they be first mellow, and would be gathered betimes.

CHAP. XV.

Of Peares. And of the varietie of grafting.

VPon the same cause there be Peares also reproched with the name of Pride, and are called the Proud-peares: little they are, but quickly ripe, and as soone gone. Of all others the Crustumine peares be most delicat and pleasant in tast. Next to them in request are the Falerne peares, so called for their great abundance of liquor, as it were wine, whereof they are full. And these are named likewise the milke-peares: but such of them as are of colour blacke, be called the Syrian peares. As for other peares, they have sundrie names according to the countries where in they grow. Howbeit these peares following, retaine their name still in all places, and represent always the memoriall of those that first planted or grafted them, to wit, Decimiana of one *Decimus*, a knowne citizen of Rome: of which is also a bastard kind which they call Pseudodecimiana. Likewise, the Dolobellian peare, of one *Dolabella*: and those are of all other the longest tailed. As touching the Pompeian peares, which be also called the Pap or Teat-peares, the Licerian, the Severian, and of their race the Tyrannian, they differ one from another in the length of their steale. The red Favonian peares be somewhat greater than the abovenamed Proud-peares. As for the Laterian and Anitian, which be not gathered nor ripe untill Autumne be past, they have a pretie tart and fourish tast, but nathelesse pleasant ynough. The Tyberian peares beare the name of *Tiberius* the Emperour, for that of all others he loved that fruit best: they might goe for Licerians well ynough, so like they be unto them, save onely that they grow big, and are more deeply coloured with the Sunne.

Moreover, there be peares which are known by no other name than of the countries where they grow, namely, those of Ameria which are more lateward than any other: the Picentine, Numantine, Alexandrine, Numidian, Grecian, and among them the Tarentine. Also the Signine pears, which many call Testacea, of the colour of earthen pots which they resemble; like as others be named Onychium, for that they represent the Onyx stone, or a mans naile; as also those which be called Purple-peares.

D Furthermore, peares take their name of the odour which they yeeld: thus there be Myrapia, to wit, Aromaticall-peares, Laurell, and Nard-peares. Of the time also when they be ripe, as the Barley-peares: of the forme of their neck, as the Bottle peares called Ampullacca: of their thick skin, as the Coriolana. As for the Gourd-peares, they are by nature of a brutish and savage kind; so harsh, so foure and eager a liquor they doe yeeld.

Many sorts of peares there are, whereof we can give no certaine reason for their denomination, namely, the Barbarian and Venerian peares, which also be called Coloured: likewise, the roiall peares, which hang or rather sticke flat to the tree, so short a steele they have. The Patritian also and Vocouian peares, which are both greene and long. Moreover, *Virgil* hath spoken of the Voleman peares or wardens, which he had from *Cato*, who also nameth the Sementium or the E haste and soone ripe peares. So as in this point verily the world is growne already to the highest pitch, in so much, as there is not a fruit, but men have made triall and many experiments, for even in *Virgil*'s daies the devise of grafting strange fruits, was very ripe: considering that he speaketh of the Arbut tree grafted upon Nut-trees, the Plane upon Apple trees, and the Elme upon Cherrie stockes. In such sort, as I see not how men can devise to proceed farther. And certes for this long time, there hath not been a newkind of Apple or other fruit heard of.

And yet as industrious as men have been that way, they are not permitted to graffe all manner of trees indifferently one in another, no more than it is lawfull to graffe upon bushes and thornes: seeing that it is not so easie a matter to appease lightnings: for looke how many sorts of trees are thus engrafted contrarie to nature, so many kinds of lightnings and thunderbolts by report, are flashed and shot at once.

F Peares naturally are more sharpe-pointed at one end than Apples. And among them, the Greeke peares, the Gourd and Lawrell peares are last of all others ripe: for they hang upon the tree untill Winter, and they mellow with very frost: like as the Amerine and Scantiane apples.

Furthermore, peares are kept and preserved as grapes, and after so many waies: but none of them

them are put in barrels as plums be. Finally, Peares and Apples both, have the properties of wine: and in like sort Physicians be warie how they give them to their patients. Howbeit, when they be foddren in wine and water, they serve in stead of a broth or grewell: and so doe no fruit else but Pome and Pearc-Quinces. G

CHAP. XVI.

☞ *The manner how to preserve Apples.*

THe generall rules to keepe and preserve Apples, are these. *Imprimis*, That the solar be well planked and boorded in a cold and drie place; provided alwaies, that the windowes to the North doe stand open, especially every faire day. *Item*, to keepe the windows into the South shut, against the winds out of that corner: and yet the North winds also where they blow, do cause Apples to shrinke and rivell ilfavouredly. *Item*, That Apples bee gathered after the Æquinox in the Autumne: and neither before the full of the Moone, nor the first houre of the day. Moreover, that all the Apples which fell, be severed from the other by themselves, and laid apart: also that they be bedded upon straw, mats, or chaffe under them: that they be so couched, as that they touch not one another, but have spaces betweene to receive equall aire for to be vented. To conclude, this is well knowne, that the Amerine Apples do last and keepe good long, wheras the honie Apples will abide no time. H

CHAP. XVII.

☞ *How to keepe Quinces, Pome-granates, Peares, Sorvisses, and Grapes.*

FOr the good keeping and preserving of Quinces, there must be no aire let into them where they are enclosed: or els they ought to be confected in foddren honey, or boiled therein. I

Pomgranates should be plunged into sea-water boiling, and so hardened therein: and after that they be dried in the Sunne three daies, (so as they be not left abroad in the night to take dew) they would be hanged up in a solar, and when a man list to use them, then they must be well washed in fresh water. *M. Varro* setteth downe the manner to keepe them within great earthen vessels, in sand. And if they be not ripe, he would have the earthen pots bottomes broken off, and so the Pomgranates to be put in, and covered all over with mould: but the mouth thereof must be well stopped for letting any aire in; provided alwaies, that the steele and the branch whereto the fruit groweth, be pitched. For so (quoth he) they will not give over to grow still, yea, & prove bigger than if they had remained upon the tree. As for other Pomgranates [that are ripe] they may be wrapped and lapped one by one in fig-leaves, such as are not fallen, but plucked from off the tree greene, and then to bee put into twigge paniers of oifiers, or els daubed over with potters clay. K

He that would keepe Peares long, must put them in earthen vessels turned with the bottomes upward, well varnished or annealed within, covered also with saw dust or fine shavings, and so entered. As for the Tarentine Peares, they abide longest on the tree ere they be gathered. The Anitian Peares be well preserved in cuit-wine. L

As for Sorvisses, they are kept also in trenches within the ground, but the cover of the vessell whereinto they are put, ought to be well plastered all over, and so to stand two foot covered with earth: also they may be set in a place exposed open to the Sunne, with the bottome of the vessels upward: yea, and within great barrels they may be hung up with their branches and all, after the manner of grape-clusters.

Some of our moderne writers handle this argument more deeply than others, and fetch the matter farre off, giving out rules in this manner, saying, That for to have Apples or Grapes *de garde*, that is to say, fit to be preserved, and to last long; the trees that beare the one and the other, ought to be pruned and cut betimes, in the waine of the Moone, in faire weather, and when the winds blow drie. Likewise they affirme, That fruits to be preserved, would be chosen from drie grounds: gathered before they be full ripe: and this would be looked unto in any hand, that the Moone at the gathering time, be under the earth, and not appearing in our hemisphære. And more particularly, for Grape bunches they would be gathered with a foot or heele from the old hard wood, and the Grapes that are corrupt and rotten among the rest, be clipped off with a paire M

A paire of sheeres, or plucked out with pincers: then to be hung up within a great new earthen vessel well pitched; with the head or lid thereof thoroughly stopped and plastered up close, to exclude all aire. After which manner, they say Sorvisses and Peares may be kept, but so, as in any case the twigs and steeles whereby they hang, be well besmeared with pitch. Moreover, order would be given, that the barrels or vessels wherein they are kept, be far ynough from water. Some againe there be who keepe Grapes together with their branch, after the same manner in platter: but so, as both ends of the said branch sticke in the head of the sea-Onion Squilla: and others let Grape-clusters hang within hogheads and pipes having wine in them: but so, as the Grapes touch not the wine in any case. There be also that put Apples and such fruits in shallow pans or pancheons of earth, and let them swim and floate aloft upon the wine within their vessels: for besides that this is a way to preserve them, the wine also (as they thinke) will thereby get a pleasant and odoriferous tast. Others yee have besides, that chuse rather to preserve all these fruits, as well Apples, Peares, &c. as Grapes, covered in Miller seed. Howbeit, the most part dig a trench or ditch two foot deep in the ground, they floore it with sand in the bottome, & lay their fruits thereupon; then they stop the top with an earthen lid, and afterwards cover all with earth. Some there are which smeare their bunches of Grapes all over with potters clay, and when they are dried in the Sunne, hang them up in solars for their use: and against the time that they should occupie them, steepe them in the water, and so wash off the foresaid clay. But for to keepe Apples that are of any worth, they temper the same clay with wine, and make a mortar thereof, wherein they lap the said Apples. Now if those Apples be of the best kind and right soveraigne, after the same sort they cover them with a crust of the like past or mortar, or else clad them within a coat of waxe: and if they were not fully ripe before, they grow by that meanes, and breake their crust or cover what ever it be. But this would not be forgotten, that they use alwaies to set the Apple or fruit upright upon the taile, howsoever they be kept. Some there are who gather Apples and such like fruit with their slips & sprigs, hide them within the pith of an Elder tree, and then cover them in earth, as is before written. And others there are, who for every Peare or Apple, have a severall earthen pot, and after that their lids be well closed and stopped with pitch, then they enclose them againe with great vessels or tuns. Nay, ye shall have some to lap them with flockes and wooll, and so put them in cases, and them they see well luted with mortar made of clay and chaffe tempered together. Some order them in the same sort, but they put them in earthen pans: and others make no more adoe, but dig an hole in the ground, floore the bottome with a course of sand, put the Apples or fruit within, and then anone when they are thus buried, cover all with mould. There be that use Quinces in this wise; they take them, annoint them with waxe comming out of Pontus, and suffer them afterwards to lie covered in honie.

Columella mine author reporteth, That fruits will keepe well in earthen pots thoroughly pitched, and afterwards set in pits, and drenched in cesternes of water. In the maritime coasts of Liguria next to the Alpes, they use to take Grapes after they are dried in the Sun, and wrap them within bands of rushes and reeds, put them up in little barrels, and stop them close with plaster. The Greekes have the same fashion: but they take for that purpose, the leaves of the Plane-tree, of the vine it selfe, or else the fig-tree, after they be dried one day in the shade: and when they be in the barrell, betweene every bed of grape clusters, they couch a course of grape kernels, and such refuse remaining after the presse. And in this manner are the grapes of Coos and Berytus preserved: and for sweetnesse and pleasant tast, there are no better to be found. And some there be, that for to counterfeit these excellent Grapes, besmeare them with lie ashes so soone as ever they be pulled from the Vine, and presently drie them in the Sunne: which done, they enwrap them within leaves, as hath been said before, and so couch them close within the cake of pressed grapes. Neverthelesse, there be divers that chuse rather to keepe Grapes in the saw dust or shavings of Firre wood, Poplar, or Ash. Some are afraid to let Grapes hang neare to Apples, Pomegranates, and such like fruit, and therefore give in charge to let them presently after they bee gathered, for to bee hung up in garners or boarded lofts: supposing that the dust which they gather from above, is the best cover to defend and preserve them. The remedie to keepe Wespes from them, is to spurt or squirt oile out of a mans mouth upon them. And thus much concerning the way to preserve Grapes and other fruits aforesaid. As for Dates, we have spoken sufficiently before, of them.

OF all other fruits which have tender pills or skins, and are called in Latine, Poma, Figs are the biggest: for some of them are found to be as great as Peares. As touching the Sycomores of Ægypt and Cypres, and of their admirable fruit, we have written ynough in the treatise of forraine Trees. The Idæan Figs that come from the mountaine Ida, are of colour red, of the bignesse of Olives, onely rounder they be, & in tast resemble Medlars. In the region about Troas neare unto the said hill Ida, they call that fig-tree Alexandrina. It is as thicke as a mans arme about at the cubite or elbow, and full of branches: the wood thereof is tough and strong, howbeit, pliable to wind and bend which way a man would have it. Void of milkie substance it is, clad with a greene barke, bearing leaves like the Tillet or Linden tree, but that they be soft. *Oenescritus* writeth, that the Fig-trees in Hyrcania beare more pleasant fruit than ours in Italie, without all comparifon: also that they carie a greater burden, and be farre more plentifull, inso much, as one of them doth ordinarily yeeld 270 Modij of Figs. We have here also in Italie many Fig-trees brought out of other forraine countries, to wit, from Chalcis and Chios: whereof there be many sorts. For both our Lydian Figs which are of a reddish purple colour, and also the Mammillane or teat-Figs, have a resemblance of the said Chalcidian and Chian Figs, yea, and the Callistruthion Figs beyond others not a little, in goodnesse of tast: and these of all the rest are the coldest. For as touching the Affricane Figs, which many men prefer before all others, they hold the name of Affricke, as if it were their native countrey: and yet there is a great question thereabout, and I wot not well what to say thereof, considering that it is not long agoe that Affricke began first to have Fig-trees. For the Alexandrine Figs are of the blacke kind, having a white rift or chamfre, and are surnamed Delicate. The Rhodian Fig is likewise blacke of hue: and so is the Tiburtine, which also is of the hastie kind, and ripe before others.

Moreover, there be certaine Figges which beare the names of those that brought them first into Italie: namely, the Livian and Pompeian, and such are fittest to bee dried in the Sunne, and so to be kept all the yeare long for a mans use: like as the illfavoured, foolish, and gaping Figges *Mariscæ*: as also those that are speckled with spots like the leaves of the Laconian reeds.

There are besides the Herculean, Albicerate, and Aratian white Figs, which of all other are most flat and broadest, and withall have the least taile or steele whereby they hang. The Porphyrice Figs first shew upon the tree, and ordinarily are longest tailed. The smallest Figs called the popular Figs, which also are of all others the basest and of least account, come next after and beare the Porphyrices companie. Contrariwise, the Chelidonian Figges be the last: and ripen against Winter.

Moreover, certaine Figs there be which are both early, and also lateward: namely, such as beare twice a yeare: and be both blacke and white: for they are ripe first in harvest, and afterwards, in time of vintage. Late also it is before the Duracinæ be ripe, so called of the hard skin which they have. Also some there be of the Chalcidian kind which beare thrice a yeare. At Tarentum there grow none but such as are exceeding sweet, and those they call *Omas* [or rather *Oenadas*, tasting of wine.]

Cato in his treatise of Figs writeth thus, The unfavorie Fig dotes, *Mariscæ*, would be sowne in an open, light, and chalkie ground. But the Affricane, Herculeane, and the Winter Saguntine Figges, as also the Telliæ (which are blacke and long tailed) love a fatter soile, or else well dunged.

After this, Figges have chaunged into so many kinds, and altered their names very often: in such sort, that by this point it is evident, how the world is altered, and to what varietie this life is subject. In some provinces, as namely in *Moesia*, there be winter Figs that hang all Winter long: but they come to be such, more by art and cunning, than naturally of themselves. For so soone as Autumne is passed, and Winter approacheth, they use to cover with dung certaine little Fig-trees which they have, and together with them the greene yong Figs which they find upon them in Winter: and when they have continued so the sharpe time of dead Winter, so soone as the weather beginneth to be more warme and temperate, they discharge both fruit and tree of their dung: which being thus let out againe (as it were) where they seemed buried, and now comming

A to light; they no sooner find the fresh aire, and another kind of nourishment differing from that, whereby they lived, but doe embrace and receive the comfort of the new Sunne most greedily, as if they were new born and revived: in such sort, as that in Moesia, notwithstanding it be a most cold region, ye shall have the figs of these trees to ripen, when others begin to blossome: and by this meanes become early and hastie figs in another yeare.

Now for as much as we are fallen to mention the figs in Affricke, which were in so great request in the time of *Cato*, I am put in mind to speake somewhat of that notable opportunitie and occasion, which by the meanes of that fruit he tooke for to root out the Carthaginians, and raise their very citie. For as he was a man who hated deadly that citie, & was otherwise carefull to provide for the quiet and securitie of his posteritie, he gave not over at every sitting of the Senate, to importune the Senators of Rome, and to crie out in their eares, That they would resolve and take order to destroy Carthage. And in very truth, one day above the rest, he brought with him into the Senate house an early or hastie fig which came out of that countrey: and shewing it before all the lords of the Senate, I would demaund of you (quoth he) how long agoe it is (as you think) since this figge was gathered from the tree? And when none of them could denie but that it was fresh and new gotten. Lo (quoth he) my maisters all, this I doe you to weet, It is not yet full three daies past, since this figge was gathered at Carthage: see how neare to the wals of our cittie wee have a mortall enemy. Vpon which remonstrance of his, presently they concluded to begin the third and last Punicke warre, wherein Carthage was utterly subverted and overthrowne. Howbeit *Cato* survived not the rasing and saccage of Carthage, for he died the yeare immediatly following this resolution. But what shall we say of this man? whether was more admirable in this act, his provident care and promptnesse of spirit; or the occasion presented by the suddaine object of the fig? was the present resolution and forward expedition of the Senate, or the vehement earnestnesse of *Cato*, more effectuall to this enterprize? Certes, somewhat there is above all, and nothing in mine opinion more wonderfull, that so great a signorie and state as Carthage, which had contended for the Empire of the world for the space of a hundred and twentie yeares, & that, with the great conquerors the Romanes, should thus be ruined and brought to nought, by occasion of one fig. A desseigne, that neither the fields lost at Trebia and Thrasymenus, nor the disgrace received at the battell of Cannas, wherein so many brave Romanes lost their lives and left their dead bodies on the ground to be enterred, could never effect: nay not the disdain that they tooke to see the Carthaginians encamped and fortified within three miles of Rome, ne yet the bravadoes of *Anniball* in person riding before the gate Collina, even to dare them, could ever bring to passe. See how *Cato* by the meanes of one poore fig, prevailed to bring and present the forces of Rome to the very wals of Carthage.

There is a fig-tree called *Navia*, honoured with great reverence, in the common Forum and publicke place of justice at Rome, even where the solemne assemblies are held for elections of magistrates neare to the Curia, under the old shops called *Veteres*: as if the gods had consecrated it for that purpose: neare (I say) it is to the Tribunall named *Puteoli Libonis*, & planted there by *Aetius Navius* the Augur, where the sacred reliques of his miracle, to wit, the Rasour and the Whetstone, were solemnelly enterred: as if it came of the owne accord from the said Curia into the Comitium, and had not been set by *Navius*. This tree if it begin at any time to wither, there is another replanted by the Priests, who that way are very carefull & ceremonious. But a greater respect there is had of another in remembrance of the first fig-tree named *Ruminalis* (as it were) the nource of *Romulus* & *Remus*, the two young princes fondlings, and founders also of the citie of Rome: for that under it was found a shee Wolfe giving to those little babes the teat (which in Latine they called *Rumen*): and for a memoriall hereof there is a monument of Brassie erected neare unto it, representing that straunge and wonderfull storie. There grew also a third fig-tree before the temple of *Saturne*, which in the yeare 260 after the foundation of the citie of Rome, was taken away: at what time as a chappell was built there by the Vestall nuns, and an expiatorie sacrifice offered, for that it overthrowne the image of *Sylvanus*. There is a tree of the same kind yet living, which came to grow of it selfe, no man knoweth how, in the middest of the Forum Romanum, and in that very place where was the deepe chinke and gaping of the ground, that menaced the ruine of the Romane Empire; which fatall and porrentious gulfe, the renowned knight *Currius* filled up with the best things that were to be found in the citie, to wit, his Vertue & Pietie incomparable, testified by a most brave and glorious death. In the very same place likewise there is

an Olive and a Vine, which came thither by as meere a chaunce, but afterwards well looked and trimmed by the whole people for to enjoy the pleasure of the shade thereof. And there also stood an altar, which afterwards was taken away by occasion of the solemne shew of sword-fencers, which *Iulius Casar* late Emperour, exhibited to doe the people pleasure, which were the last that plaid their prices and fought at the sharpe in the said Forum. To conclude, wonderfull it is to see, how the fruit of this tree maketh hast to ripe: a man would say that Nature therein sheweth all her skill and force to ripen figs all together at once.

CHAP. XIX.

Of the wild Fig-trees: and of caprification.

There is a kind of wild fig-trees, which the Latines call *Caprificus*, that never bringeth any fruit to maturitie: but that which it selfe hath not, it procureth to others, and causeth them to ripen. For such is the interchangeable course & passage of causes in Nature, that as this thing putrifieth, that engendreth; and the corruption of one is the generation of another. By this it comes to passe, that the wild fig-tree breedeth certaine flies or gnats within the fruit thereof: which wanting nourishment, and not having to feed upon in those figs, because they become rotten and putrified as they hang upon the tree, they flie unto the other kind of gentle and tame fig-trees, where they settle upon the figs, and greedily nibble thereupon, untill they have made way, and pierced into them; and by that means let in at first the breath of the warme Sunne, and that comfortable and vegetative aire besides, that helpeth to ripen them. Soone after they sticke up and spend the milkie humor which they find there, and which keepeth the figs still as it were in their infancie, and hindereth their speedie and timely maturitie. True it is, that the figs in time would ripen of themselves by the power and benefite of Nature onely: howbeit, skilfull and industrious husbandmen take order alwaies to set these wild fig-trees near to the place where other fig-trees grow, but with due regard of the wind side, that when the foresaid gnats breake forth and are readie to flie out, a blast of wind might carie them to the other. And hereupon came the devise and invention to bring whole swarms and casts of them as they hang one to another, from other places, that they might settle upon the figs to consume the raw moisture within. Now, if the soile be leane and hungrie, and the fig-trees growing thereupon exposed to the North wind, there is no such need of this help: for the figs will drie sufficiently of themselves, by reason as well of the situation of the place, as the clifts & ruts in them, which will effect that which the gnats or flies abovenamed might performe. The like effect is to be seene also where much dust is, namely, if a fig-tree grow neare unto an high way, much frequented and travelled by passengers. For the nature of dust is to drie and soke up the superfluous moisture of the milke within figges. And therefore when they are thus dried, whether it be by the meanes of dust, or of the said flies feeding, which is called *Caprification*, they fall not from the tree so easily: by reason they are discharged of that liquid substance, which maketh them both tender and also ponderous, weightie, and brittle withall.

All figges ordinarily are tender and soft in handling. Those which be ripe, have small graines within them: their succulent substance besides, when they begin to ripen, is white like milke: but when they are perfectly ripe, it is of the colour of honic. They will hang upon the tree untill they be old: and when they are aged, they yeeld a certaine liquor which distilleth from them in manner of a gum, and then in the end become drie.

The better sort of figges have this honour and priviledge, to be kept in boxes and cases for the purpose: and principally those that come from the Isle *Ebusus*, which of all others are the very best and largest: yea, and next to them those that grow in the *Marrucines* countrey. But where they are in more plentie, they put them up in great vessels called *Oræ*, as namely in *Asia*: also in barrels and pipes, as at *Ruspina*, a citie in *Barbarie*. And in very truth, the people of those countries make that use of them when they be drie, that they serve both for bread and meat. For *Cato* setting downe an order for diet and victuals fit and sufficient for labourers, ordained, that they should be cut short of their other pittance, when figs are ripe, and make up their full meales with it. And it is not long since the manner came up, to eat fresh new figges with salt and powdered meats, in stead of cheefe. And for to be eaten in this sort, the figges called *Coctana*, (wherof we have written before) and the dried figs *Caricæ* are commended: as also the *Caunæ*, which

A which when *M. Crassus* should embarke, in that expedition against the Parthians (wherein hee was slaine) presaged ill fortune, and warned him not to go forward: namely, when at the very instant that he was readie to set foot a shipbourn, there was a fellow heard to crie those figs for to be sold, pronouncing aloud, *Cauneas, Cauneas*; which word in short speaking was all one with *Cave ne eas*, [*i. Beware of this voiage, and goe it not.*] All these sorts of figs, *L. Vitellius* brought out of Syria, unto his ferme or manour that he had neare Alba. Having been *L. governour* or Lieutenant generall in those parts, namely, in the latter end of *Tyberius Caesar* the Emperour: and the same *Vitellius* was afterward Cenfor at Rome.

CHAP. XX.

Of Medlars: three kinds of them.

Medlars and Servises, may well and truly be raunged in the ranke of Apples and Peares. Medlars be of three sorts; namely, *Anthedon*, and *Serania*, and the third which they call *Gallicum*, [*i. the French medlar*] which is of a bastard nature, yet it resembleth the *Anthedon*, rather than the other. As for the *Seranian medlar*, the fruit is greater and whiter than the rest; also the kernels or stones within are of a more soft substance, and not altogether so woodie and hard. The rest are smaller than these *Serania* or common Medlars, but they have a better smell and more odoriferous, and withall will last longer. The tree itseife that beareth Medlars, is reckoned among the greatest sort: the eaves before they fall, wax red: the roots be many in number, and run downe right deepe into the ground; by which means, unneeth or very hardly, they be quite rooted up. This tree was not known in *Italie* by *Catoes* daies.

CHAP. XXI.

Of Servises, foure kinds.

Of Servises there be foure sundry sats, differing one from the other: for some of them are round like apples; others pointed at one end as Peares; a third kind are fashioned like eggs, as some long or tankard apples: and these are apt to be soone soure. For sweet sent and pleasant tast, the round excell all cheis: the rest have a rellish of wine. The best kind of them are they that have soft and tender eaves about their steles whereby they hang. The fourth sort they call *Torminale*, allowed one) for the remedie that they affourd to mitigate the torments and wringing of the cholique. This tree is never without fruit, howbeit the smallest of all the rest, and differeth from the other, or it beareth leaves very like to the *Plane*. There are none of them that beare fruit before they be three yeares old. Lastly, *Cato* would have Servises to be preserved and condite in *Cuit*.

CHAP. XXII.

Of the Walnut.

The next place to these for bynesse, the Walnuts do challenge, which they cannot claime for their credit and authorie; & yet they are in some request among other licentious and wanton *Fescennine* ceremonies, at weddings: for lesse they be than *Pine-nuts*, if a man consider the grossenesse of the bod outwardly; but in proportion thereto they have a much bigger kernell within. Moreover, *Nate* hath much graced and honoured these nuts with a peculiar gift that she hath endued them with, namely, a double robe wherewith they are clad: the first, is a tender and soft huske; the next, a hard and woodie shell: which is the cause, that at marriages they serve for religious ceremonies, resembling the manifold tunicles and membranes wherein the infant is lapped and ensted within the wombe: and this reason soundeth more probable, than that they should bee attared, because in their fall they rebound and make a ratling [to drowne (forsooth) all oer noises from the bride-bed or chamber.] That these Nuts also were brought out of *Per* first by commaundement of the Kings, is evident by their Greeke names; for the best kind of them, they call *Perficon*, and *Basilicon*; as one would say, the *Persian* and *Roiall* nut: and the indeed were the first names. Afterwards, the nut came to be named *Caryon*, (by all mens ascession) for the heaviness of head which it causeth, by reason of the

strong smell. Their outward huske serveth to die wooll, and the little nuts when they come new forth, are good to give the haire of the head a reddish or yellow colour: the experiment thereof was first found, by staining folkes hands as they handled them. The elder that nuts be and longer kept, the more oleous and fatter they are. The onely difference of the sundrie kinds, consisteth in the shell, for that of some it is tender and brittle, in others hard; in one sort it is thin, in another thicke: lastly, some have smooth and plaine shels, others againe be as full of holes and cranies.

Walnuts be the fruit alone that Nature hath enclosed with a cover parted in twaine, and so is joined and set together; for the shell is divided and cleft just in the mids, and ech halfe resembleth a little boat. The kernell within is distinguished into foure parts, and betweene every one there runneth a membrane or skin of a woodie substance. As for other nuts, their meat is solide and compact, as we may see in Filberds and Hazels, which also are a kind of nut, and were called heretofore *Abellinæ*, of their native place, from whence came good ones at first. They came out of Pontus into Natolia and Greece, and therefore they be called Ponticke nuts. These Filberds likewise are covered with a soft bearded huske, and as well the shale as the kernell is round and solide, all of one entire peece. These nuts also are parched for to be eaten: and within their belly they have in the mids a little chit or spurt, as if it were a navill.

As for Almonds, they are of the nature of nuts, and are reckoned in a third ranke. An upper huske they have like as Walnuts, but it is thin: like as also a second coverture of a shell. The kernell differeth somewhat; for broader it is and flatter, and their skin more hard, more sharpe, and hotter in tast than that of other nuts. Now whether the Almond tree were in Italie during the life of *Cato*, there is some doubt and question made, because he nameth the Greeke nuts, which some doe hold for a kind of Walnut. Mention maketh he besides of the Hazle nuts or Filberds, as well the * *Galbæ*, as the *Preneftine*, commended by him above all others, which he saith, are put up in pots and kept fresh and greene within the earth. Now adaies the *Thasian* and *Albeutian* nuts be in great account: and two sorts besides of the *Tarentine*; whereof the one hath a tender and brittle shell, the other as hard: and those are the biggest of all other, and nothing round. He speaketh also of the soft-shaled Filberds *Mdlufcæ*, the kernells whereof doe swell and cause their shells to cleave in sunder.

But to returne againe to our Walnuts: some to honour them, interpret their names *Inglandes*, as a man would say, the nuts of *Iupiter*. It is not long since I heard a knight of Rome (a gentleman of high calling and who had been *Consull*) proffesse and say, That he had certaine Walnut trees that bare twice a yeare. As for *Fisticks*, we have spoken already of them. To conclude, these kind of nuts the above-named *Vitellius* brought first into Italy at the same time, namely, a little before the death of *Tyberius* the Emperour: and withall, *Flaccus Pompeius* a knight of Rome, who served in the warres together with him, carried hem over into Spaine.

CHAP. XXIII.

Of Chestnuts, eight kind.

WE entitle Chestens also by the name of Nuts, although indeed they are more aptly to be called a kind of Mast. This fruit what ever it be, is enclosed within an huske, and the same defended and armed all over with a ramier and palaisade (as it were) of sharpe pricks like the skin of an *Vrchin*; whereas the *Acorne* another mast is but halfe covered, and that defence in them, is begun only. And certes, a wondrous matter it is, that we set so little store by this fruit, which Nature is so carefull to hide and defend. Under one of these husks ye shall find sometime three Chestnuts, and those having certain tough pills or shells very pliable. But the skin or filme within, and which is next to the bodie or substance of the fruit, unless it be pilled off and taken away, marreth the tast of it, like as it doth also in other nut-kernels. Chestnuts, if they be roasted, are better and more pleasant meat than otherwise. They use also to grind them to meale, and thereof is made a kind of bread that poore women for hunger will eat. The first Chestnuts were knowne to grow about *Sardis*, and from thence were brought, & therefore the Greekes call them *Sardinian* nuts: but afterwards they came to be named *Διός Βαλανίτις*, [*i. Iupiters* nuts] when as men began to graffe them; for thereby they became more excellent: and at this day there be many sorts of them. The *Tarentine* be gentle, and not hard of digestion, and in forme flat and plaine. That which they call *Balanitis*, is rounder, it is soone pilled and cleansed,

A cleansed, and of it selfe will leape out of the skin. And of this kind, the Salarian is more neat, flat, and smooth: the Tarentine not so easie to bee handled and dealt withall: the Corellian is more commended than the rest; as also the Meterane, which commeth of it by grafting: the manner whereof wee will shew when wee come to treat of grasses. These have a red pilling, in which regard they are preferred before either the three cornered, or the blacke common ones, which be also called *Coctivæ*, [*i. Chestnuts to be boiled.*] The best Chestnuts are they which grow about Tarentum, and Naples in Campaine. All the rest are good in manner for nothing but to feed swine: *so close sticketh the pill or inner skin also, as if it were souldered to the kernell within, and so hard is it to separate the one from the other.

* *Scrupulosa
corticis interio-
ris circa nucleos
quoque firmi-
tatione.*

B

CHAP. XXIII.

¶ *Of Carrobes: of fleshie and pulpous fruits: of Mulberries: of liquid kernels
or graines, and of berries.*

THe fruit called Carobes or Caracts, may seeme to come neate unto the foresaid Chestnuts, (so passing sweet they be) but that their cods also are good to be eaten. They bee as long as a mans finger, and otherwhiles hooked like a faulcheon, and an inch in bredth. As for mast, it cannot be reckoned among fruit properly called Poma, and therefore we will speake of them apart, according to their nature.

C Now are we to treat of the rest which are of a carnosus substance: and those are divided into fruits that be soft and pulpous, and into berries. The carnositie in Grapes and Raisons, in Mulberries, and the fruit of the Arbut tree, differeth one from the other. Again, the fleshie substance in Grapes between the skin and the liquid juice, is one, and that in Sebesten is another. Berries have a carnositie by themselves, as namely Olives. Mulberries yeeld a juice or liquor within the pulpe thereof, resembling wine. They be ordinarily of three colours: at the beginning, white; soone after, red; and when they be ripe, blacke. The Mulberrie tree bloometh with the last, but the fruit ripeneth with the first. Mulberries when they be full ripe, staine a mans hands with the juice thereof, and make them blacke: but contrariwise being unripe, they scoure them cleane. There is not a tree againe, wherein the wit of man hath been so little inventive, either to devise names for them, or to graffe them, or otherwise, save only to make the fruit fair and great. There is a difference which we at Rome doe make, betweene the Mulberries of Ostia and Tusculum.

D There is a kind of Mulberries growing upon the bramble, but their skin is much harder than the other. Like as the ground-strawberries differ in carnositie from the fruit of the Arbut tree, and yet it is held for a kind of Strawberrye, even as the tree it selfe is termed the Strawberry tree. And there is not a fruit of any other tree, that resembleth the fruit of an hearb growing by the ground, but it.

E The Arbut tree it selfe spreadeth full of branches: the fruit is a whole yeare in ripening: by which means a man shall find alwaies upon the tree, yong and old fruit together one under another; & the new evermore thrusteth out the old. Whether it be the male or female that is barren, writers are not agreed. Surely the fruit is of base or no reckoning at all: no marveile therefore if the Latines gave it the name *Vnedo*, for that one of them is enough to be eaten at once. And yet the Greeks have two names for it, to wit, *Comarum* and *Memecylon*: whereby it appeareth, that there be as many kinds among the Latines also, although it be termed by another name, *Arbutus*. *K. Inba* saith, that these trees in Arabia grow to the height of fiftie cubits.

F As touching Graines and liquid Kernels, there is great difference between them: for first and foremost, among very grapes, there is no small diversitie in the skin, either for tendernes or thickenesse: in the inner stons or pepins, which in some grapes are but single, or one alone; in others double, and those commonly yeeld not so much wine as the others doe. Secondly, those of Ivie and Elder differ very much: yea and the graines within a Pomegranat are not like to others in their forme, for they alone be made cornered and angle-wise; and severall as they be, they have not a particular skin of their owne, but they are altogither clad within one, which is white: and yet they stand all wholly of a liquor and pulpous carnositie, especially those which have within them but a small stone or woodie kernell.

Seemably, there is as much varietie in berries: for Olives differ much from Bay berries: likewise those of the Lote tree are divers from them which the Corneil tree beareth. The Myrtle also

The fifteenth Booke of

differeth from the Lentiske in the very berrie. As for the hulver or holly berries, and the hawes of the white-thorne, they are without any juice or liquor: whereas Cherries bee of a middle kind, betweene berries and graines. This fruit is white at the first, as lightly all berries be whatsoever: but afterwards, some wax green, as Olives and Baies; others turn red, as Mulberries, Cherries, and Cornoiles; but in the end they all become blacke, as Mulberries, Cherries, and Olives. G

CHAP. XXV.

Of Cherries, eight kinde.

BEfore the time that *L. Lucullus* defeated *K. Mithridates*, there were no Cherrie-trees in Italie: but after that victorie (which was about the 680 yeare from the foundation of the city of Rome) he was the man that first brought them out of Pontus, and furnished Italie so well with them, that within six and twentie yeares, other lands had part thereof, even as far as Britaine beyond the ocean. Howbeit (as we have before said) they could never be brought to grow in Ægypt, for all the care and industrie employed about them. Of Cherries, the reddest sort be called Apronia; the blackest, Actia: the Cæcilian be round withall. The Iulian Cherries have a pleasant tast, but they must bee taken new from the tree and presently eaten; for so tender they be otherwise, that they will not abide the carriage. Of all other, the Duracine Cherries be the soveraign, which in Campaine are called Pliniana. But in Picardie, and those low countries of Belgica, they make most account of the Portugall Cherries: as they do likewise who inhabit upon the river Rhene. They have a hew with them composed of three colours, between red, black, and green, & alwaies looke as if they were in ripening still. It is not yet full five years since the Cherries which they call Laurea, were known: so called they be, because they were grafted upon a Bay-tree stocke, and thereof they take a kind of bitternesse, but yet not unpleasant to the tast. There be moreover Macedonian Cherries, growing upon a small tree seldom above three cubits high: and yet there be certain dwarfe Cherries not full so tall, called Chamæcerasti, [i.e. ground cherry-shrubs.] The Cherrie-tree is one of the first that yeeldeth fruit unto his master, in token of thankfulness & recognifance of his paines all the yeare long. It delighteth to grow in cold places and exposed to the North. The Cherrie will drie in the sunne, and may be kept in barrels like Olives. H

CHAP. XXVI.

Of the Corneile and Lentiske tree.

THe same care is had in conditing the berries of the Corneil and the Lentiske, as in preserving Olives: so curious are men to content their tooth, as if all things were made to serve the belly. Thus we see, how things of divers relishes are mingled together, and one giveth a tast unto another, and causeth it to be pleasant at the tongues end. Nay we entermingle all climats and coasts of heaven and earth to satisfie our appetite: for to one kind of meat we must have drugs & spices fetcht as far as from India: to another, out of Ægypt, Candie, and Cyrene: and in one word, for every dish wee have a severall land to find us sawce. To conclude, wee are growne to this passe, that wee cease not to sophisticate our viands, even with hurtfull things, so that they tast well: yea and to make dishes of very * poisons, because we would devoure and send all downe the throat. But more plainely hereof, in our professed discourse of the nature and vertue of Hearbs. I

CHAP. XXVII.

The diversitie of tastes and savors.

IN the mean time, as touching those things which are common as wel to all fruits, as juices and liquors: first and foremost we find of tastes thirteen severall kinds; to wit, sweet, pleasant, fattie; bitter, harsh and unpleasant, hot and burning at the tongues end, sharpe and biting, tart or astringent, sowre, and salt. Over and besides all these, there be three others of a most strange and wonderfull nature: The first is that, wherein a man may have a smacke of many tastes together, as in wines: for in them a man shall find an harsh, sharpe, sweet, and pleasant relish all at once; and yet these all differ from the native verdure of wine. A second sort there is besides, which carrieth a strange and different tast verily from the thing it selfe, and yet it hath besides the proper and peculiar M

A peculiar tast of the owne substance, as the Myrtle: for it carrieth a severall tast by it selfe, proceeding from a certain kind, mild, and gentle nature, which cannot truly be called either sweet, fattie, or pleasant, if we would speake precisely. Last of all, water hath no tast at all of any juice or liquor whatsoever, and yet therein is a flat tast by it selfe, which is called waterish, that nothing els besides hath: for if a man doe tast in water a rellish of any sap or liquor, it is reputed for a bad and naughtie water.

Furthermore, a great and principall matter of all these tasts, lyeth in the favour and smell; which is connaturall unto the tast, and hath a great affinitie with it: and yet in water, is neither one or other to be perceived. For if any be felt either by tongue or nose, it is faultie, that is certain. Finally, a wonderfull thing it is to consider, that the three principall Elements whereof the world is made, namely, Water, Aire, and Fire, should have no tast, no favour, nor participation of any sap and liquor at all.

CHAP. XXVIII.

The iuyce and sap of Fruits and Trees: their colours and odours: the nature of Apples, and such soft Fruits: and the singular commendation of all Fruits.

TO begin withall, The Peare, the Mulberrie, and the Myrtle-berrie, have a juice or sap within them, resembling wine; * no marveile then, of Grapes, if they have the like. Olives, Bay-berries, Walnuts, and Almonds, have a fattie liquor in them. The Grape, the Fig, and the Date, carie a sweet juice with them. Plums have a waterish tast.

There is no small difference in the colour also that the juice of fruits doe beare: Mulberries, Cherries, and Corncils, have a sanguine and bloudie liquor: so have the blacke grapes; but that of the white grapes, is likewise white. The juice of Figs toward the head or necke of the fruit, is white like milke; but of another colour in all the bodie besides. In Apples, it is in manner of a froth or fume: in Peaches, of no colour; and yet the Duracina of that kind, be full of liquor; but who was ever able to say, what colour it was of?

The odour and favour likewise of fruits, is as strange and admirable: for the smell of Apples is sharpe and piercing; of Peaches, weake and waterish. As for sweet fruits, they have none at all: for verily we see, that sweet wines likewise have little or no sinell, whereas the small and thin are more odoriferous: and all things in like manner of a subtil substance, doe affect the nostrils more, than the thicke and grosser doe: for whatsoever is sweet in sent, is not by and by pleasant and delicat in tast; for sent & smack are not alwaies of like sort: which is the reason that Pomecitrons have a most piercing and quicke favor, whereas in rellish they are rough and harsh: and so it fareth in some sort with Quinces. As for Figs, they have not any odor. And thus much may suffice in generall, for the sundry kinds and sorts of fruits which are to be eaten: it remaineth now to search more narrowly into their nature.

To begin then with those that are enclosed within cods or husks: ye shall have some of these cods to be sweet, and the fruit or seed contained within, bitter: and contrariwise, many of those graines or seeds are pleasant and toothsome enough; but eaten with the huskes, they bee starke naught and loathsome.

As touching berries, there be that have their stone or woodie substance within, and the fleshy pulpe without, as Olives, and Cherries: and there bee againe, that within the said woodie stone have the carnositie of the berry, as some fruits in Ægypt, whereof wee have already written. As for berries carnos without, and pulpous fruits called Apples, they be of one nature. Some have their meat within, & their woodie substance without, as nuts: others, their carnositie without, and their stone within, as Peaches and Plums. So that in them we may say, That the faultie superfluitie is environed with the good fruit, whereas fruit otherwise is ordinarily defended by the said imperfection of the shell. Walnuts and Filberds are enclosed with a shell: Chestnuts be contained under a tough rind, which must be pulled off before they be eaten; whereas in Medlars, the carnositie and it be eaten together. Acornes, and all sorts of mast, be clad with a crust; Grapes with a skin, Pomegranats with a rind and a thin pannicle or skin besides. Mulberries doe consist of a fleshie substance and a liquor. Cherries, of a skin & a liquid juice. Some fruits there be, the substance whereof will soon part from their woodie shell without, or stone within, as nuts

* *Mimind' quod m' am' u' u'.*
Others distinguish thus: *Mimind' quod m' am' u' u'.* work, to this sentie: whereas in grapes (& that may be a wonder) there is none such.

and Dates: others sicke close and fast thereto, as Olives and Bay berries. And there be againe that participate the nature of both, as Peaches: for in those that be called Duracina, the carnos substance cleaveth hard to the stone, so as it cannot be plucked from it; whereas in the rest, it commeth easily away. Now ye shall meet with some fruits, that neither without in shell, nor within-forth in kernell, have any of this woodinesse, as a kind of Dates [named Spadones.] And there be againe whose verie kernell and wood is taken for the fruit it selfe, and so used; as a kind of Almonds, which (as we said) doe grow in Ægypt. Moreover, yee shall have a kind of fruits furnished with a double superfluitie of excrement to cover them without-forth, as Chestnuts, Almonds, and Walnuts. Some fruits have a substance of a threefold nature, to wit, a bodie without; then, a stone or wood under it; and within the same, a kernell or seed, as Peaches. Some fruits grow thicke and clustred together upon the tree, as Grapes, and likewise Servises, which claspe about the braunches and boughes, bearing and weighing them downe as well as grapes. Others for it, hang here and there very thin, as Peaches. And there be againe that lye close, contained (as it were) within a wombe or matrice, as the kernels of the Pomegranats. Some hang by small steles or tailes, as Peares: others in bunches, as Grapes and Dates. Ye shall have some fruit grow by clustres, and yet hang by a long taile, as the berries of Ivie and Elder: and others againe cleave fast to the branch of the tree, as Bay berries: some both waies, as Olives; for there be of them that have long steles, and others againe short tailed. Some fruits there be also, that are formed like cups or mazers, as Pomegranats, Medlars, the Ægyptian Beane or Lote, and that which groweth about the river Euphrates.

As for the singularities and commendable parts in fruits, they be of divers sorts. Dates are most set by for their fleshie substance; and yet they of Thebes above in high Ægypt, are esteemed onely for their outward coat or crust that they have. Grapes, and the Dates called Caryotæ, are in great account and estimation for their juice and liquor: Peares and Apples be most accepted for their callous substance next unto their skin or paring; but the honey-apples Melimela, are liked for their carnositie and fleshie pulpe within: Mulberries content the tast with their gristle or cartilage substance: and the best part of the nut, is the verie graine of the kernell. In Ægypt, some fruits are regarded onely for their utmost skin, as drie Figs: when Figges bee greene, the same is pilled off and cast aside like a shell; but be they once drie, the said skin is passing good. In all kind of Papyr-reeds, Ferula plants, and the white thistle Bedegnar, the verie maine stemme is the fruit for to be eaten. The shoots also and tender sprigs of the Fig-tree, are reputed for good meat, and also medicinable. To come unto the shrubs kind, the fruit of Capres is eaten together with the stalke. As for the Carobe, what is it else but a meere woodie substance that folke doe eat? (and yet the seed and graines within them, are not altogether to be despised for the propertie that they have) although to speake precisely, it cannot properly bee called either flesh, wood, or gristle; neither hath it found any other convenient name to be termed by.

CHAP. XXIX.

Of the Myrtle, eleven kinds thereof.

Nature hath shewed her wonderfull power and bountie, especially in the juice of the Myrtle, considering that of all fruits, it alone doth yeeld two sorts both of oile and wine: likewise the mixture or composition called Myrtidanum, as we have said before. Also there was another use in old time of Myrtle berries: for, before that Pepper was found and used as it is, they served in stead thereof: from whence tooke name that exquisite and daintie dish of meat, which even at this daie is called Myrtatum. And hereof came that excellent sauce so highly commended for the brawne of the wild Bore, when for the most part Myrtle berries are put thereto to dip the meat therein, for to give a better tast to that kind of venison.

As for the very tree it selfe, the first that ever was seene within the compasse and precincts of Europe (which beginneth at the mountaines Ceraunia) was about Circeij, where stood the tombe somtimes of *Elpenor*; and still it retaineth the Grecke name: whereby we may well judge, that it is a straunger. Howbeit there grew a Myrtle tree in old time, when Rome was first founded, even in that plot of ground where the cittie now standeth. For thus goeth the historie: That upon a time the Romanes and Sabines being raunged in battaile array, and at the point

A to fight a field, and to trie the quarell (for the wrong which the Sabines pretended, was done unto them, in regard that the Romanes had ravished their daughters being young maidens) were reconciled and made friends: and thereupon laid downe their armes and weapons, and were there purified with the sacred branches of Myrtle, in that very place wherein now the temple & image of *Venus Cloacina* standeth: which thereupon tooke the name (for that *Cluere* in old Latine, signified to purge or cleanse.) Besides, that tree otherwise doth affourd a kind of sweet perfume to bee burned. Now was this tree chosen for that purpose then to make attonement and to ratifie the mariage betweene the Romanes and the Sabine virgines, because *Venus* is the president and mother of carnall copulation, and the patronesse withall of the Myrtle tree. I will not confidently avouch, but me thinks I may presume to say, That the Myrtle was of all other trees first planted in the publicke places of Rome for some memorable preface and fore-tokening of future events and things to come. For whereas the temple of *Quirinus* (that is to say, of king *Romulus*) is reputed for one of the most antique buildings now extant, there grew even before it for a long time two old and sacred Myrtle trees: the one named *Patritia* [i. the Myrtle of the Nobilitie:] and the other *Plebeia*; that is to say, the Myrtle of the Comminaltie. The *Patritian* prospered and flourished many yeeres together, whiles the *Plebeian* began to fade and wither. And to say a truth, so long as the Senate was able to maintaine and uphold their authoritie, the Myrtle of the Nobles continued fresh and greene, and spread her boughes at large; whereas that other of the Commons seemed as it had been blasted, dried, and halfe dead: but after that the state of the Senate began to quaille and droupe, (which was about the time of the warre with the *Marsyans*) as their tree decayed and wasted, so the *Plebeians* Myrtle held up the head againe: and so by little and little, as the majestie of the Senatours was taken downe and abated to nothing, so their Myrtle waxed poore and barren untill it became drie and starke dead. Moreover, there stood an old chappell and an altar consecrated unto *Venus Myrtia*, whom now at this day they call *Murtia*.

C *Cato* in his time wrote of three kinds of Myrtle: to wit, the white, the blacke, and the *Conjugula* (so called haply of wedlock or mariage:) and peradventure it may come of the race of those Myrtles belonging to *Venus Cloacina* abovenamed. Howbeit, in these daies we distinguish our Myrtles otherwise; for some we repute wild and savage, others tame and gentle: and these both are likewise of two sorts, to wit, either broader or narrower leaved. To the wild kind properly belongeth the prickie Myrtle *Oximyr sine*. As for the tame and gentle Myrtles, they bee those that are planted in hort-yards and gardens, wherewith gardeners make arbors, knots, and divers devices. Whereof be sundrie kinds, The *Tarentine* with small leaves; ours of *Italie* with broader; and the myrtle **Hexastica*, which is very full of leaves, and ordinarily each branch hath six ranks thereof. But these are altogether out of request: both the other are full of boughes and branches. As touching the abovenamed *Conjugula*, I suppose it bee the same that our common Myrtle here in *Italie*. But the most odoriferous Myrtle of all others, is that which groweth in *Ægypt*.

D Now concerning the wine of Myrtles, *Cato* hath shewed us the manner how to make it: namely, to take the blacke Myrtle berries, to drie them in the shade untill they have lost all their waterish humiditie, and so to put them in Must or new wine, and let them lie there infused, or in steep. Afterwards there was a devise found out to make a white wine of the white Myrtle in this manner. Take of Myrtles well beate[n] or stamped, the quantitie of two **Sextares*, steepe the same in three **z. wine-quarts*, hemires or pints of wine, and then straine and presse forth the liquor.

E Moreover, the very leaves of the Myrtle tree, being dried and reduced into a kind of meale, are singular good for to cure the ulcers in mens bodies: for certaine it is, that this powder doth gently eat away and consume the superfluous humours that cause putrifaction. And besides, it serveth well to coole and repress[e] immoderate sweats. Over and besides, the oile also of Myrtles (a strange and wonderfull thing to tell) hath a certaine rellice and tast of wine: and withall, the fat liquor thereof is endued with a speciall and principall vertue to correct and clarify wines; if the bagges and strainers where-through the wine runneth, bee first soaked and drenched therewith: for the said oleous substance retaineth and keepeth with it all the lees and dregs, and suffereth nothing but the pure and cleare liquour to passe through, and more than that, it carrieth with it the commendable odor and principall vertue of the said oile. Furthermore it is said, That if a wayfaring man that hath a great journey for to goe on foot, carrie

* not Exotica. Turneb.

* z. wine-quarts.

in his hand a stick or rod of the Myrtle tree, he shall never bee wearie, nor thinke his way long and tedious. Also *rings made of Myrtle wigs, without any edged yron toole, keepe downe and cure the swelling bunch that riseth in the groine. What should I say more? The Myrtle intermedleth in warre affaires: For *Posthumius Tubertus*, being Consull of Rome (who was the first that entred in a pettie triumph, ovant into the cittie, because he had easily conquered the Sabines, and drawne in manner no bloud of them) rode triumphant in this manner, to wit, crowned with a chaplet of Myrtle, dedicated to *Venus Victroesse*: and from that time forward the Sabines (even his very enemies) set much store by that tree, and held it in great reverence. And ever after, they that went but ovant into the cittie after a victorie, ware this kind of guirland one-ly, except *M. Crassus*, who after hee had vanquished the fugitive slaves, and defeated *Spartianus*, marched in a coronet of Lawrell. *Massurius* writeth, how Generals when they entred triumphant into Rome, riding in their stately chariots (which was the greatest honor of all others) ware upon their heads, chaplets of Myrtle. *L. Piso* reporteth, That *Pappyrus Massa* (who first triumphed in mount Albanus over the Corsians) used ever after to come unto the Games Circenses, and to behold them, crowned with a guirland of Myrtle. This *Pappyrus* was grandfather by the mothers side, to the second *Scipio Africanus*. Finally, *M. Valerius*, according to a vow that hee made in his triumphs, used to weare coronets as well of Lawrell as Myrtle.

CHAP. XXX.

Of the Lawrell or Bay tree, thirteene kinds thereof.

Lawrell is appropriate unto triumphs, and besides groweth most pleasantly before the gates of the Emperors court, and Bishops pallace; giving attendance there as a dutifull portresse or huiffer, most decently. This tree alone both adorneth their stately houses, & also keepeth, watch and ward duly at the dores. *Cato* setteth downe two kinds of Lawrell, to wit, the Delphicke, and the Cyprian. Hereunto *Pompeius Lenens* hath joined a third, which he called *Mustacea*; because in old time they used to lay the leaves thereof under certaine cakes or March-panes (which in those daies they called *Mustacea*) as they were in baking: This third kind hath leaves of all others largest, flaggie, hanging, and whitish withall. As for the Delphick, it carieth leaves of one entire colour, greener than the rest: the baies or berries thereof likewise are biggest, and of a reddish greene colour. With this Lawrell were they wont to be crowned at Delphos, who woon the prise at any tournoy or solemne games; as also the victorious captains who triumphed in Rome. The Cyprian Lawrell hath a short leafe, blacke, crisped, or curled, and about the sides or edges thereof it turneth up hollow like a gutter or crest-tile. Howbeit, afterwards there were raunged in the ranke of Lawrels other trees, to wit, the *Tinus*, which some take to be the wild Lawrell, others say it is a kind of tree by it selfe: indeed, it differeth from other Lawrels in the colour of the fruit; for it beareth blew berries. Then came the roiall Lawrell in place, which began to be called *Augusta* or *Imperiall*. This is a very tall and big tree, with leaves also as large in proportion, and the Baies or Berries that it beareth are nothing sharpe biting and unpleasent in tast. But some there be that thinke this roiall Bay, is not a Lawrell, but a severall tree apart, as having longer and broader leaves than the rest of the ordinarie sort. And these writers speaking of other kinds, call our common Bay tree, *Baccalia*, and namely that which is so fruitfull and beareth such a sort of Berries: as for the fruitlesse and barren of that sort they name *Triumphall*, which, as they say, is used in triumphs. Whereat I marvell very much, unlesse this ordinance and custome began of *Augustus Casar*, by occasion of that Lawrell which came to him as sent from heaven (as I wil shew anon more at large;) and of all others it is for height lowest, in leafe short and frizled, very geason and hard to be found. Now there is another kind of Lawrell named *Taxa*, very fit for greene arbors, and to be wrought into knots. Out of the middest of the leafe there groweth forth another little one, in manner of a skirt, tongue, or lapper of the leafe. Also without any such excreffence, there is that, which they name *Spadonia*, as one would say, the guelded Bay, which careth not how shadowie the place be where it groweth: for be it never so remote out of the Sunne, or overshadowed howsoever, yet it ceaseth not to grow and overspread the ground where it standeth. Moreover in this rank is to be reckoned the wild shrub called *Lowrier* or *Chamædaphne*. There is besides the Lawrell *Alexandrina*, which some call *Idæa*, [i. Mountaine Lawrell] others *Hypoglottion*, [i. Horse-tongue] some *Daphnitis*, others *Carpophyllon* or *Hypelate*. This plant putteth forth branches

A branches immediatly from the root, of a span or nine inches long: very proper and handsome to draw workes, or to clad arbours withall in a garden, also to make guirlands and chaplets. The leaves are more sharpe and pointed, softer also and whiter than those of the Myrtle, yea, & have within them a bigger grain or seed, of colour red. Great plentie thereof groweth upon the mountaine Ida, likewise about Heraclea in Pontus: and in one word, never but in hillie and mountaine countries.

As for the hearbe Daphnoeides or Laureola, it hath many names. For some tearme it Pelafgum, others Eupetalon, and there are againe who would have it to be Stephanos Alexandri [*Alexanders* chaplet.] This plant also is full of branches, carying a thicker and softer leafe than the common Lawrell: and if a man tast thereof, it will set both the mouth and also the throat on a fire:

B the berries that it beareth be blackish, inclining to a kind of red. It hath been noted and observed in the ancient writers, that no kind of Lawrell in old time was to be found in the Island Corfica: and yet in these daies it is there planted, and thriveth well ynough. The Lawrell betokeneth peace: inso much, as if a branch thereof be held out among armed enemies, it is a signe of quietnes and cessation from arms. Moreover, the Romans were wont to send their missive letters adorned with Lawrell, when they would give advertisement of some speciall good newes or joifull victorie: they used besides to garnish therewith their launces, pikes, and speares. The knitches also & bunches of rods, borne before grand captaines and generals of the armie, were beautified and set out with Bay branches. Herewith they sticke and bedecke the bosome of that most great and gracious *Jupiter*, so often as there commeth glad tidings of some late and fresh victorie. And all this

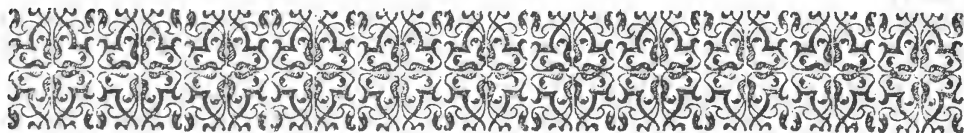
C honor is done to the Lawrell, not because it is alwaies greene, nor for that it pretendeth and sheweth peace (for in both these respects the olive is to be preferred before it) but in this regard, That the fairest and goodliest of them grow upon the mountaine Parnassus: and therefore also is it so acceptable to *Apollo*, for which cause (as may appeare by *L. Brutus*) the Roman kings in old time were accustomed to send great presents and oblations thither to the temple of *Apollo*: or peradventure it was in memoriall of that ground that bare Lawrell trees, and which according to the Oracle of *Apollo*, the said *L. Brutus* kissed, when he intended the publicke freedome of the cittie, and minded to deliver it from the yoke and servitude of the kings: or haply, because it alone either set with the hand before the doores, or brought into the house, is not blasted and finitten with lightning. And these reasons verily induce me to beleeve, that in times past they chose the

D Bay tree for their triumphs, before any other: rather than as *Messurius* would have it, because the Lawrell served for a solemne perfume, to expiate and assoile the carnage and execution done upon the enemies. And so farre were men in old time from common using either Lawrell or Olive, & polluting the same in any prophane use, that they could not be permitted to burn thereof upon their altars when they sacrificed or offered Incense, although it were to doe honor to the gods, and to appease their wrath and indignation. Evident it is, that the Bay tree leaves, by their crackling that they make in the fire, doe put it from them, and seeme to detest and abhorre it. It cureth moreover the diseases of the guts [the Mawce and the Bladder] also the lassitude and wearinesse of the sinewes. It is reported, that *Tiberius Cesar* the Emperour used ever to weare a chaplet thereof when it thundered, for feare of being stricken with lightening.

E Moreover, certaine strange and memorable events as touching the Bay tree, have happened about *Augustus Cesar*. For *Livia Drusilla*, (who afterwards by marriage with the said *Augustus*, became Empresse, and was honoured with the title of *Augusta*) at what time as she was affianced and espoused to *Cesar*, chanced as she sat still, to have an exceeding ~~hens~~ Hen to light into her lap (which an *Ægle* flying aloft, let fall from on high) without any harme at all to the said pullet. Now when this ladie or princeesse advised and considered well the Hen, without being astonied & amazed at so strange and miraculous a sight, she perceived that the Hen held in her bill a Lawrell branched full of Bay berries. The Wisards and Soothsaiers were consulted withall about this wonderfull occurrent, and gave advise in the end to preserve the bird and the Brood thereof: likewise to set in the ground the foresaid branch, and duly to tend and looke unto it. Both the one

F and the other was done and executed accordingly, about a certaine house in the countrie belonging to the *Cesars*, seated upon the river Tyberis, neare the causey or port-way Flaminia, about nine miles from Rome: which house therupon was called, Ad Gallinas, as a man would say, The signe of the Hens. Well, the foresaid branch mightily prospered, and proved afterwards to be a grove of Lawrels, which all came from that first stocke. In proceesse of time, *Augustus Cesar* when

he entred in Triumph into Rome, caried in his hand a braunch of that Bay tree, yea, and wore a chaplet upon his head of the same: and so did all the Emperours and *Cæsars* his successors after him. Hereof also came the custome to set againe and replant those braunches of Lawrell that Emperours held in their hands when they triumphed: & thereof continue whole woods & groves distinguished each one, by their severall names, and perhaps therefore were they named Triumphall. This is the onely tree knowne in the Latine tongue, whereof a man beareth the name. Againe, there is not another tree besides that hath the lease to carie in the Latine tongue a denomination and name by it selfe apart, as well as the tree: for where as the plant is named *Laurus*, the lease we call *Laurea*. Moreover, there is a place likewise within the cite of Rome upon mount *Aventine*, retaining still the name *Loretum*, which first was imposed upon it by reason of a Lawrell grove which grew there. The Bay tree also is used in solemne purifications before the gods: and to conlude, this would be resolved and agreed upon by the way, That if a branch thereof be set, it will prosper and become a tree; although *Democritus* and *Theophrastus* make some doubt thereof. Thus much of Lawrels and other domesticall and native trees: it remaineth now to write of those that be wild and savage, and of their natures.



THE XVI. BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECUNDVS.

The Proëme.



Hereto have we treated of those Trees that beare Apples and such like fruits: which likewise with their mild iuice and sweet liquors made our meats first delighsome, and taught us to mingle together with the necessarie food for sustentation of our lives, that which maketh it delicate and pleasant to content our tast: as well those trees that naturally were so in the beginning, as those which through the industrie and skill of man, what by grafting and what by wedding them (as it were) to others, became toothsome, and delectable to our tongue: whereby also wee have gratified in some sort wild beasts, and done pleasure to the foules of the aire. It followeth now by order, that we should discourse likewise of trees that beare Mast, those trees (I say) which ministred the first food unto our forefathers, and were the nourices that fed and cherished mankind in that rude wild age and poor infancie of the world: but that I am forced to breake the course of mine historie, and prevented with a deepe studie and admiration arising from the truth and ground of experience, to consider, What manner of life it might be, to live without any trees or shrubs at all growing out of the earth.

CHAP. I.

¶ Of nations that have no trees nor plants among them. Of wonderfull trees in the Northerly regions.



We have shewed heretofore, that in the East parts verily toward the maine Ocean, there be many countries in that estate, to wit, altogether destitute of trees. In the North also I my selfe have seene the people called **Cauchi*, as well the greater as the lesse (for so they be distinguished) where there is no shew or mention at all of any tree. For a mightie great compasse, their countrey lieth so under the Ocean, and

* The low countries of Zeland, &c.

A and subject to the tide, that twice in a day & night by turnes, the sea overfloweth a mightie deale of ground when it is floud, & leaveth all drie again at the ebbe & return of the water: infomuch; as a man can hardly tell what to make of the outward face of the earth in those parts, so doubtfull it is between sea and land. The poore sillie people that inhabit those parts, either keepe together on such high hills as Nature hath afforded here & there in the plain: or els raise mounts with their owne labour and handie worke (like to Tribunals cast up and reared with turfe, in a campe) above the height of the sea, at any Spring tide when the floud is highest; and thereupon they set their cabines and cottages. Thus dwelling as they doe, they seeme (when it is high water, & that all the plaine is overspread with the sea round about) as if they were in little barkes floating in the midst of the sea: againe, at a low water when the sea is gone, looke upon them, you would take them for such as had suffered shipwracke, having their vessels cast away, and left lying at-o-side amid the sands: for yee shall see the poore wretches fishing about their cottages, and following after the fishes as they go away with the water. They have not a four-footed beast among them: neither enjoy they any benefite of milke, as their neighbour nations doe: nay, they are destitute of all meanes to chase wild beasts, and hunt for venison; in as much as there is neither tree nor bush to give them harbour, nor any neare unto them by a great way. Sea-weeds or Reike, rushes and reeds growing upon the washes & meeres, serve them to twist for cords to make their fishing nets with. These poore soules and sillie creatures are faine to gather a slimie kind of fattie mud or oafe, with their very hands, which they drie against the wind rather than the Sunne: and with that earth, for want of other fiewell, they make fire to seeth their meat (such as it is) and heat the inward parts of their bodie, readie to bee starke and stiffe againe with the chilling North wind.

C No other drinke have they but raine water, which they save in certaine ditches after a shower, and those they dig at the very entrie of their cottages. And yet see! this people (as wretched and miserable a case as they bee in) if they were subdued at this day by the people of Rome, would say (and none sooner than they) that they lived in slaverie. But true it is, that Fortune spareth many men, to let them live still in paine and miserie. Thus much as touching want of woods and trees.

On the other side, as wonderfull it is to see the mightie Forrests at hand thereby, which overspread all the rest of Germanie: and are so big, that they yeeld both cooling and shade to the whole country. Yea, the very tallest woods of all the rest are a litle way up higher in the country, and not farre from the Cauchi abovesaid: and especially those that grow about the two great loughes or lakes in that tract. Vpon the bankes whereof, as also upon the sea-coasts, there are to be seene thicke rowes of big Okes, that love their seat passing well, and thrive upon it in growth exceeding much: which trees happening to be either undermined by the waves and billowes of the sea under them, eating within their roots, or chased with tempestuous winds beating from above, carie away with them into the sea (in manner of Islands) a great part of the Continent, which their roots doe claspe and embrace: wherewith being counterpoised and ballasted, they stand upright, floating and making saile (as it were) amid the waves, by the meanes of their mightie armes which serve in stead of tackling. And many a time verily, such Okes have frighted our fleets and armadoes at sea: and especially in the night season, when as they seemed to come directly against their proes standing at anker, as if of purpose they were driven upon them by the waves of the sea: infomuch, as the sailers and passengers within, having no other meanes to escape them, were put to their shifts, and forced for to addresse themselves, and range a navall battell in order, and all against trees, as their very enemies.

E

CHAP. II.

Of the huge and great Forrest Hercynia.

IN the same North climate is the mightie Forrest Hercynia. A huge and large wood this is, stored with tall and big Okes, that never to this day were topt or lopt. It is supposed they have beene ever since the creation of the world, and (in regard of their eternall immortalitie) surmounting all miracles besides whatsoever. And to let passe all other reports which happily would be thought incredible, this is knowne for certaine, That the roots of the trees there, run and spread so farre within the ground, that they encounter and meet one another: in which resistance they swell and rise upward, yea, and raise up mounts of earth with them to a good height

in

in many places: or, where as the earth followeth not, a man shall see the bare roots embowed arch-wise, and mounting aloft as high as the very boughes: which roots are so interlaced, or else rub one against the other, striving (as it were) not to give place, that they make a shew of great portales or gates standing open so wide, that a whole troupe or squadron of horsemen may ride upright under them in ordinance of battell.

CHAP. III.

Of trees bearing *Maß*.

MAST trees they were all, for the most part, which the Romanes ever so highly honoured and held in best account.

CHAP. IIII.

Of the *Civicke* guirland: and who were honoured with chaplets of tree-leaves.

FROM Mast trees [and the Oke especially] came the *Civicke* coronets. And in very truth, these were the most honourable badges and ornaments that could possibly bee given unto souldiours and men of warre, in regard of their vertue and manhood: yea, and now for a good while, our Emperours have had this chaplet graunted unto them, in token and testimonie of clemencie: ever since that by our prophane and unkind civile warres the world is growne to this passe, that it is reputed a singular demerite and gracious act, not to kill a citizen of Rome, but to let him live. To this kind of guirland, none other be comparable: for the Murall and Val-lare coronets (bestowed upon them that either skaled the walls, or entred the breach first into an enemie citie, or else mounted over the rampier of a campe) albeit they were of gold, and of greater price by farre, yet they gave place to these. Yea, the very Navall coronets, fashioned like the three forked pikes of ship beake-heads (wherwith they were honoured, who had performed some brave service at sea) came behind these *Civicke* guirlands, due to them who have rescued citizens and saved them out of the enemies hands: and yet in these our daies there have bene knowne twaine in that kind most renowned above the rest; whereof the one was bestowed upon *M. Varro*, by *Pompey* the Great, for defeating the pyrates, and for scouring & clearing the seas of them: the other likewise given to *M. Agrippa*, by *Augustus* *Cesar*, for vanquishing the Sicilians, who also were no better than rovers.

Now for as much as we are light upon the mention of Navall or Rostrate coronets, this would be noted, That in old time the said brasen beake-heads of ships woon from the enemies, and set upon the front of the Tribunall or publicke pulpit in Rome, served for an ornament to beautifie the Forum or common place of the citie; so as the very bodie of the people of Rome seemed to be crowned and honoured thereby. But after that the Tribunes in making seditious Orations, began to stampe and fare like mad men there, to trample (I say) under foot, and to pollute that sacred piace and those goodly ensignes; after that they fell once every man to make his privat and particular profit of the common good, without regard to advance the weale publicke; after that each one sought to strengthen and arme himselfe by the benefite of authoritie, and that to the weakening of the maine state, inso much as they who were reputed by their place sacrosanct and inviolable, polluted and prophaned all: then the said ornaments of beake-heads, which beautified the place under their feet, served to adorne the heads of Romane citizens. So as, to returne againe now to the abovenamed *Agrippa*, *Augustus* *Cesar* gave unto him a Navall coronet for subduing the Sicilian pyrates: and himselfe received of mankind a *Civicke* chaplet, for sparing the bloud, and saving the lives of so many citizens.

In auncient time they used to crowne none but the gods. And hereupon it is, that the Poët *Homer* speaketh of no guirlands and chaplets but due to the celestiall & heavenly wights, or at leastwise in the name of a whole armie, for victorie atchieved in some notable battell: for to one man alone hee alloweth not any, no not in regard of the better hand in combate or single fight. And to say a truth, the first that ever set a guirland upon his owne head, was prince *Bacchus*, and the same was made of Ivie: but afterwards, those that sacrificed to the honor of gods, not only ware chaplets themselves, but also adorned therewith the heads of the very beasts which were appointed to be killed for sacrifice. In the end, the custome was taken up to honor them with

A guirlands, who wan prizes at those sacred and solemne games, Olympia, Isthmia, Pythia, and Nemoea. Howbeit the manner was then, and so continueth to this day, To give chaplets to the said victours, not in their owne name, but in the behalfe of their native country, which by open proclamation they pronounce to be crowned and honoured thereby. And hereof it came also, that such coronets and chaplets were graunted to them that should triumph, yea and soon after to those also who had woon the prize in any publick games, upon condition to dedicate them to the temple of the gods.

To discourse what Romane cittizen received this honour first of a chaplet or coronet, were a long peece of worke, and nothing pertinent to our purpose and matter in hand; considering that they were acquainted with none at all, but in regard of service performed in the warres. Yet thus much I may averre for certain, That no nation under heaven, nay put them all together, can shew so many sorts of chaplets and coronets, as this one state and people of Rome. *K. Romulus* crowned *Hostius Hostilius* with a guirland of bare greene leaves, for that in the forcing and ruining of Fidenæ, he brake first into the citie and made way for the rest. This man was grandfire to *Tullus Hostilius* king of Rome. Semblably in the warre against the Samnites, wherein *Cornelius Cossus* the Confull was L. Generall, the whole armie crowned *P. Decius* the father with a chaplet of greene leaves, who then was a martiall Tribune or Colonell over a regiment of souldiors, for that he had saved and delivered the said armie.

But now to come againe to our Civicke guirland, it was made at first of the Ilex or Holme tree leaves: afterwards men tooke a better liking to make it of the *Æsculus*, a tree consecrated to *Iupiter*. They staid not there, but changed soone after with the common oke; neither made they any precise choise, but tooke the leaves of that which came next hand, wheresoever they found it growing; provided alwaies that it bare acorns: for all the honour of these guirlands consisted principally in the mast. Moreover, there belong to these Civicke guirlands streight lawes and ordinances, in which regard these chaplets be proud and stately: and wee may be bold to compare them with that Paragon-coronet of the Greekes, which passeth all others, given solemnly and published in the presence of *Iupiter*, and made of the wild Olive dedicated unto him: comparable (I say) to any crowne or chaplet whatsoever; even to that, for which a citie in token of joy, would not sticke to lay open a *breach in their very wall to receive it when it should enter in. The lawes ordained in this behalfe run in this forme. *Imprimis*, Hee that is to enjoy the

D honour of a Civicke chaplet, ought, First, To have rescued a citizen, and withall to kill the enemy in whose daunger he was. Item, It is required, that the enemies the same day held the very ground and were masters hereof, wherein the rescue was made and the service performed. Item, That the partie himselfe so saved, doe confesse the thing, for otherwise all the witnesses in the world availe not in this case. Item, The man thus delivered, must be a free citizen of Rome in any hand: for set case that hee were a king which was thus rescued, if he were a stranger, and came onely among the auxiliaries to aid the Romans, it would not boot, nor gaine any man this honour for to save his life. Item, Say that the Generall himselfe were rescued and delivered out of daunger, the partie for his good service should have no more honour done unto him, than if he had preserved but a simple common souldior, so hee were a Romane citizen: for the makers of these ordinances aimed chiefly at the life of a citizen who-

E soever he was, without regard of any other circumstance. Item, Hee that was once crowned with this guirland, was endued also with these priviledges: That he might weare it alwaies after, whensoever it pleased him: That so often as he came in place of publicke places or games, men should accustomably rise up unto him, yea and the very Senators themselves, doe him honour in that sort: That he should have his place allowed him to sit next to those of Senators degree: That both himselfe, and also his father and grandfire by the fathers side, should ever after be exempt from all civile charges and enjoy full immunitie. Thus much concerning the lawes and priviledges attending upon the Civicke guirland. *Siccus Dentatus* (as we have specified before) received fourteen of these chaplets for his good service: [*Manlius*] *Capitolinus* six, and he verily had one of them for rescuing *Servilius* being Generall of the armie. As for *Scipio Africanus*, he refused this honour when it was offered and presented unto him, for saving the life of his own father at the journey and battaile of Trebia. O the excellent orders & customs of those times, worthis of immortalitie & everlasting memorie! O the wisdom of men in those daies, who assigned no other reward for so brave exploits and singular works, but honor only! and whereas all other militarie coronets they enriched and adorned with gold, they would not set the life of a citizen at any price. A plaine and evident

* As the manner was to receive the *Hieratica*.

profession of our 'auncestors and predeceffours, That it is an unlawfull and shamefull thing to seeme for to save a mans life, in hope of any gaine and profit thereby. G

CHAP. V.

Of Mast, thirteene kinds.

Many nations there be even at this day, and such as enjoy peace and know not what warre meaneth, whose wealth and riches lyeth principally in Mast : yea and elswhere in time of dearth and for want of other graine, folke use to drie their mast, grind it into meale, temper it with water, and thereof make dough for bread. Moreover, even at this day throughout Spaine, the manner is to serve up acorns and mast to the table for a second service: & sweeter it is being roasted under the cinders and ashes, than otherwise. Over and besides, provided it is by an expresse act and law of the twelve tables in Rome, That a man may gather the mast that falleth from his owne trees into another mans ground. H

Divers and sundrie sorts there be of Mast, and their difference consisteth in the forme and fashion of the fruit, in the site and situation of the place, in the sex, and in the tast: for the mast of the Beech tree is of one figure and making, the Acorne (which is the mast of the Oke) another; and the mast of the Holme or Ilex, differeth from them both: yea & in every one of these kinds, they doe varie one from another. Also, some are of trees growing wild; others more mild and gentle, loving places well tilled and ordered by husbandrie. Some like the hillie countries, others the champaine and the plaines. Semblably there is mast comming from the male trees: there is again that groweth on the female. In like manner, the rellish and tast maketh a difference and diversitie in mast. The sweetest of all, is the Beech mast: for *Cornelius Alexander* reporteth, That the inhabitants of Chios, when they were streightly beleaguere, endured the siege a long time by the benefit and substance onely of the mast. We are not able distinctly to specifie name by name, the sundrie sorts of mast and the trees which beare the same, considering that in everie countrey they alter their names: for wee see the Robur and the Oke to grow commonly everie where, but the Esculus is not so rife in all countries. A fourth sort there is of the same kind, which is not knowne ordinarily in most places of Italy. We will therefore distinguish them according to their nature and properties: yea and when need shall require, by their Greeke names also. I

CHAP. VI.

Of the Beech mast, and other Masts: of Charcole: and the feeding of Hogs. K

The Beech mast is like to the kernell of a Chestnut, enclosed within a three-cornered skin. The leafe of the tree is thin and very light, resembling that of the Poplar: it turneth yellow passing soone. In the middle whereof, for the most part, and in the upper side, it bringeth forth a little greene berrie, pointed sharpe at the top. The mast of Beech, Rats and Mice are much delighted in: marke therefore when there is store of that mast, yee shall have as great encrease of that vermin. It will feed also Reremice or Dormice fat: and the Oufels or Blackbirds take a great liking thereto, and will flie unto it. Lightly, all trees are more fruitfull one year than another, and beare most every second yeare; but above all, Beeches keepe this course. As touching Mast (which properly is so called) it groweth upon the Robur, the common Oke, the Esculus, Cerrus, Ilex, and Corke tree. All kinds of mast are contained more or lesse, within a rough cup, which lieth close to the utmost skin thereof, & claspth it about. The leaves of all these mast trees, except the mast-Holme Ilex, be heavie, fleshie, large, waved or indented along the sides, neither be they yellow when they fall, as the Beech leaves are; longer also or shorter, according to the divers trees whereupon they grow. L

Of the Ilex or mast-Holme tree, there be two sorts. Those in Italy differ not much in leafe from the Olive. Some Greekes call them Smilaces, but in other provinces Aquifoliz. The mast of Ilex, both the one and the other, is shorter and slenderer than of the rest: *Homer* calleth it *Acyon*, by which name he distinguisheth it from other mast. The male Holms (men say) beare no fruit. The best mast and the biggest, is the Acorne growing upon the common Oke: next to it is that of the Esculus: as for that of the Robur, it is but small. The Cerrus carrieth a mast unpleasant to the eie, and rough to be handled, for clad it is with a cup beset with sharpe pricks like to

- A** to the Chestnut shell. Among the very Acornes, some have a sweeter raste than others: the female Oke beareth those that be more soft and tender; the male, tough, thicke, and massie: and the best simply are those that come of the broad-leafed Oke, for so it is called by reason of the large leaves. Moreover, there is another difference in mast and acornes, for some be bigger than others; again, there are that have thin & fine skins enclosing the kernell; and ye shall find others for them as thicke skinned; likewise many of them are covered with a rough and rustie tunicle; and as many againe do shew immediatly their bare white skin and naked fleshie substance. Furthermore, that mast is accounted good, which at both ends (taking it long-waies) groweth hard in manner of a stone: howbeit that which hath an hard shell without, and a soft bodie within, is better than that which is hardened in the carnous substance of the bodie; and lightly neither of
- B** both these qualities happeneth to any but the male kind. Over and besides, some you shall find fashioned long like an egge; others as round as a ball; and a third sort sharpe pointed. The outward colour also yeeldeth varietie: for some be blacker than other, but the whiter commonly be the better set by. Some are bitter toward the ends, and sweet in the mids. The length also, & the shortnesse of the stele or taile whereto they hang, maketh a difference. The very tree it selfe causeth diversitie of the fruit: for that oke which beareth the biggest mast, is named *Hemeris*. A shorter tree this is than the rest, with a round head, and putting forth many hollow armpes (as it were) of boughs and branches. The wood or timber of the ordinarie and common Oke is tougher and harder than that of others, and lesse subject to purefaction: full of arms & boughs it is, as the other, but it groweth taller and is thicker in the bodie. The highest of all, is the *Ægiplos*, which loveth to grow in wild and desert places. Next to it for tallnesse, is the broad-leafed Oke, but the timber thereof is not so good and profitable for building, howsoever it be employed for to make charcole: yet being once squared to that purpose, & cleft, it is subject to the worne, and will soone rot: and for this cause, being in quarters, they use not to make cole of it cloven, but of the solid and round boughs or branches thereof. And yet this kind of charcole serveth onely the Bloome-smithies and furnaces; the hammer-mills also of brasse and copper-smiths, whome it standeth in great good stead and saveth them much fewell; for it burneth and consumeth no longer than the bellowes goe: let them leave blowing once, presently the cole dieth; and so it lasteth long: for at every new blast it is renewed againe and refreshed: otherwise it sparkleth very much and yeeldeth many cinders. But the charcole made of yong trees is the better.
- D** Now the manner of making them, is this: when the wood is cut into many clefts & splents, fresh and green, they are heaped up on high, and hollow in manner of a furnace or chimney, and then well luted with clay in the top, and all about: which done, the pile of truncheons aforesaid, is set on fire within; and as the outward coat or crust of clay beginneth to wax hard, the workmen or colliers pierce it with poles and pearches, and make divers holes therein for vent, and to let out the smoakie vapour that doth sweat and breath from the wood. The worst of all other for timber or cole, is the oke named *Haliphleos*; a thicke barke it hath, and as big a bodie, but for the most part hollow and light like a sponge or mushrome: and there is not another besides it of all these kind of trees, that rotteth as it stands alive. Besides, so unfortunate it is, that the lightning smiteth it, as low as it groweth; for none of them arrieth to any great height: which is the cause that it is not lawfull to use the wood thereof about the burning of any sacrifice. Seldome beareth it any Acornes, and those few that it hath, be exceeding bitter, so as no other beast will touch them, but swine again; nor they neither, but for pure hunger, when they can meet with no other food. Moreover, in this regard also rejected it is, and not employed in any religious use, for that without blowing at the wood and cole thereof continually, it will not burne cleare and consume the sacrifice, but goeth out and lieth dead.

But to returne unto our mast againe: That of the Beech tree feedeth swine quickly, maketh their flesh and lard faire and pleasant to the eye, tender to be soone foddren or roasted, light and easie of digestion, and good for the stomacke. The mast of the Holme causeth hogs to gather a more fast and compact flesh, their bodies to be neat, slender, lanke, and ponderous. Acornes doe engender a fleshie substance, more square and spreading, and the same also most heavy and hardest of digestion, and yet they are of all other kinds of mast, most sweet and pleasant. Next to them in goodnesse (by the testimonie of *Nigidius*) is that of the tree *Cerrus*, neither is there bred of any other a courser flesh, howbeit hard it is, fast, and tough. As for the mast of *Ilex*, hogs are endaugered by eating thereof, unlesse it be given them warily by little and little. Hee saith

moreover, that of all other it falleth last. Moreover, the mast of Esculus, Robur; and the Corke, G
causeth the flesh to be spongeous and hollow. To conclude, what trees soever beare mast, carrie
also certaine nuts called Galls: and lightly they are full of mast but each other yeare. But the
oke Hemeris beareth the best galls, and fittest for the curriours to dresse their leather. The broad
leafed oke hath a kind of galls like unto it, but lighter in substance, and not so good by far: it carieth
also blacke galls (for two sorts there be) and this is better for the dier to colour wooll.

CHAP. VII.

*Of the Gall-nuts: and how many other things Mast-trees doe
beare besides Mast.*

THe nuts called Galls, doe ever breake out all at once in a night, and namely about the be-
ginning of Iune, when the sunne is readie to goe out of the signe Gemini. The whiter sort
thereof commeth to the growth in one day: and if in the first spring and breaking foorth
thereof it be hot weather, it drieth and withereth out of hand, and commeth not to the full big-
nesse and perfection, namely to have a kernell as much as a Beane. The blacke of this kind con-
tinueth longer fresh and greene, and groweth still, to the bignesse otherwhiles of an apple. The
best Galls be those of Comagena: the worst is that of the oke called Robur, which are knowne
by the holes they have, that may be seen through. The common oke Quercus, over and besides
the fruit (which is the mast) beareth many other things; for it carieth both sorts of Gall, the black
and the white: certaine berries also like Mulberries, but that they be drie and hard, resembling I
for the most part a Bulls head, containing within them a fruit much like the kernels of the Olive.
Moreover, there grow upon it certain little balls not unlike to nuts, having soft flos within good
to make candle-wieke or matches for lamps; for burn they will without any oile, like as the black
Galls. It beareth also other little pills or balls good for nothing, covered over with haire, & yet
in the spring time they yeeld a certain juice or liquor like honey. Furthermore, there breed in
the hollow arme-pits (as it were) of the boughs, other small pills fetled or sticking close to the
wood, and not hanging by any steles, which toward the navill or bottome thereof are whitish;
otherwise they be speckled all over with blacke spots, save that in the mids betweene they are of a
scarlet red colour: open them, and hollow they are within, but very bitter. Sometimes also this K
Oke engendreth certain hard callosities, like Pumish stones; yea and other round balls made of
the leaves folded one within another: on the backside also of the leafe where it is reddish, yee
shall find sticking certaine waterish pearls, white and transparant or cleare within, so long as they
be soft and tender, wherein there breed little flies or gnats: howbeit in the end they ripen and
wax harder, in manner of Galls.

CHAP. VIII.

*Of the Catkin called Cachrys: the graine of Scarlet: of Aga-
ricke, and Corke.*

THe Oke called Robur, bringeth forth likewise a certaine pendant chat or catkin, named in L
Greeke Cachrys: for so they tearme the little pill, which is of a burning and causticke na-
ture, and whereof there is use in Physicke for potentiall cauteries. The like groweth upon
Firres, Larch trees, Pitch trees, Lindens or Tilletts, Nut-trees, and Planes, namely after that the
leaves be falne; and abideth upon the tree in winter time. These chats have a kernell within like
to those of the Pine-nuts. It beginneth to grow in winter, and by the spring time all of it openeth
and spreadeth to the prooffe; but when the leaves begin to bud and put forth, it falleth off. Thus
you see how fruitfull these Okes be, and how many things besides mast, they do bring forth. And
yet they cease not nor give over thus, for many times a man shall see certaine excrescences
growing forth about their roots, such as toadstools and mushrooms; the last devises that our glut-
tons have invented to whet their appetite and stomacke, and to maintaine gourmandize. The M
common Oke breedeth the best of this kind: as for those that grow about the Oke Robur, the
Cypresse, and Pine tree, they are hurtfull to be eaten and venomous. Moreover, *Hesiodus* saith,
that the Okes Robora do beare Miffelto, and yeeld honey. True it is indeed, that the honey-dews
called Manna, falling from heaven (whereof we have spoken before) light not upon any other
leaves

A leaves more than of those Oakes. Moreover, this is knowne for certain, that the ashes of this oke when it is burnt, hath a qualitie or tast of nitre or salt-peter.

Howbeit for all the riches and fruit that the Oke affouderth, the Scarlet graine alone which commeth of the Ilex, challengeth yea and overmatcheth it. This graine is no other than a verie excrement or superfluitie arising about the stem of the small shrub called Ilex Aquifolia, scraped and pared off from it, like such refuse as they call Cusculium, or Quisquilium: but of such price it is, that the poore people of Spaine gather it, & make a good part of their revenue thereby, even as much as will pay halfe their tribute. As touching the commendable use thereof in dying, wee have sufficiently spoken in the discourse of the purple tincture. This scarlet graine is engendred also in Galaria, Africa, Pisidia, and Cicilia. But the worst of all other is that which

B commeth out of Sardinia.

As for Agaricke, it groweth in Fraunce principally upon trees that beare mast, in manner of a white mushroom: of a sweet favor, very effectuall in Physicke, and used in many Antidotes and soveraigne confections. It groweth upon the head and top of trees: it shineth in the night, and by the light that it giveth in the darke, men know where and how to gather it.

Of all Mast trees, the Oke called by the Greekes Ægylops, beare certaine drie excrescences swelling out like touchwood, covered all over with a hoarie and hairie mosse, and these not onely beare out from the barke of the fruit, but also hang downe from the boughs a cubit in length: and odoriferous they are, as we have shewed in our treatise of Ointments.

C Now concerning Corke, the woodie substance of the tree is very small, the mast as bad, hollow, spongeous, and good for nothing. The barke onely serveth for many purposes, which will grow again when the tree is barked, and that of such a thicknes, that it will beare ten foot square. Much use there is of it in ships, & namely for boys to ancre cables; also for flores to trainels or dragnets that fishers doe occupie: moreover in bungs and stopples of barrels, bottles, and such like vessels. Finally, our gentlewomen and daintie dames have the soles of their pantofles and winter-shoes underlaid therewith. In regard of which barke, the Greekes call it by a prety name, and not improperly, The Barke tree, or the tree all barke. Howbeit some would have it to be the female Ilex or mast Holm, and so they name it: and where there groweth no Ilex, in stead thereof they take Corke, especially in carpentrie and cart-wrights worke, as about Elis and Lacedæmon. Neither groweth it in all parts of Fraunce, ne yet in any one quarter of Fraunce.

D

CHAP. IX.

¶ *What trees they be that carrie barke good for any use.*

THe paisants of the countrey and the rusticall people employ much, the barke also of Beeches, Lindens or Tilletts, Firres, and Pitch trees: for thereof they make sundry vessels, as paniers, baskets, and certain broad and wide hampers for to carrie their corne and grapes in time of harvest and vintage, yea and otherwhiles they cover their cottages therewith. Moreover, spies use to write in barks (when they be fresh and green) intelligences to their captaines; graving and drawing their letters so, as that the sap and juice thereof covereth them. To conclude, the barke of the Beech tree is used in certaine religious ceremonies of sacrifice: but when the tree is spoiled of the barke, it soone fadeth and dieth.

E

CHAP. X.

¶ *Of Shindles: of the Pine tree, the wild Pine, the Firre, Pitch tree, Larch tree, Torch tree, and the Yew.*

THe boards or shindles of the wild Oke called Robur, be of all others simply the best: and next to them, those which are made of other mast-trees, and especially of the Beech. The shindles are most easily rent or cloven out of all those trees which yeeld Rosin, but setting

F

aside the Pine-wood onely, none of them are lasting. *Cornelius Nepos* writeth, that the houses in Rome were no otherwise covered over head but with shindles, untill the warre with *K. Pyrrhus*, to wit, for the space of 470 years after the foundation of the citie. And of a truth, the chiefe quarters of Rome were divided and distinctly named by certain woods and groves neare adjoining. And even at this day there remaineth the quarter of *Jupiter Fagutalis*, where sometime stood a tuft or

grove of Beeches: also the gate Querquetulana, bearing the name of an Oke-row: likewise the hill Viminalis, from whence they used to fetch windings and bands of osiers: and many other groves, whereof some were set double, and were two of a name. Wee read in the Chronicles, that *Q. Hortensius* Dictator for the time being, (when as the commons arose, and in that mutinie or insurrection forsook the citie and withdrew themselves to the fort Ianiculum) made a law and published it within a certaine grove hard by, called Esculetum, where there grew a number of trees named Esculi, and the said statute ran in this forme, That whatsoever ordinance should be enacted by the same Comminaltie, it should bind all citizens of Rome whomsoever, to observe and keepe.

In those daies the Pine and Firre, and generally all trees that yeeld Pitch, were held for straungers and aliens, because none of them were knowne to grow near unto the citie of Rome: whereof now we will speake, the rather because the beginning and the whole manner of confecting and preserving wines, might be thereby throughly known. First and formost, some of the trees aforesaid in Asia or in the East parts, doe bring forth Pitch. In Europe there be sixe sorts of trees, seeming all of one race, which yeeld the same. Of which, the Pine and the Pinafter carie leaves thin and slender in manner of haire, long also and sharpe pointed at the end. The Pine beareth least Rosin of all others, howbeit otherwise some it hath in the verie fruit thereof, which we call Pine-nuts or apples (whereof we have already written) yet so little it is, that hardly a man would reckon the Pine among those kind of trees that yeeld Rosin. The Pinafter is nothing els but the wild Pine: it groweth wonderfull tall, putting forth armes from the mids of the trunk or bodie upward; whereas the other Pine, brauncheth only in the head: this of the twaine is more plentifull in Rosin, whereof we will speake more anon. These wild Pines grow also upon plains. There be trees upon the coasts of Italie which men call Tibuli, and many think they be the same, although they carie another name: slender they are and shorter, altogether without knots, and little Rosin they have in them or none: but they serve very well for shipwrights to build frigats & brigandins.

The Pitch-tree loveth the mountains and cold grounds: a deadly and mournfull tree it is, for they used in old time to sticke up a branch thereof at the doores of those houses where a dead corps was, to give knowledge thereof abroad: yea and commonly it grew greene in churchyards and such places where the manner was to burne the bodies of the dead in funerall fires: but now adadies it is planted in courtyards and gardens near our houses, because it may be easily kept with cutting and shredding, it brauncheth so well. This tree putteth forth great abundance of Rosin, with white graines or kernels comming betweene, so like unto Frankincense, that if it be mingled therewith, unneeth or hardly a man may discern the one from the other by the eye. And hereupon it commeth, that druggists and Apothecaries doe sophisticate Frankincense and deceive folke with it. All the sort of these trees are leaved with short, thicke, and hard prickie bristles, in manner of the Cypresse. The Pitch tree beginneth to shoot forth branches even from the very root almost, and those be but small, bearing out like armes, and sticking one against another in the sides. Semblably do the Fir-trees, which are so much sought for to serve shipping: and yet this tree delighteth in the highest mountains, as if it fled from the sea of purpose, and could not away with it: and surely the forme and manner of growing is all one with the Pitch tree. The wood thereof is principall good timber for beames, and fitteth our turne for many other necessities of this life. Rosin if it be found in the Firre, is thought a fault in the wood, whereas the only commoditie of the Pitch tree, is her Rosin; and yet sometime there frieth and sweareth out a little thereof, in the extreme heat of the sun. The timber of them both is not alike, for that of the Firre is most faire and beautifull; the Pitch tree wood serveth only for cloven lath, or rent shindles, for Coopers to make tubs and barrels, and for some few other thin bourds and painels.

As for the Larch tree, which is the fift kind of those that beare Rosin: like it is to the rest, and loveth to grow in the same places: but the timber is better by ods, for it rotteth not, but will last and endure a long time: the tree will hardly be killed: besides, it is red of color, and carieth an hotter and stronger smell than the other. There issueth forth of the tree as it groweth, good store of liquid Rosin, in colour like to honey, somewhat more clammy, which will never grow to be hard.

A sixt sort there is of these trees, and it is properly called Teda, [*i. the Torch-tree:*] the same yeeldeth more plentie of moisture and liquor than the rest: lower it is of growth than the Pitch-tree, but more liquid and thin: very commendable also to maintain fire at sacrifices, and to burn in torches for to give light. These trees, I meane the male onely, bring forth that strong and stinking

A king rosin, which the Greekes call Syce. Now, if it happen that the Larch tree prove Teda [i. to be Torch-wood] it is a signe that it doth putrifie, and is in the way of dying.

The wood of all these kinds before named, if it be set a fire, maketh an exceeding grosse and thicke smoke, and presently turneth into a coale, spitting and sparckling a farre off; except that only of the Larch tree, which neither burneth in light flame, nor maketh coale, ne yet consumeth in the fire no otherwise than a very stone.

B All these trees whereof we speake, continue green all the yeare long: and very like they are in leafe, that men otherwise of cunning and good experience, have ynough to doe to discern one from the other by it, so neare of kin they be, and their race so much intermingled. But the Pitch-tree is not so tall as the Larch: for the Larch is thicker in bodie, of a thinner and lighter barke, more shag leaved, and the said leaves fattier, growing thicker, more pliable, & easier to wind and bend: whereas the leaves of the Pitch-tree hang thinner, they be of a drier substance, more slender, and subject to cold; and in one word, the whole tree is more rough and hideous to see to, and withall, full of rosin; the wood also resembleth the Firre, rather than the Larch.

The Larch tree, if it be burnt to the very stump of the root, will not spring againe and put forth new shoots: whereas the Pitch tree liveth still for all the fire, and will grow afresh: the experience whereof was seene in the Island Lesbos, at what time as the Forrest Pyrrhæum was set on fire, and cleane burnt to the ground.

C Moreover, every one of these kinds differ in the very sex: for the male of each kind is shorter and harder: the female taller, having fattier leaves, and the same soft and plain and nothing stiffe and rugged. The wood of the male, is tough, and when it is wrought, keepeth not a direct graine, but windeth and turneth, so that the Carpenter must go every way about it both with axe and plane: contrariwise, that of the female is more firm and gentle. And commonly the axe or the hatchet will tell the difference of male and female in any tree; for what wood soever it be, it will soon find and feele the male, for hardly is it able to enter, but either turneth edge or rebounds againe: & whether a man hew or cleave withall, it maketh more crashing and a greater noise where it setleth and taketh hold; it sticketh also faster, and with more adoe is plucked forth. Furthermore, the very wood of any male tree, is of a more browne and burnt colour, yea, & the root of a blacker hew.

D About the Forrest Ida within the territorie of Troas, there is another distinction of trees in the same kind: for some grow upon the mountaines, others toward the coast and the sea side. In Macedonia, Arcadia, and about Elis, these trees commonly change their names: inso much, as the Greeke writers are not agreed how to distinguish their severall sorts, and to range them duly in their kind. For mine owne part, I have set them downe distinctly according to the judgement of Romane and Latine Authors.

Of all the trees abovenamed, the Firres surpass for bignesse: and the females are the taller. The timber is more firm and soft, more profitable also and easier to be wrought: the tree it selfe rounder, and so it brancheth arch-wise: the boughs as they resemble wings stretched out and displaid, so they stand so thicke with leaves, that they will beare off a good shower, inso much, as no raine is able to pierce through. In summe, the female Firre is faire more lovely and beautifull every way than the male.

E All the sort of these foresaid trees, save only the Larch, beare certaine knobs like Catkins or Chats, composed (as it were) of many scales wrought one over another, and those hang downe dangling at the branches. These knobs or clogs of the male Firre, have in the upper end a kernell within: but those of the female have no such thing. Moreover, the Pitch tree as it hath such Catkins lesse and slenderer; so all within, from one end to the other, the kernels be passing little and blacke withall, like to lice or fleas: which is the reason, that the Greekes call it Phthirophoros. The said Catkins of the male Pitch trees are more flat, and nothing so round as those of the females, lesse gummie also and not so moist of the rosin.

F To come now to the Yugh, because we would overpasse none: it is to see to, like the rest, but that it is not so greene; more slender also and smaller, unpleasant and fearefull to looke upon, as a cursed tree, without any liquid substance at all: and of these kind of trees, it alone beareth Berries. The fruit of the male is hurtfull: for the berries in Spaine especially, have in them a deadly poyson. And found it hath been by experience, that in Fraunce the wine bottles made thereof for wayfaring men and travellers, have poysoned and killed those that drunke out of them. *Seistus* saith, that the Greekes call it Smilax: and that in Arcadia it is so venomous, that whosoever

take either repose or repast under it, are sure to die presently. And hereupon it commeth, that those poysons wherewith arrow heads be envenomed, after some were called in times past Taxica, which now wee name Toxica. But to conclude, it is seene by good prooffe, that if a brazen wedge or spike be driven into the very bodie of the tree, it loofeth all the venomous nature, and becommeth harmelesse.

CHAP. XI.

How to make all kinds of Pitch. The manner how Cedrium is made. Also, of thicke pitch, how it is made, and in what sort Rosin is boiled.

THe liquid Pitch or Tarre throughout all Europe, is boiled out of the Torch tree: and this kind of Pitch serveth to calke ships withall, and for many other uses. Now the manner of drawing Tarre out of this tree, is, to cut the wood thereof into peeces, and when they are piled up hollow into an heape, to make a great fire within, as it were under a furnace, being claied without-forth: thus with the heat of the fire it doth drie and seeth againe. The first liquour that sweateth and issueth forth, runneth cleare as water, in a channell or pipe made for the purpose: and this the Syrians call Cedrium: which is of such force and efficacie, that in Ægypt they use to embaulme the dead bodies of men and women departed, and keepe them from putrifaction. At the next running it is thicker, and this second liquor is very Pitch. Howbeit, this is cast again into certain coppers or cauldrons of brasse, and together with vinegre sodden a second time, untill it come to a thicke *consistence: and when it is thus thickened, it taketh the name of Brutian Pitch, good onely for tuns, barrells, and other such vessels. Much like it is to the former Pitch, but that it is more glutinous and clammy, redder also of colour, and more fattie. And thus much concerning the Pitch made of the Torch-tree.

* Palm pitch,
i. Stone-pitch.

As for that which commeth of the Pitch tree, the Rosin thereof is drawn with red hot stones in certain vessels made of strong and thicke Oken planks: or, in default thereof the wood is cloven into peeces, and piled together, after the order of a charcole hearth, and so the pitch boileth forth. The use hereof, when it is beaten into a kind of meale or powder, is to bee put into wine, and it is of a blacker colour than the rest. The same pitch-rosin, if it be boiled more lightly with water, & be let to run through a strainer, commeth to a reddish colour, and is glewie: and thereupon it is called Stilled pitch. And for this purpose lightly, is set by the more grosse & faultie substance of the rosin, together with the barke of the tree. But there is another composition and manner of making pitch that serveth for headie wine, called Crapula. For the flower of the rosin is taken greene and fresh, as it distilleth from the tree, together with a good quantitie of small, thinne, and short spils or chips of the tree plucked away with the same: the same are shred and minced so small, as they may passe through a sieve or a riddle: which done, all is put into scalding water, and there boileth untill it be incorporate with the water. The fat substance that is strained and pressed from hence, is the excellent pitch-rosin, hard to come by, and not to bee found in Italic, unless it bee in few places under the Alpes; and singular good it is in Physicke. Now for to make it passing white, there must bee taken one gallon of the rosin, and sodden in two gallons of raine-water. But some thinke it the better way, to seeth it a whole day together at a soft fire, without any matter at all, in a pan or vessell of latton. Others there be likewise that boile Terpentine in a hote frying pan, and are of opinion, that this is the best of all others. And the next to it in goodnesse, is the Lentiske rosin, called Mastich.

CHAP. XII.

Of the Pitch Zopissa, which is scraped from ships, and of Sapium. Also, what trees are in request for their timber.

IT would not bee forgotten, that the Greekes have a certaine Pitch, scraped together with waxe from ships that have lien at sea, which they call Zopissa (so curious are men to make experiments and trie conclusions in every thing;) and this is thought to bee much more effectuall for all matters that pitch and rosin are good for, by reason of the fast temperature that it hath gotten by the salt water.

For

A For to draw rosin out of the *Pitch-tree, it must be opened on the Sun side, not by giving a slit or gash in the barke, but by cutting out a peece thereof, so that the tree may gape and lie bare two foot at the most: and from the earth, this wound to bee at least a cubite. Neither doe they spare the entire bodie and wood of the tree, as they doe in the rest: for there is no daunger thereof, considering that the very chips of the wood being cut out, are full of liquor, and doe serve to make pitch. But the nearer that the said ouverture or hole is made to the earth, the better is the rosin that issueth forth: for if it be higher, it is bitter. When this is done, all the humour afterwards runneth to the ulcer or incision aforesaid, from every part of the tree. The like it doth in the Torch pine. When it hath left running to the first hole, there is a second likewise made on another side, and so still is the tree opened every way: untill at length tree and all is hewed down, and the very pith and marrow thereof serveth for Torch wood to burne. Semblably, in Syria they use to plucke the barke from the Terebinth, yea, and they pill the boughs and roots too for Terpentine, howsoever in other trees the rosin issuing out of those parts, is not counted good. In Macedonie the manner is to burne the male Larch, but the roots onely of the female for to draw out pitch. *Theopompus* wrate, that there is found in the territorie of the Apollonians, a kind of minere pitch, called Pistasphaltum, nothing inferiour in goodnesse to the Macedonian.

The best pitch in all countries, is that which is gathered from trees, standing upon the North wind, and in places exposed to the Sunne-shine. As for that which commeth from shadowie places, it is more unpleasant to the eie, and carrieth besides a strong and stinking favour. If it be a cold and hard winter, the pitch then made is the worse, there is also lesse store of it, and nothing is it so well coloured. Some are of opinion, That the pitch issueth in more abundance out of trees in the mountaines, also that it is better coloured, sweeter in tast, more pleasant also in smell, namely, while it is raw pitch-rosin, and as it runneth from the tree: but if it be boiled, it yeeldeth lesse plentie of pitch than that which commeth of trees in the plaine, and runneth all into a thin liquor in manner of whey, yea, & the very trees themselves are smaller. But both the one and the other, as well the mountaine pines and pitch-trees, as those of the plaines, yeeld not so much pitch in a faire and drie season, as when the weather is rainie and full of clouds. Moreover, some there be of these trees that yeeld forth fruit (which is their rosin) the very same yeare that immediately followeth their incision; others, two yeares after; yea, and some again in the third yeare. As for the incision or open wound that is made, it filleth up with rosin: for neither dooth it souder or unite in manner of a skar, ne yet closeth the barke againe: for in this tree, being once divided it will never come together and meet.

D Among these trees, some have reckoned one kind by it selfe named Sapium, because it is replanted and groweth of some of the sions or imps of the said trees, in manner as hath been shewed before in our treatise of nut-kernels. The nether parts of which tree they call Teda [Torch-wood:] whereas indeed this tree is no other than the Pitch-tree, brought to a more mild and gentle nature by transplanting. As for that which the Latines call Sapius, it is nothing else but the wood or timber of these kind of trees, being hewed or cut downe, as we will *hereafter declare in place convenient.

* Chap. 39 of this booke.

E CHAP. XIII.

¶ Of the Ash, foure kinds thereof.

THERE be many trees besides that Nature hath brought forth, onely for their wood and timber: and among them the Ash, which of all others, groweth most plenteously in every place. A tall tree this is, and groweth round, bearing leaves set in manner of feathers or wings; much ennobled by the praise and commendation that the Poet *Homer* giveth it, as also for the speare or lance of *Achilles*, made thereof. And in very truth, the wood serveth right well for many uses. As for the timber of the Ash, growing upon the Forrest Ida in Troas, it is so like the Citron-wood, that when the bark is off, a man may hardly discern the one from the other, in so much, as the merchants and chapmen are deceived therewith.

F The Greekes have made two kinds of the Ash: the one runneth up tall and even without a knot: the other is lower, more tough and hard, and withall, of a more brown and dusky colour: and the leaves resemble the Lawrell. In Macedonie they have an Ash, which they call Bumelia, which of all other is the tallest and biggest, the wood wherof is most pliable and bending. Others

have

have put a difference betweene Ashes, according to the places: for that of the plaine and champion countrey, hath a more curled or frised graine than the other of the mountaines, but contrariwise, the wood of this is more compact and harder than the other. The leaves of this tree, according to the Greekes, are hurtfull, venomous, and deadly to Horses, Mules, and such labouring garrons; but otherwise to beasts that chew cud, they be harmelesse. Howbeit, in Italie, if horses, &c. doe brouse of the leaves, they take no harme thereby. Moreover, they be excellent good, and nothing so soveraigne can be found against the poyson of serpents, if the juice thereof be pressed forth, & given to drinke; or to cure old ulcers, if they be applied and laid thereto in manner of a cataplatte: nay, so forcible is their vertue, that a serpent dare not come neare the shadow of that tree, either morning or evening, notwithstanding at those times it reacheth farthest; you may be sure then they will not approach the tree it selfe, by a great way. And this am I able to deliver by the experience which I have scene, that if a man doe make a round circle with the leaves thereof, and environ therewith a serpent and fire together within, the serpent will chuse rather to goe into the fire, than to flie from it to the leaves of the ash. A wonderfull goodnesse of dame Nature, that the Ash doth bloome and flourish alwaies before that serpents come abroad; and never sheddeth leaves, but continueth green, untill they be retired into their holes, and hidden within the ground.

CHAP. XIII.

Of the Line or Linden tree, two sorts thereof.

Great difference there is every way between the male and female Linden tree: for, the wood of the male is hard and knottie, of a redder colour also, and more odoriferous than the female. The barke moreover is thicker, and when it is plucked from the tree, it is stiffe, and will not bend. It beareth neither seed nor flower, as the female doth: which also is rounder and bigger in bodie, and the wood is whiter and more faire and beautifull by farre than is the male. A strange thing it is to consider, that there is no living creature in the world will touch the fruit of the Linden tree, and yet the juice both of leafe and barke is sweet ynough. Between the barke and the wood of this tree there bee thin pellicles or skins lying in many folds together, whereof are made bands and cords called Bazen ropes. The finest of these pellicles or membranes served in old time for to make the labels and ribbands belonging to chaplets, and it was reputed a great honour to weare such. The timber of the Linden or Tillet tree will never be worne-eaten. The tree it selfe is nothing tall, but of a meane height, howbeit the wood is very commodious.

CHAP. XV.

Ten kinds of the Maple tree.

The Maple in bignesse is much about the Linden tree: the wood of it is very fine and beautifull, in which regard, it may bee raunged in the second place, and next to the very Citron tree. Of Maples there bee many kinds: to wit, the white, and that is exceeding faire and bright indeed, growing about Piemont in Italie, beyond the river Po, and also beyond the Alps, and this is called the French Maple. A second kind there is, which hath a curled graine running to and fro with diverse spots; the more excellent worke whereof, resembling the eies in the Peacockes taile, thereupon tooke also the name. And for this rare and singular wood, the countries of Istria and Rætia bee cheefe. As for that which hath a thicke and great graine, it is called Crassivenium of the Latines, and is counted to bee of a baser kind. The Greekes distinguish Maples by the diverse places where they grow. For that of the champion or plaine countrey (which they name Glinon) is white, and nothing crisped: contrariwise, the wood of the mountaine Maple is harder and more curled, and namely, the male of that sort, and therefore it is in great request for most exquisite and sumptuous woikes. A third sort they name Zygia, which hath a reddish wood, and the same easie to cleave: with a barke of a swert colour, and rough in handling. Others would have it to be no Maple, but rather a tree by it selfe, and in Latine they call it Carpinus.

* Plinie herein is deceived. For the Line-tree with us, is comparable to the highest Okes in tallnesse.

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CHAP. XVI.

¶ Of the Bosses, Wennes, and Nodosities, called Bruscum and Molluscum:
Of the wild Fijlicke or Bladder nut-tree called Staphylodendron: also, three kinds of the Box-tree.

THe bunch or knurre in the Maple, called Bruscum, is passing faire, but yet that which is named Molluscum, excelleth it. Both the one and the other swell like a wen out of the Maple. As for the Bruscum, it is curled & twined after a more crawling and winding manner: whereas the Molluscum is spread with a more direct and streight course of the graine. And certes, if there might be planks hereof found, broad ynough to make tables, doubtlesse they would be esteemed and preferred before those of the Citron-wood. But now it serveth only for writing tables, for painels also and thin bords in wainescot work, to set out beds heads and feelings, and such are seldome seene. As for Bruscum, there bee tables made of it, inclining to a blackish colour. Moreover, there be found in Alder trees, such nodosities; but not so good as those, by how much the wood of the Alder it selfe is inferiour to the Maple, for beautie and costlinesse. The male-Maples doe put forth leaves and flourish before the female. Yea, and those which grow upon drie grounds, are ordinarily better esteemed than those of moist and waterish places, in like sort as the Ashes.

B

Beyond the Alpes there is a kind of Bladder nut-tree, whereof the wood is very like unto the white Maple, and the name of it is Staphylodendron. It beareth certaine cods, and within the same, kernels in tast like the Filberd or Hazell-nut.

C

Now for the Box-tree, the wood thereof is in as great request as the very best: seldome hath it any graine crisped damaske wise, and never but about the root, the which is dudgin and full of worke. For otherwise the grain runneth streight and even without any waving: the wood is sad ynough and weightie: for the hardnesse thereof, and pale yellow colour, much set by and right commendable. As for the tree it selfe, gardeners use to make arbours, borders, and curious works thereof. Three sorts there be of the Box-tree: the first is called the French boxe, it groweth taper-wise, sharpe and pointed in the top, and runneth up to a more than ordinarie height. The second is altogether wild, and they name it Oleastrum, good for no use at all; and besides carrieth a strong and stinking favor with it. The third is our Italian Boxe, and so called. Of a savage kind I take this to be also: howbeit, by setting and replanting, brought to a gentle nature. This spreadeth and brancheth more broad: and herewith a man shall see the borders and partitions of quarters in a garden, growing thicke and greene all the year long, and kept orderly with cutting and clipping. Great store of Box-trees are to be seene upon the Pyrenæan hills, the Cytorian mountaines, and the whole Bercynthian tract. The thickest and biggest Box-trees be in Corfica, and they beare a lovely and amiable flower, which is the cause, that the honic of that Island is so bitter. There is not a beast that will eat the fruit or graine thereof. The Boxes of Olympus in Macedonie, are more slender than the rest, and but low of growth. This tree loveth cold grounds, yet lying upon the Sunne. The wood is as hard to burne as yron: it will neither flame or burne cleare it selfe, nor

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E

serve to make charcole of.

CHAP. XVII.

¶ Of the Elme, foure kinds.

Between these wild trees abovesaid, and those that beare fruit, the Elme is reckoned of a middle nature, in regard of the wood and timber that it dooth affoord, as also of the friendship and acquaintaince that it hath with Vines. The Greekes acknowledge two sorts thereof: namely, the one of the mountaines, which is the taller and bigger: and the other of the plaines and champion; which is the rather more like a shrub, the branches that it shooteth forth are so small and slender. In Italie men hold the Elmes about Atinum to be the tallest, and of those they preferre them which grow in drie grounds, and have no water comming to them, before those by river sides. A second sort of them, which are not all out so great, they call the French Elmes. The third kind be Italian Elmes, thicker growne with leaves than the rest, and those proceeding in greater number from one stemme. In the fourth place bee raunged the wild Elmes.

The

The Atinian Elmes abovesaid beare no Samara (for so they call the seed or graine of the Elme.) G
All the kind of them are planted of sets taken from the roots, whereas others come of seeds.

CHAP. XVIII.

¶ *The nature of trees, as touching the place where they grow.*

HAVING thus discoursed in particular of the most famous and noble trees that are. I thinke it not amisse to say somewhat of their natures in generall. And first to begin with the mountain high countries: the Cedar, the Larch, and the Torch-tree love to grow among the hills; like as all the rest that engender rosin: semblably, the Holly, the Boxe-tree, the Mastholme, the Juniper, the Terebinth, the Poplar, the wild Ash Ornus, the Cornell tree, and the Carpin. Vpon the great hill Apennine there is a shrub named Cotinus, with a red or purple wood, most excellent for inlaid workes in Marquettric. As for Firres, the wild hard Okes (Robora) Chestnut-trees, Lindens, Mast-holmes, and Cornell trees, they can away with hills and valleies indifferently. The Maple, the Ash, the Servis tree, the Linden and the Cherry-tree, delight in the mountaines neare to waters. Lightly a man shall not see upon any hill, Plum-trees, Pomgranate trees, wild Olives, Walnut-trees, Mulberrie trees, and Elders. And yet the Cornell tree, the Hazell, the common Oke, the wild Ash, the Maple, the ordinarie Ash, the Beech, and the Carpin, are many times found to come downe into the plaines: like as the Elme, the Apple tree, the Peare tree, the Bay tree, the Myrtle, the Bloud shrubs, the Holme, and the Broome (which naturally is so good for to die clothes) doe as often climbe up the mountaines. The Servis tree gladly groweth in cold places: so doth the Birch, and more willingly of the twaine. This is a tree which is meere French, and came first out of Fraunce: it sheweth wonderfull white, and hath as fine and small branches or twigs, which are so terrible to the offenders, as wherewith the Magistrats rods are made for to execute justice. And yet the wood of this tree is passing good for hoopcs, so pliable it is & easie to bend: the twigs thereof serve also for to make paniers and baskets. In France they use to boile the wood, and thereof draw a glutinous and clammie slime in manner of Bitumen. In the same quarters there loveth to grow for companie the white thorn, which in old time they were wont to burne for torches at weddings, and it was thought to be the most fortunat and luckie light that could be devised, because (as *Massurius* doth report) the Romane shepheards and heardmen who ravished the Sabine maidens, were furnished every one with a branch thereof, to make them torches. But nowadaies the Carpine and the Hazell are commonly used for such nupriall lights. The Cypresse, Walnut, Chestnut-trees, and the Laburnum, cannot in any wise abide waters. This last named, is a tree proper unto the Alpes, not commonly knowne: the wood thereof is hard and white: it beareth a blossome of a cubite long, but Bees will not settle upon it. The plant likewise called Iovis Barba, so handsome to bee cut in arbours and garden workes, which groweth so thicke and round withall, full of leaves, and those of a silver colour, hateth waterie places. Contrariwise, Willows, Alders, Poplars, & Oisfars, and the Privet which is so good for to make dice, will not grow well and prosper but in moist grounds. Also the Vaccinia or Whortles, set and sowed in Italie for the fowlers to catch birds withall; but in France for the purple colour, wherewith they use to die cloths for their servants and slaves.

To conclude, this is a generall rule, What trees soever will grow indifferently as well upon hills as plaines, arise to be taller, bigger, & carie a fairer head to see to in the low champion grounds: but timber is better, and carieth a more beautifull graine upon the mountaines, except onely Apple-trees and Pyrries.

CHAP. XIX.

¶ *A division of trees, according to their generall kinds.*

MOREOVER, some trees loofe their leaves: others continue alwaies greene. And yet there is another difference of trees before this, and wherupon this dependeth. For trees there be which are altogether wild & savage: there be again which are more gentle and civile: and these names me thinks are very apt to distinguish them. Those trees therefore which are so kind and familiar unto us, as to serve our turns either with their fruit which they bear, or their shade which they yeeld, or any other vertue or propertie that they have, may very aptly and fitly be called civile and domesticall.

CHAP. XX.

Of trees that never shed their leaves: also of Rhododendron.

AMong these trees and plants which are of the gentle kind, the Olive, the Lawrell, the Date tree, Myrtle, Cypresse, Pines, Ivie, and the Oleander, loose not their leaves. As for the Oleander, although it bee called the Sabine herbe, yet it commeth from the Greekes, as may appeare by the name Rhododendron. Some have called it Nerion, others Rhododaphne: it continueth alwaies green leaved, beareth flowers like roses, and brancheth very thicke. Hurtefull it is and no better than poison, to Horses, Asses, Mules, Goats, and Sheep, and yet unto man it serveth for a countrepoison, and cureth the venime of serpents.

CHAP. XXI.

What trees shed not their leaves at all: which they be that loose them but in part: and in what countries all trees are ever greene.

OF the wild sort, the Firre, the Larch, the wild Pine, the Juniper, the Cedar, the Terebinth, the Box tree, the mast-Holme, the Holly, the Corke tree, the Yew, and the Tamariske, be greene all the yeare long. Of a middle nature betweene these two kinds abovenamed, are the Adrachne in Greece, and the Arbut or Strawberrie tree in all countries: for these loose the leaves of their water-boughs, but are ever green in the head. Among the shrubskind also, there is a certaine bramble and Cane or Reed, which is never without leaves. In the territorie of Thuri-um in Calabria, where sometime stood the city Sybaris, within the prospect from the said citie, there was one Oke above the rest to be seene, alwaies green and full of leaves, and never began to bud new before midsummer: where by the way, I marveile not a little, that the Greeke writers delivered thus much of that tree in writing, and our countrymen afterwards have not written a word thereof. But true it is, that great power there is in the climat: insomuch as about Memphis in Ægypt, and Elephantine in the territorie Thebais, there is not a tree (not so much as the verie vine) that sheddeth leaves.

CHAP. XXII.

The nature of such leaves as fall from trees: and what leaves they be that change colour.

ALL trees without the ranage of those before rehearsed (for to reckon them up by name particularly were a long and tedious peece of worke) doe loose their leaves in winter. And verily this hath been found and observed by experience, that no leaves do fade & wither, but such as be thin, broad, & soft. As for such as fall not from the tree, they be commonly thicke skinned, hard, and narrow: and therefore this is a false principle and position which some hold, That no trees doe shed their leaves which have in them a fatie sap or oleous humiditie: for who could ever perceive any such thing in the mast-Holme? a drier tree there is not, and yet it holdeth alwaies green. *Timarus* (the great Astrologer and Mathematician) is of opinion, that when the sunne is in the signe Scorpio, he causeth leaves to fall, by a certain venomous and poisoned infection of the aire, proceeding from the influence of that maligne constellation. But if that were true, we may well and justly marveile, why the same cause should not be effectuell likewise in all other trees. Moreover, we see that most trees doe let fall their leaves in Autumne: & some are longer ere they shed, and continue greene untill winter bee come. Neither is the timely or slow fall of the leafe long of the early or late budding; for wee see some that burgen and shoot out their spring with the first, and yet with the last shed their leaves and become naked: as namely the Almond trees, Ashes, and Elders. And contrariwise, the Mulberrie tree putteth forth leaves with the latest, and is one of them that soonest sheddeth them againe. But the cause here-
Fof lyeth much in the nature of the soile: for the trees that grow upon a leane, drie, and hungrie ground, doe sooner cast leafe than others: also old trees become bare before younger: and many of them also loose their leaves ere that their fruit be fully ripe: for in the Fig-tree, that commeth and beareth late, in the winter Pyrric, and Pomegranate, a man shall see in the latter end

of the yeare, fruit only and no leaves upon the tree. Now as touching those trees that continue ever greene, you must not thinke that they keepe still the same leaves, for as new come, the old wither and fall away: which happeneth commonly in mid-Iune about the summer Sun-stead. For the most part, the leaves in every kind of tree, doe hold one and the same colour, and continue uniforme, save those of the Poplar, Ivie, and Croton, which wee said was called also Cici, [*i. Ricinus, or Palma Christi.*]

CHAP. XXIII.

Three sorts of Poplar: and what leaves they be that change their shape and figure.

OF Poplars, there be found three sundrie kinds, to wit, the white, the black, and that which is named *Lybica, or the Poplar of Guynee: this hath least leaves, and those of all other blackest; but most commendable they are for the fungous meazles (as it were) that come forth thereof. As for the white Poplar leafe, it is of two colours; the upper side is whitish, the nether part greene. Both of it, and of the black Poplar, the leaves when they be young, are as round as if they were drawne with a paire of compasses, like unto those of Croton before-named: but as they grow elder, they run out into certaine angles or corners. Contrariwise, the Ivie leaves, at the first be cornered, and afterwards become round. All Poplar leaves are full of downe: as for the white Poplar (which is fuller of leaves than the rest) the said downe flieth away in the aire, like to mossie chats or thistle-downe. The leaves of Pomegranats and Almond trees stand much upon the red colour. But very straunge it is and wonderfull which happeneth to the Elme, Tillet or Linden, the Olive tree, Aspe, and Sallow or Willow: for their leaves after midsummer, turne about upside downe, in such sort, as there is not a more certaine argument that the sunne is entered Cancer, and returneth from the South point or summer Tropicke, than to see those leaves so turned.

CHAP. XXIII.

What leaves they be that use to turne every yeere. Of Palme or Date tree leaves, how they are to be ordered and used. Also certaine wonderfull observations about leaves.

THERE is a certain generall and universall diversitie and difference observed in the very leafe: for commonly the upper side which is from the ground, is of greene grasse colour, more smooth also and polished. The outside or nether part of the leafe, hath in it certain strings, finewes or veines, brawnes and joynts, bearing out like as in the backe-part of a mans hand: but the inside, cuts or lines, in manner of the palme of ones hand. The leaves of the Olive, are on the upper part whiter, and lesse smooth; and likewise of the Ivie. But the leaves of all trees for the most part, every day doe turne and lie open to the Sunne, as desirous to have the inner side warmed therewith. The outward or nether side toward the ground of all leaves, hath a certaine hoarie downe more or lesse here in Italy, but in other countries so much there is of it, that it serveth the turne for wooll and cotton. In the East parts of the world, they make good cordage and strong ropes of Date tree leaves (as we have said before;) and the same are better, and serve longer within, than without. With us these Date leaves are pulled from the tree in the spring, while they be whole and entire; for the better are they which are not cloven or divided. Being thus plucked, they are laid drying within-houfe foure daies together: after that, they be spred abroad and displaied open to the sunne, and left without dores to take all weathers both day and night, and to bee bleached, untill they be drie and white: which done, they be flived and slit for cord-worke. But to come againe unto other leaves, the broadest are upon the Figge-tree, the Vine, and the Plane; the narrowest, upon the Myrtle, Pomegranat, and Olive: as for those of the Pine and Cedar, they be hairie. The Holly leaves, and all the kinds of Holme, are set with sharpe pricks. As for the Juniper, in stead of leafe it hath a very pointed thorne. The Cypresse and Tamariske carrie fleshie leaves: those of the Alder be most thicke of all other. The Reed and the Willow have long leaves: the Date tree hath them double. The leaves of the Peare tree are round, but of the Apple tree pointed; of the Ivie cornered; of the Plane tree divided into certain incisions; of the Pitch tree and the Firre cut in, after the manner of comb-teeth; of the wild hard

* Taken by some, to be our Aspe.

A hard Oke, waved and indented round about the edges; of the brier and bramble, sharpe like thornes all the skin over. Of some, they be stinging and biting, as of Nettles: of others, readie to prick like pins or needles, as of the Pine, the Pitch tree, the Larch, the Firre, the Cedar, and all the sorts of Holly. The leaves of the Olive tree, and the mast-Holme, hang by a short stele, the Vine leaves by a long. The Poplar or Aspen leaves doe shake and tremble, and they alone keepe a whistling and rustling noise one with another. Moreover, in the very fruit it selfe, and namely in a certaine kind of Apples, ye shall have small leaves breake out of the very sides in the mids, in some single, in others double and two together. Furthermore, there bee trees that have their leaves comming forth about their boughs and branches, others at the very end and shoot of the twig: as for the wild oke Robur, it putteth leaves forth of the trunk and maine stocke. Over and besides, the leaves grow thicker or thinner in some than in others; but alwaies the broad and large leaves, are more thin than others. In the Myrtle tree, the leaves grow in order by rankes; those of the Box tree turne hollow; but in the Apple trees they are set in no order at all. In Pyrries and Apple trees both, ye shall see ordinarily many leaves put forth at one bud, hanging at one and the same taile. The Elme, and the Tree-trifolie, are full of small and little branches. *Cato* addeth moreover and saith, That such as fall from the Poplar or the Oke, may be given as fodder to beasts, but he willet that they be not over drie: and he saith expressly, that for kine and oxen, Fig leaves, mast-Holme leaves, and Ivie, are good fodder: yea and such kind of beasts may well brouse and feed of Reed leaves and Bay leaves. Finally, the Servise tree loofeth her leaves all at once, others shed them by little and little one after another. And thus much for the leaves of trees.

CHAP. XXV.

The order and course observed in Nature as touching plants and trees, in their conception, slowring, budding, knotting, and fructifying. Also in what order they put forth their blossoms.

THe manner and order of Nature yeare by yeare, holdeth in this wise: first, trees and plants doe conceive by the means of the Westerne wind Favonius, which commonly beginneth to blow about sixe daies before the Ides of Februarie: for this wind is in stead of an husband to all things that grow out of the earth, and of it they desire naturally to be conceived, like as the Mares in Spaine, of which we have written heretofore. This wind is that spirit of generation which doth breath life into all the world; which the Latines call thereupon Favonius, *à favendo*, [*i.* of cherishing and nourishing every thing] as some have thought. It bloweth directly from the Æquinoctiall Sun-setting, and evermore beginneth the Spring. This time, our rusticall peasants call the Seasoning, when as Nature seemeth to goe proud or assaured, and is in the rut and furious rage of love, desirous to conceive by this wind, which indeed doth vivifie and quicken all plants and seeds sowne in the ground. Now all of them conceive not at once, but in sundrie daies: for some are presently sped in a moment, like as living creatures: others are not so hastie to conceive, but long it is first ere they retaine, and as long againe before their vitall seed doth put forth; and this is thereupon called their budding time. Now are they said to bring forth and be delivered, when in the Spring they bloome, and that blossome breaketh forth of certaine matrices or ventricles. After this, they become nources all the while they cherish & bring up the fruit: and this time also the Latins call *Germinatio*, [*i.* the breeding season.] When trees are full of blossomes, it is a signe that the Spring is at the heighth, and the yeare become new againe. The blossome, is the very joy of trees, and therein standeth their chiefe felicitie: then they shew themselves fresh and new, as if they were not the same; then be they in their gay coats; then it seemeth they strive avie one with another in varietie of colours, which of them should excell and exceed in beautifull hew. But this is not generall, for many of them are denied this pleasure, and enjoy not this delight; for all trees blossome not: some are of an heavie and sad countenance, neither cheare they at the comming of this new season and glad some Spring: for the mast-Holme, the Pitch tree, the Larch, and the Pine, doe not bloome at all, they are not arrayed in their robes, they have not their liveries of divers colours to fore-signifie (as messengers and vantcourriers) the arrivall of the new yeare, or to welcome and solemnize the birth of new fruits. The Figge trees likewise both tame and wild, make no shew of flowers: for they are

not to soone bloomed (if they bloome at all) but they bring forth their fruit. And a wonderfull thing it is to see what abortive fruit these Figge-trees have, and how it never commeth to ripeness. Neither doe the Junipers bloome at all. And yet some writers there be who make two kinds thereof: and they say, that the one doth flower, and beare no fruit: as for the other which doth not blossome, it brings forth fruit upon fruit, and berie upon berie, which hang two yeers upon the tree before they come to maturitie. But this is false, for in verie truth all Junipers without exception, have evermore a sad looke, and at no time shew merie. And this is the case and condition verily of many a man, whose fortune is never in the flower nor maketh any outward shew to the world. Howbeit there is not a tree but it buddeth, even those that never blossome: And herein the diversitie of the soile is of great power: for in one and the same kind, such as grow in marish grounds, do shoot and spring first; next to them, those of the plains; and last of all they of the woods & Forrests. And generally the wild Pyrries growing in woods do bud later than any other. At the first comming of the westerne wind Favonius, the Cornell tree doth bud; next to it, the Bay; and somewhat before mid-march or the spring Æquinoctiall, the Tillet or Linden, and the Maple. The Poplar, Elme, Willow, Alder, and Filberds or Hazell nut trees, bud with the first. The Palme also maketh hast and is loth to come behind. All the rest at the point and prime of the spring, namely the Holly, the Terebinth, the Paliurus, the Cheston, and the Walnut-trees, or Mast-trees. Appletrees are late ere they bud, but the Corke tree longest of any other. Trees there be that put forth bud upon bud, by reason that either the soile is exceeding battill and fat, or else the weather fair and pleasant: and this hapneth more to be seen in the blades of corne. But trees if they happen to be over ranck in new shoots and buds, they wax wearie and grow out of heart.

Moreover, some trees there be that naturally doe sprout at other seasons besides the spring, according to the influence of certaine starres, whereof the reason shall be rendered more convenient, in the third booke next ensuing after this. Meane time this would bee observed, That the winter spring of trees is about the rising of the Ægle-star: the Summer budding at the rising of the Dog-star: and a third, when the star Arcturus is up. And for the latter twaine, some would have them to be common verily to all trees, but most evidently seen, in Fig-trees, Vines, Pomegranate trees: and they yeeld a cause, For that in Thessalie and Macedonie the Fig tree about these times putteth forth most plenteously: & in Ægypt this reason is to be seen most apparently. As for all other trees, certain it is, that when they begin once to bud, they hold on and shoot forward continually without intermission. The wild Oke, the Fir, and the Larch tree, have their severall shoots in one yeere, and spring at three sundry times, giving over betweene whiles; and therefore they put forth their sprouts between the scales of their barks: a thing usually hapning to all trees in their budding & breeding time; for after they be once conceived, their rind or bark doth burst withall. Now their first budding is in the prime and beginning of the spring, and continueth much about fifteene dayes. They bud a second time in the month of May when the sun passeth through the sign Gemini: by which time it is evidently to be seen, how the bud heads that came first, are driven and thrust up higher by those that follow after; and that appeareth more plainly by the encrease of the knots and joynts. As for the third budding, it is very short, namely at * midsummer, and lasteth not above a seven-night: and even then also may a man perceive manifestly by the knots and joynts of the shoots how much they are put forth and grown. The Vine alone shooteth twice, to wit, when she first beginneth to burgen and put forth a grape; and a second time, when she doth forme and digest or concoct the same. As for those trees that blossome not, they have no more to do but only to bring forth their fruit, and so proceed to ripen it. Now there are some trees, which no sooner bud, but they shew also a blossome; and yet as hasty as they be that way, they take their leisure afterwards, and long it is ere their fruit come to be ripe: and such are the Vines. Others againe bee as backward and slow both to bud and blossome; but they make speed to ripen their fruit, as the Mulberie tree, which of civile and domesticall trees, is the last that doth bud, and never before all the cold weather is past; and therefore she is called the wisest tree of all others: but after that she begins once to put forth buds, she dispatcheth her busines out of hand, inso much as in one night she hath done; and that with such a force, that in the breaking forth a man may evidently heare a noise. Of those trees which do conceive in winter, about the rising of the Ægle-star, (as we have sayd before) the Almond tree is the first that doth blossome in the moneth of Januarie, and by March the Almond is ripe. The next that

blossome

Ex Theophrast.
lib. 8. c. 10.

o Salsissimum.

A blossome after it, be the Peach-plum trees of Armenia, then the Injube trees called Tuberes, and the Abricots. As touching those former, they be meere strangers, but these Abricots are forced by Art and industrie of man. As for wild and savage trees, by course of nature the Elder floweth first, and hath of all other most plentie of pith or marow within; whereas the male Corneil hath none at all. But of domesticall and civile trees, the Apple tree beginneth to blossome, and soone after the Pyrry, Cherrie tree, and Plum tree, insomuch as they seeme all to floure together. Next to them, is the Lawrell; anon after it, the Cypresse; and then the Pomegranat, and the Fig tree: Vines and Olive trees doe but then burgen and bud, when those other be in their floure: for in truth they conceive late, namely, at the rising of the Vergiliae or Broodhen; for this is the proper star to the influence whereof these trees be subject: and it is Iune first and the summer Sun-stead, before the vine doth bloome; and so it is with the Olive tree, but that it cometh somewhat later: All trees be seven daies at the least in their blossoming; and some are longer ere they give over, but none passe a fortnight: and done they have ever by the eighth day before the Ides of Iuly, which are the fore-runners of the Etesian winds. Finally, some trees there are which doe not knit or shew their fruit immediatly upon their blooming:

CHAP. XXVI.

Of the Corneil tree. Also, what is the proper time wherein every tree beareth: which trees be they that beare not, and which be reputed unluckie.

Also of those trees which soonest loose their fruit. Last of all, what trees shew fruit before lease.

C **A**S for the Corneil tree, it is about midsummer or the summer Sun-stead, before it putteth forth any fruit, which at first is white, afterwards red as blood. But the female of this kind beareth after Autumne, sowe berries, and such as no beaft will abide to tast. The wood thereof also is spongeous, hollow, and good for nothing; whereas that of the male is counted among the hardest that be: so great difference there is in trees of one and of the same kind. Moreover, the Terebinth, Maple, and Ash, yeeld their fruit or seed in harvest time: Walnuts, Apples; and Peares (unless they be some winter fruits, or of the haste kind) ordinarily are readie to be gathered in the Autumne. All mast-trees be later ere they render their fruit, to wit, about the going downe of the Vergiliae or beginning of the winter, save onely the Æsculus, which passeth not the Autumne. As for certain Apple trees and Peare trees both, as also the Corke tree, their fruit is not to be gathered before winter begin. The Firre putteth foorth a blossome of a yellow colour like Saffron, about mid-Iune or the summer sun-stead; but the Broodhen-starre is downe before the fruit be ripe. The Pine, and Pitch tree, do bud before the Firre some fifteen daies, or thereabout; but it is winter first, and the foresaid Vergiliae or Brood-hen is likewise set, before their fruit is ripe. Citron trees, Junipers, and mast-Holmes, are counted trees that beare all the yeare long, and the old fruits of the former yeare tarieth on the tree untill new come, and they hang both together. But above all other trees, the Pine is a wonder in nature; for a man shall ever find upon it some of the fruit readie to be ripe; and some againe that will remaine unto the next yeare, and the third yeare before it will be readie: and there is not another tree that is more forward and greedie (as it were) to put foorth it selfe, and give greater hope of encrease, than it doth: for look in what moneth soever the Pine-nuts are gathered from the tree, in the very same others are in good forwardnesse of ripening; and in such sort she ordereth the matter, that every moneth a man shall have ripe fruit upon her. Those Pine-apples or nuts which cleave and open upon the tree, bee called Zamia; and well may they be so named, for unless they be plucked, they hurt and corrupt the rest. The only trees that beare no fruit at all, that is to say, not so much as seed, are these; the Tamariske, good for nothing but to make beesoins of; the Poplar, Alder, Atinian Elme, and the Alaternus, which hath leaves resembling the Holme, and partly the Olive. As for such trees which neither at any time are set or planted, nor yet beare fruit, they bee holden for unfortunate, accursed, and condemned, in such sort, as there is no use of them in any sacrifice or religious service. *Cremutius* writeth, That the (Almond) tree whereon *Phyllis* hanged her selfe, had never (after) greene leaves on it. Such trees as yeeld gum; after they have put forth their bud, doe cleave and open; howbeit the gum that issueth forth, never commeth to any thickenesse, untill the fruit thereof be gathered. Young trees commonly beare not, so long

as they shoot and grow. The Date tree, the Fig tree, the Almond tree, the Apple tree, and the Pyrie, doe soonest of all other let their fruit fall before it be fully ripe. Semblably, the Pomegranate tree, which is so tender besides, that with every thicke and heave dew, white frost, and foggie rime, she will be bitten and shed the blossom: which is the cause that folk use to bend the boughs thereof downward to the ground, that both dew and rime may sooner fall off which lighteth upon them, and otherwise would over-load and hurt them. The Pyrie and the Almond tree cannot abide close and cloudy weather, especially if the wind be Southerly, although no raine doe fall: for in such daies, if they chauce to blossome, they not only shed their flower, but loose their fruit new knit. But the Sallow or Withie tree, is of all other most ticklish, & soonest doth forgoe the seed or chats that it beareth before it commeth to any ripenessse: for which cause, called it is of *Homer* * Loose-fruit, or Spill-fruit. Howbeit the age ensuing (naught as it was) hath interpreted that Epithet of his, in another sense, according to the wicked experience they had of it, whereby it was found, that the seed thereof causeth barrainnesse in women, and hindreth conception. But in this regard, Nature also hath done well to prevent this mischiefe and inconvenience, in that shee hath not been very carefull to preserve the seed: and yet for the maintenance of the whole kind, shee hath endued it with this gift, To grow very quickly, if a man doe pricke into the ground but a cutting or twig thereof. And yet (by report) there is one Willow in Candie, and namely about the very descent of *Jupiters* cave, which is wont ordinarily to carie the graine or seed thereof untill it be full ripe, and then is it of a rough and writhen shape, of a wooden and hard substance, and withall, of the bignesse of a cich peafe.

Moreover, some trees there be that proove barraine and fruitlesse by occasion of the imperfection of the soile and territorie where they grow: and namely in the Isle Paros, there is a whole wood or coppise that usually is lopt and cut, but it never beareth any fruit. The Peach trees in the Island Rhodos blossome only, and otherwise are fruitlesse. Over and besides, this difference of trees (that some be fruitfull and others barraine) ariseth of the sex also; for commonly the males beare not: howsoever some affirme cleane contrarie, and say, They are the male onely which be fruitfull, and the female barraine. Furthermore, it falleth out many times that trees be fruitlesse, either because they grow too thicke one by another, or els are overcharged and too ranke with boughs and branches: but of such as doe beare, some bring forth their fruit both at the sides, and also at the very tips and ends of their branches; as the Peare tree, Pomegranat tree, Figge tree, and Myrtle. As for others, they are of the nature of corne and pulse; for the one groweth in the eare or spike alone, the other by the sides, and not otherwise. The Date tree onely (as hath been said before) containeth fruit within certain pellicles, and the same hangeth downe in clusters after the manner of grapes. Other trees beare their fruit under the leafe for their safeguard and defence, except the Fig tree, which hath her Figs above the leafe, because it is so large and overshadowie. Moreover, the leafe of the Figge tree commeth forth after the Figge. One notable thing is reported of a kind of Figge trees, in Cilicia, Cyprus, and Hellas, to wit, that they have this propertie singular by themselves, To bring forth their perfect Figs under leafe, and their Greene abortive Figs that come to no prooffe, after the leafe. The Figge tree beareth moreover certaine hastie Figs, which the Athenians call *Prodromos*, *i.* vant-courriers or forerunners, because they be long ripe before others. The Laconian Figge trees bring the fairest and greatest Figs.

CHAP. XXVII.

Of trees that beare twice and thrice in one yeere. Also what trees soonest waxe old: and of their ages.

IN the same countries above-named, there be Figge trees also that beare Figges twice in one yeere. And in the Island Cea, the wild Figge trees beare thrice in the same yeere: for the second encrease is put forth upon the first, and the third upon the second: and by this third fruit, the Figges of the tame Figge tree receive their maturitie by way of caprification: and those wild Greene Figgs of theirs come forth above the leafe. Moreover, there be some Pyries and Apple trees that bring forth fruit twice in a yeere: as also there bee others of the hastie kind, which beare both Peares and Apples betimes in the yeere. There is a kind of Crab tree also or Wilding, that in like manner beareth twice a yeere; and the latter fruit is ripe presently after

- A** after the middelt of September, especially in places lying well upon the Sunne. As touching Vines, there bee of them also, that after a sort beare three times in the yeare, which thereupon men call *Infanas*, [*i. The mad or foolish Vines:*] for whiles some of the grapes bee ripe, others begin to swell and waxe big, and a third sort againe are but then in the flower. *M. Varo* writeth, That in Smyrna by the sea side there was a Vine which bare fruit twice a yeare, as also an Apple-tree in the territorie of *Consentia*. But this is an ordinarie thing throughout all the countrey about *Tacapa* in *Affrica*, and never is it seene otherwise there, so fertile is the soile; but thereof will we write more at large hereafter in another place. As for the Cypresse trees, they faile not but come with fruit thrice in one yeare: and their Berries bee gathered in Ianuarie, May, and September, and all of a diverse bignesse, one from the other. Over and besides, the very trees themselves are not laden with fruit after one and the same manner: for the Arbut or Strawberry tree is more plenteous in the head, & toward the top: the Oke, the Walnut-tree, Fig-tree (and namely that which beareth the unsavourie great figges *Mariscæ*) are more fruitfull beneath. Generally, all trees the elder they are, the sooner they beare and make more hast to ripen their fruit; the rather also, if they grow in a ground leane and exposed to the Sun. Contrariwise, trees that bee wild are later in bearing than other: and some of them never yeeld fruit fully ripe. Moreover, such trees under which the ground is tilled and laid hollow, have their fruit sooner ripe, and are more fruitfull withall, than those that are neglected and not looked unto. Besides all this, there is a difference in trees as touching bearing their fruit, according to the age: for the Almond tree and the Pyrrie are most fertile when they be old, as also Mast trees, & a certaine kind of Fig-trees. All others, the younger they are, the more fruitfull they be, howbeit, later it is ere their fruit bee ripe: a thing most plainly to bee observed in Vines. For the better wine cometh from the elder Vines: but more plentie from the younger. As for the Apple-tree, it becommeth of all other soonest old, and in that age the fruit is nothing so good as in youth: for both lesser be the Apples, and also more worme-eaten, inso much as the very worms will breed in them upon the tree. The Fig is the fruit alone of all trees, that needeth some helpe of **Phylick* *To wit, by caprification. to ripen. And this may be noted for a strange and miraculous thing in them, That the latter figs be in more price than the hastie and early ripe, and that there should bee more reckoning made of preposterous and artificiall things beside the course of kind, than of the naturall. Also, this is a generall rule, Whatsoever tree is exceeding fruitfull, and beareth most, the same continueth least while, and soone waxeth old. Yea, and some of them are to be seene for to die right out, and that very quickly, because they enjoied so favourable a season, to cause them so to spend themselves with bearing; as we may marke most easly in Vines.

CHAP. XXVIII.

¶ Of the Mulberrie tree.

- C**ontrariwise, the Mulberrie tree lasteth long, and is very late ere it seemeth old. For why? it is not given greatly to beare fruit, neither is overloden with Mulberries. To conclude, looke what trees have a curled graine in the wood, as the Maple, Date-tree, and Poplar, they continue a long time before they decay. And in one word, such as have their roots digged or dived often and laid bare about, are not long lived, but soone age and decay.

CHAP. XXIX.

¶ Of wild trees.

- A**S for wild trees, they endure longest of all others. And generally, as carefull tending and looking to trees, maketh them more fertile: so there is nothing sooner bringeth age upon them, than fruitfulness and much bearing. Hereupon it is likewise, that such trees both bud and also blossome sooner than others, yea, and ordinarily their fruit is ripe before the rest: in regard whereof, they are more subject to the injurie of the time and the weather, which causeth also divers and sundrie infirmities. Moreover, as wee have said already in the chapter of Mast-trees, there be many that bring forth fruits of different sorts: among which may be reckoned the Lawrell, with her variable flowers and Berries growing so thicke; and principally the barren of that kind, which beareth nothing else, and therefore is esteemed of some the male. The Hazels also

so and Filbard trees, besides, their nuts doe carie certaine chats with a callous substance of skales G
 joined one within another, but good for nothing.

CHAP. XXX.

Of the Box-tree: the Greeke Beane or the Lotus.

All this Theophrastus reporteth of Ilex, and not of Buxus.

AMong these is to be raunged the Box-tree, which bringeth forth the most varietie of all others. For it putteth forth a seed of her owne, also, a graine which they call Carthegon: besides, on the North side Misselto, and on the South Hyphear: whereof wee will write anone more at large: so that otherwhiles a man shall find foure diuers things upon the Boxe all together. H

Moreover of trees, some be simple or single, to wit, such as from the root have one trunk or bodie, and no more, and yet many boughes and branches; as the Olive, Fig-tree, and the Vine: others be of a shrubs kind, and put forth many shoots from the root besides the maine trunk, as the Rhamne-thorne Paliurus, and the Myrtle. In like manner the Hazell nut-tree. Howbeit, the better is the tree and more plenteous in fruit, when it is well branched from the bodie, and hath not those suckers from the root. Yee shall find some againe have no principall stocke at all, as we may see in a kind of Boxe, and a certaine Lotus beyond sea. Others be forked in twain, yea, in five, immediately from the root: and yee shall meet with those that put up many trunkes out of the earth, but branch not into boughes, as namely, the Elders; as also with others that forke not, nor are devided at all, howbeit, they be full of armes and boughes, as the Pitch-trees. Moreover, some there be which have their boughs disposed in good order, as the Pitch-tree, Firre, or Deale: others againe be as disorderly, as the Oke, Apple-tree, and Pyrric. As for the Firre verily, where it is devided into boughs, they grow directly upright unto heaven, & spread not in breadth about the sides. But a strange and wonderous thing it is of this tree, that if it be headed, or the tops onely of those armes cut off, the whole dieth thereupon: but if they be lopped off close to the bodie, it continueth still alive. Nay, in case it be cut under the place where the branches put forth, the stocke or stumpe that is left, will take no harme by it, but remaine and live: crop the head onely thereof, and the whole tree dieth. To proceed, some trees spread into armes immediately from the root, as the Elme, others branch onely toward the top, as the Pine, and the Greeke Beane, which at Rome for the pleasant tast of the fruit, resembling cherries very much, although it be of a wild nature, they call Lotus. This tree is much planted about faire houses, in the court yards, especially because the boughs spread so large; for albeit the stock or bodie it selfe be but very thort and small, yet it brancheth so, as that it yeeldeth much shade: yea, and oftentimes the boughs reach to the neighbour housen. But there is not a tree againe that maintaineth this shade a lesse while: for when Winter is once come, the leaves shed, and then it admitteth the warme Sunne for it. Moreover, there is not another tree that beareth a fairer barke, nor more pleasant to the eie, nor that carieth either longer boughs, and more in number than it, or stronger: a man that seeth them, would say they were so many trees by themselves. As touching the use and commodities of this tree, the barke serveth to colour skins and leather: the root to die wooll. And as for the fruit or Apples that it beareth, they are a speciall kind by themselves: for all the world they resemble the snouts or muzzles of wild beasts, and many of the smaller sort seeme to hang to one that is bigger than the rest. I

As concerning boughs of trees, some are tearmed blind, because they put not forth certaine eies or chits where they should bud: which happeneth sometime by a naturall defect, when they are not of validitie to thrust out a bud; otherwhiles it is occasioned by some wrong and injurie done, namely, when they be cut off, and in the place of the cut, there groweth as it were a callous skar that dulleth the vertue of the tree. Furthermore, looke what is the nature that forked trees have in their boughs, the same hath the Vine in her eies and burgeons; the same also have canes and reeds in their joints and knots. Over and besides, all trees toward their root, and the nearest to the ground, are thicker than elsewhere. Some run up altogether in height, and therein shew their growth, as the Firre or Deale tree, the Larch, Date-tree, Cypresse, Elme, and generally all that rise up in one entire stocke, and are not devided. Of those also that branch and put out many boughes, there is a kind of Cherry-tree that is found to beare armes like beames fortie cubites long, and two foot in thicknesse square throughout the whole length. L

A

CHAP. XXXI.

Of the Boughs, Barke, and Roots of trees.

THere are trees, that immediatly from the root thrust out boughs and branches, as doe the Apple-trees. Some be covered with a thin rind, as the Lawrell and Line-tree : others with a thicke barke, as the Okes. In some a man shall find the barke even and smooth, as in the Apple-tree and Fig-tree : the same in others is rough and rugged, as is to bee seene in Okes and Date-trees. And ordinarily, all old trees have more riveled barks and furrowed, than the younger. In many trees, the Barke naturally dooth breake and cleave of the owne accord, and namely in the Vine. From some it shaeth and falleth off, as from the Apple-tree and the Arbut. The Corke and the Poplar have a fleshie and pulpous barke: the rind of the Vine and the reed, is made in manner of a membrane or thin skin. In Chery-trees it is as slender as Paper, and runneth into rolls: but Vines, Lindens, and Firs, are clad with tunicles and coats of many folds. In some again the rind is but single, as in the Fig-tree, and the cane or reed. And thus much of Barke.

B

There is as great difference in the root. For the Fig-tree, the Oke, and the Plane, have great store of roots and large spurns: contrariwise, in the Apple-tree they are short and small. The Fir and Larch have one tap root and no more : for upon that one maine maister-root they rest and are founded; howbeit, many small strings and pretie spurns shoot out of the sides. In the Bay-tree the roots be more grosse and unequally embossed, & likewise in the Olive, which also spreadeth out into many branches. But those of the Oke bee of a carnous substance: and verily, all the kind of Okes doe root deepe into the ground. Certes, if wee give credite to *Virgill*, that sort of them which are called *Esculi*, goe down as deepe into the earth with their roots, as they arise & mount above ground with their heads. The roots of the Apple-tree, Olive, and Cypresse, lie very ebbe, and creepe hard under the sould of the ground. Moreover, there bee roots that runned direct and streight, as those of the Bay and Olive: there be againe that wind and turne as they goe, as those of the Fig-tree. Some are all overgrowne and full of hairie strings, as the Firre root, and many others of wild trees that grow in forrests: from which the mountainers use to plucke those fine fibres and small threads, wherwith they twist goodly faire paniers, covers for flaggons and bottels, and worke many other vessels and pretie devises. Some* writers hold opinion and have put down

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in their bookes, that no roots goe lower into the earth, than that the Sunnes heat may pierce unto them and give them a kind warmth; the which is more or lesse, say they, according to the nature of the soile, as it is either lighter and leane, or massier, richer, and faster compact. But I take this to be a meere untruth. This is certaine that wee find in auncient writers, that a young Firre, when it was to be transplanted and set againe, had a root that went eight cubits within the earth; and yet it was not digged up all whole, but broken in the taking up, and left somewhat behind. The roots of Citron trees are biggest of all other, and spread most. Next to them are those of the Planes, Okes, and other Mast-trees. Some trees there be, the roots whereof like better and live longer, the more ebbe that they lie within the upper face of the ground, and namely, Lawrels; and therefore they spring fresh againe, and put forth better, when the old stocke is withered and cut away. Others hold, that trees which have short stumped roots, doe sooner decay, & live lesse while. But deceived they are, and may bee reproved by the instance of Fig-trees, which live least while, and yet their roots are longest of any other. I suppose this also to bee as false, which some have held and delivered in writing, That the roots doe diminish and decay, as the trees doe wax old: for the contrarie hath been seene by an aged Oke, which by the violent force of a tempest was overthrowne, the root whereof tooke up a good acre of ground in compasse.

F

Moreover, a common thing it is and ordinarie, to replant and recover many trees that have been blowne downe and laid along: for they will rejoyne, knit againe, and revive, by meanes of the earth, even as a wound doth unite by the solder of a callous cicatrice. And this is a most usuall and familiar practise observed in the Planes, which by reason of their great heads so thicke of boughs, gather winds most, and are soonest subject to their rage: if any one of them by that meanes bee fallen, they lop their boughs, and discharge them of their weightie load, and then set them upright againe in their owne place, as it were in a socket, and they will take root and prosper. And in good faith, this hath been done heretofore already in Walnut trees, Olives, and many other, to the like prooffe.

Of certaine prodigious trees, and presages observed by them. By what meanes trees grow of their owne accord. That all plants grow not every where: and what trees they be that are appropriate to certaine regions, and are not elswhere to be found.

WE read in Chronicles and records, that many trees have fallen without wind and tempest, or any other apparent cause, but onely by way of prodigie and presage of some future event: and the same have risen againe of themselves without mans helpe. This happened during the warres against the Cymbrians, to the great astonishment of the people of Rome, who thereupon gathered a fore-tokening of great consequence: for at Nuceria in the grove of *Iuno*, there was an old Elmefell, and after the head was lopped off, because it light upon the very altar of *Iuno*, it arose of it owne accord; and that which more is, immediately upon it put forth blossomes and flourished. And this was observed, That from that very instant, the majesticie of the people of Rome began to take heart, revive, and rise againe, which had been decayed and enfeebled by so many and so great losses that the Romanes had received. The like chanced (by report) neare the citie Philippi, unto a Willow tree which was fallen downe, and the head of it cut off cleane: semblably, to an Aspen tree at Stagyrae, neare unto the colledge or publick place of Exercise there. And all these were fortunate presages of good lucke. But the greatest wonder of all other was this, of a Plane-tree in the Isle Antandros, which was not onely tallen, but also hewed and squared on all sides by the Carpenter; and yet it rose againe by it selfe, and recovered the former greenenesse and lived, notwithstanding it bare fiftene cubits in length, and foure elns in thickenesse or compasse.

All trees that we are beholden unto the goodnesse of Nature for, wee have by three meanes: For either they grow of their own accord, or come of seed, or else by some shoot springing from the root. As for such as we enjoy by the art and industrie of men, there bee a great number more of devises to that effect: whereof wee will speake apart in a severall booke for that purpose. For the present our treatise is of trees that grow in Natures garden onely, wherein shee hath shewed her selfe many waies after a wonderfull manner, right memorable.

First and formost, as we have shewed and declared before, every thing will not grow in every place indifferently: neither if they bee transplanted, will they live. This happeneth sometimes upon a disdain, otherwhiles upon a peevisish frowardnesse and contumacie, but oftener by occasion of imbecilitie and feblenesse of the very things that are remooved and translated: nay, one while the climate is against it, and envious; otherwhiles the soile is contrarie thereunto. The Baulme tree can abide no other place but Iurie. The Assyrian Pome-Citron tree will not beare elswhere than in Syria. As for the Date-tree, it scornes to grow under all climates: or, if it bee brought to that passe by transplanting, it refuseth to beare fruit. But say, that it fortune by some meanes, that she giveth some shew and apparence of fruit, shee is not so kind as to nourish and reare up to perfection, that which she brought forth, forced against her will. The Cinnamon shrub hath no power and strength to endure either the aire or earth of Syria, notwithstanding it be a neare neighbour to the naturall region of her nativitic. The daintie plants of Amomum or Spikenard, may not away with Arabia, albeit they be brought out of India thither by sea: for king *Seleucus* made triall thereof: so strange they are to live in any other country but their own. Certainly, this is a most wonderfull thing to bee noted; That many times the trees for their part may be entreated to remove into a forraine country, and there to live; yea, and otherwhiles the ground and soile may bee persuaded and brought to accord so well with plants (bee they never such strangers) that it will feed and nourish them; but impossible it is to bring the temperature of the aire, and the climate, to condiscend thereto and be favourable unto them. The Pepper-trees live in Italic; the shrub of Casia or the Canell likewise in the Northerly regions; the Frankincense tree also hath been knowne to live in Lydia: but where were the hote gleames of the Sunne to be found in those regions, either to drie up the waterish humor of the one, or to concoct and thicken the gumme and rosin of the other? Moreover, there is another marvell in Nature, welneere as great as that, namely, that she should so change and alter in those same places, and yet exercise her vertues and operations otherwhiles againe, as if there were no change nor

- A** alteration in her. She hath assigned the Cedar tree unto hote countries: and yet we see it to grow in the mountaines of Lycia and Phrygia both. Shee hath so appointed and ordained, that cold places should be hurtfull and contrarie to Bay-trees, howbeit, there is not a tree prospereth better, nor groweth in more plentie upon the cold hill Olympus, than it. About the streights of the Cimmerian Bosphorus, and namely, in the cittie Panticapæum, both king *Mithridates*, and also the inhabitants of those quarters, used all meanes possible to have the Lawrell and the Myrtle there to grow, onely to serve their turnes when they should sacrifice to the gods: it would never be, did they what they could: and yet even then, there were good store of trees there growing of a warme temperature; there were Pomgranates and Fig-trees plentie; and nowadaies there bee Apple-trees and Pyrries in those parts, of the best and daintiest sort. Contrariwise, yee shall not find in all that tract any trees of a cold nature, as Pines, Pitch-trees, and Firres. But what need I to goe as farre as to Pontus for to averre and make good my word? Goe no farther than Rome, hardly and with much adoe will any Chestnut or Cherie-trees grow neare unto it, no more than Peach-trees about the territorie of Thusculum. And worke ynough there is to make Hazels and Filbards to like there: turne but to Tarracina thereby, yee shall meet with whole woods full of Nut-trees.

CHAP. XXXIII.

Of the Cypresse tree. That oftentimes some new plants doe grow out of the ground, which were never knowne to be there beforetime.

- C** **T**He Cypresse hath beene counted a meere stranger in Italie, and most unwilling there to grow, as wee may see in the workes of *Cato*, who hath spent more words, and made oftener mention of the Cypresse alone, than of all other trees whatsoever. Much adoe there is with it before it come up; and as hard it is to grow, and when all is done, the fruit is good for nothing. The Berries that it beareth, bee wrinckled, and nothing lovely to the eie; the leaves wherewith it is clad, bitter in tast; a strong and violent smell it hath with it; not so much as the very shade thereof is delectable and pleasant; and the wood but small & not solide, but of an hollow substance, insomuch, as a man may raunge it among the kinds of shrubs. Consecrated is this tree to *P Pluto*, and therefore men use to set a bough thereof as a signe, before those houses wherein a dead corpes lieth under board. As touching the female Cypresse, it is long ere the beareth. The Cypresse tree for all this, in the end growing up to a pyramidall form sharpe pointed, is not rejected but much set by, if it were for nothing else but to stand betweene every row and ranke of Pine-trees: howbeit, nowadaies it is ordered with cutting and clipping for to grow thicke in borders about garden quarters along the allies, also to climbe upon walls in manner of feeling: and being thus kept downe, it is by this meanes alwaies small and tender. Moreover, thereof are drawne many vinets and borders about storie-workes in colours: for so fine is the leafe, so short & greene withall, that it may be brought in a traile to wind about pictures either of hounds and hunters, or of ships and sailers, or any counterfets and images whatsoever, most daintily.

- E** Two sorts there are of the Cypresse tree. First, that which runneth up into a pyramidall point, winding upward as a round spire, which also is called the female. As for the male, it sendeth out braunches, and spreadeth broad: it is lopped also, and serveth in frames to beare up Vines. Both the one and the other is suffered to grow for perches, railes, and planks, to be made of their boughs when they are cut. Once in thirteene yeares there is made a fall, and not one of those but are sold for a Romane denier apeece. A wood thereof planted in this manner, is of all others most gainefull, and yeeldeth greatest profite: insomuch, as in old time they were wont commonly to say, That one fall of such Cypresse poles would yeeld a man a portion sufficient to give with his daughter in mariage.

- F** The Island Candie is the naturall countrey of the Cypresse tree, howsoever *Cato* hath called it a Tarentine tree: haply, because it came thither first. In the Isle *Ænaria*, the Cypresse trees spring againe after they bee cut downe to the roots. But in Candie, looke what ground soever a man doth breake up and plough; unlesse he sow or set it with some other thing, Cypresses will come up, and presently shew above ground. In many places also of that Isle, they spring and grow of themselves, even in ground otherwise untilled; and principally in the mountaines of *Ida*, and those which they call the white Hills: upon the very crests and tops whereof, which are alwaies

alwaies covered with snow, they are to be seen in greatest plentie. A wonderfull thing, considering that in all other places they love warmth, and without it, will not grow: and besides, when they have met with a familiar ground unto them, yet they care not much for it; but disdain for kind a nource: whereby a man may see, that not onely the nature of the soile, and the ordinarie power of the climat serveh much for these plants, but also certaine sodaine and temporarie impressions of the aire doe wonderfully worke in this case: for some showers there bee, that oftentimes doe bring seeds with them and engender plants. The same rains do fall sometime after one certaine manner; otherwhiles also in such straunge sort, as men are able to give no reason thereof: A thing that befell the country about Cyrene in Barbarie, at what time as the herb *Laserpitium* (which beareth the gum Benjoine) grew there first: as hereafter we will write more at large in our treatise of Herbs. Moreover, about the 430 yeare after the foundation of Rome citie, there sprung up a very forest or wood neare unto the same citie, by reason of a certaine thicke and glutinous showre like to Pitch, that then fell.

CHAP. XXXIII.

Of *Ivie*.

IT is said, that now the *Ivie* tree groweth also in Asia: and yet *Theophrastus* in his time deli-
 red the contrarie, and affirmed, That neither it was to bee found there, nor yet throughout all
 India, but only upon the mount Merus. Over & besides, it is reported, that *Harpalus* did what
 he could to store the country of Media therewith, but all in vaine. And as for *Alexander* the
 Great, when he returned from out of India with victorie, for the rareness thereof he would have
 all his souldiours go in a sumptuous shew, wearing chaplets thereof upon their heads; resembling
 herein prince *Bacchus*, in solemnities and high feasts of which god, the people of Thracia even
 at this day are furnished from this tree, and doe with *Ivie* set out and garnish the heads of their
 launces, pikes, and javelins, their mourrons also and targuets.

An enemy is *Ivie* doubtlesse to trees, and generally to all plants and sets whatsoever: it clea-
 veth and breaketh sepulchtes built of stone, it undermineth citie walls; good only to harbour
 serpents, and most comfortable for their cold complexions: so that I cannot chuse but marveile
 much that it should bee honoured at all, and accounted of any worth. But to enter into a more
 particular consideration and discourse of *Ivie*, two principall kinds are found thereof, like as of all
 other trees, to wit, the male and the female. The male is described to bee a more massive and
 greater bodie, to be clad with a harder and fatter leafe, and to shew a flower inclining to pur-
 ple: and yet the flower of them both, the male as well as the female, doth resemble that of the
 wild Rose or Eglantine, save that it hath no smell at all. These generall kinds containe each of
 them three particular sorts: for there is the black & the white *Ivie*, & a third besides named *Helix*.
 And yet we must admit other subdivisions of these also: for of the white, there is one sort that
 beareth white fruit onely, and another that hath white leaves withall: moreover, of such as carrie
 only white fruit, one kind hath big berries growing thicke together, and bunching round in man-
 ner of grapes, which clusters be called of the Greeks and Latins *Corymbi*. A second sort there is
 of the white *Ivie*, named *Selenitium*, which beareth smaller berries, and those not so close set and
 thicke couched together. Semblably, it is to be said of the black: for there is an *Ivie* that beareth
 also a blacke graine or seed: another with a fruit of a Saffron colour; and hereof are the guir-
 lands made which Poets weare: some call it *Nysia*, others *Bacchica*: the leaves of it are not al-
 together so blacke, but it beareth the greatest bunches and biggest berries of all the blacke kind.
 And verily of this *Ivie* there be some Greeke writers that make two sorts, according to the divers
 colours of the berries: for, the one they call *Erythranus*, [i. the Red;] the other *Chryfocarpos*, as
 one would say, the golden-berry *Ivie*. Now as touching the rampant or climbing *Ivie*, *Helix*,
 there be many and sundrie sorts thereof, differing in their leafe especially: for first and foremost
 the leaves of this *Ivie* are small, cornered, and better fashioned than the rest, which in deed are
 but of a plaine and simple making. There is a difference likewise in the length betwene every
 knot and joynt, but especially in this, that it is barrain and beareth no fruit at all. And yet some
 there be, who attribute that to the age, and not to a severall kind of *Ivie* by it selfe; saying, That
 the same which at first was *Helix*, and clasped trees, in tract of time chaunged the leafe and be-
 came a very *Ivie* tree: but fouly they are deceived, and disprooved plainly they may be by this,

That

- A That of the said clasping Ivie Helix, there be many kinds, and three principall above the rest. The first, of grasse Greene colour, which groweth most common: the second, with a white leaf: and the third, called also the Thracian Ivie, which hath leaves of divers colours. The foresaid Greene Ivie is fuller of leaves, and those finer and set in better order than others; whereas the contrary is to be seene in the white kind: also in the third sort with varietie of colours, some have smaller and thinner leaves, couched likewise in good order, and thicker growing; whereas in the middle kind, no such thing may be observed. Over and besides, the leaves of Ivie are bigger or lesse, spotted also and marked; in which regard one differeth from another. Among the white Ivies, some bee whiter than other. The Greene Ivie, groweth most of all others in length: the white killeth trees, for by sucking and soking all the sap and moisture out of them, it feedeth and thriveth so well it selfe, that it becommeth in the end as big as a tree. A man may know an Ivie being come to his perfection, by these signes: The leaves are very big and large withall; the tree putteth fourth young shoots straight, whereas in others they be crooked and bend inward: the berries also stand in their clusters directly upright. Moreover, whereas the branches of all other Ivies be made like unto roots, this hath boughs strong and sturdie above the rest; and next unto it, the blacke kind: howbeit this proprietie hath the white Ivie by it selfe, That amid the leaves it putteth forth armes that claspe and embrace the tree round on every side: which it doth upon walls likewise, although it cannot so well compasse them. And hereupon it is, that although it be cur asunder in many places, yet it continueth and liveth still: and looke how many such armes it hath, so many heads likewise of roots are to be seene, whereby it maintaineth it selfe safe and sound; and is besides of that force, as to sucke and choke the trees that it claspeth. Furthermore, there is great diversitie in the fruit, as well of the white as the blacke Ivie. As for the rest, the berries of them are so exceeding bitter, as no bird will touch them. And yet there is one kind more of Ivie, which is very stiffe and standeth alone of it selfe without any prop to beare it up: & this of all others only, is thereupon called Cissos, or Ivie in deed. Contrariwise, Chamæcissos, [*id est*, ground-Ivie] is never knowne but to creepe along the ground.

CHAP. XXXV.

☞ *Of the Bind-weed or Ivie called Smilax.*

- D **L**ike unto Ivie, is that plant which they call Smilax, or rough Bind-weed. It came first out of Cilicia, howbeit more commonly it is to be seene in Greece: it putteth forth stalkes set thicke with joynts or knots, and those thrust out many thornie branches. The leaf resembleth Ivie, and the same is small, and nothing cornered: from a little stele that it hath, it sendeth forth certain pretie tendrils to claspe and wind about: the flower is white, and smelleth like to a Lillie: it beareth clusters comming nearer to those grapes of the wild vine Labrusca, than to the berries of Ivie; red of colour, whereof the bigger containe within them three kernels or pepins apeece, the smaller but one, and those be hard and blacke withall. This Smilax is not used in any sacrifices or divine service of the gods, nor serveth for guirlands and chaplets; for that it is held to be dolefull and ominous, or of an unluckie presage, by occasion of a certaine young ladie or damsell of that name, who for the love of the young gallant and knight *Crocus*, was turned into this shrub or plant, retaining still her name: which the ignorant people not knowing, but taking it for a kind of Ivie, sticke not to make coronets thereof; proianing by that meanes many times their high feasts and sacred solemnities: and yet who woteth not with what chaplets Poets are crowned, and what guirlands prince *Bacchus* or *Silenus* used to weare? Of this Smilax are made certain manuell writing-tables. And this proprietie moreover hath the wood thereof, That if a man hold it close to his eare, he shall heare it to give a pretie sound.

But to returne againe to the Ivie indeed, it hath (by report) a strange and wonderfull vertue to trie wines, whether they bee delaid with water or no: for make a cup of Ivie wood, and put wine thereinto, all the wine will soke and run through, but the water (if any be mingled therewith) will tarie behind.

CHAP. XXXVI.

☞ *Of Reeds, Canes, and other water shrubs.*

I**N** this discourse as touching plants that love cold places, it will not be amisse to treat of those that grow in waters. Among which, the Reeds and Canes may bee raunged in the first place:

for Arrowes
and Darts.
for Writing-
pens.
for Flutes
and Pipes.

for necessarie they bee in time both of *warre and *peace: they have their use besides, and are accepted among the *delightful pleasures of this world. Moreover, in the Northern regions, the people use therewith to cover and thatch their houses: and this kind of rouse will last many ages, if it be laid with a thicke coat, even upon high and stately houses. In other parts also of the world, they are wont with it to make their arch-rouses, and hanging-floores of most slight worke. As for Canes particularly, and those of Ægypt by name, which have a certaine resemblance of the Papyr reed in Nilus, they serve for writing-paper. Howbeit those of Gnidos, and which grow in Asia along the lake or meere of Anaia, be held for the best. As for ours here in Italy, they are of a more spongy substance and gristly matter, apt to sicke and drinke up any liquor. The same within-forth is full of holes and concavities, but converted aloft into a fine woodie rind, and in time becommeth drie, fast, and hard. Apt it is to cleave, and the cliffs evermore carie with them a very sharpe edge; and besides, it is full of joynts. Now this woodie substance being thus distinctly parted by knots, runneth alwaies even and smooth, growing smaller and smaller untill it proove sharpe pointed in the top; with a head consisting of a good thicke downe or plume, which serveth also to right good purposes: for either in stead of feathers they use to stuffe beds therewith in common Innes; or when it is growne hard and hath a slimie callositie about it, they in Picardie and those nether-lands doe stampe it, and therewith calstet or calke the joynts of their ships, betweene the ribs and planks: and herein it hath no fellow, for it taketh faster hold than any glew, and for filling up any rifts and chinkes, no folder so strong, no pitch so sure and trustie. Of Reeds, the Easterlings make their shafts; and archers they be that fight their battailes and determine all quarels. These shafts they arme with sharpe barbed arrow heads in manner of fish hookes, which wound with a mischiese, because they cannot be drawne out of the bodie againe: and to make these arrowes flie the faster and kill more presently, they set feathers unto them. Now say that a shaft be broken as it is set fast in the bodie, that end without the flesh will serve againe to be shot: and so inured are the people in those parts to these kind of weapons, so practised withall in discharging of them so nimbly, that a man seeing how thicke the shafts flie in the aire, would say they were a cloud of arrowes that shadowed the very sunne. And therefore when they goe to battaile, they wish ever for faire weather and Sunne-shine dayes. Winds and raine, as most adverse unto their warres, they cannot abide: then are they quiet and rest in peace, full sore against their wills, because their weapons at such a time will not serve their turne. Certes if a man would fall to an exact reckoning and estimate of Æthyopians, Ægyptians, Arabians, Indians, Scythians, and Bactrians, or so many nations also of the Sarmatians, and other East countries, together with all the kingdomes of the Parthians, hee should find, that the one moiety or halfe of the world hath been vanquished and conquered by the meanes of arrowes and darts, made of Reeds. The Candiot above all others, were so readie and perfect in this kind of feat, that the overweening of their owne skill, and the confidence which they had in this manner of service, made them too bold, and was in the end their owne overthrow. But herein also, as in all other things else whatsoever, Italie hath carried the name, and woon the prize: for there is not a better Reed growing for to make shafts, than that which is found along the Rhene, a little river running under Bononia: verie full of marow or pith; stiffe also it is and weightie withall; it cutteth the aire, it flyeth away most swiftly; and last of all, it will hold the owne and stand in the weather so countrepoised, that no wind hath any power on it. And those Reeds in Picardie and the low countries, are nothing comparable; ne yet of Candie, how highly soever they bee commended for warre-service. And yet the Reeds that grow in India be preferred before them, and beare the name, which indeed some thinke to be of another nature, considering they be so firme and bigge withall, that beeing well headed with yron, they serve in stead of speares and javelins. In very truth, the Indian Canes for the most part, grow to the bignesse of trees, such as we see commonly in temples, standing there for a shew. The Indians doe asstume, that there is a difference among them also, in regard of sex; and namely, that the substance and matter of the male, is more fast and massie; but that of the female, larger and of greater capacitie within. Moreover, (if wee may beleve their words) the very Cane betweene every joynt, is sufficient to make a boat. These great Canes doe grow principally along the river Acefine. All Reeds in generall, doe shoot and spring in great number from one root and principall stocke: and the more they bee cut, the better they come againe. The root liveth long, and without great injurie offered unto it, will not die: it also is divided

A vided into many knottie joynts. Those onely of India, have short leaves. But in all of them, the leafe springeth out of the joynt, which embracing the Cane, doth clad it round about with certaine thin membranes or tunicles, as farre as to the middle space betweene the joynts; and then for the most part they give over to claspe the Cane, and hang downward to the ground. As well Reeds as Canes, spread their leaves like wings round one after another, on either side upon the very joynts, and that in alternative course alwaies verie orderly; so as if the one sheath come foorth of the right side, the other at the next knot or joynt above it, putteth out on the left, and thus it doth throughout by turnes. From these nodosities, otherwhiles a man shall perceive (as it were) certaine little braunches to breake foorth, and those be no other but small and slender Reeds.

B Moreover, there bee many kinds of Reeds and Canes: for some of them stand thicker with joynts, and those are more fast and solide than others, and small distance there is betweene the same: there be againe, that have not so many of them, and greater space there is from the one to the other, and such Canes for the most part are of a thinner substance. Ye shall have a Cane all full of holes within, called thereupon Syringias; and such are very good to make whistles or small flutes, because they have within them neither gristly nor fleshie substance. The Orchomenian Cane is hollow throughout from one end to the other, and this they call Auleticus, or the pipe Cane; for as the former was fit for flutes, so is this better for great pipes. Now you shall meet with Canes also that stand more of the wood, and have but a narrow hole and concavities within; and this is full of a spongy pith or marow within-foorth. Some be shorter, some longer than other: and where you have one that is thin and slender, you shall spie a fellow to it more grosse and thicker. That which brancheth most, and putteth foorth greatest store of shoots, is called Donax, and is never knowne to grow but in marshes and waterie places, (for herein also lyeth a difference) and preferred it is farre before the Reed that commeth up in drie ground. The Archers Reed is a severall kind by it selfe (as we have shewed before;) but of this sort, those in Candie have the greatest spaces betweene every joynt; and if they be made hote, they are verie pliable, and will bend and follow which way soever a man would have them.

Moreover, Reeds are distinguished one from another by the Leafe, not for the number, but the strength and colour. The leaves of those about Lacedæmon, * are stiffe and strong, growing thicker of the one side than the other. And such as these are thought generally to grow along standing pooles and dead waters, farre unlike to those about running rivers: and besides, to be clad with long pellicles, which claspe and climbe about the Cane higher above the joynt, than the rest doe. Furthermore, there is another kind of Reeds that groweth crooked and winding travers, and not upright to any height, but creeping low toward the ground, and spreading it selfe in manner of a shrub. Beasts take exceeding great delight to feed thereof, and namely, when it is young and tender, for the sweet and pleasant tast that it hath. Some call this Reed, Elegia.

Over and besides, there breedeth in Italie also among the fennes, a certaine salt some, named * Adarca, sticking to the rind or utmost baake of Reeds and Canes, onely under the verie tuft and head: passing good it is for the tooth-ach, by reason of the hote and causticke qualitie that it hath like to Senvie or Mustard-seed. As touching the Reed-plots about the Orchomenian lake, I must needs write more exactly, considering in what admiration they were in times past: for in the first place, they called that Cane which was the thicker and more strong, Characias; but the thinner and more slender, Plotia. And this verily was wont to be found swimming in the Islands that stoted in the said lake; whereas the other grew alwaies firme upon the banks and edges thereof, how farre soever it spread and flowed abroad. A third sort also there is of Canes, which they called Auleticon, for that it serveth to make flutes and pipes of: but this commonly grew but every ninth yeare: for the said lake also kept that time just, and encreased not above that tearme; but if at any time it chaunced to passe that time, and to continue full two yeares together more than ordinarie, it was holden for a prodigious and fearefull signe. The which was noted at Chæronia, in that unfortunate battaile wherein the Atheniens were overthrowen and defeated: and many times else is observed to happen about Lebadia, namely, when the river Cephissus riseth so high, that he swelleth over his bankes, and is discharged into the said lake. Now during that ninth yeare (whiles the inundation of the lake continueth) these Canes proove so bigge and strong withall, that they serve for hawking poles, and fowlers perchies:

* *Varia, or Versi-
scolor, πικρα, α,
Theop. i. of
divers colors.*

* *Calamachne.*

and then the Greeks call them Zeugitæ. Contrariwise, if the water hold not so long, but doe fall and returne back within the year, then the Reeds be small and slender, named Bombyciæ. Howbeit the females of this kind, have a broader and whiter leafe, little or no down at all upon them, and then they are knowne by a pretie name and called Spadones, as one would say, guelded. Of these Reeds were made the instruments for the excellent close musicke within-house: wherein, I cannot passe with silence, what a wonderfull deale of paines and care they rooke to fit them for their tune, and make them to accord: insomuch, as wee are not to be blamed but borne withall, if now adaiies we chuse rather to have our pipes and hautboies of silver. And in truth, unto the time of *Antigenes* (that excellent minstrell and plaier upon the pipe) all the while that there was no use but of the plaine musicke and single instrument; the right time of cutting down and gathering these Reeds for this purpose, was about September, when the signe Arcturus is in force: then were they to have a seasoning and preparation for certain yeares, before they would serve the turne: yea and then also much adoe there was with them, and long practise and exercise they asked, before they could be brought into frame and good tune: so as a man might well say, that the very pipes were to be taught their found and note, by means of certain tongues or quills that strucke and pressed one upon another; and all to give contentment and shew pleasure unto the people assembled at Theatres, according as those times required. But after that musicke came once to be compound, and that men sung and plaied in parts with more varietie and delight, they began to gather these Reeds before mid-Iune, and in three yeares space they had their perfection and grew to their prooffe: then were those tongues or holes made more wide and open, for to quaver and change the note the better: and of such are the flutes and pipes made, which be used at this day. But in those times men were persuaded, that there was a great difference in the parts of any Reeds for to serve these or those instruments: in such sort, as that joynt which was next unto the root, they held to be meeter for the Base pipe that was fitted for the left hand; and contrariwise for the Treble of the right hand, those knots that were toward the head and top of the Reed. Howbeit of all others, by many degrees were those preferred which grew in the river Cephisus. Now adaiies the Hautboies that the Tuscanes play upon at their sacrifices, bee of Box-wood; but the pipes used in plaies for pleasure only, are made of the Lotos, of asses shank-bones, and of silver. The best Faulconers Reeds wherewith they use to chase foules, came from Panhormus: but the Canes for angle-rods that fishers occupie, are brought out of Africk from Abaris. The Italian Reeds and Canes be fittest for to make perches to lay over frames, & props for to bear up vines. Finally, as touching the setting of Reeds, *Cato* would have them to be planted in moist grounds, after they have been first delved and laid hollow with a spade; provided alwaies that the cœleth stand three foot asunder, and that there be wild Sparages among, whereof come the tender crops for sallads; for those like well and sort together with the Canes.

CHAP. XXXVII.

☞ *Of the Willow or Sallow, eight kinds thereof: and what trees besides the Willow are good for buildings. Also of Briers and Brambles.*

Moreover (after the opinion of the said *Cato*) it is good to plant Withies also about river sides, and neare to Reeds: for surely there is not more profit arising from any other tree of the waters, than from it; howsoever the Poplars are well liked and loved of the vines, and doe nourish the good wines of Cæcubum: howsoever the Alders serve in stead of rampiers and strong fences against the inundation and overflowing of rivers, withstanding their forcible eruptions; howsoever they stand in the waters as mures and walls to fortifie the banks, or rather as sentinels to watch and ward in the borders of country farmes; and being cut down to the roor, doe multiply the rather, and put forth many shoots and imps as heirs to succeed. And to begin withall, of Sallows there be many kinds: for some there be, that in the head beare pearches of a great length to prop and make trailes for vines to run upon: and the rind or skin as it were pilled from the wood, is as good as a belt or thong to bind or gird any thing withall. Others againe there are, and namely the red Willowes, which carie twigs and rods that are pliable and gentle to wind as a man would have them; fit also for buildings. Ye shall have of these Osiers, some that are very fine & passing slender, wherof are wrought pretie baskets and many other daintie devices; others also that are more tough and strong, good to make paniers, hampers, and a thousand other

A other necessarie implements for countrey houses, and to fit the husband-men. Beeing pilled, they are the fairer and whiter, more smooth also and gentle in hand, whereby they are excellent good for the more delicate sort of such wicker ware, and better farre than stubborn leather; but principally for leaning chaires, wherein a man or woman may gently take a nap, sitting at ease and repose most sweetly. A Willow, the more that it is cut or lopt, the better spring will it shoot at root, and beare the fairer head. Let that which you cut or shred, be so little and thort withall, that it resemble a mans fist, rather than a bough, the thicker will it come againe: a tree no doubt that would not be set in the lowest ranke, but be well regarded, howsoever we make but base reckoning thereof: for surely there is not a tree for revenue and profit, more safe and certaine; for cost, lesse chargeable; and for injurie of weather, in better securitie. Certes *Cato*, among the commodities that commend a good ferme or manour, esteemeth it in the third place, and preferreth the encrease and benefit thereby, before the gaine that groweth from Olive rows, corne fields, and good medowes. Yet hereof wee must not infer, that wee are not furnished with many other things which will serve for bands to bind withall; for we have certain sorts of Sparr or Spanish broome, wee have Poplars, Elmes, the Sanguine-shrubs, Birch, cloven Reeds, leaves of Cane; as for example in Liguria: the cuttings also of the very Vine, and Briars, so their sharpe pricks be cut away, to tie withall; yea and the Hazell wands also, so they be writchen and twined: wherein a man may see a wonderfull propertie, That a wood should be stronger for to bind withall, when it is crushed and bruised, than whiles it was entire and sound. All these (I say) are good for bands, and yet the Willow hath a gift therein beyond all the rest. The Greek Willow is red, and commonly is sliven for to make withes. The Amerian Osier is the whiter, but more brittle, and soone will cracke, and therefore it is put to that use of binding sound and whole as it groweth, and not cloven through. In Asia, they make account of three sorts of Willows: the blacke, which they employ to wind and bind withall, so tough and pliant it is: the white, wherewith husbandmen make their wicker paniers and baskets, with other such vessels for their use: as for the third, it is the shortest of all other, and they call it Helix, or Helice. With us also here in Italie, there be as many kinds, and those distinguished by their severall names: the first, which is of a deepe purple colour, they call the free Osier or Willow; and that is so good for bands: the second, which is more thin and slender, is named * Vitelina, for the bright hew that it hath: the third that is smallest of all three, is the French Willow.

D To come now to the brittle Rushes that grow in marish grounds, which serve to thatch houses and to make mats; and the pith whereof when the rind is pilled, maketh wieke for watch-candles, and funerall lights to burne by a dead corps whiles it lieth above ground: they cannot justly be reckoned in the ranke either of Shrubs, or Brier-bushes and Brambles, ne yet of tall plants growing up with stems and stalkes, no more than among Hearbs and Weeds creeping along the ground; but are to be counted a severall kind by it selfe. True it is, that in some places there are to be found rushes more stiffe, hard, and strong, than in others. For not onely mariners and watermen in the river Po doe make sailes thereof, but fishermen also of Affrick in the maine sea: howbeit they hang their sailes betweene the masts, from mast to mast, after a preposterous manner contrary to all other. The Mores also doe cover their cottages with Bulrushes: and surely if a man looke nearely to the nature of them, they may seeme to serve for that use which the Papyr reeds in the neather-land of Ægypt are put unto, about the descent and fall of the river Nilus.

E As touching Brambles, they may goe among the shrubs of the water: so may the Elders also, which consist of a spongeous kind of matter, & yet cannot well be counted among those plants which be tearmed Fenels-gyant: for surely the Elder standeth more upon the wood than they doe. The shepheards are verily perswaded, that the Elder tree growing in a by-place farre out of the way, and from whence a man cannot heare a cocke crow out of any town, maketh more shrill pipes and lowder trumpes than any other. The Brambles beare certaine berries like the Mulberries, even as the sweet Brier of another kind, which they call Cynosbatos or the Eglantine, carrieth the resemblance of a Rose. A third sort there is of Brambles, which the Greeks call *Idaea*, of the mountaine *Ida*. This is the *Raspis*: smaller it is and more slender than the rest, with lesse pricks upon it, and nothing so sharpe and hooked. The flower of this *Raspis* beeing tempered with honey, is good to be laid to bleared and bloodshotten eyes; as also to the wild-fire or disease called *Saint Antonies* fire. Being taken inwardly, and namely drunke with water, it is verie

* or, *Vitellinam* rather, for the yellow colour of the yolke of eggs.

comfortable to a weake stomacke. The Elder beareth certaine blacke and small Beries, full of a grosse and viscous humor, used especially to die the haire of the head blacke. If they be boiled in water, they are good and wholesome to be eaten, as other potherbes.

CHAP. XXXVIII.

¶ Of the juice or humor in trees. The nature of their wood and timber. The time and manner of felling and cutting downe trees.

Trees have a certaine moisture in their barks, which we must understand to bee their verie bloud, yet is it not the same, nor alike in all: for that of the Figge trees is as white as milke, and as good as rendles to give the forme to cheese. Cherric trees yeeld a glutinous and gummie humor, but Elmes a thin liquor in manner of spittle. In Apple trees the same is fartie and viscous; in Vines and Pyrries, waterish. And generally, those trees continue and live longest that have such a glewie moisture in them. In summe, there are to bee considered in the substance and bodie of trees, like as of all other living creatures, their skin, their bloud, flesh, sinewes, veines, bones, and marrow. For in lieu of their hide is the barke. And I assure you, a straunge and marvellous thing it is to be observed here in the Mulberrie, that when Physicians seeke to draw the foresaid liquour out of it, at seven or eight a clocke in a morning, if they scarifie or lightly cut the barke with a stone, it issueth forth, and they have their desire; but if they crush or cut it deeper in, they meet with no more moisture than if it were starke drie. In most trees next to the skin lieth the fat: this is nought else but that white sap, which of the colour is called in Latin *Alburnum*. As it is soft in substance, so is it the worst part of the wood; and even in the strong Oke, as hard as otherwise it is, ye shall have it soone to putrifie and rot, yea, and quickly to bee worne-eaten. And therefore, if a man would have sound and good timber, this white must be alwaies cut away in the squaring. After it, followeth the flesh of the tree; and so the bone, which is the very heart and best of the wood.

All trees whereof the wood is over drie, beare fruit but each other yeare, or at leastwise more in one yeare than another, as namely, the Olive tree. A thing observed more in them, than in those that have a pulpous and fleshie substance, as the Cherric tree. Neither are all trees indifferently furnished with store of the said fat or flesh, no more than the most fierce and furious beasts. As for the Boxe, Cornell, and Olive trees, they have neither the one nor the other, ne yet any marrow at all, and but verie little bloud. Semblably, the Servise tree hath no heart, the Elder no carnositie, (and yet both of them are stored well ynough with marrow, which is their pith) no more than canes or reedes for the most part. In the fleshie substance or wood of some trees, there are to bee found graine and veine both. And easie it is to distinguish the one from the other: for commonly the veines bee larger and whiter; contrariwise, the graine (which the Latines call *Pulpa*) runneth streight and direct in length, and is to bee found ordinarily in trees that will easily cleave. And hereupon it commeth, That if a man lay his eare close to one end of a beame or peece of timber, he shall heare the knocke or pricke that is made but with a penknife at the other end, bee the peece never so long, by reason that the sound goeth along the streight graine of the wood. By this meanes also a man shall find when the timber doth twine, and whether it runne not even, but bee interrupted with knots in the way.

Some trees there be that have certaine hard bunches, bearing out and swelling like to kernels in the flesh of a Swines necke, and these knobs or callosities, have not in them long graine and broad veine, as is abovesaid: but onely a brawnie flesh (as it were) rolled round together. And to say a truth, when such knurs and callosities as these bee, are found either in Citron or Maple trees, men make great account of them, and set no small store by that wood. All other sorts of tables, when the trees are cloven or sawne into planks, are brought into a round compasse with the graine: for otherwise, if it were slit overthwart to make them round against the grain, it would soone breake out. As touching the Beech, the graine of it runneth crosse two contrarie waies like combe teeth; but in old time the vessels made of that wood, were highly esteemed. As for example, *Manius Curius* having subdued his enemies, protested, and bound it with an oth, That of all the bootie and pillage taken from them, hee hath not reserved any thing for himselfe, but onely a cruet or little ewer of Beech wood, wherewith he might sacrifice unto the gods.

There

- A** There is no wood but floteth aloft the water, and waveth in length: like as that part which is next to the root, is farre more weightie, setleth faster downe and sinketh. Some wood hath no veines at all, but consisteth onely of a meere graine, streight and small in manner of threds: and such commonly is easie to be cloven. There is againe wood which hath no such direct grain, and that will sooner breake out than cleave, and of this nature is the Olive and Vine-wood. Contrariwise, the whole bodie and woodie substance of the Fig-tree, is nothing but flesh. The Mast-holme, Cornell, Oke, Tretrifolie, Mulberrie, Ebenie, and Lotus, which have no pith and marrow within, as is before said, are all heart. All wood for the most part turneth to a blackish colour. The Cornell tree is of a deepe yellow, whereof are made the faire Bore-speare staves, which shine againe, and bee studded (as it were) with knots, and chamfred betweene, both for decencie and handfomeneffe. The Cedar, Larch, and Juniper wood, is red.
- B**

CHAP. XXXIX.

Of the Larch, the Firre, and the Sapine: the manner of cutting or falling such like trees.

- T**HERE is a female Larch tree which the Greekes call *Ægis*: the wood whereof is of a pleasant colour, like to honic. Painters have found by experience, that it is excellent good for their tables, both for that it is so even and smooth, not apt besides to chinke and cleare; as also because it will endure and last for ever. And that part they chuse which is the very heart of it, and next the pith, which in the Fir tree the Greekes call *Leuson*. In like sort the heart of the Cedar is hardest, which lieth next to the pith or marrow abovenamed (much after the manner of bones in the bodies of living creatures) when the muddie carnositie is scraped off & taken away. The inward part also of the Elder by report is wonderous hard and tough, and they that make thereof staves for Bore-speares, prefer it before any wood whatsoever. For it standeth onely upon skin and bone, that is to say, of the rind and heart.
- C**

Theophrastus writeth this of the Cornell tree.

- As touching the falling and cutting downe of trees, to serve either in temples or for other uses, round and entire as they grow, without any squaring; as also for to bark them; the only time and season is, when the sap runneth, and that they begin to bud forth: otherwise you shall never be able to get off their barke: for barke them not, they will rot and become worne-eaten under the said barke, and the timber withall waxe dusky and blacke. As for the other timber that is squared with the axe, and by that meanes rid from the barke, it would bee fallen or cut downe betweene mid-winter and the time that the wind *Favonius* bloweth: or, if wee bee forced to use the timber before, and to prevent that time, trees may be fallen at the setting of the star *Arcturus*, or of the *Harpe* star before it. Finally, the utmost and last time thereof is at the Summer Sunstead. But for as much as most men be ignorant of these seasons, and know not when these stars abovenamed doe either rise or fall, I will hereafter shew the reason both of the one and the other in place convenient. For this present, as touching the time of felling trees, the common sort make no more scruple, but thinke it sufficient to observe, that no trees which are to be hewne square for Carpenters worke be cast downe and laid along before they have borne their fruit. As
- E** for the hard and savage Oke, if it bee felled in the Spring, it will be subject to the worme: but cut it downe in midwinter, it will neither warpe, nor yet cleave and chinke: being otherwise subject unto both, namely, as well to cast and twine, as to rift and gape: a thing incident to the Corke wood, bee it cut downe in as good a season as it is possible. Moreover, it passeth to see how much the age of the Moone availeth in this case. For it is commonly thought, that timber would not be fallen but in the wane, and namely, in the last quarter, from the twentieth day of the Moone, untill the thirtieth. And this is generally received among all good workemen, That the best time to cut downe any timber, is in the conjunction of the Moone with the Sunne, even the very day of the change, before she sheweth new. Certes, *Tiberius Cesar* the Emperour, gave order to fell the Larch trees that came out of *Rhoetia*, to repaire and reedifie the bridge that served to represent the shew of a navall battell upon the water (which fortun'd to be consumed with fire) jult at the change of the Moone. Some say, that we must precisely observe the point of the conjunction, and that the Moone withall be under the earth, when such trees should be felled: which cannot be but in the night. But if it fall out besides, that this conjunction or change of the Moone, and the last day of the winter Sunstead meet together at one instant: the timber then cut downe will
- F**

will last a world of yeares. Next unto it is that timber which is fallen in the daies and signs above rehearsed. Others affirme moreover, that the rising of the Dog star would be considered & chosen for this purpose: for at such a time was that timber felled, which served for the stately hall or pallace of *Augustus*. Moreover, for to have good and profitable timber, the trees would be cut downe that are of a middle age, for neither young poles nor old runts are fit for durable building. Furthermore, there bee that hold opinion, That for to have the better timber, the trees should have a kerse to the very heart and pith round about, and so let it stand an end still, that all the humor by that meanes might run out, before they be overthrowne and laid along. And verily, a wonderfull and miraculous thing is reported in old time, during the first Punicke war against the Carthaginians, namely, That all the ships of that fleet which was conducted by Generall *Drebellius* the high Admirall, were shot into the sea and under saile, within threescore daies after that the timber whereof they were built, was cut downe in the wood. And *L. Piso* hath left in writing, That against king *Hiero*, there were two hundred and twentie ships made and furnished in five and fortie daies after the timber grew. Also in the second Punicke war, the Armado which *Scipio* employed, was set afloat and bare saile fortie daies after the fall of the timber. See how forcible and effectuell in all things is the season & opportunitie of time duly taken, especially when need driveth to make speed and hasten apace.

Cato the cheefe and onely man of all others for experience and knowledge in every thing, in his Treatise of all kind of timber to be employed in building, giveth these rules following, Make thy pressing planke especially of the black *Sapine or Hornbeame tree. *Item*, Whensoever thou meanest to stork up either Elme, Pine, Walnut tree, or any other whatsoever for timber, see thou dig it out of the ground, in the wane of the moone, and that in the afternoone, and take heed in any wise that the wind be not South. *Item*, The right season to fell a tree for timber, is when the fruit is full ripe. *Item*, Beware in any case, that thou neither draw forth of the ground, nor yet square a tree, when the dew falleth. And a little after, Beware thou meddle not with timber trees but either at the change or full of the Moone. And in no hand, neither stork it up then, nor hew it hard to the ground. But within foure daies after the full Moone, plucke up trees hardly, for that is the best time. *Item*, Be well advised, that thou neither fell, square, nor touch with the ax, any timber that is blacke, unlesse it be drie. And meddle not with it, if either it be frozen, or full of dew. *Tiberius* the Emperour abovenamed, observed likewise the change of the Moone, for cutting the haire both of head and beard. And yet *M. Varro* gave a rule, That to prevent baldnesse and the shedding of haire, the Barber should be sent for alwaies after the full Moone.

But to come againe unto our timber trees. The Larch and Fir, both, but the Fir especially, if they be cut down, bleed a long time after, and yeeld abundance of moisture. Indeed, these twaine of all other bee the tallest, and grow most streight and upright. For Mast poles, and crosse-Saile-yards in ships, the Fir or Deale is commended and preferred before all other, for the smoothnes and lightnesse withall. The Larch, the Fir, & the Pine, have this propertie common to them all, To shew the graine of their wood, running either parted in foure, forked in twaine, or single one by one. For fine Carpentrie and Joiners feeling within house, the heart of the tree would be cloven or rent. The quarter timber, or that which runneth with foure graines, is simply the best, and more pleasant to be wrought than the rest. They that be skilfull woodmen and have experience in timber, will soone find at the first sight the goodnesse of the wood by the very barke. That part of the Fir tree which groweth next to the earth, is without knots, even and plaine: the same is laid to soke and season in the water, and afterwards the barke is taken off, and so it commeth to be called *Sapinus*. The upper part is knottie and harder than the nether, and the Latines name it *Fusterna*. In summe, what tree soever it be, that side which regardeth the North, is more strong and hard than the other. And generally, the wood of those trees that grow in moist and shadie places is the worse: contrariwise, that which commeth from ground exposed to the Sunnes shine is more fast and massie, and withall, endureth a long time. And hereupon it is, that at Rome the Fir trees that come from the nether sea side out of Tuscane, be in better request than those from Venice side, upon the coast of the upper sea.

Moreover, there is great ods betweene Fir trees, in regard of diverse countries and nations where they grow. The best are those of the Alpes and the Apennine hills. Likewise within France there are excellent good Firs upon the mountaines *Iura* and *Vogefus*: as also in *Corfica*, *Bithynia*, *Pontus*, and *Macedonia*. A worse kind of them grow in *Arcadia* and about the mountaines neare

A neare Ænea. The worst be those of Pernassus, & Eubœa: for in those parts they be full of boughs and grow twined, besides, they soone doe putrifie and rot.

As for Cedars, the best simply be those that grow in Candie, Affricke, and Syria. This vertue hath the oile of Cedar, That if any wood or timber be throughly annointed therewith, it is subject neither to worme nor moth, ne yet to rottenesse.

The Iuniper hath the same propertie that the Cedar. They prove in Spaine to bee exceeding big and huge, the Berries also greatest of all others. And wheresoever it groweth, the heart thereof is more found than the Cedar.

B A generall fault and imperfection there is common to all wood, When the grain, & the knots run into round balls; and such they call in Latine Spiræ. Also in some kind of timber, like as in marble also there bee found certaine knurs like kernils, as hard they be as naile heads, and they plague sawes, wheresoever they light upon them. Otherwhiles they fall out to be in trees, by some accidentall occasion, as namely, when a stone is gotten into the wood, and enclosed within it: or, in case the bough of some other tree be incorporate or united to the foresaid wood. There stood a long time a wild Olive in the market place of Megara, upon which the hardie and valiant warriors of that citie used to hang and fasten their armour, after some worthie exploit performed: which in tract and continuance of time were overgrowne with the barke of the said tree, & quite hidden. Now was this a farall tree unto the same citie and the inhabitants thereof, who by way of Oracle were forewarned of their wofull destinie and utter ruin; which was to happen, When that a tree should be with young, and delivered of harneis: which Oracle was fulfilled when this tree was cut downe, for within the wombe thereof were found the mourrions, jambriers or greives, of **C** brave men in times past. To conclude, it is said, That such stones so found in trees bee singular good for a woman with child, to carie about her, that she may goe her full time.

CHAP. XL.

☞ *Of diverse sorts of timber. Of certaine trees of extraordinarie bignesse. What trees they be that never be worme-eaten, nor decay and fall. What wood doth endure and continue alwaies good.*

D The greatest tree that to this day had ever beene knowne or seene at Rome, was that, which being brought with other timber for the rebuilding of the foresaid bridge called Naumachiaria, *Tiberius Cesar* commanded to be landed and laid abroad in view for a singular and miraculous monument to all posteritie: and it remained entire & whole, untill the time that *Nero* the Emperour built his stately Amphitheatre. This peece of timber was of a Larch tree: it contained in length 120 foot, and carried in thicknesse every way two foot, from one end to the other. Whereby a man may guesse and judge the incredible height of the whole tree besides, to the very top. Such another tree there was to be seene in our daies, which *M. Agrippa* left for the like singularitie & wonder of men, in those stately porches and cloisters that he made in *Mars* field: and it continued still after the building of the muster place and treasurers hall named *Diribitorium*. Shorter it was than the former by twentie foot, and carried a foot and halfe in thicknesse. As for the Fir tree, which served for a mast in that huge ship, which by the commaundement and direction of *C. Caligula* the Emperour transported and brought out of Ægypt, that **E** Obeliske which was erected and set up in the Vaticane hill, within the Cirque there, together with the foure entire stones which bare up the said Obeliske as supporters; it was seene of a wonderfull and inestimable height above all others: and certaine it is, that there was never knowne to flote upon the sea a more wonderfull ship than it was. She received 120000 Modij of Lentils for the very ballast; shee tooke up in length the greater part of the left side of *Hostia* harbour: for *Claudius* the Emperour caused it there to be sunke, together with three mightie great piles or dams founded upon it, and mounted to the height of towers, for which purpose there was brought a huge quantitie of earth or sand from *Puteoli*. The maine bodie of this mast contained **F** in compasse foure sadome full. And a common by-word it is, currant in euery mans mouth, that Fir masts for that purpose, are usually sold for eight hundred Sesterces apeece, and more monie: whereas for the most part planks which are set together and serve in stead of boats, ordinarily cost but fortie. Howbeit, the kings of Ægypt and Syria, for default and want of Fir, have used (by report) in steed thereof Cedar wood about their shipping. And verily, the voice goeth of an exceeding

ceeding big one which grew in Cyprus, and was cut downe for a mast to serve that mightie gal- G
leace of king *Demetrius*, that had eleven bankes of oares to a side; a hundred and thirtie foot it
was high, and three fatham thicke. And no marvell, since that the pyrates and rovers who haunt
the coasts of Germanie, make their punts or troughs of one entire peece of wood and no more,
wrought hollow in manner of a boat, and some one of them will hold thirtie men.

To proceed now unto the sundrie natures of wood. The most massie and fast wood, and there-
fore the weightiest of all other, by judgement of men, is that of the Ebene and the Boxe: both
small trees by nature. Neither of them twain swimmeth above the water, no more will the Corke
wood, if it be barked, nor the Larch. Of all the rest, the saddest wood is that of Lotus, I meane
that which at Rome is so called. Next to it, is the heart of Oke, namely, when it is rid of the white
sappie wood: the heart (I say) which commeth neare to a blacke colour: and yet the Cytisus or H
Tretifolie is blacker, and seemeth most to resemble the Ebene. Howbeit, you shall have some,
who affirme that the Terebinths of Syria bee blacker than it. There was one *Thericles* a famous
Turner, who was wont to make drinking cups, mazers, and bowles of the Terebinth; which is a
sufficient prooffe, that the wood is fine and hard. This wood alone of all others, loveth to bee oil-
led, and surely the better it is for the oile. But a marvellous pretie devise there is to set a passing
faire blacke colour, and a shining glosse upon it; with Walnuts and wild Peares, namely, boiling
these together, and making thereof a mixture and composition to give the said tincture. All
these trees abovenamed have a sad and fast wood. Next to them in that respect is the Cornell
tree: and yet I cannot properly raunge it in the order of timber trees, so small and slender it is.
Neither is the wood thereof good in manner for nought els but for spokes in cartwheeles, also I
to make wedges to cleave wood, and tough pins, which will hold as fast well neare as yron spikes. In-
like sort, the Mast-holme, the Olive both wild and tame, the Chestnut tree, the Hornebeame, and
the Poplar, be of an hard substance, and meet for this purpose. The wood hereof hath a curled
graine like the Maple, and surely would bee as good timber as any, but for often lopping the
boughs, which gueldeth and deminisheth the strength. Moreover, many of them there bee, and
the Oke especially, so hard, that unlesse they be soked first in water, it is impossible to bore a hole
into them with an auger, nor to plucke forth a naile if it be once set fast, water them as much as
you will. Contrariwise, the Cedar will not hold a naile. The wood of the Linden tree seemeth of
all other to be most soft, and hottest withall: for prooffe whereof, this reason men doe alleadge, be- K
cause it soonest turneth and dulleth the axe edge. Of a hote nature also are the Mulberrie tree,
the Lawrell, and the Yvie, and in one word, all those that serve to strike fire with. This experiment
was first found out by spics, that goe betweene campe and campe, by shepheards also in the field:
for having not flint evermore readie at hand to smite and kindle fire withall, they make shift for
to rub and grate one wood against another, & by this attrition there flie out sparckles, which light-
ing upon some tinder, made either of drie rotten touchwood, or of bunts and withered leaves,
very quickly catch fire, and burne not out. And for this intent, there is nothing better than to
strike the Yvie wood, with the Bay. In this case also the wild Vine (I meane not *Labrusca*) is much
commended: and it climbeth and runneth upon trees in manner of Yvie.

The trees that grow in waterie grounds be coldest of all others: but such be toughest, & there-
fore best to make bucklers and targuets, the wood whereof, if it bee cut, commeth quickly to-
gether, and closeth up the gash again, & in that regard, much adoe there is to pierce it through with
any weapon whatsoever. And of this sort are Fig trees, Willows, Lindens, Birch, Elder, Ash, and
Poplar. Of all these, the Fig tree and the Willow bee lightest, and therefore fittest for that pur-
pose. These trees last rehearsed, bee good for caskets and foffers: wicker baskets also and prettie
paniers, which be made of winding twigs. Their wood besides is faire and white, streight also and
casie to be graven. The Plane wood is soft and gentle, but moist withall; and so is the Alder, Elme
likewise, Ash, Mulberrie, and Cherry-tree wood, is pliable, but drier and more powderous. The
Elme, of all kinds of wood, will keepe streight and stiffe best, and not warpe at all: and because it
twineth and casteth not, it is passing good for hinges and hookes, for sawne bords, for led-
ges in dores and gates: so as this regard bee had of exchange, that the upper end of the bord
which grew toward the head of the tree, bee fitted to the nether hinge or hooke of the dore; M
and contrariwise the butt end, serve the higher. The Date tree and the Corke, have a soft & ten-
der wood: the Apple tree, Peare tree, and Maple, have as sad and massie; but brittle it is, like as
all wood that goeth with a crosse and frizled graine. And looke what tree soever is naturally hard
and

A and tough, the wild and the male of the same kind, have their wood more churlish than otherwise it is in the rest. Semblably, those that beare no fruit, are of a faster and firmer wood than the fruitfull: unlesse it bee that the males bee bearers, and the female barren, of which sort are the Cypresse and Cornell trees. The wood of Cypresse, Cedar, Ebene, Lotus, Box, Yewgh, Juniper, and the Olive both savage and gentle, is never worme-eaten, ne yet rotteth for age. As for all other trees, long it is before these decay, to wit, the Larch, the Oke, the Corke tree, Chestnut and Walnut tree. The Cedar, Cypresse, and Olive wood, never doth chinke or cleave of it selfe, unlesse it be by some accident.

B It is commonly thought, that the Boxe, the Ebene, the Cypresse, and Cedar wood, is everlasting and will never be done. An evident prooffe thereof as touching all these sorts of timber, by the judgement and choise of so many men, was to bee seene in that famous temple of *Diana* in Ephesus: for all Asia set to their helping hand and contributed toward that worke, which in four yeares and not before, they brought to an end and finished. The beames, rafters, and spars that went to the making of the rouse, were by the generall voice of the whole world, of Cedar timber. As touching the statue or image it selfe of the goddesse *Diana*, it is not so certainly known of what wood it was: all writers, save onely *Mutianus*, report that it was of Ebene. As for him, a man who had been thrice Confull of Rome, and one of the last who upon their owne sight of the said thing, wrote thereof, avoucheth that it was made of Vine wood; and that, howsoever the temple was ruined and rebuilt againe no lesse than seven times, yet the foresaid image was never altered nor changed. Who saith moreover, that *Canetias* chose that wood for the best (for

C so he named the workman that cut and carved it.) And I much marvell thereat, considering that by his saying this image was of greater antiquitie than that of ladie *Minerva*, much more than of prince *Bacchus*. He addeth moreover and saith, that this statue was embaulmed within, by reason of the precious oile of Spikenard, which was distilled into it at many holes: by meanes of which medicinable liquor, the wood was nourished, and the joints held close and fast together: whereat I cannot chuse but marvell againe very much, that considering the statue was so small, it should have any peece or joint at all. Now as touching the leaves of the dores belonging to this temple, they were by his report, of Cypresse wood: and continued still fresh and new to the eie, notwithstanding it is foure hundred yeares well neare since they were made. Where, by the way,

D this is to be noted, that these dores stood foure yeares glewed in the clave. And verily, this wood was chosen for that purpose, because among other properties, the Cypresse alone hath this gift, to looke alwaies shining and polished, and never loseth the glosse and beautie. And for to prove this, we need not to goe farre: Looke but upon the image of * *Vejovis* in the Capitoll, made of Cypresse wood, doth it not endure still faire and trim? and yet was it dedicated and consecrated in that temple, in the yeare after the foundation of Rome, 551. *or, Jupiters.

A famous and memorable temple there is of *Apollo* at *Vtica*, where the beames and maine peeces of timber, made of Numidian Cedars, remain as whole and entire as at the first day when they were set up, which was when the citie was first founded: by which computation, they have continued already 1188 yeares. Moreover, it is said, that at *Saguntum* a citie of Spaine, there is a temple of *Diana* still standing, a little beneath the citie: and yet as king *Bacchus* mine Authour saith, 200 yeares before the ruine & destruction of Troy, the same men which brought the image of the said *Diana* from the Island *Zacynthus*, founded the temple abovesaid. For the antiquitie and religion whereof, *Anniball* made some conscience to demolish it, and would not once touch it: and therein are to be seene at this day the beames and rafters of Juniper, sound and good. But above all other, memorable is the temple of the said goddesse *Diana* in *Aulis*, which was built many hundred yeares before the Trojane warre: but what kind of timber was emploied about the Carpentrie thereof, is not well knowne. Howbeir, this we may boldly resolve upon, that the more odoriferous any wood is, the more durable also it is, and everlasting.

E Next to those trees above rehearsed, the wood of the Mulberrie tree is most commended, which in tract of time as it groweth to be old, waxeth also blacke. Moreover, some kinds of wood as they be more lasting than other: so they continue better being emploied in one kind of work, than they doe in another. The Elme timber will well abide the aire and the wind. The wild Oke *Robur* loveth to stand within the ground, and the common Oke is good in the water: let it be used above ground to take the aire and the weather, it will cast, warpe, and cleave, too bad. The Larch wood agreeth passing well with water workes, and so doth the black Alder. As for the Oke *Robur,*

Robur, it will corrupt and rot in the sea. The Beech will doe well in water, and the Walnut tree likewise : but to stand within the earth, they are principall good, and have no fellow. And for the Juniper, it will hold the owne, being laid under ground : but for building above in the open aire, it is excellent good. The Beech and the Cerrus wood rot quickly. The small Oke called Esculus cannot abide the water. The Cherrie tree wood is firme and fast: the Elme and the Ash are tough; howbeit, they will soone settle downward and sag, being charged with any weight, but bend they will before they breake : and in case before they were fallen, they stood a while in the wood, after they had a kerfe round about, for their superfluous moisture to run out untill they were well dried, they would be the better & surer in building. It is commonly said, that the Larch wood if it be put into ships at sea, is subject to the worme: like as all other kinds of wood, unlesse it be the wild and tame Olive. For to conclude, some timber is more readie to corrupt & be marred in the sea, and others againe upon the land. H

CHAP. XLII.

Of wormes that breed in wood.

OF vermine that eat into wood, there bee foure kinds. The first are called in Latine Teredines: a very great head they have for the proportion of the bodie, and with their teeth they gnaw. These are found onely in ships at sea, and indeed properly none other bee Teredines. A second sort there bee, and those are land wormes or mothes, named Tineæ. But a third kind resembling gnats, the Greekes tearme by the name of Thripes. In the fourth place bee the little wormes : whereof some are bred of the putrified humour and corruption in the verie timber : like as others againe engender in trees, of a worme called Ceraustes : for having gnawne and eaten so much, that hee hath rounge ynough to turne him about within the hole which he first made, hee engendresth this other worne. Now, some wood there is so bitter, that none of these vermine will breed in it, as the Cypresse: others likewise so hard, that they cannot eat into it, as the Boxe. It is a generall opinion, that if the Firre bee barked about the budding times, at such an age of the Moone as hath been before said, it will never putrifie in the water. Reported it is by those that accompanied *Alexander* the great in his voiage into the East, that in the Island Tylos lying within the red sea, there be certain trees which serve for timber to build ships, the which were knowne to continue two hundred yeares : and being drowned in the sea, were found with the wood nothing at all perished. They affirmed moreover, that in the same Island there grew little plants or thrubs, no thicker than would well serve for walking staves to carie in a mans hand, the wood whereof was massie and ponderous, striped also and spotted in manner of a Tygres skin; but so brittle withall, that if it chanced to fall upon a thing harder than it selfe, it would breake into sifers like glasse. K

CHAP. XLIII.

Of timber good for Architecture and Carpentrie: what wood will serve for this or that worke: and which is the strongest and surest timber for roofes of building. L

WE have here in Italie, wood and timber that will cleave of it selfe. For which cause our Maister Carpenters give order to besmeare them with beasts dung, and so to lie a drying, that the wind and piercing aire should not hurt them. The joists and planks made of Firre and Larch, are very strong to beare a great weight, although they bee laid in length overthwart. Contrariwise, the rafters made of the wild Oke Robur, and Olive wood, will bend, and yeeld under their load: whereas the other named before, do resist mainly and withstand, neither will they easily breake, unlesse they have much wrong: nay sooner doe they rot, than faile otherwise in strength. The Date-tree wood also is *tough and strong, for it yeeldeth not, but curbeth the contrarie way. The Poplar setleth and bendeth downward: whereas the Date-tree contrariwise riseth upward archwise. The Pine and the Cypresse are not subject either to rottenesse or worme-eating. The Walnut-tree wood soone bendeth, and is saddle-backt as it lieth, (for thereof also they often use to make beames and rafters) but before that it breaketh, it will give warning by a cracke; which saved many a mans life in the Island Antandros, at what time

*Valida, ex Theophrast.

- A** time as being within the common baines, they were skared with the cracke that the floore gave, and ran forth speedily, before all fell. Pines, Pitch trees, and Allat, are very good for to make pumps and conduit-pipes to convey water; and for this purpose their wood is boarded hollow: lying buried under the ground, they will continue many a yeare sound and good; let them be uncovered without any mould and lie above-ground, they will quickly decay. But if water also stand above the wood, a wonder it is to see how they will harden therewith and endure. Firre or Deale wood, is of all other surest and strongest for rouses above head: the same also is passing good for dore leaves, for bolts and barres: also in all feelings and wainscot whatsoever it be, whether Greekish, Campaine, or Sicilian, it is the best, and maketh very faire worke. A man shall see the fine shavings thereof run alwaies round and winding, like the tendrils of a vine, as the
- B** Ioyner runneth over the painels and quarters with his plainer. Moreover, the timber of it is commendable for coches and chariots. And there is not a wood that maketh a better and stronger joynt with glew, than it doth: infomuch, as the sound planke will sooner cleave in any other place, than in the joynt where it was glewed.

CHAP. XLIII.

¶ Of glewing timber: of rent, cloven, and sawen painell.

- C** Great cunning there is in making strong glew, and in the feat of joyning with it, as well in regard of feelings and wainscot made of thin board and painell, as of marquetric & other inlaid workes: and for this purpose, Ioyners doe chuse the mistressie threadie graine that is most streight, which some call the Fertill veine, because ordinarily it breedeth others; and yee shall see it braunching and curled, as if it shed teares and those trickling downe. In every kind of wood whatsoever, the crisped graine will not take glew and bear a joynt. Some wood it is impossible to glew and joyne, with peeces of their owne kind, much lesse of other wood; as the hard oke Robur. And lightly yee shall not have peeces of a divers nature, knit and unite well in a joint, no more than if a man should goe about to glew and joyne stone & wood together. The Servise tree wood cannot in any wise sort in a joynt with the Corneill wood; no more can the Horne-beame and the Box: after them, the Tiller or Linden wood may hardly away with his societic. To speake generally, whatsoever wood is gentle and apt to bend, (such as we call pliant) the same is
- D** good and easie to bee wrought to any worke that a man would have: to which, you may put the Myrtle and wild Fig-tree. Durable and handsome withall, either to bee cut, squared, cloven, or sawen, are all those kinds of wood which be by nature moist. As for drie peeces of timber, they give not way so fast to the saw, as greene: and yet you must except the Oke and the Box wood, which although they be greene, doe stiffely withstand the saw-gate, choking and filling up their teeth even; by which meanes the slit is hindred, and the worke goeth not forward: which is the cause also that the sawyers draw up and let downe the saw twice, before the teeth send from them any dust into the pit. As for the Ash, it is most easie to be wrought, put it to what use you will, and maketh the fairest worke: and namely for horsemens staves, better it is than Hazell, lighter than the Corneil, and more gentle and pliable than the Servise wood. The French white Ash, it will
- E** bend well for cart-thills and fellies. The Elme would be very like vine-wood, but that it is more ponderous and heavie. The Beech is easie to bee wrought into any forme, brittle though it be and tender: yet thereof are made fine trenchers, thin shindles, and such like, as will wind & bend every way: and therefore it is the only wood commendable for to make pretie caskets, paniers, and boxes. The mast-Holme also may be cut into fine thin foile or leaves like plates, and those also are of a daintie and pleasant colour: but singular good is the wood thereof for such things as fret and weare with rubbing, and namely, the axeltrees in wheeles: and as the Holme (I say) is fit for this purpose in regard of the hard wood; so the Ash likewise, because it is so lyth and pliable: in which two respects, the Elme is chosen before them both. Moreover, the wood of these trees before-named, are notable to make many pretie tooles that serve artizans in their daily
- F** worke: and therefore it is commonly said, That the wood of the wild Olive, Box, mast-Holme, Elme, and Ash, are excellent good for awgre-handles and wimble-stocks. Of the same also are made mallets; but beetle heads of the bigger sort, of the Pine and Holme. A great reason why these kinds of wood are the more tough & harder, is when the trees have their right season, and be cut downe in their best time, rather than too soone and before they are come to maturitie.

Thus it hath been knowne that doore-hinges and hooke made of Olive wood (which otherwise is most hard) if they have rested any long time, and not been worne by shutting and opening too and fro, have put forth fresh buds, as if they had growne still in the plant. As for dore-barres and bolts, *Cato* would have them made of Holly, Bay-tree, and Elme. The handles and helms of rusticall tooles, mattocke steles, and spade trees, *Hyginus* willeth they should be either of Horne-beame, Holme, or Cerrus. For fine painell in fret-worke, for feeling also and overlaying other wood, these are the chiefe, the Citron, Terebinth, Maple of all sorts, Boxe, Date tree, Hulver, Holme, Elder root, and the Poplar. The Alder tree likewise (as hath been said) doth affourd certaine swelling bunches and hard knots, which may be cut and cloven into most daintie flakes and pretious leaves, as faire and pleasant to the eye for their damaske braunch, as either Citron or Maple: setting which three aside, there be no knurres and nodosities in any tree worth ought and of account. G
H

Moreover, ye shall have trees ordinarily in the mids toward the heart, carie a more crisped and curled wood; and the nearer it is to the butt or root end, the finer is the graine, more braunching also, and the streaks winding in and out. Loe, from whence first came the superfluous expence to cover and seele one wood with another! See how those trees which for their very wood were of no price, are become more costly and deerer, when they serve as a barke to clad others! that one tree forsooth by this means, should be sold many and sundrie times at a severall price. Thus have been devised (I would not else) thin leaves of wood, like gold or silver-foile. And yet that is not all: for there is come up of late a devise, to paint and die in sundry colours the hornes of beasts, to cut and saw their teeth into thin plates: and whereas at first there was fret-works only inlaid and set out with Ivorie here and there, soone after it came to passe, that the wood was covered all over therewith. Neither hath the royer and wastfull prodigalitie of the world staid there, but proceeded farther, even to search into the deepe sea for that, which might serve in stead of wood and timber. Thus the Tortoise shell hath been cut into flakes and leaves, for want forsooth of wood upon drie land. And now of late daies, certaine monstrous spirits, during the Empire of *Nero*, have found out a devise to disfigure the Tortoise shell also with paintings, that it might be sold the deerer when it lookt like wood. Thus meanes are wrought, that the price of beds should be raised and set up by this means: thus they would have the Terebinth wood to be excessive deerer and above the woorth: thus must the Citron wood be enhaunfed to an higher rate: and thus the Maple is counterfeited, Tortoise shels are foisted in the place and bought for it. To conclude, of late daies the curiositie of men was such, that they could not content themselves with rich and costly wood; and now for to beautifie and set out their wood, Tortoise shels must needs be bought, there is no remedie. I
K

CHAP. XLIIII.

¶ *The age of trees: what kind of trees they be that are of least continuance. Semblably of Misselto, and the Priests called Druides.*

IF a man would consider the hidden corners of the world, and the inaccessible desarts that be in it, he might by infallible arguments conclude and resolve, that there be some trees which have continued time out of mind, and lived infinitely. But to speake of their age only that are knowne (even by the testimonie of auncient records, & those faithfully delivered unto us) there are to be seen standing and growing at this day, about Linternum (a town in Campaine) certain Olive trees, which *Scipio Africanus* (the first of that name) planted long since with his own hand. In the same place also there is a Myrtle tree, of a rare and admirable greatnesse; and under it, a cave or hole in the ground, wherein (by report) there lyeth a dragon that keepeth the ghost and soule of the said *Scipio*. And at Rome, in the court-yard belonging to the chappell of goddesse *Diana Lucina*, there is yet to be seene a Lote tree standing before the said chappell, built in the yearc of the Anarchie, what time as Rome stood desolate of all magistrates, and that was 369 yeares after the foundation of the citie: but how much more auncient this tree is than the said temple, God knoweth: for, elder it is without all question, considering that of the grove or tuft of trees there growing, which the Latins call *Lucus*, the said goddesse *Diana* tooke her name L
M

* *Gravia Lucina
dedit hæc tibi
nomina Lucus.*
Ovid.

* *Lucina*. Now is it 450 yeares or thereabout, since that time, and so old it is doubtlesse. Another Lote tree there is an elder than that, but the age thereof is likewise uncertein: known it is
by

- A** by the name *Capillata*, [*i. hairie* :] so called, because the haire of the vestall Nuns heads is usually thither brought, and there consecrated. And yet is there a third *Lotus* in the court-yard and cloister about the temple of *Vulcane*, which *Romulus* built for a perpetuall monument and memoriall of a victorie, and defraied the charges out of the tenths of the pillage and spoile that hee wooon from his enemies; and this tree is at least full as old as the citie of Rome, if it be true that *Massurius* writeth. The roots thereof, passing along the street where the Burgeois use to keepe their residence, doe reach as farre as the stately market-place or Hall of *Cesar*. There grew by it a *Cypresse* tree also of the same age, the which by an oversight and carelesse neglect, fell downe no longer since than the last yeere of *Nero* the Emperour. But why stand wee long hereupon? there is an *Holme* growing in the *Vaticane*, elder than Rome it selfe, with a plate of brasse upon it engraven in *Tuscane* letters, containing an inscription or title: whereby it appeareth, that even in those daies the said tree for antiquitie, was worthie of peoples devotion. Moreover, it is well knowne, that the *Tyburnines* are more auncient than the Romans, and their citie *Tybur* founded many a yeare before Rome: and yet certaine it is, that there bee yet three *Holmes* there remaining alive, elder than *Tyburnus* himselfe, their first founder: upon which trees (as the voice goeth) hee observed the flight of birds, and thereby tooke his auspices and warrant from the gods to build the said citie. And (by report) the sonne he was of *Amphiaraius*, who died at *Thebes* an hundred yeares before the *Trojane* warre. Writers there be who affirme, that both that *Plane* tree which groweth before the temple of *Apollo* at *Delphos*, was set by king *Agamemnon*s owne hand: as also another in the sacred grove of *Caphys* in *Arcadie*. Furthermore, at this day, there be trees near unto the streight of *Callipolis*, sometime called *Hellepontus*, over-against the citie of the *Ilians*, where old *Troy* stood, growing close unto the tombe or sepulchre of *Protesilaus*: which every fourteen yeares so soon as they are shot up so tall only as they may seeme to discover and see the citie *Ilium*, immediatly begin to wither and fade; & afterwards spring againe and grow anew unto that age and height aforesaid. Hard by the citie of *Ilium*, there be certaine *Okes* also (as folke say) neare unto the tombe of *Ilius*, which were then planted or set of acorns, when *Troy* began to be called *Ilium*. It is reported moreover, that the *Olive* tree remaineth yet alive at *Argos*, unto which *Argus* tied *ladie Io*, after shee was transformed or turned into an *Heifer*. About *Heraclea* in *Pontus*, there be certaine altars erected to the honour of *Iupiter* surnamed *Stratius*, over which there stand two *Okes*, both set by the hands of
- D** *Hercules*. In the very same tract there is an haven, ennobled and renowned by the name of *Amycus* the *K.* of the *Bebrycians* there slaine. His tomb, from the very day of his sepulture, hath ben overshadowed with a *Bay* tree (planted there and then for that purpose) which the people of that country doe call *The raging* or *mad Lawrell*; for plucke but a branch or twig thereof be it never so small, and carie it into a ship, all the mariners & passengers within, will fall a brawling, and never agree untill it be cast out and throwne away out of the vessell, which was brought thither from the tree aforesaid. Of a certaine region we have before written, called *Aulocrene*, lying in the way betweene *Apamia* and *Phrygia*; and there the paissants of that country can shew you that very *Plane* tree, on which *Marsyas* the musician hung himselfe in a melancholly mood, for that he was overmatched in his owne cunning and professed skill, by *Apollo*: and surely like it is,
- E** that even then he made choise of that tree for the bignesse. Over and besides, in the *Island Delos*, there is a *Date* tree to be seen, which hath remained there ever since that the said god *Apollo* was borne and reared there. The wild *Olive* tree at *Olympia* (whereof *Hercules* ware the first coronet or *guirland*) is kept and tended still with great devotion. The very same *Olive* tree also (by folkes saying) continueth this day at *Athens*, which sprung up at the very time that *Minerva* and *Neptune* strove together about giving the name to the citie of *Athens*. And thus much of long-lived trees.

Contrariwise, *Pomegranat* trees, *Fig* trees, and *Apple* trees, live a very short time: & of these, the hastie kind or *lenitings*, continue nothing so long as those that bear and ripen later: neither yet those that carie sweet fruit, last so well as they that bring forth sower. The *Pomegranat* tree also with the more pleasant fruit, is shorter lived than the other. The like is to bee said of *Vines*, and namely, such as bear greater burden of grapes and yeeld most wine. Howbeit *Gracinus* saith, That there have been vine trees knowne to live threescore yeares. It seemeth also, that trees which come up in waterish and moist places, are not of any long continuance, but soone die. In deed *Bay* trees, *Apple* trees, and *Pomegranat* trees, do age & looke old quickly; howbeit, they spring

fresh againe from the root. Well then, the Olive trees hold out life and live very long: for after the common opinion and agreement of all writers, they continue ordinarily 200 years. There is a little hill named Carne within the territorie of Tusculum, not far from Rome citie side, clad and beautified with a goodly grove and tuft of Beech trees, so even and round in the head, as if they were curiously kept, cut, and shorne artificially with garden sheares: which grove was consecrated in old time to *Diana*, by the common consent of all Latium, which did their devotions there. In it there was one especiall faire tree above the rest, which *Pasienus Crispus*, a man in our daies of great authoritie (as having been twice Consull in his time, and reputed an excellent Oratour, who also afterward mounted to higher place of reputation by marrying *Agrippina* the Empreffe, by which match he became father in law to *Nero* the Emperour) cast a fancie and extraordinarie liking unto: insomuch as he was wont not onely to take his repose and lie under it, to sprinkle and cast wine plentifully upon it, but also to clip, embrace, and kisse it otherwhiles. Neare adjoyning as a neighbour to the said grove, there is an Holme, which of it selfe alone is much renowned: it beareth in compasse about the butt thereof 35 foot, and sendeth out ten monstrous big armes from the bodie, which may goe well enough for as many trees, and those every one so great as it is wonderfull. Surely this one tree alone (a man would say) resembled a whole wood.

Moreover, there is nothing more certaine than this, that Ivie killeth trees. The like is to be said (in some sort) of the Miffelto, although it is generally thought, that the harme thereby is not so soon seen. And this you must thinke, that this Miffelto is not to be taken for the fruit of a tree, and therefore as great a wonder it is in nature, as any other: for some things there be, that not willing to grow out of the earth, engender in trees; and having no proper place of their own habitation to seat themselves in, sojourne as it were and make their abode with others, and of this nature is the Miffelto. Also, in Syria there is a certaine hearbe named *Cadytas*, which windeth about, not trees onely, but also very bushes and thornes: likewise, all about the pleasant vale Tempe in Theffalie, you shall have a kind of Ferne called Polypodie, to doe the same: also, the Pulse named *Dolychos*, which is Fasels or Kidney beanes, and the wild running-laced Thyme, *Serpyllum*. Semblably, that which the Greeks call *Phaunos*: the very same, that after a man hath cut and pruned the wild Olive, engendreth thereupon. The like is to be said of *Hippopheston*, which groweth upon the Fullers thorne or thystle: it beareth certaine little heads and hollow knobs with nothing in them, small leaves, and a white root: the juice whereof is singular good to evacuate and purge the bodie, for the diversion of ill humors, in the falling sicknesse. But to returne againe to Miffelto, there bee three kinds thereof. For that which groweth on the Firre and Larch tree, is called *Stelis* in Eubœa, and *Hyphear* in Arcadia. And as for that, which properly is Miffelto indeed, most men are of opinion, that it groweth fast to the common Oke, the wild Robur, the Holme, wild Plumtree, and the *Terebinth*, & not lightly upon any other trees. Howbeit, in greatest plentie it is seene upon the Oke, and that is named *Dryos Hyphear*. A difference there is in the *Hyphear* and Miffelto, on what tree soever they are found (except the Holme and common Oke) in regard of the favor, which is strong & stinking in the one more than the other. The leafe in them both hath no pleasant smell, and in the Miffelto it is bitter, clammy, and viscidous besides. Of the twaine, *Hyphear* yet is the better to feed sheepe and such cattell fat: only at the first it purgeth yll humors, and maketh them to scoure apace, but afterwards it fattereth them; I meane such as were able to beare the said purgation. But in case any of them were deeply tackt and infected with the rot, or other inward consuming disease, they can never endure the taking of the said *Hyphear*, but they die upon it. The onely fit time for this kind of curing them, by the way of purging, is in Summer, & that for fortie daies space together. There is moreover, by mens saying, another difference in Miffelto: for that which groweth upon trees, shedding their leaves in winter, looseth also his owne leaves; but contrariwise, it continueth alwaies greene upon such trees as hold their leaves all the yeare long. Moreover, set or sow this Miffelto which way soever you will, it will never take and grow: it commeth onely by the mewting of birds, especially of the Stockdove or *Quoist*, and the Blackbird, which feed thereupon, and let it passe through their bodie. And this is the nature of it, unlesse it bee mortified, altered and digested in the stomacke and belly of birds, it will never grow. It exceedeth not at any time a cubit in heighth, notwithstanding it be alwaies greene and full of braunches. The male beareth a certaine graine or berry: the female is barrain and fruitlesse. But sometimes neither the one nor the other beareth at all.

* Some take this for *Cassia*, *tha*, or *Cuscuta*, i. *Doder*.

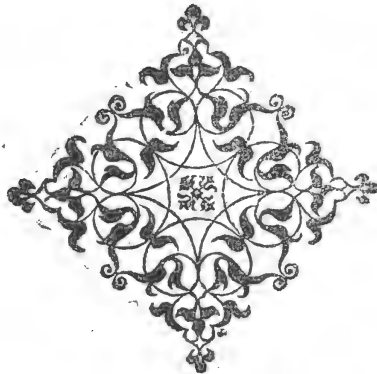
A Now as touching Birdlime, it is made of the berries of Miffelto, gathered in harveft time before they are ripe; for if they ſhould tarie ſtill to take ſhowres of raine, well might they thrive and encrease in bignesse, but their strength and vertue would be gone cleane, for ever making any ſuch glew or birdlime aforeſaid. Beeing ſo gathered, as is beforeſaid, they muſt be laid abroad a drying, and when they be once drie, they are braied or ſtamped, and ſo put in water to ſteep, and let to putrifie for the ſpace of twelve daies or thereabout. This one thing yet in the whole world is the better for putrefaction, and ſerveth to good purpoſe. When this is done, the ſaid berries thus putrified and corrupt, are beaten or punned once againe with mallets, in running water; by which meanes when they are huſked and turned out of their ſkins, the fleſhie ſubſtance within, becommeth glutinous and will ſticke too, in manner of glew. This is the way to make birdlime
B for to catch poore birds by their wings, entangled therewith; which fowlers uſe to temper and incorporate with the oile of Walnuts, when they liſt to ſet limetwigs to take ſoule.

And forasmuch as wee are entred into a diſcourſe as touching Miffelto, I cannot overpaſſe one ſtrange thing thereof uſed in Fraunce: The Druidæ (for ſo they call their Divinours, Wiſe men, & the ſtate of their Clergie) eſteeme nothing more ſacred in the world, than Miffelto, and the tree whereupon it breedeth, ſo it be on Oke. Now this you muſt take by the way, Theſe Priests or Clergie men choſe of purpoſe ſuch groves for their divine ſervice, as ſtood only upon Okes; nay they ſolemnize no ſacrifice, nor perform any ſacred ceremonies without branches & leaves thereof, ſo as they may ſeeme well enough to be named thereupon Dryidæ in Greeke, which ſignifieth as much as the Oke-prieſts. Certes, to ſay a truth, what ſoever they find growing upon that

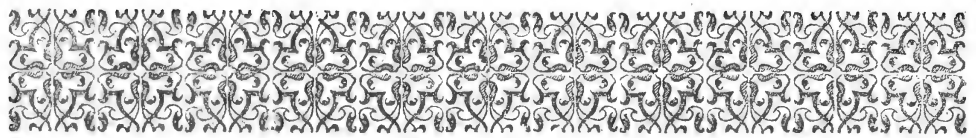
C tree over and beſides the owne fruit, be it Miffelto or any thing elſe, they eſteeme it as a gift ſent from heaven, and a ſure ſigne by which that very god whome they ſerve giveth them to underſtand, that he hath choſen that peculiar tree. And no marveile, for in very deed Miffelto is paſſing geaſon and hard to be found upon the Oke; but when they meet with it, they gather it very devoutly and with many ceremonies: for firſt & foremoſt, they obſerve principally, that the moon be juſt ſix daies old (for upon that day they begin their moneths and new yeares, yea and their ſeverall ages, which have their revolutions every thirtie yeares) becauſe ſhee is thought then to be of great power and force ſufficient, and is not yet come to her halfe light and the end of her firſt quarter. They call it in their language All-Heale, (for they have an opinion of it, that it cureth all maladies whatſoever) and when they are about to gather it, after they have well and duly prepared their ſacrifices and festivall cheare under the ſaid tree, they bring thither two young bullocks milke white, ſuch as never yet drew in yoke at plough or waine, & whoſe heads were then and not before bound, by the horne: which done, the prieſt arraied in a ſurpleſſe or white veſture,

D climbeth up into the tree, and with a golden hook or bill cutteth it off, and they beneath receive it in a white ſouldiours caſſocke or coat of armes: then fall they to kill the beaſts aforeſaid for ſacrifice, mumbling many oraiſons & praying devoutly, That it would pleaſe God to bleſſe this gift of his to the good and benefit of all thoſe to whome he had vouchſafed to give it. Now this perſuaſion they have of Miffelto thus gathered, That what living creature ſoever (otherwiſe baraine) doe drinke of it, will preſently become fruitfull therupon: alſo, that it is a ſoveraign countrepoiſon or ſingular remedie againſt all vermine. So vaine and ſuperſtitious are many nations

E in the world, and oftentimes in ſuch frivolous and fooliſh things as theſe.



F



THE XVII. BOOKE OF
THE HISTORIE OF NATVRE,
WRITTEN BY C. PLINIUS
SECVNDVS,

CHAP. I.

⌘ The wonderfull prices of some trees.



S touching the nature of all those trees, which of their owne accord doe grow, as well upon the maine land as the sea coasts, we have already treated sufficiently. It remaineth now to discourse of those, which (to speake more truly and properly) are made rather and forced by Art and wit of man, than otherwise come by nature and of themselves. But before I enter into this treatise, I cannot chuse but marveile how it is come to passe, That those trees, which for necessitie & need we having taken from the wild and bruit beasts, and possessed in common with them (considering that men maintaine fight and scramble with them for the fruits that fall, yea and otherwhiles with the foules of the aire, about those which hang upon the tree) should grow to so excessive a price, as to be esteemed among the principall delights and dainties of this world? And that this is so, appeareth by that most notable example (in mine opinion) of *L. Crassus* and *Cn. Domitius Aenobarbus*. This *L. Crassus* (a right renowned Oratour of Rome as any one of his time) had a stately and sumptuous dwelling upon mount Palatine: howbeit that house of *Q. Catulus* (who defeated in battaile the Cimbrians together with *C. Marius*) went beyond it a faire deale in magnificense; and stood likewise within the pourprife of the same mount. But the goodliest and fairest pallace known in that age, was that of *C. Aquilius* a gentleman or knight of Rome, situate upon the hill of Ofsers, called *Viminalis*: in regard whereof, there went a greater name of him, than for all the skill hee had in the civile Law, which was his profession. Yet of all those three, *Crassus* only was challenged and reproched for that foresaid house of his. And in this manner is the storie delivered: *Crassus* and *Domitius* (great personages both, and descended from most noble houses in Rome) after they had been Consuls, happened also to be chosen Censors together: and this fell out to be in the yeare after the foundation of the cittie 662: but during this magistracie of theirs, there passed many a foule day and bitter fit between them; so dissonant were their natures, & their conditions so farre unlike. Now it fortunued upon a time, that *Cn. Domitius* (as he was a hot and hastie man) by nature, & carried an inward hatred besides in his heart, which soon is kindled & set on fire, yea & most insatiable, upon emulation & envie between concurrents, such as they two were) reproved *Crassus* very sharply for his excesse in expence, & namely, that any Censor of Rome should dwell in so stately and sumptuous a palace as hee did; and ever and anon made offer to buy the house, and pay him downright for it* 100 millions of Sesterces: whereat *Crassus* (being a man quicke of spirit, of a prompt and present wit, finely conceited withall, and not to seeke for a readie answer) tooke him at his word and accepted of the offer; reserving onely sixe trees that grew about his house. Tush quoth *Domitius*, replying againe, take those trees away, and take all; if they be gone, I will none of the house though I might have it for a single denier. Then *Crassus*, having gotten the vantage and start of him, rejoyned & came upon him thus: Tell me now, I pray you, good *Domitius*, whether of us twaine giveth a scandalous example to the world? whether am I my selfe (I say) offensive, and deserve to be taxed & noted by mine owne Censorship, who can be content to live quietly & lovingly among my neighbours in mine owne house, and that house which came to me by way of inheritance from my father;

* *Millies Sester-*
tium. An incre-
dible price for
a dwelling
house: & there-
fore as *Endeus*
thinketh, this
place must be
corrected, by
conference
with *Val. Max.*
who for (*mil-*
lies) hath (*sex-*
agies) which
amounteth
little more thā
to the 20 part
of the other
summe.

- A** father; or you rather, that for six trees bid 100 millions of Sesterces? Now, if a man bee desirous to know, what these trees might be? truly they were no other but sixe Lote trees, very faire and beautifull indeed, but there was nothing in them commendable, save only their spreading & casting a goodly shade. And verily, *Cacina Largus*, a Nobleman & principall citizen of Rome, used many a time and often (I remember well) to shew me when I was a young man, those trees about his house. And since our speech hath been of such trees as live very long, these I wote well, continued for the space of 180 yeares after *Crassus* death, unto the great fire that *Nero* caused to be made for to burne Rome; fresh and greene they were with good keeping, and looked young still, like to have lived many a faire day more, had not that Prince hastened the untimely death even of trees also [as well as of cittizens.] Now least any man should thinke, that all the sumptuositie of
- B** *Crassus* consisted onely in those trees, and that the furniture otherwise of his house was but mean and simple, and could minister unto *Domitius* no matter of such contesting and reproofe, disposed as he was to quarrell and find fault: Know he thus much, That the said *Crassus* had before that time set up in the open hall of that house, foure goodly pillars of Hymettian Marble; which in the yeare of his *Ædileship* were brought abroad to enrich and beautifie the Theatre, the Stage and Shew-place of the solemne plaies by him set out: for as yet there had not been in publicke place at Rome any marble pillar scene. Loehow lately is come up this excessive expence in rich and glorious building, so common in these daies. See (I say) how in those times, faire trees beautified pallaces more than any thing else; insomuch, as *Domitius* for the want of six trees onely, would not stand to the price that himselfe first made, no nor to buy his very enemy out of houle and home with it. But no marvell if trees were accounted of so highly, seeing that our ancestors in old time thought not scorne to take otherwhiles their surnames from them. Thus that brave and valiant souldiour came to be named *Fronditius*, who (maugre the beard of *Anniball*) swum over the river Vulturinus, with a chaplet of greene leaves (answerable to his name) set upon his head, and performed many feats of armes and worthie exploits against him. Thus they of the noble *Licinian* familie had for their addition *Stolons* (that is to say, the unprofitable watershoots that put forth from the root or tree it selfe, and never prove or come to any good.) And why so? For that one of the said house devised the meanes to cleanse trees and vines of such superfluous twigs (the practise and feat of cutting which away, is called *Pampinatio*) and thereupon was one *Licinius* first surnamed *Stolo*. Moreover, our predecessors in auncient time made good statutes and ordinances for the maintenance of trees: and expressly provided it was by the lawes of the twelve Tables at Rome, in these words, *That whosoever made wilfull wast, and cut downe any trees growing in another mans ground, should be peined in the court for a trespassse done; and forfeit for every such tree, five and twentie pound of brasse money.* But what should we thinke of this? Did those law-makers, trow yee, suppose or imagine that other wild trees would ever have growne to that high reckoning abovenamed, and which now they are come unto, who valued fruitfull trees at no greater price, & set the penaltie for the trespassse, so low? But never marvell we any more hereat, considering to what a proportion Apple-trees and such like are risen unto. For there bee many of them here about the citie of Rome, in the villages near adjoining, which are set for a yearly rent of two thousand Sesterces; and one of them yeeldeth more profit and revenue by the year to the
- E** owner, than a pretie ferme in times past of good domaine, to the landlord. Hereupon came the invention of grafting trees: for this purpose have wee such bastard fruits entermingled one with another, of sundrie kinds; as if Apples and other fruits were not for poore men to eat, but grew onely for the rich. Hence forward now therefore will we shew the right, persite, and absolute manner how to order and cherish them, that it may appeare by what meanes especially, such annuall commoditie can bee made of them, as is before laid. For the better performance of which discourse, I meane to leave the common and ordinarie way; neither will I handle the usuall and vulgar manner of that point in husbandrie, wherein every man is perfect, and whereof no man maketh question: but deliver such matters onely, as be uncertaine and doubtfull, whereby oftentimes folke are deceived and beguiled. For, to breake my head or busie my braines in needlesse trifles, and therein to affect a kind of curiositie, was never my manner yet, nor is it any part of my meaning and intention now. But before I doe enter into particulars, my purpose is to treat in generalitie of this matter, and touch breafely the consideration of heaven and earth both, so farre forth as may concerne in common all kinds of trees whatsoever:
- F**

Of the nature of the Skie respective unto trees: and what quarter thereof they should regard.

Trees generally doe like best that stand to the Northeast wind: for it nourisheth them well, causeth them to spread thicke and grow every way in length and breadth, and withall maketh the timber more fast and strong. But in this rule most men doe erre, and be much deceived: for in underpropping Vines, the forkes would not bee set opposite against that wind to hinder the blast thereof; a point that is to be observed in regard of the North wind onely. Moreover, wee find by experience, that if trees have a kindly winter and cold season in their due time, their wood will be more firme, and so likewise will they bud and shoot out best: otherwise, if the warme Southerne winds blow upon them much, yee shall have the trees prove soft and feeble, and their blossomes come to nothing, blouming as they doe before time. For if it chauce, that presently after their flowers be fully out and readie to shed, there fall any store of raine, the fruit is quite gone for that yeare. And as for Almond trees and Peare trees, if it be but close and clouddie weather onely, without any raine, or the wine stand South when they flower, sure they bee to loose their fruit. Certes, a glut of raine in May, at what time as the Brood-hen star called Virgilæ cloth arise, is exceeding hurtfull to Vines and Olive trees: for then is the very season of their knitting or conception. Then bee the foure decretorie or criticall daies, that give the dome of Olive trees, either to good or bad: this is the Southerly point of filthie, foule, and glowmie weather, whereof wee have spoken before. Moreover, all manner of graine feeleth the inconvenience of Southerne wind at the time of their ripening. Well may corne make hast and ripen sooner, but it shall never have the kind maturitie and perfection as it ought. As for the cold pinching black frosts and Northerne winds, which blow out of season, come they early or come they late, they be hurtfull all. But if the wind stand Northeast in winter, there is nothing so good generally for all fruits of the earth. And verily, a good shower now and then during that time, will do no harm; and that men wish for raine then, the reason is evident: for why? trees with bearing of fruit, are drawne drie and have lost their naturall moisture, with shedding their leaves they bee poore and feeble; so that it is kind for them to be hungrie then, and to have a greedie appetite to new food, which is raine. Now if the winter be open and warme withall, that so soone as the trees have done bearing, they rest not betwene, but conceive againe presently upon it (that is to say, bud & spurt anew, yea, and fall afresh to blossome, whereby they have another evacuation that way also, to spend their sap and radical moisture) we find by experience, that there is nothing in the world so bad for them. Nay, if many such yeares come together, immediately one after another, the verie trees themselves will die; for who can looke for better, when they are thus pined and famished? He then *whosoever he was that said, Husbandmen were to with for faire winters: surely hee was no friend therein to trees, nor never praied for them: neither are wet midsummers good for Vines. But in truth, That winter dust should cause plentiful harvest, was a word spoken in a braverie, and proceeding from a pregnant wit and jollie spirit: For otherwise, who knoweth not, that every man (wishing well to trees and corne indifferently) praieith, That snow might lie long upon the ground? The reason is, for that not only it keepeth in and encloseth the vitall breath & soule (if I may so say) of the earth, readie to exhale out and vanish away, yea, and driveth it back againe into the blade and root of corne, redoubling therby the force and vigor thereof: but also because it both yeeldeth liquour and moisture thereunto gently by little and little, and the same withall fine, pure, and passing light: considering, that snow is nothing else but the some or froth of raine-water from heaven. This humor therefore, not falling forcibly all at once to drowne the root, ne yet washing away the earth from it (but distilling drop-meale a little at once, in that proportion and measure as thirst requireth and calleth for it) nourisheth all things, as from a teat or pap; nourisheth (I say) and neither drencheth nor overfloweth them. The earth also for her part, by this means well soaked, swelleth and hooveth as it were with a leaven, and lieth thereby more light and mellow: thus being full of juice and moisture it selfe, & not barren, but well replenished with seeds sowne, and plants suckled, thus continually in her womb; when the open time of the spring is once come to discharge her, she sheweth her selfe fresh and gay, and willingly entertaineth the warme weather of that season.

A By this meanes especially, we see how corne liketh well upon the ground, and thriveth apace every where, unlesse it be in climates where the aire is alwaies hote, as in Ægypt. For continuance and ordinarie custome alone effecteth the same there, which the season of the time, & moderate temperature of the aire elsewhere. And in one word, bee the place whatsoever, passing good it is to keepe away the thing that is hurtfull. For in the most parts of the world it happeneth, That when either corne is winter-prowd, or other plants put forth and bud too earely, by reason of the mild and warme aire; if there follow any cold weather upon it, all is nipped, blasted, and burnt away. Which is the cause, that late winters doe harme unto the wild trees also in the Forrest. The more paine and sorrow likewise such trees abide, by reason of their owne thick branches shading one another, and not easily admitting the warme Sunne; and destitute they are besides of mans helping hand to cure them: for growing as they doe in wild and desert Forrests, impossible it is to lap and wrap them about with wreaths and thumb-ropes of straw, and so to cherish and defend them when they bee yong and tender. Well then, to conclude this matter, Winter raine principally is seasonable and good for all plants: and next to it the dewes and showers that fall immediately before their sprouting time. A third sort also there be of showers that come when fruits hang on the tree, and are in their growth, yet not too soone, namely, before they bee strong and able to abide some hardnesse.

As touching trees which be late-ward and keepe their fruit long ere they ripen, such also as require store of nourishment and more food still, as namely, the Vine, the Olive, and Pomgranat trees; it is good for them to be watered with raine in the latter end of the yeare. And to say a truth, every kind of tree requireth a severall raine by it selfe, in due season, for that some ripen their fruit at one time, and some at another: so as a man shall see ordinarily the selfesame showers, to hurt one sort, and to helpe another: yea, and that diverse effect is to be seene in trees and fruits of the same kind, as for example, in Pyrries: for the late-ward of them call for raine at one time, and the hastie or forward at another, and yet indifferently all doe require alike the seasonable showers of Winter, as also those before budding time. In which regard, the winds Northeast are better than the Southerne, and such Winters be most kindly. Semblably, by the same reason the Mediterranean or mid-land parts of any countrey are for this purpose preferred before the maritime or sea-coasts (as being for the most part colder:) the high and hillie regions before the plains and valleies: and last of all, the night raines are held to be more profitable than those that fall by day time: for lands new sowne, and any young plants, enjoy more benefite by such showers in the night, for that the Sunne commeth not so presently upon them againe to drie and drinke up all the moisture.

Hereunto ought to be annexed the consideration of Vine-yards, Hort-yards, and Groves, as touching their situation, and namely, what part of the heaven they should regard. *Virgill* condemned altogether the planting of any trees, respective to the West: some have chosen that quarter before the East. And this have I observed, that in most mens opinion, the South is best: But if I should speake what is mine owne conceit indeed, there can no generall and infallible rule be given concerning this point, for to hold alwaies. All our skill and art herein must bee directed by the nature of the soile, the disposition of the climate and temperature of the aire. In Affricke, although it be nothing profitable for Vine-yards to be planted so as they looke into the South, yet kind it is and wholesome for the Vine-planter and husbandman, by reason that all Affricke lieth under the Meridionall or South climate. And therefore he that shall set Vines there, either into the West or North (howsoever *Virgill* alloweth not of the West) shall make an excellent medley betweene the temperature of that aire and the nature of soile together. As for the North no man seemeth to make any doubt or question, but that Vines so planted, will proove right well. And verily, there are not found any Vines to prosper, or to beare more fruit in all Italie, than in that tract which lieth on this side, and under the Alps: and there for the most part the Vineyards are so planted.

Moreover, in this case the winds would be much considered: for in Languedoc or the province of Narbone, in Liguria and part of Tuscan, they are reputed unskilfull husbandmen that plant any Vine-yards directly upon the Northwest wind: but it is counted contrariwise a speciall point of providence and good husbandrie, to cast it so, as the said wind may flanke it on the side. For this is the wind, which in those quarters qualifieth and tempereth the excessive heat of the Summer: howbeit, many times, so violent and blustering hee is, that hee beareth downe before him
the

the rooffe of many a house, and carieth it cleane away.

CHAP. III.

¶ *The societie of the skie and aire with the earth, respectiue to trees.*

Some men doe force the skie for to be obedient and conformable to the earth: as namely, when planting in drie grounds, they have regard to the East and North: and contrariwise, when in moist places they respect the South. Moreover, it falleth out, that they bee driven otherwhiles to follow the nature of the very Vines, and thereby to bee ruled: whereupon, in cold ground they plant such as be of the hastie kind, and soone ripen their grapes; to the end that they may come to their maturitie and perfection, before cold weather comes. As for such Vines and trees bearing fruit, as cannot abide dewes, those they set into the East, that the Sunne may soone dispatch and consume the said dew: but looke what trees doe love dewes, and like well therewith, those they will bee sure to plant against the West, or at leastwise toward the North, to the end they may enjoy the full benefite thereof. All others againe (grounding in manner upon naturall reason onely) have given counsell to set as well Vines as Trees, into the Northeast. And *Democritus* verily is of this mind, that such fruits will be more pleasant and odoriferous.

CHAP. IIII.

¶ *The qualitie of sundrie regions.*

AS touching the proper seat of the Northeast wind, and of all other winds, wee have spoken alreadie in the second booke: and our purpose is in the next following, to treat of the rising and falling of signs and notable stars, of other Astronomically points also concerning heaven. Now in the mean time for this present, it is sufficient, that in the former rule of the North wind, wee seeme to rest and resolve upon the apparent and evident argument of the wholesome and healthfull climate of the heaven: for as much as we see, that evermore all such trees as stand into the South, soonest shed their leaves. The same reason also is to bee given of those that grow upon the sea-coasts: and albeit in some places the winds blowing from thence, and the very aire of the sea be hurtfull, yet in most parts the same are good and profitable. Certaine plants and trees there are, which take pleasure to be remote from the sea, and joy to have the sight of it only a farre off: set them neerer to the vapours and exhalations ascending from thence, they will take harme and mislike therewith. The like is to be said of great rivers, lakes, and standing pooles. As for those which we have spoken of, they either burn their fruit with such mists, or refresh & coole such as be hote with their shade, yea, and take joy and prosper in the frost and cold. And therefore to conclude this point, the surest way is, to beleeeve and trust upon experience. Thus much for this present, concerning the Heaven: our next discourse shall be of the Earth and Soile, the consideration whereof is no lesse difficult to be handled than the other.

First and formost, all grounds are not alike good for trees and most kinds of corne. For neither the blacke mould (such as Campaine standeth much upon) is in all places best for Vines; or that which fumeth and sendeth up small and thin mists: neither is the red veine of earth any better, howsoever there bee many that commend it. The white earth or chalkie marle, the clay also within the territorie of Alba and Pompeij, for a vineyard, are generally preferred before all other countries (although they bee exceeding fat, which in that case is otherwise usually rejected.) On the other side, the white sand about *Ticinum: likewise, the black mould or grit, in many places, as also the red sandie ground, although it be well mingled and tempered with fat earth, are all of them nothing to the purpose for encrease and fruitfulness. And herein must men take heed, because oftentimes their judgement may faile when it goeth but by the eie: for we must not streight waies conclude, that the ground is rich and battle, whereon we see goodly faire and tall trees to grow, unlesse it be for those trees onely: for where shall we meet with any, higher than the Firre? and is there a tree againe that possibly can live where it doth? No more is ranke grasse & plentifull forrage a true token alwaies of a good ground: for there is no better pasture nor grasing to be found than in Almaine; and yet dig but up the Greene sould and the thinnest coat of turke that may be, ye shall presently come to barren sand under it. Ne yet is it by & by a moist ground, that hath upon it deepe grasse and hearbes shooting up in height: no more verily, than a fat and

- A** and rich soile is knowne by sticking to ones fingers; as appeareth plainly in all sorts of clay. And verily, no earth doth fill up the trenches even againe, out of which it was cast, that therby a man might find out whether the ground bee sad, or hollow: and generally all sorts thereof will cause yron to rust that shall be put into it. Moreover, there is no weighing of earth in ballance, to know by that meanes which is lighter or heavier: for who could possibly ever set downe the just weight that earth should have? Againe, the ground that is cast up into bankes by the overflow of great rivers, is not alwaies commendable: seeing that some plants there be that decay, if they be set in water. And say that some such banke were ground good ynough, yet it continueth not so, long; unlesse it be for Willows and Oisters onely. But if you would know a rich ground indeed, one of the best arguments and signes thereof is this, when you see it to bring forth a thick and strong
- B** haulme or straw, such as usually groweth in that noble territorie Laborine within Campaine; which is of that bignesse, that the people of the countrey use it for fewell in steed of wood. Now, this ground, so good as it is, where and whensoever we have found it, is hard ynough to be tilled; and requireth great labour and husbandrie, putting the poore husbandman to more paines in manner with that goodnesse of it, than possibly hee could have with any defects and imperfections thereof. For even the hote earth, called by the name of Carbunculus, which useth to burne the corne sowne thereupon, may be helped & remedied (as it is thought) by setting it with plants of poore and hungrie Vines. The rough gravell stone which naturally will crumble as grit, many wilters there be that allow and commend, for Vines. As for *Virgil*, he findeth no fault with the ground that beareth ferne and brake, for a Vineyard. The earth that is brackish, and standeth much upon saltpetre, is thought to be more sound for many plants than others; and in regard of vermine that use to breed therein, much safer also. Neither do high bankes and hills remaine untilled and naked for want of good husbandrie, if so be a man have the cast of it, to eare and break them up skilfully. As for the plaines, they are not all of them exposed to the Sunne or subject to the wind more than need requireth. And to speake of frosts, mists and fogs, there be Vines (as we have said already) which are nourished and fed with them. And to conclude, hereby wee may see, that in every thing there is some one deepe secret or other, wherein it behoveth each man to employ his spirit and set his mind for to search them thoroughly and find them out. What shall wee say then to this, That oftentimes those things which have been approved by long experience and many observations, become otherwise, and change their usuall manner? In Thessalie
- D** about Larissa, the whole region, by reason of a lake that was let out and drained drie, proved much colder: and the Olives which there grew before, left bearing and died all, upon it. In like sort, neare unto *Ænos*, the Vines were all scorched and burnt, by occasion, that the course of the river *Ebrus* was brought neare unto them, an accident that beforetime never befell unto them. Semblably, about the citie *Philippi*, the whole countrey being made drie by sluices and trenches artificiall; altered withall the whole disposition of the aire and weather, and chaunged the verie habite of the heaven above their heads. But in the territorie of *Syracusa*, the forraine Coloners that thither came to inhabite and practise husbandrie, by ridding the ground from all the stones; marred all the corne in the countrey; so mirie and durtie it was by that meanes, untill such time as they were driven to lay the stones againe where they had them. In *Syria*, the husbandmen goe
- E** lightly over with their plough, and take no deepe stich in making their furrowes, for feare of the stonie rocke lying ebbe under the good ground, which in Summer season would burne all their graine and seed sowne there. Now, there be certaine parts of the world, where a man shall see one and the same effect to proceed both of extreame heat, and also of excessive cold. *Thracia* is exceeding cold, and thereby plentifull in corne. *Affricke* and *Ægypt* be as hote, and yet come not after it for fertilitie in that kind. In *Chalcia*, an Island belonging to the *Rhodians*, there is one place above the rest so fruitfull, that the Barley which was sowed in the due time and season of the year, they mow once, and presently put it into the ground againe; which will be readie to be cut downe the second time, with other corne in harvest. In the *Venafrane* tract within the realme of *Naples*, the gravellie ground is thought meetest for Olive trees, and therein they bear most plentifully: contrariwise, about *Boetica* in *Spaine*, the fattest soile is best for that purpose. The excellent grape that maketh the good *Punicke* wine, ripeneth soone upon the very rockes: but the *Cæcube* Vines stand soaked and drenched (as it were) in the marsh low grounds of *Pomprinum*. See what a difference and diversitie there is in causes, to makethis varietie in sundrie plots of ground! *Cæsar Vopiscus* being convented before the Censors, and there pleading his cause, affir-

med openly, that the plaines of Roſea were the very fat of Italie, and reſembled the kell or leafe of a fed and franked ſwine: wherein (quoth hee) if a man left forkes or props to day, they will bee overgrowne and covered with graſſe by to morrow. But ſurely, this ground is good for nothing but paſture. Yet notwithstanding, Nature would have us ſtill to learne and grow ſkilfull every day more than other: and for that intent ſhee hath laid open the defects and imperfections of the ground, even there, whereas the commodities thereof be neither ſo certain, nor ſo well known. And therefore let us in the firſt place ſpeake of thoſe faults for which the earth is blamed.

CHAP. V.

Sundrie ſorts of earth.

IF a man would know which is a leane, hungrie, bitter ground, there is no better experiment and prooffe thereof, than by the blackiſh, miſliking, and unkind hearbes growing thereupon: like as, when they come up ſcorched and burnt, they ſhew a cold ſoile: alſo, when they ſeeme illfavoured and unpleaſant to the eie, the earth no doubt is ſoaked and drowned in wet. As for red ſandie ground and cley, you need goe no farther than to your owne eieſight. And ſuch ſoiles as theſe be, is of all other, hardeſt to bee wrought and tilled; they ſo clog and load both the harrow teeth and the plow-ſhares, with huge & heaue clods. Howbeit, the ground that is thus churliſh to be eared and husbanded, is not alwaies bad and naught for encrease. But it fareth cleane contrarie with the pale and wan aſhie earth, as alſo with the white ſandie ſoile: for the barraine ground is ſoone found by a thicke and callous cruſt that it hath, even at the firſt dent of culter, or ſtroke of mattocke.

Cato ſetteth downe breefely, as his manner is, all the defects & faults of ground in theſe words: Take heed (quoth he) of a rotten ground, and ſee that you ſtirre it neither with cart, nor touch it with beaſt. What ſhould wee thinke was his meaning by this tearme of his, that he ſhould feare rotten ground ſo much, as to forbid in a manner to tread and goe thereupon? Let us call to mind the rottenneſſe that is in wood: and thereby ſhall we find thoſe faults that he abhorreth and deteſteth ſo much in earth. In good faith, by rotten earth hee underſtandeth drie, ſpungeous, and full of holes, rugged, hoarie, eaten, old, and hollow. So as in that one ſignificant word (*Car:ofa*) he ſaid more than could be expreſſed poſſibly by any multiplicite of language whatſoever. For if a man would rip up to the quicke the imperfections that are in grounds, he ſhould find, that ſome peeces there be of it that may be tearmed truly old and overworne, not for any age (for who can ſay properly, that earth is ſubject to old age) but by reaſon of their naturall defects: in regard whereof, a ground may be weake, feeble, barren, and no longer good for to bring forth any thing. The ſame *Cato* judgeth, That ground to be principall which lieth at the foot of an hill, and runneth forth in manner of a plaine, into the South, which is the very ſituation of all Italie: and by a blackiſh and ſwart earth, which he calleth [*Pulla*] he meaneth a gentle, tender, & mellow ſoile. And this we will determine to be the beſt ſimply both for worke or tillage, and alſo for gaine and encrease. Now let us (if yee pleaſe) ſtand a little upon this word *Tenara*, [*i. Tender*] which he uſeth in this ſence: you ſhall find a marvellous ſignification thereof: and that hee implieth thereby, as much as your heart can wiſh to be in a ground. That is it, which is ſo temperate in fertilitie, that is it which to bee wrought is ſo gentle, ſoft, pliable, and mellow; neither wet, nor yet drie and thirſtie. Now doth this ground ſhine againe after the plough-ſhare, reſembling that veine of earth, which *Homer*, the very fountaine and ſpring of all good wits, reported to have bene engraven by a * god, in the armour [of *Achilles*:] adding moreover, that the ſaid earth looked blacke withall: wherein he obſerved a wonderfull peece of workmanſhip, notwithstanding it was wrought in gold. This is that ground, I ſay, which being new broken and turned up with the plough, the ſhrewd and buſie birds ſeek after, and goe under the plough-ſhare for it: this is it, that the verie Ravens follow the ploughman hard at heeles for, yea, and are readie for greedineſſe to pecke and job under his verie feet. And here, in this place I cannot chuſe but relate the opinion that is currant among our riotous and delicate gallants: with ſome other thing alſo making for our purpoſe, in the diſcourſe of this argument which wee have in hand. Certes *Cicero*, a man reputed (as hee was no leſſe indeed) for a ſecond light of all good learning and literature, Better are eſteemed (quoth hee) the ſweet compositions and ointments which aſt of earth, than of ſaffron: where note by the way, that this great clerke choſe to uſe the word

A of tast rather than of smell, in such odoriferous perfumes and mixtures. Well, to speake at a word, surely that ground is best of all other, which hath an aromaticall smell and tast with it: Now if we list moreover to be better instructed, what kind of savour and odour that should be, which we would so gladly find in the earth; we may oftentimes meet with that sent, even when the is not stirred with the plough, but lieth still and quiet, namely, a little before the sun-setting, especially where a rainbow seemeth to settle & pitch her tips in the Horizon: also, when after some long and continuall drought, it beginneth to raine; for then being wet and drenched therewith, the earth will send up a vapour and exhalation (conceived from the sunne) so heavenly and divine, as no perfume (how pleasant soever it be) is comparable unto it. This smell there must be in it when you ere it up with the plough: which if a man find once, he may be assured it is a right good ground; for this rule never faileth: so as (to say a truth) it is the very smell and nothing els, that will judge best of the earth: and such commonly are new broken grounds, where old woods were lately stocked up: for all men by a generall consent, doe commend such for excellent. Moreover, the same ground for bearing is held to be farre better, whensoever it hath rested between, and either lien ley or fallow; whereas for vineyards it is cleane contrarie: and therefore the more care and diligence is to be employed in chusing such ground, least wee approve and verifie their opinion, who say, That the soile of all Italie is alreadie out of heart and wearie with bearing fruit. This is certaine, that both there and elsewhere, the constitution of the aire and weather, both giveth and taketh away the opportunitie of good husbandrie, that a man cannot otherwhiles doe what he would: for some kind of grounds there is so fat and readie to resolve into mire and dirt, that it is impossible to plough them and make good worke, after a showre of raine. Contrariwise, in Byzacium a territorie of Affricke, it is farre otherwise: for there is not a better and more fruitfull peece of ground lieth without dore than it is, yeelding ordinarily 150 fold; let the season be dry, the strongest teeme of oxen that is, cannot plough it: fall there once a good ground showre, one poore asse, with the helpe of a sillie old woman drawing the ploughshare at another side, will be able to goe round away with it, as I my selfe have seene many a time and often. And whereas some great husbands there be, that teach us to enrich and mend one ground with another, to wit, by spreading fat earth upon a leane and hungrie soile; and likewise by casting drie, light, and thirstie mould, upon that which is moist and over-fat; it is a meere follie and wastfull expence both of time and travaile: for what fruit can he ever looke to reape from such a mingle mangle of ground?

CHAP. VI.

¶ *Of the earth which Britaine and Fraunce love so well.*

THE Britaines and Frenchmen have devised another meanes to manure their ground, by a kind of lime-stone or clay, which they call Marga, [*i. Marle.*] And verily they have a great opinion of the same, that it mightily enricheth it & maketh it more plentifull. This marle is a certaine fat of the ground, much like unto the glandulous kernels growing in the bodies of beasts, and it is thickned in manner of marow or the kernell of fat about it.

CHAP. VII.

¶ *The discourse of these matters continued according to the Greekes.*

THE Greekes also have not overpassed this in silence: for what is it that they have not medled withall? The white clay or earth wherewith they use to marle their grounds in the territorie of Megara, those onely I meane which are moist and cold, they call Leucargillaæ. These marles (all the kind of them) do greatly enrich Fraunce and Britaine both, and therefore it would not be amisse to speake of them more exactly. In old time there were two sorts thereof, and no more: but of late daies (as mens wits are inventive every day of one thing or other) they have begun to find out more kinds, and to use the same: for there are now divers marles, the white, the red, the columbine, the clay soile, the stonie, and the sandie: and all these are but two in nature, to wit, either hard and churlish, or else gentle and fat. The trial of both, is knowne by the handling, and a twofold use they yeeld; either to beare corne onely, or else for grasse and pasture also. The stonie or gravelly soile is good onely for to nourish corne; which if it be white

withall, and the pit thereof found among springs or fountaines, it will cause the ground to be infinite fruitfull; but it is rough in handling, and if it be laid too thicke upon the lands or leyes, it will burne the verie ground. The next to it is the red marle, called also Capnumargos, which hath intermingled in it a certaine small stonie grit full of sand: This stonie marle the manner is to breake and bruisse upon the very lands; and for the first yeares, hardly can the straw be mowne or cut downe for the said stones. Lighter is this marle than the rest by the one halfe, and therefore the cariage thereof into the field is least chargeable. It ought to be spred and laid thin, and some thinke that it standeth somewhat upon salt. But both the one and the other will serve well for fiftie yeares, and the ground enriched thereby, will (during that time) yeeld plentie as well of corne as grasse.

CHAP. VIII.

Sundrie sorts of Earth and Marle.

OF those marles which are found to be fat, the white is chiefe; and thereof be many sorts. The most mordant and sharpest of them all, is that whereof we spake before. A second kind there is of chalkish clay, which our goldsmiths use [called Tripela:] this lieth a great depth within the earth, insomuch as many times men are driven to sinke pits an hundred foot deepe, for it; and those have a small and narrow mouth above, but within-forth and under the ground, they be digged wider, by reason that the vaine thereof runneth many waies, in manner of other metall mines. This is the marle so much used in Britaine: the strength thereof beeing cast upon a land, will last fourscore yeeres; and never yet was the man known that herewith marled the same ground twice in all his life time. The third kind of white marle, is that which the Greekes call Glischromargon: it is no other than the Fullers chalkie clay mixed with a viscous and fattie earth. The nature of it, is to breed grasse better than to beare corne: for after one crop of corne is taken off the ground in harvest, before seed time is come for winter grain, the grasse will be so high growne, that a man may cut it down and have a plentifull after-math for hay: and yet all the while that it hath corne upon it, you shall not see it to beare any grasse besides. This marle continueth good thirtie yeares: if it be laid over-thicke upon a land, it choketh the ground in manner of * Cumine. The Columbine marle, the Gaules call in their language, by a name borrowed of the Greekes, Pelias, [i. Dove or Pigeon marle:] it is fetched out of the ground in clots and lumps, like as stones bee hewed out of quarries: with sunne and the frost together, it will resolve and cleave into most thin slates or flakes. This marle is as good for corne as for herbage. As for sandie marle, it will serve the turne for want of other: yea & if the ground be cold, moist, and weely, the husbandman will make choise thereof before other.

The Vbians, upon my knowledge, use to enrich their ground and make it more battle (though their territorie otherwise be most fertile) with any earth whatsoever; provided alwaies that it be digged up three foot deepe at least, and laid a foot thicke; a devise that no other countrey doth practise: howbeit this soile and manner of manuring, continueth good not above ten yeares. The Hedvans and Pictones, have forced their grounds and made them most plentifull, with limestone: which is found also by experience to be passing profitable for vines and Olives.

To come now to the ordering of this peece of husbandry. The ground ought to be ploughed first, before marle of any sort bee cast upon it; to the end that the medicinable vertue and substance thereof, might the sooner and more greedily be received into it. Now forasmuch as marle is at the first over-rough and hard, not so free in the beginning as to resolve and turne into blade or grasse, it had need of some compost or dung to be mingled with it: for otherwise, be it never so rich, it will rather doe harme than good to the ground, by reason that it is yet straunge and not acquainted therewith: and yet helpe it this way as well as you can, it will not bring forth any plentie the first yeare after it is laid on. Last of all, it skilleth much to consider the nature of the ground, which you meane to marle: for the drie marle, sorteth well with a moist soile; and the fattie, hitteeth that which is drie and leane. But when the ground is of a middle temperature between both, it mattereth not whether you use the white goldsmiths chalke, or the Columbine marle, for either of them will serve well enough.

* Cimini.
Tinneb-readeth
Signini, & meaneth
thereby
shards of pot-
ters work and
such like rub-
bish.

CHAP. IX.

☞ *The use of ashes upon lands : of Dung : what graine or pulse forme, doth make the ground more plentifull, and what burneth it.*

THe people dwelling beyond the Po, make such account of ashes for to enrich their grounds withall, that they prefer it before horse-muck, and such like : which dung (because they take it to be verie light) they burne also into ashes for that purpose. Howbeit (as we have said before) in one and the same corne-land, they use not ashes and mucke both at once : no more doe they cast ashes in hortyards for to nourish young trees ; nor in fields, for soine kind of corne.

Some are of judgement, that grapes are fed with dust : who also doe cast dust upon them when they begin to bloome, yea and bestrew dust upon the roots as well of vines as other trees. Certaine it is, that in the province of Narbon they use so to doe ; and they are assuredly persuaded, that grapes ripen better and the vintage commeth the sooner thereby : because in those parts dust doth more good than the Sunne.

As for mucke, there be divers sorts thereof, and in old time much use there was of it : for in *Homer* we read, that long ago the good old king [*Laertes*] was found laying foile and dung upon his land with his owne hands. The first that devised mucking of grounds, was (by report) *Augeas*, a king in Greece : but *Hercules* divulged the practise thereof among the Italians, who in regard of that invention immortalized their king *Siercutius* the sonne of *Faunus*. *M. Varro* esteemeth the dung of Blackbirds (gathered out of their bartons where they bee kept in mew) above all others. He highly magnifieth and extolleth it also, for that it bringeth forth so good forage to feed kine, oxen, and swine withall : avouching for certaine, that they will become fat beefe and porke with no meat sooner. Wee must thinke well therefore and hope the best of the world now adaies, since that our aunceltors and forefathers so long ago had so great bartons and pens, that the dung of foules there kept, was sufficient to helpe their hard and hungrie grounds. In the second degree of goodnesse, *Columella* raungeth Pigeons dung gathered out of dovescotes : the third place hee giveth to that of Hens, and other land pullen, rejecting altogether the dung of water-foule. Howbeit all other authours (setting these two aside) attribute with one voice and consent unto the excrements of mans bodie, the greatest praise for this purpose. Some of them

D prefer mans urine, and namely when the haire of beast-hides have been loked therewith and quicke-lime together in the Tanners pits. Others use urine alone by it selfe, only they mingle water with it againe, but in greater quantitie a good deale, than they (whose urine it was) did put to the wine when they dranke it : and good reason too ; for more need there is now to correct and repress the malice thereof, considering that besides the native malignitie of the wine it selfe, mans bodie hath given and imprinted into it, a strong and unfavorie qualitie. Thus you may see how men labour, strive, and trie conclusions, to feed and enrich the very ground, the best way they can devise. Next unto the ordure and urine of mans bodie, the filthie dung of swine is most commended : only *Columella* condemneth it. Some praise the mucke of any four-footed beasts whatsoever, so they were fed with Tree-trifolie, called *Cytisus*. Others preferre the dung of Pigeons before any other ; in the second place that of Goats ; thirdly of sheepe ; then of kine and oxen ; and lastly of cart-jades, mules, asses, and such like. Thus you see as well what difference there was in times past, betweene this dung and that ; as also what were the rules (so farre as I can guesse and learne) whereby they went, in the use and ordering thereof : for, to say a truth, the old way is best, even herein as well as in other matters. Over and besides, the practise hath been already seene in some of our provinces (where there is so great store of cattaille bred) to riddle and sift their dung over their ground through sieves, in manner of meale ; and so in proesse of time it loofeth not only the stinking sent and ill-favoured sight that it had, but also turneth into a pleasant smell, and looketh lovely withall. Of late, found it hath been by experience, that Olive trees doe like and prosper very well, if the ashes of lime-kills especially bee laid to their roots.

F *Varro*, among many other precepts, addeth and saith, That corne grounds would bee manured with horse dung, because it is the lightest ; but medowes require compost that is heavier, and namely, made by beasts that have barley for their provender ; for that such soile bringeth plentie of grasse. Some there be also, that preferre the dung made by horses, before the mucke of kine and oxen ; likewise sheeps treddles, before goats dung ; but asses mucke before all other, because

they eat and chew their meat most leisurely. But daily experience teacheth the contrarie, and testifieth against the one and the other. And thus much as touching compost of mucke.

Furthermore, all men are of opinion, that nothing is better for the ground, than to sow Lupines therupon; provided alwaies, that before it cod, it be turned into the ground by the plough, spade, or two-piked yron forke: also when it is cut downe, to make it into wads or bottles, and so to burie them at the roots of trees, and vines especially. In countries where there are no cattell to better the lands, it is thought good to manure the same in stead of beasts dung, with verie hawme, straw, and ferne. *Cato* hath a devise to make an artificiall mucke or compost of litter, lupine straw, chaffe, beane stalkes, leaves and braunches both of mast-Holme and Oke. Hee saith moreover to the same purpose: Weed out of the standing corne, * *Walwort* [otherwise called Danewort] and Hemlocke; also from about osier-plots, plucke up rancke weeds, or ground-Elder; also Reeke or Sea-grasse, and dead leaves or braunches lying rotten under trees: when thou hast so done, strew and lay a course of them under sheepe where they be folded. *Item*, If thy vine beginne to decay and wax leane, burne the threads and cuttings of the owne, and turn the ashes under ground hard to the roots thereof. *Item*, Where thou meanest to sow any wheat or such like bread-corne, draw thy sheepe thither, and there fold them. He saith moreover, that the sowing of some graine is as good as a dunging to the ground: for these be his very words, The fruit it selfe of the earth is a batling to the earth, and namely, Lupines, Beanes, and Vetches, for they mucke the lands: like as on the contrarie side, Chiches doe burn the ground, both because they are plucked, and also for that they stand upon salt. Semblably doth Barley, Foenigreeke, Ervile, and generally all kind of pulse which are pulled and not mowen down. *Item*, Take heed (quoth *Cato*) that you set no pepins or kernels, where you meane to sow corne. As for *Virgil*, he is of opinion, that the sowing of Line-seed for flax, likewise of Otes and Poppies, do burn corne-ground and pill it out of heart. He also giveth rules as touching mucke-hills, That they should be made in the open aire, within some hollow place where it may gather water; that they bee covered over with straw and litter, for feare they should drie in the sunne; and last of all, that they have a good strong stake of Oke pitched and driven in about the mids thereof, for so there will no snakes nor such like serpents breed and engender therein. Moreover, as touching the spreading of mucke, and mingling it with the mould of a land, it is exceeding good to do it when the wind setteth full West, so that the Moone then be past the full and in the waine. But this rule many have mistaken and not construed aright, supposing that they should so doe when the Westerne wind Favonius beginneth to rise, and namely in the moneth of Februarie only: whereas indeed most corne lands require this point of husbandrie in other moneths as well. But looke what time soever you list to doe it, be sure in any hand that the wind doe then blow from the Æquinoctiall point of the West, and that the moone then be in the waine, and drie withall. Have regard to these rules and observations, you will wonder to see the effects thereof, and what encrease the earth thereby will yeeld.

CHAP. X.

The planting and setting of trees: the manner how trees doe grow, by a Sion sliued and plucked from the root.

NOW that we have already sufficiently treated of the considerations as well of the aire and skie, as of the earth, belonging unto plants and trees; me thinkes it were to good purpose to discourse of the industrie and artificiall means that men have used to make trees grow: and verily we shall find no fewer kinds of them that come by mans hand, than of such as Nature it selfe hath brought forth; so kind and thankfull have we been to her, as to make recompence in this behalfe. First and foremost therefore this is to be noted, That all trees doe grow either of seed sown, or of braunches growing to the tree and couched in the ground, or of an old stocke from whence new imps may sprout: also, either of a slip or sprig plucked from another tree, and so laid in the ground; or of a young shoot, twig, impe, or Sion, engrafted in the very trunk of a tree, slit and cloven for that purpose. For I cannot chuse but marveile much at *Trogus*, who was verily persuaded, That about Babylon the leaves onely of Date trees being set or sown, would proove trees. Now whereas there bee so many devises abovesaid for to nourish trees, this you must understand, that some trees there be which will grow by many of these waies before specified,

- A** fied, and others by them all. And verily the most part of this knowledge hath been taught by Nature her selfe: for first of all, we have learned by her for to sow seed, by occasion that we have seen some to fall from trees, which being received by the ground, have chitred, taken root, and lived. And in very truth, some trees there be that grow no otherwise, as Chestnut, and Walnut-trees, excepting only those that being cut downe, doe spring new againe from the root. Offseed also (although the same be farre unlike to others) those also will grow; which are usually planted otherwise, as for example, Vines, Apple trees, and Pyrries: for in these the stone and pepin within, serveth in stead of the seed; and not the fruit it selfe, as in those before rehearsed, the kernels whereof [*i. the fruit*] are sowne. Medlars likewise may come up of seed. But all the sort of these that spring after this manner, be late ere they come forward, and slow in growth: they turne also
- B** to a degenerate and bastard nature, & had need to be grafted anew ere they be restored to their owne kind: which is the case of Chestnuts also otherwhiles. Howbeit there be others for them againe, which (sow or set them what way you will) never grow out of their owne kind, and such be Cypresses, Date trees, and Lawrels: for the Lawrell commeth up by sowing, by setting, and planting, after sundrie sorts. The divers kinds whereof, we have described alreadie. Of all which, the Lawrell Augusta with the broad leaves, the common Bay tree also that beareth berries, as also the wild kind named Tinus, bee ordered all three after one and the same sort. The manner whereof is this: The bayes or berries thereof, bee gathered drie in the moneth of Januarie when the Northeast wind bloweth: they are laid abroad thin to wither, one apart from another, & not in heaps, for feare they should catch a heat. This done, some put them afterwards in dung; and
- C** being thus prepared and readie for to bee sowne, they steepe them in wine. Others take and lay them within a large basket or twiggen panier, trample them under their feet in a brooke of running water, untill they be pilled and rid of their outward skins: for otherwise their skinne is off so tough and moist a substance, that it would hardly or not at all suffer them to come up and grow. Aiter all this, in a plot of ground well and thoroughly digged once or twice over, a trench or furrow must be made a handfull deepe, and therein the berries ought to be buried by heaps, to wit, twentie or thereabout together in one place: and all this would be done in the month of March. Lawrels also will grow, if their braunches or boughs be bended from the stocke and laid within the ground: but the Triumphall Lawrell will come up no other way but by setting a graffe or inpe cut from it. As for the Myrtle, all the sorts therof within Campaine, come of berries sowne:
- D** but wee at Roine use to interre onely the boughs of the Tarentine Myrtle, growing still to the bodie, and by that meanes come to have Myrtle trees. *Democritus* sheweth another devise also to encrease Myrtles, namely, to take the fairest and biggest berries thereof, and lightly to bruise or bray them in a mortar, so that the graines or kernels within be not broken; and then to besmere with the batter or stamped substance thereof, a course cord made of Spart or Spanish broome, or els hempen hurds, and so lay it along within the ground. Thus there will spring therof, a marvellous thick hay or wall (as it were) of yong Myrtles: out of which, the small twigs you may draw which way you will, yea and plant them elsewhere. After the like manner, folke use to sow thorns or brambles for to make hedges and mounds, namely, by anointing such another hempen rope with bramble blacke-berries, and interring the same. As for Bayes thus sowne, when they come
- E** once to beare a darke and blackish leafe: Myrtles also, when their leaves bee of a wine colour, to wit, of a deepe red (which commonly happeneth when they be three years old) it will be time to remoove and transplant.

Among those plants and trees that are sowne of seeds, *Mago* maketh much ado, and is foully troubled about those trees that beare nuts, & such like fruit in shels: For to begin with Almonds first, he would have them to be set in a soft clay ground that lieth into the South: and yet he saith againe, that Almond trees love a hot and hard soile; for in a fat or moist ground, they will either die or els wax unfruitfull. But above all, he giveth a rule to chuse Almonds for to set or sow, that be most hooked, and especially such as were gathered from a young tree: also he ordaineth, that they should be well soked or infused in soft beast shearne or thin dung, for three daies together: or

F at leastwise in honyed water, a day before they be put into the ground. *Item*, They ought (by his saying) to be set charily with the sharpe and pointed end pitched downward, and the edge of the one side to turne into the Northeast. Also that they must stand three and three together in a triangle, forsooth, so as there be a handbreadth just between every one. Moreover, that every tenth day they ought to be watered, untill they bee shot up to a good bignesse. Now to come unto

The seventeenth Booke of

Walnuts, they be laid along within the earth, with this regard, that they do lye upon their joints. **G**
 As for Pine-nuts, there would be fixe or seven of their kernels put together into pots that have holes in them, and so buried in the ground: or els they should bee ordered after the manner of the Bay tree, which commeth of berries bruised, as hath been shewed before.

The Citron tree will grow of seed, and may be set also of sprigs or twigs drawn to the ground from the tree, and so couched. Sorvise trees come of the graines thereof sowed of a quicke-set plant also with the root, or of a slip plucked from it. But as the Citron trees live in hot grounds, so these Sorvises love cold and moist.

As concerning feminaries and nource-gardens, Nature hath shewed us the reason and manner thereof, by certain trees that put forth at the root a thicke spring of young shoots or sions; but lightly the mother that beareth these imps, killeth them when she hath done, with her shade **H** and dropping together. And this is evident to be seene in Lawrels, Pomegranate trees, Planes, Cherrie trees, and Plum trees: for standing as these imps doe, a number of them without all order under their mother stocke, they be over-shadowed and kept down so, that they mislike and never come to prooffe. Howbeit some few there bee of this sort, that are not so unkind to their yong breed, as to kill them with the shadow of their boughs; and namely, Elmes and Date trees. This would be observed by the way, that no trees have such young imps springing at their feet, but they only, whose roots for love of the warme sunne and moist rain, spread aloft and lie ebbe within the ground. Moreover, the manner is not to set these young plants presently in the place where they must remaine and continue for altogether, but first they are to be bestowed in a peece **I** of ground where they may take nourishment, to wit, in some nource-garden for the nones, untill they be growne to a good stature; and then they are to be removed a second time unto their due place. And a woonder it is to see, how this transplanting doth mitigate even the savage nature of the wildest trees that are: whether it be that trees as well as men, are desirous of novelties, and love to bee travailing for change; or that as they goe from a place, they leave behind them their malicious qualitie, and being used to the hand, become tame and gentle like the wild beasts; especially when such young plants are plucked and taken up with the quicke root. We have learned of Nature also, another kind of planting much like to this: for we see that not only water-shoots springing out of the root, but other sprigs slipped from the stocke, live and doe full well: But in the practise of this feat, they ought to be pulled away with a colts-foot of their owne, so as they take a quicke parcell also of their mothers bodie with them, in manner of a fringe or border hanging thereto. After this manner they use to set Pomegranat, Filberd, **K** Hazell, Apple, and Servise trees; Medlars also, Ashes, and Fig trees; but Vines especially: may a Quince ordered and planted in that sort, will degenerat and grow to a bastard kind. From hence came the invention, to set into the ground young sprigs or twigs, cut off from the tree. This was at first practised with foot-sets for a prick-hedge, namely, by pitching downe into the earth, Elder, Quince-cuttings, and brambles; but afterwards men began to do the like by those trees that are more set by, and nourished for other purposes, as namely Poplars, Alders, and the Willow, which of all others may be pricked into the ground with any end of the cutting or sprig downward, it makes no matter whether, for the smaller end will take as well as the bigger. Now all the sort of these, are bestowed and ranged in order at the first hand, even as a man would have them, **L** and where he list to see them grow, neither need they any remooving or transplantation at all. But before we proceed any further, to other sorts of planting trees, it were good to declare the manner how to order feminaries, seed-plots, or nource-gardens.

For to make a good pepinnier or nource-garden, there would be chosen a principall & speciall peece of ground: for oftentimes it falleth out, yea and meet it is, that the nource which giveth sucke should be more tender over the infant, than the owne naturall mother that bare it. In the first place therefore, let it be a sound and drie ground, howbeit furnished with a good and succulent elementall moisture, and the same broken up and after well digged over & over with mattocke and spade, and brought to temper and order, so as it be nothing coy but readie to receive all manner of plants that shall come, and to entertaine them as welcome guests; and withall, as like **M** as may be to that ground unto which they must be remooved at last. But before all things, this would be looked unto, that it be rid cleane of all stones; surely fenced also and paled about, for to keepe out cocks and hens and all pullen: it must not bee full of chinkes and cranies, for feare that the heat of the sunne enter in and burne up the small filaments or strings and beard of the

A new roots : and last of all, these pepins or kernils, ought to stand a foot and a halfe asunder : for in case they meet together and touch one another, besides other faults & inconveniences, they will be subject to wormes: and therefore, I say, there would be some distance betweene, that the ground about them may be often harrowed and raked, to kill the vermine, and the weeds plucked up by the heels that doth breed them. Moreover, it would not be forgotten, to proine these yong plants when they are but new come up : to cut away, I say, the superfluous sprigs underneath, and use them betimes to the hooke. *Cato* giveth counsell to sticke forkes about their beds a mans height, and lay hurdles over them, so as the Sunne may be let in underneath : and those hurdles to cover and thatch over with straw or haulme, for to keep out the cold in winter. Thus are yong plants of Peare trees and Apple trees nourished : thus Pine nut trees, thus Cypresses which likewise come up of seed, are cherished.

B As for the graines or seeds of the Cypresse tree, they bee exceeding small, and so small indeed, that some of them can scarce bee discerned well by the eie : wherein the admirable worke of Nature would bee considered, to wit, that of so little seeds there should grow so great and mightie trees, considering how far bigger are the cornes of Wheat and Barley (to make no reckoning nor speech of Beanes) in comparison of them. What should wee say to Peare trees and Apple trees? what proportion or likenesse is there betweene them, and the prettie little pepins whereof they take their beginning? Marvell we not, that of so slender and small things at the first, they should grow so hard, as to checke and turne againe the very edge of axe and hatchet? that frames and stockes of presses should bee made thereof, so tough and strong, as will not shrinke under the heaviest poise and weights that be? that Mast-poles comming thereof should be able to beare saile in wind and weather? and finally, that they should affourd those huge and mightie rams, and such like engines of batterie, sufficient to commaund towers and bastils, yea, and beat downe strong walls of stone before them? Loe, what the force of Nature is! see how powerfull she is in her workes! But it passeth and exceedeth all the rest, that the very gum and liquour distilling out of a tree, should bring forth new plants of the same kind: as we will more at large declare in time and place convenient. To returne then againe to the female Cypresse (for the male as hath been said already, bringeth forth no fruit) after that the little bals or pills (which bee the fruit thereof) be gathered, they are laid in the Sunne to drie, during those months, which we have before shewed: and being thus dried, they will breake and cleave in sunder. Now, when they are thus opened, they yeeld forth a seed, which Pismitres are very greedie of. Where another wonder of Nature offereth it selfe unto us, That so small a creature as it, should eat and consume the seed that giveth life and being to so great and tall trees, as the Cypresse. Well, when the said seed is gotten, and the plot of ground laid even and smooth, with cylinders or rollers, it must be sowne of a good thickeesse in the moneth of Aprill: and fresh mould sifted and strewed over with riddles, an inch thicke and no more: for if this graine be buried over deepe and surcharged, it is not able to breake through against the weight of the earth, but in steed of rising up, the new chit turneth and bendeth backward under the ground. And hereupon it is, that foike forbear either to goe at all upon it, or else they tread very lightly. Being thus sowed, it must be gently watered for three daies following, after the Sunnes setting, (that the earth may drinke equally in all places)

C until the sprouts appeare above ground. Now, after they have had a yeares growth, they be transplated, and replanted againe in rewes: for by that time they are come to a span or nine inches in height: but great care must bee had, that the time bee temperate, that is to say, that the weather be fresh and faire, and without any wind. Certes, a wonderfull thing it is to be spoken, That all the daunger or securitie of this tree, standeth upon the choise of that onely day, wherein it is replanted: for let there fall never so small a raine or dew, nay, let the wind blow never so little, it is a great hazard that it will die. For ever after it is warished and safe ynough, howbeit, they cannot abide a glut of raine, at any time following. Moreover, as touching Injubes, they are likewise set of their graines, in the moneth of Aprill. But that kind of Peaches or Abricots which bee called Tuberes, love better to bee grafted either upon a skeg or wild Plum-stocke, or Quince, or else upon the wild Hart-Rhamme, called Calabricum, [or Spina Cervina.] To knit up this discourse, the fruit Sebesten and the Servises may be grafted and planted both upon the same kind of stocke: and lookewhat will beare the one, is apt to receive the other.

¶ *The manner of translating and replanting, out of one seminarie or nource-garden unto another. How Elmes are to be planted. Also, as touching trenches.*

Some would have us to remoove plants out of one seminarie into another, before they bee set indeed where they should be for to continue: which mee thinkes is a matter of more toile and curiositie than necessitie, howsoever they make promise, That by such transplanting, the leaves will prove larger and broader.

*: The first of March.

Now for Elmes, their seed or graine is to be gathered about the *Calends of March, when it beginneth to turne yellow, and before the leaves break forth. After it hath been dried in the shadow for two daies, it is to bee sowne thicke in a plot of ground well broken up and laid hollow beforehand, and then must there be mould serced over through a fine riddle, to the same thickeesse as we have appointed for the Cypresse. In case no raine doe fall in due time, it ought to be watered by hand. After one yeare, the plants that come hereof, must be taken up out of the trenches and raunges wherein they came up, and translated directly into the Elme plots, where they are to grow; with this care and good regard, that they stand a foot at least everie way distant one from another. As for the male Elmes, unto which Vines are wedded, because they are without seed, it is better they were planted in the Autumne: and for that they want seed, they would bee set of plants. Here with us about Rome side, they use to replant them againe in their grove plots, when they be five yeares old, or, as some would have it, so soone as they bee come to twentie foot in height. The manner whereof is this, in a trench or ditch called *Novenarius, three foot deepe in the ground, and as many broad, or rather more, they are set: which done, for three foot in height every way about the foot of each tree from the ground as it standeth, there must be banks raised of some earth, after the manner of those seats which they call Arulæ in Campanie. As for the spaces between tree and tree, they ought to be set out and disposed according to the nature and situation of the place, and as the ground will give leave. In the champion and plaine countrey, those would bee planted that are of a drier nature, and likewise in a thinner course. As for Ashes and Poplars, because they make hast to spring, leafe, and bud out betimes, it is meet that their plants likewise were set and ranged with the first, that is to say, about the *Ides of Februarie; for they also grow of plants, and may well be replanted.

*Nine foot distant every way from another: for trees were planted ordinarily, with that space betweene: as may appear in the next chapter.

*: The 13 day of Februarie.

Now for the order of setting trees either in groves, hortyards, or vineyards, we ought to follow the usuall manner of checquer row, called *Quincuntiall*, which is not so common, but it is also as necessarie: not onely good to admit all kinds of wind to passe betweene, but also faire and pleasant to the eie, considering, that which way soever a man lookes, there offer to his sight both the allies, and rewes, directly raunged in order.

The Opiets or *Vich-hazels* are sowne of seed after the same manner as Elmes: in like sort also they to bee remooved and transplanted out of their nource-plots, as if they were wild, drawne from the very forrests.

Moreover, above all things this would be considered, that a tree to be removed, ought to bee translated either into the like ground from whence it came, or else into a better. For we must take heed how we do remove plants out of warme grounds, & where the fruit is earely ripe, into others that be colder or late in ripening. Semblably, out of cold and hard places, they would not bee translated into warme, mellow, and forward. *Item*, If it be possible, let the trenches bee cast and digged so long before, that a good thicke greene sould be overgrowne against the time that you meane to plant. *Mago* is of opinion, That the said ditches or trenches should stand made a year before at the least, that they might be fully seasoned with the Sunne, and receive all raine, wind, and weather, throughly. But in case it fall out otherwise that the opportunitie thereof be overslipped, or our leisure will not serve, he would have fires to be made in the middest of them two moneths before, and in no case any trees to be set but after showers of raine. And if the ground be tough or hard, and standing upon the cley, the ditches ought (according to *Mago*) for to bee three cubites deepe every way: and if they be for to plant Plum-trees, hee would have them bee a handbreadth more or a span in deapth, and digged on every side hollow, and vaulted in manner of a furnace, with a narrower mouth in the top. In a blacke veine of ground, by his direction, it is sufficient that they be two cubites and a handbreadth or span deepe, and made foure square in manner

- A** ner of a quadrangle. In the measure and proportion of these ditches, the Greeke writers doe accord in one, saying, that they ought not to bee more than two foot and a halfe deepe, nor wider than two foot bare: also, that in no place it must bee under a foot and a halfe deepe, for that in a moist soile, we shall come ordinarily neare to water about that skantlin, and not before. But *Cato* is of another judgement, If (quoth he) the place be waterish, let the trenches be three foot broad in the mouth, but in the bottome not above a foot and a hand-breadth, but see they bee foure foot deepe: provided alwaies, that they be* paved beneath with stone: and for want thereof, laid with greene willow bastons, and for default of them, with vine cuttings, or such trouffe; so that they lie halfe a foot thicke. But considering the nature of trees whereof we have before written, I thinke it not amisse to adde somewhat of mine owne, namely, The more ebbe that any roots of
- B** trees creepe under the ground, the deeper they must be set into the earth; as for example, the Ash and the Olive tree: for they and such other like ought to stand foure foot deepe. As for all the rest, it skills not, if they goe no deeper than three foot, for that is thought sufficient. [Stocke me up this root here (quoth *Papyrius Cursor* a Roman Generall, in a braverie, when he meant to terrifie the Pretor of the Prænestines.) Wherby it is plain, that the more secure and safe way in his judgement, was rather to cut the stocke and maister Root indeed, than slightly to pare away those bare roots that appeare naked above ground; for that might be done, and the tree never the worse for it.] Some there be that would have round pebble stones laid in the bottome of such ditches, which might as well containe & keepe water, as let it forth and give issue thereto: whereas broad flat stones would not so doe, but besides, hinder the root that it should not goe downe
- C** and take hold of the earth. For to keepe therefore a meane betweene, it were good in mine opinion, to lay gravell under the root.

*It seemeth that *Cato* meant of trenches to draine water out of low grounds: and not as *Plinius* mistaketh.

- Moreover, there be diverse men of this mind, that a tree should not be removed, either under two yeares old, or above three: whereas others make no question to transplant them after the first yeare, without more adoe. *Cato* alloweth not of translating a tree, unlesse it bear in thickeesse more than five fingers. And verily, so exactly hath he written hereof, that he would not have forgotten, to marke in the barke of trees the South side, before they were taken up, in case, hee had thought that it was materiall to the replanting of them, that they should stand just in the same position and accustomed coast of the heaven, as they did before; for feare least that side which regarded the North, if now it should bee opposed against the South, might cleave and rift with the heat of the Sunne, not used thereto: and contrariwise, the parts which looked Southward, might now by the Northerne winds, be clunged and congealed withall. Now, there bee some that affect a cleane contrarie course, and namely, in the Fig tree and the Vine; exchanging the one side for the other: being fully persuaded, that by that meanes they will beare leaves thicker, preserve and defend their fruit better, and in the end shed fewer: more particularly, that the Fig-tree thereby will be the* more easie to climbe. Most men take great heed of this only, that when they prune trees, and cut off the top ends of boughs, the cut may be toward the South; without any regard or consideration, that in so doing they expose the boughs to the danger of cleaving, by reason of the hote Southerne wind, which lieth uncessantly beating upon them. Yet hold I rather with them, that would have branches cut Southeast or Southwest, namely, toward the points
- D** where the Sunne is, at the sixt and eight houres of the day. Another secreet there is besides, whereof they are as ignorant, howbeit, not to bee neglected, namely, to beware that the roots of such trees as are to bee replanted, stay not long above ground, and thereby waxe drie: also, that trees be not digged up, either standing into the North, or in any quarter betweene that point and the Southeast, where the Sunne riseth in midwinter, in case the wind fit in those corners: or at leastwise, that the roots be not exposed bare against any of those winds: for surely, many a tree dieth hereby, and husbandmen never know the cause thereof. *Cato* utterly condemneth all manner of winds whatsoever, yea, and raine too, all the while that trees bee in remooving. Moreover, in this case it is singular good, that there hang to the roots of these trees when they bee translated, as much of the old earth wherein they lived and grew before, as may be, yea, and (if it were possible)
- E** to bring them away with the turfs whole and entire, lapped fast about the roots. And therefore *Cato* provided well, that such yong plants should be caried in baskets, earth and all together with the roots. Doubtlesse, not without very great reason there is one Author saith, That it is sufficient that the uppermost course of the old mould which lay at the foot of the tree, should bee put under the root thereof now when it is replanted. Some write, that if the bottome of the hole or

*Scarflem, reading it *βλατο* τρε, haply: for *βλατο* τρε, out of *Theophrastus*, i. more fertile and fruitful.

grave be paved with stone where Pomgranate trees should stand, the Apples or fruit that they beare, well never burst nor cleave upon the trees. Also, that the roots of trees when they are to be set, should be laid bending at one side, and not stand direct and streight. Moreover, that the tree in any case bee set just in the middest of the ditch or hole made for it. It is said moreover, that if a man plant a Fig tree, together with the sea-onion, Scilla (which is a kind of the Bulbi) it will make hast to beare Figs, and those will not be subject to the worme: and yet other fruits will be worm-eaten nevertheless, set them with the said Scilla as well as you can. As for the roots of a tree, who maketh any doubt, that great care should be had in the taking of them up; so as they might seeme rather drawne forth gently, and not plucked up violently. But my purpose is not to dwell in these matters, nor to stand much upon such points, which have a manifest reason, and whereof no man is ignorant or doubtfull; to wit, that the earth is to bee well driven and beaten downe close with a rammer, that it may lie fast about the roots, which *Cato* judgeth to bee a principall point for to bee observed in this businesse: who also giveth a rule, that the place where a tree is cut in the bodie, should be plaistered over with dung, covered over also, and fast tied with leaves.

CHAP. XII.

Of the spaces and distances that ought to be betweene trees planted: of their shadowes and droppings: of the place where they should be planted.

IT belongeth to this place properly for to speake of the distances betweene tree and tree, in the setting. Some writers are of opinion, That Pomgranat trees, Myrtle trees, and Lawrels, should be planted thicker than ordinarie, howbeit, with this regard, that they be set nine foot asunder one from another. As for Apple trees, they may stand a little more at large, Peare trees somewhat wider than they, Almond trees and Fig trees yet a little more than all the rest. But herein must we be ruled and directed by the boughs spreading more or lesse, by the rowne of the place it selfe, and according to the shaddow that each tree casteth. There is not (I say) any one of these considerations to bee neglected, and the shade especially of all others would bee observed. For such trees as doe branch round as it were in compasse, although they bee otherwise great, as namely, Apple trees & Pyrries, yet they yeeld no great shaddow: whereas a man shall see Cherie trees and Lawrels take up an exceeding deale of ground with their shade. Now these shadowes of trees have their properties by themselves, for that of the Walnut tree is noisome and hurtfull even to man, breeding heavinesse in the head: and an ill neighbour it is besides to all plants either under or neare unto it. The Pine tree also with her shaddow nipperth and killeth the young spring of all plants within the reach thereof. Howbeit, both it and also the Walnut tree resist the force of winds notably, and therefore they serve in good steed to protect vineyards, and are projected against the winds to breake their violence. The dropping of the Pine, Oke, and Mast-holme, by reason of the raine water wherewith they are much charged, is very heavie and ponderous, and therefore hurtfull. As for the Cypresse tree, it droppeth little or nothing, by reason that it receiveth so small a deale of raine: & in truth of all others the shade is least, the boughs are knit and trust so round, and run up sharpe pointed in the top. The Fig tree giveth no thicke shaddow, however the boughs spread large ynough; which is the cause, that no man forbiddeth the planting of them in Vineyards among Vines. And as for Elmes, their shade is so mild and thin, that it nourisheth whatsoever it overspreadeth under it. Howbeit, *Anticus* is of opinion, That the shaddow of Elmes is one of the thickest and most hurtfull: neither doe I make any doubt thereof, if they be let to spread into great armes and boughs at libertie: marie, if the branches thereof, or of any tree within-forth be shrigged, I thinke that the shade will doe no harme at all. The Plane tree carrieth a heavie head, and therefore casteth a thicke shade, howbeit, pleasant it is, and refresheth those that sit under it: safe resting there is upon the grasse, rather than the bare ground: and there is not a tree againe where grasse groweth thicker and longer, to cover the banks and seats under it. As for the white Poplar or Aspen tree, it maketh little or no shade arall, the leaves keepe such a wagging and trembling, and never hang still. The shaddow of the Alder tree is fat and battie, it feedeth whatsoever is fowne or set under it. The Vine hath shade ynough to serve her owne tume: the leaves are ever stirring, and by their motion and turning often too and fro, there is a good temperature of shade and Sunne by that meanes: they serve also in steed of a covert in time of raine, and beare off a good shower. Generally, all trees in manner that have

A have their leaves hanging by a long taile, cast but a light and slender shaddow. And in very truth the knowledge hereof would not be contemned, nor set in the last place of such points as belong to husbandrie, considering there is not the shaddow of any one tree, but either is a kind nource, or a shrewd and curst stepdame, that is to say, either profitable or incommodious to all the fruits of the earth. For without all question, the shade of Walnut trees, Pine trees, Pitch trees, and Firs, is no better than poison to all that is within the compasse of it, and kils whatsoever it toucheth: And thus much of Shadowes.

As touching the dropping of trees, a man may conclude in one word all that belongeth thereunto. For looke what trees soever be so defended and clad with thicke leaved branches, that the raine cannot passe readily through them, bee sure the dropping and distillation of such is naught and daungerous. And therefore it skilleth very much in this matter and question now in hand, to know the nature of the earth wherein wee meane to plant, how many trees it may well beare and nourish. As for hils, they require of themselves not so great distance betweene tree and tree, as the plaines beneath: besides, in such places exposed to the wind, it is good that they bee planted thicker. Howbeit, Olives require the greatest space betweene of all others: and therefore *Cato*, following the judgement of all Italie, ordaineth in these words, That they should stand asunder five and twentie foot at the least, and thirtie at the most: but this rule holdeth not alwaies; for herein guided wee must bee by the nature and site of places, which varie and differ much. For in Boetia, which is a part of Spaine, there is not another tree growing, bigger than the Olive: and if we may give credite to authors that have written hereof, there bee in Affricke, by their report, many of them called *Milliariae*, for that every yeare they yeeld a thousand pound weight of oile, apeece. And therefore *Mago* allowed threescore and fiteene foot every way, for distance betweene Olive trees, or els five and fortie at least, even in leane and hard grounds, and those that were exposed to the winds. And in Boetia verily, the people use to reape great plentie of corne among Olive trees.

Now of all other follies this is one, and bewraieith shamefull blindnesse and ignorance, To be driven to make glades betweene trees when they be growne to a good bignesse: and namely, either by lopping their boughs too much for to let in light betweene, and so by this meanes hasten their age and decay; or els to draw them by cutting them downe cleane: wherein oftentimes they that did set them at first, take themselves in the manner, and blame their owne want of skill.

D Considering therefore, that there is no greater shame can happen to husbandmen than to repent when a thing is done, and then goe about to undoe it, much better it is of the twain in this case, to fault in overwide, than too streight roume.

CHAP. XIII.

¶ *What trees grow but slowly: and which they be that soone come forward: also, of the Savine.*

Some trees by nature are slacke of growth, and principally those that come of seed, and live longest. But such as soone decay and die, are quicke of growth, as the Fig tree, Pomgranate tree, Plum-tree, Apple-tree, Peare-tree, Myrtle, and Willow: but they make amends for their short life in this, that they goe before others in fruit, and enrich their maisters quickly, for they begin to beare well at three yeares age, yea, and they make a shew thereof in their blossome before. Of all these the Peare-tree is the slowest. But the Cypirus, as well the true and legitimate as the bastard (which is a shrub called *Pseudo-Cypirus*) come fastest forward of any other, for they beare at first both blossome and fruit. This is a generall thing observed, That all trees will thrive and prosper better, yea, and grow sooner to perfection, if the shoots and suckers that put out at the root, as also other water twigs, be rid away, so that all the nourishment may be turned to the principall stocke onely.

F The worke of Nature in sending out these sprigs, taught us the feat to couch and lay sets in the ground by way of propagation: and even after the same manner briers and brambles doe of themselves put forth a new off-spring: for growing as they do, small and slender, and withall running up to be very tall, they cannot chuse but bend and leane to the ground, where they lay their heads againe, and take fresh root of their owne accord without mans hands: & no doubt, overgrow they would and cover the whole face of the earth, were they not repressed and withstood by

by good husbandrie. The consideration whereof maketh mee to enter into this conceit, That men were made by Nature for no other end but to tend and looke unto the earth. See yet what a commodious device wee have learned by so wicked and detestable a thing as this bramble is, namely, to lay slips in the ground, and quick-sets with the root. Of the same nature is the Yvie also, even to grow and get new root as it creepeth and climbeth. And by *Catoes* saying, not onely the Vine, but Fig-trees and Olives also, will grow & encrease of cuttings couched in the ground; likewise Pomgranate trees, all kinds of Apple-trees, Baies, Plum-trees, Myrtles, Filberds, Hazels of Præneste, yea, and Plane-trees. Now be there two waies to encrease trees by way of propagation or entering their twigs. The first is, to force a branch of a tree as it groweth, downe to the ground, and so to couch it within a trench foure foot square every way; and after two yeares to cut it two, where it bent from the tree; and after three yeares end to transplant it. But if a man list to have such plants or young trees to beare longer, the best way were to burie the said branches at the first within mould, either in paniers or earthen vessels, that when they are once rooted, they might be removed all whole and entire in them, and so replanted. The second, is a more curious and wanton devise than this, namely, to procure roots to grow upon the very tree, by carying & conveighing branches, either through earthen pots or oisier baskets, full of earth, thrust close unto the said branches: and by this meanes, the branches feeling comfort of the warme earth enclosing them on every side, are easily intreated to take root, even among Apples & other fruits, in the head of the tree, (tor surely by this meanes we desire to have roots to chuse, growing upon the very top.) So audacious are men and of such monstrous spirits, to make one tree grow upon another, far from the ground beneath. Thus in like manner as before, at two yeares end, the said impes or branches that have taken root, be cut off and caried away in the foresaid pots or paniers, thither where they shall grow. As for the Savine, an hearbe or plant it is that will take if it bee in this sort couched in the ground: also, a lprig if it be slipped off clean from the stocke, will come againe and root. Folke say, that if a man take wine lees, or an old bricke out of the wall broken small, and either poure the one, or lay the other about the root, it will prosper and come forward wonderfully. In like manner may Rosemarie be set as the Savine, either by couching it, or slipping off a branch from it; for neither of them both hath any seed. To conclude, the hearbe or shrub Oleander, may be set of an impe, and so grow, or els come of feed.

CHAP. XIII.

285 *Of encreasing trees by seed: the manner of grafting one in another: how the fine devise of inoculation by way of scutcheon and emplaster was devised.*

Nature not willing to conceale any thing from man, hath also taught him to engraffe trees with their seed and graine. For oftentimes it happeneth, that birds being hungrie, have greedily gobbled up seed and fruit whole and sound, which after they have moistened in their gorge, and tempered it also with the warmth and naturall heat of their stomacke, they send forth and squirt out againe when they meute, together with their dung, that giveth unto it a vertue of fecunditie, and so lay it upon the soft beds of tree leaves, which many a time the winds catch and drive into some clifis and cranies of the barke: by meanes whereof, wee have seene a Cherie tree upon a Willow, a Plane tree upon a Lawrell, a Lawrell upon a Cherie tree: and at one time Berries and fruits of diverse sorts and sundrie colours hanging at one and the same tree. It is said moreover, that the Chough or Daw hath given occasion hereof, by laying up for store, seeds and other fruits in crevices and holes of trees, which afterwards sprouted and grew. From hence came the manner of inoculation or grafting in the scutcheon, namely, to cut out a parcell of the barke of that tree which is to be grafted, with a sharpe knife made in manner of a shoemakers nall-blade; & then to enclose within the said concavities, the eie or seed taken out of another tree with the said instrument. And in old time verily this was the onely manner of inoculation used in Fig-trees and Apple-trees. *Virgil* teacheth us to open a concavities in the knot or joint of a bud that driveth out the barke, and within it to enclose the gem or bud taken out of another tree. And thus much for the grafting that Nature hath shewed.

But there is another way of grafting, which casualtie and chaunce hath taught. And to say a truth, this Maister hath shewed well neare more experiments, now daily practised, than Nature her selfe. Now the manner of it came by this occasion: A certain diligent and painefull husbandman,

A man, minding to mound and empale his cottage round about with a fence of an hedge; to the end that the stakes should not rot, laid a sill under them, of Ivie wood: but such was the vitall force of the said Ivie, that it toke hold fast of the stakes and clasped them hard, insomuch as by the life thereof, they also came to live; and evident it was to the eye, that the log of Ivie underneath, was as good as the earth to give life and nourishment unto the stakes afore-said.

To come then unto our graffing, which wee learned by this occasion: first, the head or upper part of the stocke must be sawed off very even, & then pared smooth with a sharpe garden-hook or cutting-knife: which done, there offereth unto us a two-fold way to performe the rest of the worke: The first is, to set the graffe or Sion betweene the barke and the wood: for in old time truly, men were afraid at first to cleave the stocke; but soone after they ventured to bore a hole

B into the very heart of the wood: and then they set fast into the pith just in the mids thereof, but one Sion or graffe; for by this kind of graffing, impossible it was that the said pith should receive or beare any more. But afterwards they devised a finer and more subtile invention to graffe, by cleaving the stocke gently through the mids; and after this manner they might well set into it six imps or Sions at once: as being persuaded, that by such a number they might supply the defect of any, if they chanced to die or miscarrie any way. Now when the said clift was made, they held it open with a wedge of wood put betweene, untill such time as the impe or graffe beeing thwitted thin and sharpe beneath, were set handsomely close within the rift. In the practise of which feat, many points are to be observed: first and foremost, it would be considered, what trees will thus fort together and be united; namely, what stocke will beare this manner of engrafting, and of what tree an impe or Sion will agree well to be set into it: for be ye sure of this, all trees are not alike, neither have they all their sap in one and the same part. Vines and Figge-trees are drier in the mids of the tree, than in the head; and toward the top they are more apt to take and conceive, and therefore from thence it is good to make choise of imps to be grafted. Contrariwise, the sap of Olives is most firm about the mids, and from thence they affourd Sions; for the tops are drie. Moreover, soonest of all other doe those trees incorporate one into another, if when the stock and graffe have barks both of one nature, if they blossome together at one time, if they bud and put forth their spring at the same season, and last of all, if their saps doe agree one with another. On the other side, long it will be ere they take, when the stock is drie and the graffe moist; or when the barke of the one is tender, and of the other tough and hard. Over and besides, carefull heed must be taken in this businesse, That the stocke is not cloven in a knot; for the churlish hardnesse thereof will not willingly receive and entertaine a guest: that choise also be made of the smoothest and fairest place in the stocke, where the graffe would be set: *Item*, That the clift be not above three fingers deepe; that it be streight and direct; and lastly, that the impe stand so close barke to barke in the socket, that a man may not see betweene it and the stocke: *Virgil* will in no wise have a Sion or graffe to bee taken from about the top of a tree, for such are all naught. But this one thing is generally held for certain, That the good imps to be grafted are those, which bee gathered from those armes of the tree which regard the Sun-rising in summer time: *Item*, That all such graffes come from the boughs that beare well: also that they bee new tender shoots of the last yeare (unlesse they are to be grafted in the stocke of an old tree, for then there should be chosen such as are stronger:) moreover, this is to be regarded, that they be well budded, yea and knotted too, making shew and giving good hope even then, that they would beare fruit the same yeere: but in any wise the same ought to be of two yeares growth at least, and not smaller beneath toward the stock than a mans middle finger. As for the graffes, the manner is to set them in the stocke with the lesser end downward, when our purpose is, that the tree should spread rather in breadth, than run up in heighth. Above all, it would be looked well unto, that they be neat and bright, so as they shine againe; that no part of them be seene either scorched drie with the sunne, or cicatrized (as it were) and blistered. Good hope there is that the graft will take, if the pith or marow of the sion doe fall jumpe with the joynt, so as it joyne close to the wood and inner barke of the mother stocke: for this is farre better than to let it meet just and even with the bark without-forth. Moreover, a carefull eie must be had in thwitting & sharpening the graffe or impe, that the heart or woodie substance bee not stript all naked or left bare: howbeit gently and with a light hand a man must goe over it with a fine and sharpe instrument, in such sort, as it may goe downe into the clift wedgewise, no deeper than three fingers bredth: the which may right easily be done, if it be shaven and pared presently after it hath been dipped

in water. Moreover, wee ought be well advised, that wee sharpen not the end of a graffe in the wind, and that the barke goe not either from it or the stocke. As for the graffe it selfe, it must be driven downe into the clift, close to the shoulder where the owne barke goeth round, and from whence you began to sharpen it: but take heed in thrusting and forcing thereof, that it stand not out of joynt, ne yet that the barke thereof turne up in wrinkles: and therefore chosen they would not be which are over moist, no more (I assure you) than those that be too drie; for as the excessive humiditie of the one looseth the rind, so the want of vitall moisture in the other, will not suffer it to unite and congregate. Over and besides, in the working of this feat, men observe a certaine religious reverence, namely, that the sions be set into the stocke when the moone is croissant, (to wit, before the full) and with both hands forsooth, or els all is marred: and otherwise in this businesse there is an opinion, that two hands together are put to smaller streffe, and have better stay of themselves than one alone; and therefore such a moderation is right necessaric: for the more forcibly the graffes be set into the stocke, & the faster that they are settled, the longer it will be ere they take to beare; but surer they be, and continue the longer: contrariwise, if they stand slacke, the tree indeed will the sooner beare, but last the lesse while. Furthermore, regard would be had in this case, as well that the clift of the stocke gape not too much (as being over wide for the graffe;) as that it be not too little and over-streight, for feare that either it flurt it out againe, or claspe it and gird it so hard that it kill it quite. This principally we must take heed of at the first, that there be no spill or little chip left behind in the mids of the clift, nor any thing besides the graffe it selfe, to fill up the place. Some there be, that enter the clift first in the stocke, with a bill, and with an osier twig tye and bind up the very brims or edges thereof: which done, they drive the wedges in, to make such an overture as is meet; for by reason of the foresaid bonds, they need not feare the gaping of it too wide. Some stocks there be which the very same day that they bee graffed in the nource-garden, are without any harme remooved to the place where they must grow. If the stocke wherein you graffe be bigge and round, the best way is to set the sion betweene the barke and the wood thereof, and to devide the one from the other with a wedge of bone, least in enlarging of the barke it chaunce to breake. In graffing of a Cherie tree stocke, the over rind or barke would bee taken away before the clift bee made. [Now these trees alone of all others may be graffed very well presently after mid-winter.] When the said rind is gone, you shall see therein a certaine downe, which if it chaunce to claspe about the graft, it roteth the same incontinently. But to returne againe to our worke of graffing: After the wedge is taken forth whole and found at the point, (which is a token that no spill remaineth within) you may bee bold to bind the head of the stocke all about. Yet this would be considered by the way (which I had like to have forgotten) that the best and handsomest graffing, is as near the ground as may be, in case the knots will give leave and the stocke beare it: also that the grafts would not conveniently stand without the stocke above six fingers breadth. Now when all is done and sure worke made (as hath been said) *Cato* willeth us to take clay, or the sandie grit of chalke, mixed together with oxe or cow shearn, to worke & temper all these together in manner of a tough past or cataplasme, and then to lay the same within the clift, & round about to daube all. And verily by this and other such rules which he hath left in writing, it appeareth plainly, that in those daies the manner was to graffe betweene the barke and the tree, and not otherwise; as also to set the sions in the stocke, nor above two fingers deepe. As for Apple trees and Pyrries, he prescribeth that they should be graffed in the Spring; also fiftie daies after the Summer sun-stead, & againe after vintage: but Olives and Fig trees in the Spring onely, observing the age and disposition of the Moone, when she is in the wane and thirftie, that is to say, drie: moreover, after noontide, and when no Southerne wind doth blow. And I cannot chuse but wonder much at the curiositie and double diligence of *Cato*, who not content to have defended the graft with clay or past afore said, yea and to preserve it with turfe and mosse against the injurie of rain and cold, to have bound it about also with little knitches of soft osier twigs slived in twaine; but must give charge besides to cover it with Oxe-tongue (a kind of hearb there is so called) *i.* Buglosse: and yet he hath not done, but the same must be fast bound with wispes and wreaths of straw and litter aloft. Now adaies men make no more ado, but thinke it sufficient to stop and close up barke and all, with earth or clay and chaffe tempered together; thinking it sufficient, if the graft beare out two fingers breadth above: They that wait upon the Spring season for to graffe, are many times driven to their shifts for want of time, by reason that all trees make hast then to bud, & do break

A out of a sodain; unless it be the Olive, the oilets or eyes whereof be longest while in coming forth, as having least sap of all other, running under the barke; the which if it were overmuch, would stifle and choke the grafts. As for the Pomegranat and Fig tree, howsoever otherwise they seeme to be drie, yet good it is not to deferre and put off the grafting of them. The Peare-tree may well enough be grafted with the blossome on the head, and it makes no matter if a man doe stay, and graffe it within the moneth of May. To be short, if a man bee constrained to fetch his sions or imps of Apple trees and such like, farre off, it is thought that they will keepe their sap best, if they be sticke or set fast in a Rape root. Also if one would preserve them a certaine time before they should be occupied, it is passing good to lay them close between two crest tiles, well stopp'd on every side with earth, and that neare to some rivers or fish-ponds.

CHAP. XV.

¶ *The manner how to graffe a Vine tree.*

AS for the cuttings or sets of Vines, they may bee kept well a long time, covered all over with straw or litter in drie ditches; and afterwards they are to be laid within the earth, all hilled or covered, save only that their heads be seene above ground. *Cato* graffeth a vine stocke three manner of waies: First, he willeth that the mother stocke should be cut overthwart, and then cloven through the very pith or heart in the mids, wherein hee would have the young imps (thwitted and sharpned as is before said) to be set and engrafted so, as the marow of the one and the other may joyne and meet just together. The second manner is, when two vine stocks do reach one to the other, for to cut by as or a slant (after the manner of a Goats foot) two twigs or branches, of either one, with this regard, that these cuts be of a contrarie side the one unto the other, and with all so deep, as that they come unto the pith or heart; then to fit one to the other, joyning pith to pith, and then binding them fast together so close, that no aire may enter between, untill such time as the one hath adopted the other. The third devise is, to bore holes in an old vine, not directly but aslope, as far as to the pith; and then to put into them young imps two foot long, and to bind them fast: which done, to make a certaine batter or mortar [with clay, beast dung, and sand together] and therewith to dawbe the place; but with this regard, that the graft stand halfe upright or somewhat leaning. This manner of grafting hath been checked and corrected of late daies by our countrymen, who leaving the hand-piercer have taken the French vibrequin or breast-wimble, which gently and quickly boreth a hole, and hurteth not the wood:

D for all chafing heat caused by the said piercer, dullerth the vigor both of stocke and impe. Also they have devised, that the said impe to be engrafted, be gathered from the tree when it beginneth to bud or burgen; & when it is set into the stocke, that it be left standing out with no more than two eyes or buds out of the grafting place; that it be well bound also with the winding rods of an Elme: moreover, that on either side of it, the mother-stocke be slit or cut in two places on both sides, to the end that from thence rather than otherwise, the waterish humour may distill and drop forth, which of all things hurteth vines most. After all this, they would have the said graffe remaine bound, untill such time as it have put forth shoots two foot long; and then the foresaid bands to be cut in sunder, that they may burnish in thickeesse and at ease accordingly. The season which they have allowed for to graft vines, is from the Æquinoctiall in Autumne

E unto the time that they begin to bud forth. Generally all trees that are tame and gentle, may well be grafted into stockes and roots of the wild, which by nature are more drie: contrariwise, graffe the wild and savage kind upon the other, you shall have all degenerate, and become wild. Touching other points belonging to the feat of grafting, all dependeth upon the goodnesse or malignitie of the skie and weather. In summe, a drie season is good for all trees grafted in this manner: and say that the drought were excessive, there is a good remedie for it, namely, to take certaine earthen pots of ashes, and to let water distill through them softly, by little and little to the root of the stock. As for inoculation, it loveth small dewes otherwhiles, to refresh both stock, scutcheon, and oilet.

CHAP. XVI.

¶ *Of Emplastration or grafting with the Scutcheon.*

THe manner of grafting by way of emplastre or scutcheon, may seeme also to have come from inoculation: and this devise agreeth best with those trees that have thicke barks, as namely Fig trees. To goe therefore artificially to worke, the mother stocke or tree to be

grafted, must be well rid and cleansed from the branches all about the place where you meane to practise this feat, because they should not sucke the sap from thence; and chuse the neatest and frimmest part, which seemeth most fresh and lively: then cut forth a scutcheon of the barke, [but be carefull that your instrument pierce no farther than the barke, nor enter into the quicke wood:] which done, take from another tree the like scutcheon of the barke, saving the eye or bud thereon, and set it in the place of the other; but so equall this must be to the place and so close joynd and united to it, that a man may see no token at all or apparence in the joynt, of any wound or skarre made; to the end, that presently they may concorporate, that no humor of the sap may issue forth, nor so much as any wind get between: and yet to make sure worke, the better way is to lute it well and close with clay, and then to bind it fast. This devise of grafting thus with the scutcheon, was but lately found out, by their saying, that favour all new and moderne inventions: howbeit I find that the auncient Greekes have written thereof; yea and *Cato* also our owne countryman, who ordained to graffe both Olive and Fig tree in that order: and (as he was a man very diligent and curious in all things that he tooke in hand) hee hath set downe the just measure and proportion of the scutcheon: for hee would have the barks both the one and the other, to be cut out with a chizell foure fingers long, and three in breadth, and so to close up all in manner aforesaid, that they might grow together; and then to be dawbed over with that mortar of his making aforesaid: after which manner, Apple trees also may be grafted.

Some there be, who have intermingled and comprehended under this kind of grafting with the scutcheon, that devise of making in the side a cleft, and namely in vines; for they take forth a little square peece with the barke, and then set in an impe very hard and close, on that side where it is plaine and even, to the very marow or pith. Certes, neare to Tuliæ in the Tyburtines countrey, I have seene a tree grafted all these waies aforesaid, and the same laden with all manner of fruits; one bough bearing Nuts, another Berries, here hung Grapes, there Figs; in one part you should see Peares, in another Pomegranats; and to conclude, no kind of Apple or other fruit, but there it was to be found: mary this tree lived not long. Howbeit, let us use what diligence we can, yet never shall we be able with all our experiments, to attaine unto the depth of Natures secrets. For some trees there be, that come up of themselves, and by no Art and industrie of man will be made to grow; such also love ordinarily to be in wild Forrests and in rough desarts, where they prosper well: whereas the Plane tree will beare all manner of grafting best of any other; and next unto it, the wild hard Oke: but both the one and the other corrupt and marre the tast of what fruit soever is grafted thereupon. Some trees there be, that refuse not to be engraffed upon any stock, and what way soever they be grafted it skills not, as Fig trees and Pomegranat trees. As for the Vine, it will not beare the scutcheon; neither any tree besides that hath a thin barke, or which doth pill and rift: no nor such as be dry or have small store of sap within them can away with inoculation. Howbeit this manner of grafting is most fruitfull of all other; and next to it, that which is done by way of scutcheon or emplastre: yet trees so grafted, be of all others most tender and feeble: as also such as rest and stay upon the barke only, are with the least wind that is, soonest displanted and laid along on the ground. The surest and strongest way therefore is, to graffe imps upon the head of a stocke, yea and more plentifull by farre than to sow them of seed, or plant them otherwise.

CHAP. XVII.

An historie, shewing the example and prooffe hereof.

IN this discourse and question concerning grafts, I cannot passe over the rare observation of one example, practised by *Corellius* a knight of Rome borne at Arles: This gentleman of Rome, in a ferme that he had within the territorie of Naples, chaunced to graffe a Chestnut with an impe cut from the same tree: This graft tooke and bare faire Chestnuts and pleasant to the tast, which of him tooke their name. After the decease of this gentleman, his heire (who had been sometime his bondslave and by him enfranchised) grafted the foresaid Corellian Chestnut tree a second time: and certainly betweene them both was this difference, The former Corellian bare the more plentie, but the nuts of the other twice grafted were the better. As for other sorts of grafting or planting, mans wit hath devised, by observing that which hath falne out by chance: thus are we taught to set broken boughs into the ground, when wee saw how stakes pitched

A ched into the earth, tooke root. Many trees are planted after that manner, and especially the Fig tree, which will grow any way, save onely of a little cutting: but best of all, if a man take a good big braunch thereof, sharpen it at the end in manner of a stake, and so thrust it deepe into the ground, leaving a small head above the ground, & the same covered over with sand. The Pomegranat likewise and the Myrtles, are set of braunches, but the hole first ought to bee made easie and large with a strong stake or crow of yron. In summe, all these boughs ought to be three foot long, smaller in compasse than a mans arme, sharpened at the one end, and with the barke saved whole and sound with great care. As for the Myrtle tree, it will come also of a cutting; the Mulberrie will not otherwise grow: for to couch and plant them with their braunches, we are forbidden, for feare of the lightnings. And forasmuch as we are false into the mention of such cuttings,

B I must now shew the manner of planting them also: above all things therefore regard would be had, that they be taken from such trees as be fruitfull, that they be not crooked, rough, and rugged, nor yet forked; ne yet slenderer than such as would fill a mans hand, or shorter than a foot in length. *Item*, That the barke be not broken or rased; that the nether end of the cut be set into the ground, and namely, that part alwaies which grew next the root; and last of all, that they be banked well with earth about the place where they spring and bud forth, untill such time as the plant have gotten strength.

CHAP. XVIII.

C *§ The manner of planting, ordering, and dressing Olive trees. Also which be the convenient times for grafting.*

W Hat rules (by the judgement of *Cato*) are to be observed in the dressing and husbanding of Olives, I thinke it best to set downe here word for word, as he hath delivered them. Thus he saith therefore: The truncheons or sets of Olive trees which thou meanest to lay in trenches, make them three foot long; handle them gently and with great care, that in cutting, sharpening, or squaring them, the barke take no harme nor pill from the wood. As for such as thou doest purpose to plant in a nource-garden for to remoove againe, see they be a foot in length, and in this manner set them: Let the place be first digged throughly with a spade untill it be well wrought, lie light, & brought into temper: when thou puttest the said truncheon

D into the ground, beare it down with thy foot; if it go not willingly deepe enough by that means, drive it lower with a little beetle or mallet; but take heed withall, that thou rive not the barke in so doing. A better way there is, To make a hole first with a stake or crow before thou set it into the ground, and therein maist thou put it at ease, and so will it live also and take root the sooner: when they be three yeeres old, have then a carefull eye to them in any case, and marke where and when the barke turneth. If thou plant either in ditches or furrowes, lay three plants together in the earth, but so as their heads may stand a good way asunder above the ground; also that there be no more seene of them than the breadth of foure fingers; or els (if thou thinke good) set the buds or eies only of the Olive. Moreover, when thou art about to take up an Olive plant for to set againe, be warie and carefull that thou breake not the root: get as many spurs or strings thereof

E [called the beard] as thou canst, earth and all about them: and when thou hast sufficiently covered those roots with mould in the replanting, be sure thou tread it down close with thy foot, that nothing hurt the same.

Now if a man demaund and would gladly know what is the fittest time for planting Olives, in one word I will tell him; Let him chuse a drie ground in seed time [*i. in Autumne,*] and a fat or battle ground in the Spring: furthermore, begin to prune thy Olive trees fifteen daies before the Æquinox in the Spring, and from that time forward for the space of fortie daies, thou canst not doe amisse. The manner of pruning or disbraunching them, shall be thus, Looke where thou seeest a place fertile, if thou spie any drie or withered twigs, or broken boughs that the wind hath met withall, be sure thou cut them away every one: but if the plot of ground be barraine,

F care it up better with the plough, take paines (I say) to till it well, to breake all clots and make it even; to cleanse the trees likewise of knurs and knots, and to discharge them of all superfluous wood: also about Autumne bate the earth from about the roots of Olives, and lay them bare, but in stead thereof put good mucke thereto. Howbeit if a man do very often labour the ground of an Olive plot, and take a deepe stich, hee shall now and then plough up the smallest roots

thereof, so ebbe they will run within the ground, which is not good for the trees: for in case they spread aloft, they will wax the thicker, and so by that means the strength and vertue of the Olive will turne all into the roots. G

As touching all the kinds of Olive trees, how may they be; also in what ground they ought to be set, and wherein they will like and live best; likewise, what coast of the heaven they should regard; we have shewed sufficiently in our discourse and treatise of Oile. *Mago* hath given order in his bookes of husbandrie, that in planting them upon high grounds, in drie places, and in a veine of clay, the season should bee betwene Autumne and midwinter: but in case you have a fat, moist, or waterish soile, hee fetterh downe a longer time, namely, from harvest to midwinter. But this rule of his you must take to be respectiue to the climat of Africke only: for in Italy at this day verily, men use to plant most in the Spring: howbeit if a man hath a mind to be doing also in Autumne, hee may be bold to begin after the Æquinox; for during the space of fortie daies together, even to the setting of the * Brood-hen starre, there are no more but fouerteene daies ill for planting. In Barbarie, the people have this practise peculiar to themselves, For to graft in a wild Olive stocke; whereby they continue a certaine perpetuities: for ever as the boughs that were graffed and (as I may say) adopted first, wax old and grow to decay, a second quickly putteth forth a fresh, taken new from another tree, and in the same old stocke sheweth young and lively; and after it a third successively, and as many as need; so as by this meanes they take order to eternize their Olives: insomuch as one Olive-plot hath been knowne to have prospered in good estate, a world of yeares. This wild Olive aforesaid, may be graffed either with sions set in a clift, or els by way of inoculation with the scutcheon aforesaid. But in planting of Olives, this heed must be taken, that they be not set in a hole where an Oke hath been stocked up by the root: for there be certain canker-worms (called *Eruca* in Latine, or *Rauca*) breeding in the root of an Oke, which eat the same, and no doubt will doe as much by the Olive tree. Moreover, it is found by experience better for Olive trees, that their sets be not interred in the earth, nor yet dried, before they be planted. Also, the same experience hath taught, that for old Olive trees (overgrowne with a kind of mossie skurfe) it is passing good, ech other yeare to scrape and claw them well, betwene the Spring and Æquinox, and the rising of the star *Vergilia* or the Brood-hen: likewise to bestow mosse round about the root: mary every yeare they would bee digged round about the root and laid bare after the sunstead, with a trench made two cubits broad and a foot deepe: as also once in three yeeres, it were not amisse to cherish them with good dung. I

Over and besides, the same *Mago* saith, that Almond trees ought to bee planted betwene the setting of *Arcturus* and the shortest day of the yeare. As for Peare trees, they are not to be set all at one and the same time, for they blossome not all alike: they that beare either the long or round Peares, have their season from the occultation of the Brood-hen starre, untill midwinter: All other sorts, and principally those that regard either the East or the North, are to be planted in mid-winter, namely, after the retreat of the starre called *Sagitta*, [*i. the Shaft.*] The Lawrell would bee put into the ground, from the Ægle starre, unto the fall of the Shaft aforesaid: for certainly the observation of the time, pertinent to planting of trees, agreeth much what after this manner; and for the most part men doe accord and ordaine, that it should be done in the Spring and Autumne principally. Another season there is about the rising of the Dog-starre, which few men take knowledge of, because it is not so generally practised, nor found alike profitable to all countries: howbeit I must not overpasse it in silence, considering that my purpose is not to speake of this or that countries disposition, but to search into the nature of all things. In Cyrenaica therefore (a region in Africke) they use to set trees about the time that the Etesian Northern winds doe blow: in Greece likewise they doe the same; and namely in Laconia they suppose that to be the best time for the Olive tree: and in the Island *Cös*, the manner is then to plant vines also. In all other parts of Greece, they make no doubt to inoculate, and to graffe in that season; but in no wise will they plant whole trees then. But herein it skilleth much to consider the nature of each tract and region: for in Ægypt, they set, plant, and replant, every moneth of the yeare: in Æthiopia likewise, and India; and generally in all countries wherefoever it raineth not in Summer. Setting these respects aside, trees require of necessity to be planted in Autumne. Like as therefore there bee three seasons of planting trees, so there are as many wherein they bud and put forth new shoots; to wit, the Spring; the rising of the Dog-starre, and the apparition of *Arcturus*. And verily this is a thing worthie to be noted, That not onely K

beasts L

A beasts and other living creatures have an appetite to engender, but the earth also, and all the plants thereupon, are much more lustie and hote that way. And therefore to make them to conceive in due season, the time would be well observed, when they bee as it were in love, and desire the act of generation. And not onely in the earth and trees therein planted, is this to bee seene, but in grafts and stocks also particularly by themselves, since that they have a mutuall and respective appetite, one to joine & incorporat with the other. They that make choise of the Spring for this purpose, begin to put them as it were together for to engender, presently after the Equinoctiall; giving out in these plaine teames, that trees then are broodie and readie to put forth sprouts: which is the reason, that their barks at such a time will knit and joine together easily. But such as preferre the Autumne before the Spring, fall to this businesse immediately upon the rising of the star Arcturus; for then they suppose, that plants will take root forthwith, and by the time that the Spring is come, they will bee better prepared to put forth lustily: considering that their vertue is not streightwaies spent in budding, but rather employed in taking good root. Howbeit, some trees there be that have their set times and seasons of the yeare limited, whether it be to plant or to graffe: and the same indifferently in all places, as namely, Cherrie-trees and Almond trees about the midwinter. But for the most part, the situation of the place will be able to guide and order all this matter best: for cold and waterish grounds ought to be planted in the Spring; but drie and hote, in the Autumne. With our peafants here in Italie, it is ordinarie to divide their times and seasons for planting in this manner following, They set out for the Mulberie all the time from the Ides of Februarie to the spring Equinox: for the Peare tree they allow the Autumne, and so forward untill fifteene daies before the point of midwinter, and no longer: for Summer Apples and Quinces, for Servises likewise and Plums, they assigne the space betweene the Winter tropicke or Sunnestead, and the Ides of Februarie. As for Carobes of Greece, and Peach-trees, they have all the Autumne and the whole yeare before them untill mid-winter approach. All Nut trees, as namely, Walnut trees, Pine trees, Filberds, Hazels, and Chestnut trees, would be planted from betweene the first day of March, and the fifteenth thereof. To conclude, the onely time for Willowes & Broome, is about the Calends or beginning of the same March. But of these two last named, the Broome loveth to be set of nource-plants, comming of seed, in drie and light grounds; but contrariwise, the Willow to be set of twigs in moist places, according as we have before said.

D

CHAP. XIX.

What trees they be that love to sort and keepe companie together. The skill and feat of boring the roots of trees, and also of billing or banking them about.

There is besides a new manner of grafting trees, which I will not overpasse: for my purpose is not willingly to omit ought, that I have found in any booke as touching this argument. And *Columella*, as himselfe affirmeth, was the first deviser thereof, namely, to conjoine trees of diverse natures, and such as otherwise cannot abide societie and fellowship together, as for example, Fig trees and Olive trees. He, I say, would have a Fig tree to bee planted neare unto an Olive; and so neare indeed, as that a bough or branch of the Olive may reach unto the Fig tree at ease; considering that it is very supple and pliable otherwise, and readie to follow and bee led as a man would have it: and yet as obedient as it is, hee would have it ever and anone to be handled and made gentle in the meane time, that by this meanes inured first, it may be bent and bowed to the purpose when the time serves. Which done, after that the Figge tree hath gotten some strength, and is growne to sufficient bignesse for to beare a graffe (which ordinarily is at three yeares end, or at the utmost when it is five yeares old) the head thereof must bee cut or sawed off, and then the branch or bough of the Olive before said, being well cleansed and made neat, and the head end thereof (as is before said) thwired and scraped sharpe, howbeit, not yet cut from the mother stocke, must bee set fast in the shanke of the Figge tree, where it must bee kept well and surely tied with bands, for feare, that thus beeing forced and grafted arch-wise, it start and flurt not out againe, and returne to the owne. Thus beeing of a mixt and meane nature, betweene a branch or bough growing still unto the tree, and yet laid in the ground to take new root, and an impe or son-graffed, for the space of three yeares it is suffered to feed and grow indifferently betweene two mothers, or rather by the meanes thereof, two mother-stocks

stockes are growne and united together. But in the fourth yeare it is cut wholly from the owne **G** mother, and is become altogether an adopted child to the Fig: tree, wherein it is incorporate. A pretie devise, I assure you, to make a Figge-tree beare Olives, the secret whereof is not knowne to every man: but I my selfe doe conceive and see the reason of it well ynough.

Moreover, the same regard and consideration above rehearsed, as touching the nature of grounds, whether they bee hote, cold, moist, or drie, hath shewed us also the manner of digging furrowes and ditches. For in waterie places it will not bee good to make them either deepe or large: whereas contrariwise, in a hote and drie soile they would be of great capacitie, both to receive and also to hold store of water. And verily, this is a good point of husbandrie for to preserve not onely young plants, but old trees also. For in hote countries, men use in Summer time to raise hillockes and bankes about their roots, and cover them well therewith, for feare least the **H** extreame heat of the Sunne should scorch and burne them. But in other parts the manner is to dig away the earth, and to lay the roots bare, and let in the wind to blow upon them. The same men also in winter doe banke the roots about, and thereby preserve them from the frost, Contrariwise, others in the winter open the ground for to admit moisture, to quench their thirst. But in what ground soever it be where such husbandrie is requisite, the way of cleansing tree roots, and ridding the earth from them, is to dig a trench three foot round about. And yet this must not bee done in meddowes, for as much as for the love of the Sunne, and of moisture, the roots of trees run ebbe under the face of the earth. And thus much verily may suffice in generall, for the planting or grafting of all those trees that are to beare fruit.

CHAP. XX.

Of Willow and Oisier plots: of places where reeds and canes are nourished: also, of other trees that be usually cut for poles, props, and stakes.

IT remaineth now to speake of those trees which are planted and nourished for others, and for Vines especially: to which purpose, their wood is usually lopped to serve the tume. Among which, Willowes and Oisiers are the cheefe, and to bee placed in the formost ranke: and ordinarily they love to grow in moist and waterie grounds. Now, for the better ordering of the Oisier, the place would be well digged before, and laid soft two foot and a halfe deep, and then planted with little twigs or cuttings of a foot and a halfe in length, and those prick in: or else stored with good big sets, which, the fuller and rounder they be in hand, so much better they are for to **K** grow, and sooner will they prove to be trees. Betweene the one and the other, there ought to bee a space of fixe foot. When they are come to three yeares growth, the manner is to keepe them downe with cutting, that they stand not above ground more than two foot, to the end that they might spread the better in breadth, & when time serves be lopped and shred more easily, without the helpe of ladder. For the Withie or Oisier is of this nature, that the nearer it groweth to the ground, the better head it beareth. These trees also, as well as others, require (as men say) to have the ground digged and laid light about them every year, in the month of Aprill. And thus much for the planting and ordering of Oisier willowes, which must bee employed in binding and winding. As for the other Willow, which affourdeth big boughs for poles, perches, and props, those **L** may bee set likewise of twigs and cuttings, and trenched in the ground after the same manner. These lightly every fourth yeare will yeeld good poles or staves, and for that purpose would they then be ordinarily cut and lopped. If these trees become old, their boughs by propagation may still maintaine and replenish the place, to wit, by couching them within the ground; & after they have lien so one yeare, and taken root, by cutting them cleane from the stocke-father. An oisier plat of one acre stored thus, will yeeld twigs sufficient for windings and bindinds, to serve a vineyard of five and twentie acres.

To the same purpose men are wont to plant the white Poplar or Aspe, in manner following. First, a peece of ground, or a quarter, must be digged and made hollow two foot deepe: and therein ought to be laid cuttings of a foot and a halfe in length, after they have had two daies drying; **M** but so, as they stand one from another, a foot and a handbreadth, & be covered over with mould two cubites thicke.

As touching canes and reeds, they love to grow in places more wet and waterish than either the Willowes and Oisiers abovesaid, or the Poplars. Men use to plant their bulbous roots, which some

- A** some call their oilets or eies, in a trench of a span deapth: and those two foot and an halfe asunder. These reeds doe multiplie and encrease of themselves (if a plot be once planted with them) after the old plants be extirped & destroyed. And surely, this is found nowadaies to bee the better and the more profitable way, even to commit all to Nature, rather than to guild and weed them out where they seeme to grow over thick, as the practise was in old time: for the manner of their roots is, to creepe one within another, and to be so interlaced continually, as if they were twisted together. The fit and proper time to plant and set these eases or reeds is a litle before the Calends of March, to wit, before the oilets or eies above said begin to swell. They grow untill mid-winter, at which time they waxe hard, which is a signe that they have done growing: and this is the onely season also for to cut them. Likewise, the ground would be digged about them, as often as Vines. The order of planting them is two manner of waies, for either the roots bee laid overthwart or acrosse, and but shallow within the ground (and looke how many eies there bee in the root, so many plants will spring above the earth:) or else they be pitched downe right, within a grave or trench of a foot deapth, so as there bee two eies or buds under the ground, and the third above, but close and meet with it: but this caveat is to be given, that the head thereof may bend forward toward the earth, for feare that it drinke in any dew, which might stand and settle upon it. This also is observed, that they be cut ever in the wane of the Moone: as also, before that they are employed about Vineyards for to beare up Vines, they would have a whole yeares drying, for such are more profitable than the greene.
- B** The best staies to beare up Vines, are made of the Chestnut tree: for why? the wood is gentle and tractable; tough withall, and enduring long: besides, it hath this propertie, that cutt it when you list, it will spring againe more plentifully than any Willowes. It loveth to grow in a gentle and sandie ground, but principally, if the same stand upon a moist gravell or a hore earth full of litle pebbles, and namely, where there is good store of such soft stones, as will soon crumble into grit: neither makes it any matter how much the place be shaddowed, nor how cold and exposed to the Northerne winds, for such it liketh well ynough, yea, although it bee the side or hanging of an hill, as bleake and cold as may bee. But contrariwise, it may not abide the red French earth, the chalkie or marle ground, nor in one word, any that is barle and fruitfull. See it is of a Nut, as we have before said: but it commeth not up, unlesse there bee five in a heape piled together, and those of the fairest and biggest sort. Moreover, the plot wherein you meane to have
- C** Chestnuts grow, must be overtly broken up aloft, from betwee the November and Februarie: in which time the Nuts use to bee loose, and to fall of themselves from the tree, and spring underneath, finding the ground light and hollow under them. Betwixt each heape set in manner aforesaid; there ought to be a foot space every way, and the trench wherein they be set, of a span deapth. Out of this plot, as out of a seminarie and nource-garden, these young plants are to be translated into another, and then they must be set two foot asunder. Howbeit, they ought to bee above two yeares old first, before they be removed and replanted. Moreover, a man may encrease Chestnut-trees by propagation: to wit, by couching and trenching the branches thereof, as they grow to the mother: and there is not another tree againe that sooner taketh that way, than it doth; for the root thereof being laid bare, the whole branch must be entered along in the trench made for the purpose, leaving out the end onely above ground. Thus shall you have one tree spring from it, and another from the root. Howbeit, planted in this wise, it loveth not to be translated; it cannot lodge elsewhere, but dreadeth and hateth all change of soile: and therefore such plots of ground as doe affoord coppises of Chestnut-trees, are stored with plants comming of marrons or nut-kernels, rather than quick-sets or plants set with the root. For the ordering and dressing of them, there is no other labour required, than in the others before rehearsed; namely, for the two first yeares ensuing to dig the ground loose about their roots, and to proime or cut away the superfluous twigs: for ever after they will shift well ynough, and manure themselves, by reason that their owne shade will kill those superfluous water-shoots that spring out either from the root or the sides of the tree. A coppise of these trees is cut ordinarily within every seventh yeare: and one acre of them will yeeld props ynough for to serve a vineyard of twentie acres: for besides that one pole of them will abide to be cloven and make two props apeece, they will last very well untill the next fall of the wood or coppis be past.
- D** Moreover, the Mast-tree called Esculus, is planted and commeth up in like sort: howbeit, passing untoward and unwilling they are to grow, and therefore they stand ten yeares at least before

they be cut and lopped. Set Acornes of this tree Esculus wheresoever you please, they will surely take and come up; but the trench must be a span deepe, and the Acornes two foot asunder. And foure times in the yeare are they to be lightly *raked and cleaned from weeds. A forke or prop made of this wood, lasteth very well and rotteth not: and in very truth, the more that the tree it selfe is cut and mangled, the better it springeth and putteth forth new shoots.

Over and besides these trees abovementioned, there bee others that use to be cut and lopped for Vine props and staies, to wit, the Ash, the Bay tree, the Peach, and Hazell tree, yea, and the Apple tree: but these are all of them lateward and slow of growth: neither will they endure so well without rotting, if they stand any time in the ground, and much lesse will they abide any wet. But on the other side, the Elder tree of all others is most firme for to make poles and stakes of. It will grow of sions and impes even as the Poplar. As for the Cypresse tree, we have of it spoken sufficiently already.

CHAP. XXI.

§ The manner and skill of husbanding and dressing Vineyards.

NOW that we have treated sufficiently of the instruments, furniture, and tackling (as it were) belonging to Vineyards, it remaineth to speake of the nature of Vines, and to deliver with especiall regard the manuring and dressing them. According therefore as wee may see in Vines and some other trees, which have within them a spongeous matter and light substance, their twigs and branches doe containe a kind of marrow or pith enclosed between certain knots or joints wherewith their stalkes are divided and parted. As for these fistulous concavities, they are but short all of them, and toward the top shorter and shorter, but evermore betweene two knots, they enclose the joints aforesaid. Now this marrow, this vegetative and vitall substance, I say, (call it whether you will) runneth forward still on end all the length of the hollowex or pipe so long as it findeth no resistance by the way: but meeting once with a joint or hard knot which maketh head upon it, not suffering the same to passe forward, it being driven backe, returneth downward: howbeit, in that reverberation, breaketh out under those knots, and putteth foorth certaine wings or pinnions like arme-pits, whereas the buds or leaves doe come; but alwaies in alternative course, one of this side, and another of that; after the manner of reeds, canes, and fennell-geant, as hath been shewed before: in such wise, that if one wing rise forth at the bottome of the lower knot on the right hand, another springeth for it on the left hand in that next above it; and thus they keepe order the whole length of the braunch. These sprouts when they are come once to some bignesse, and do branch there, bee called of the Latines by a prettie name, Gemmae, as it were precious stones: but so long, as they are no other than buds sprouting foorth under the concavities or pit-hole of the foresaid joints, they tearme them Oculos, [i. Oilets or Eies:] marie in the very top they be named by them Germina [i. Sprigs or Burgeons.] After this order are engendered the maine branches, the smaller sprigs yearely cut away, the grapes, leaves, and yong tendrils of Vines. But hereat I wonder most, that the burgeons comming forth on the right side, be alwaies more tough and firme than those of the left. To come now unto the planting of these Vines: The shoots or branches must bee cut just in the middle betweene the foresaid knots or joints, so as the marrow in no wise run out. And if you would plant fig-sets or sions, they ought verily to be a span long, and then to be prickt into the ground, (but first there should bee a hole made with a little stake) with the greater end that grew next to the bodie of the tree downward: provided alwaies, that two oilets or buds stand above ground. Now these oilets are properly (in twigs or sets of trees) those buds called, where the new Spring first shooteth forth. And hereupon it is, that these sions or cuttings being set in nource-gardens, beare the same yeare that very fruit which they would have borne upon the tree, if they had not been cut off: and namely, if they be set in the right season whiles they be plumpe and full: for having conceived on the tree, they doe consummate the sad conception so begun, and are delivered thereof elsewhere. And looke what Fig-sets be in this manner planted, may be easily and without daunger remooved and translated the third yeare after. For certes, as this tree of all others soone ageth and endureth not long: so in recompence of short life, this one gift it hath of Nature, That it commeth forward apace, quickly growth to the full bignesse, and beareth fruit.

As for the Vine, there is not a tree that is planted more sundrie waies, nor affourdeth greater store

- A** store of sions or sets than it. For first and formost, nothing thereof is planted, but that which is unprofitable, hurtfull, superfluous, and of necessitie to be pruned and cut away. But in the pruning, this rule must be observed, that those braunches bee cut off which were portoirs and bare grapes the yeare before. The manner in old time was to plant or set a sion, headed (as it were) and taking hold on both sides of the old wood and hard stocke: whereupon, because it was fashioned like a little mallet or hammer head, it was and is at this day called in Latine *Malleolus*. But afterwards they began to slip off a twig with a heele onely of the old wood (as they use to do in a Fig-tree:) and there is not a better way to make a Vine surely to take and live than this. A third sort there is besides of sions or sets which are more readily gotten, without any such heele of the hard wood, and therefore they be wreathed and twined when they are set into the ground: whereupon they be called in Latine *Sagittæ* [i. Shafts:] for the same sions only cut off and not wreathed, are named *Trigemmes*, as a man would say, twigs with three buds or spurts. And therefore of one and the same Vine braunch, a man may in this sort make many kinds of sions or sets: Howbeit, this is to be noted, that if you set any young sprigs that never bare fruit but leafe only, the Vines comming thereof will be ever barren: and therefore none ought to bee planted but such as are fruitfull. A Vine-set or cutting, that hath joints standing thin, but here and there, is thought to be fruitlesse: but contrariwise, if it be set thicke with buds, by all likelyhood it will beare plentifully. Some are of opinion, that no sions should be put into the ground, but those that have floured already. Also, That to set such cuttings as be called Shafts, which have no part of the old wood, is not so profitable; for that in removing they are in danger to breake whereas they were wythen.
- C** Now, when you have gotten such sets as bee meet for planting; let them be a foot long at the least, and carie five or sixe knots, and at this length they cannot possibly have fewer than three buds. Moreover, the best way is presently to set them the very same day that they bee gathered. But in case a man be driven to keepe them long before they bee put into the ground, great heed would be taken, according to the rule before said, That they be not laid above ground; that they drie not in the Sunne; that they take no wind; nor loose their fresh vigor by cold. And if it chance that they lie out any while in the drie aire, they would be laid to soake in water many daies together, untill they be refreshed and looke greene againe, before they be set into the earth. The plot or quarter within the nource-garden or vineyard, ought to bee well exposed to the Sunne, of a good largeness, and sufficiently moulded: also, it must be well digged for three foot broad with a grubbing double toothed forke: then must you goe deeper and cast up the earth with a broad spade or shovell, after that the same hath been broken up with a mattocke or yron toole, carying foure foot in the head, so as the ditch may goe two foot directly deepe into the ground. Which done, the ditch is to be cleansed, and the mould to be spread abroad, and not left lying raw in that manner, but to take a kind concoction in the weather. And herein must the labourer proceed and be ruled by measure, and trie his worke thereby: for if the earth be not well delved, it will be soone found out by the uneven balkes or beds. There would be a just measure taken also of the allies that lie betweene the beds. All things being thus prepared, let us come now to the planting of the sets aforesaid, which would be couched either in trenches made of purpose, or in long furrowes; and then the finest and most delicate mould that can be found, is to be cast aloft. But all this prevaileth not in a leane and hungrie ground, unlesse fatter earth bee laid as a pallet underneath. Moreover, this is to be looked unto, that two sets at the least be moulded and laid within the earth together in one range: also they must be so couched, that they leane with their heads close upon the earth next about them: yea, and with one and the same stake the said earth ought to be driven close and fast about them. Over and besides, throughout the whole plot or quarter of this nource-garden, regard is to be had, that between every two sets there be a foot & an halfe one way, to wit, in breadth; and halfe a foot another way, to wit, forward in length. These plants being thus ordered, after they have growne to twelve months, they should bee then discharged of all their burgeons, even to the nethermost knot, unlesse haply it be spared and let alone: for some there be that cut it also. After these, commeth forth the matter of the oillets, and shew themselves; and therewith at the third twelvemonth end the quick-set root and all is removed to another place in the vineyard.
- F**

Besides all this, there is another pretie and wanton devise, more curious ywis than needfull, to plant Vines, and namely, after this manner. Take foure braunches of foure Vines growing together, and beating sundrie kinds of grapes; bind them well and strongly together in that part
where

where they are most ranke and best nourished: being thus bound fast together, let them passe along either through the concavities of an Oxes shanke and maribone, or else an earthen pipe or tunnell made for the nonce. Thus couch them in the ground, and cover them with earth, so as two joints or buds be seene without. By this meanes they enjoy the benefit of moisture, and take root together: and although they be cut from their owne stocke, yet they put out leaves & branches. After this, the pipe or bone aforesaid is broken, that the root may have libertie both to spread and also to gather more strength. And will you see the experience of a pretie secret? you shall have this one plant thus united of foure, to beare diverse and fundrie grapes, according to the bodies or stocks from whence they came. Yet is there one fine cast more to plant a Vine, found out but of late, and this is the manner thereof: Take a Vine-set or cutting, slit it along through the middest, and scrape out the marrow or pith very cleane; then set them together againe wood to wood, as they were before, and bind them fast: but take heed in any case that the buds or oylets without-forth be not hurt, nor rased at all. This done, put the same cutting into the ground, enterre it I say well within earth & dung tempered together. When it begins to spread young branches, cut them off; and oftentimes remember to dig about it, & lay the earth light: and certes, *Columella* holdeth it for certain, and assureth us upon his word, That the grapes coming of such a Vine will have no stones or kernils at all within them. A strange thing and passing wonderfull, that the very set it selfe should live; and that which more is, grow and beare, notwithstanding the pith or marrow is taken quite away.

Furthermore, since we are entred thus farre into this discourse and argument, I cannot passe by, but I must needs speake of such twigs and branches of trees as will knit and grow together even to a tree. For, certaine it is, that if you take five or sixe of the smallest sprigs of Boxe, bind them together, and so pricke them into the ground, they will proove and grow to one entire tree. Howbeit, in old time men observed, that these twigs should be broken off from a Box tree, which never had been cut or disbranched, for otherwise it was thought verily they would never live: but afterwards this was checked by experience, and the contrarie knowne. Thus much as touching the order of Vine-plants, and their nource-garden for store.

It remaineth now to speake of the manner of Vineyards and Vines themselves. Where in the first place, there offer unto us five sorts thereof. For some traile and run along upon the ground spreading every way with their branches: others grow upright and beare up themselves without any staies. Some rest upon props, without any traile or frame at all: others be borne up with forkes and one single raile lying over in a long raunge: and last of all, there bee Vines that run upon trailes and frames laid over crosse-wise with foure courses of railes, in manner of a crosse dormant. The same manner of husbandrie that serveth those Vines which beare upon props without any other frame at all, will agree well ynough to that which standeth of it selfe without any staies. For surely it groweth so, for default onely and want of perches and props. As for the Vine that is led upon a single raunge as it were in one direct line, which they call *Canterius*, it is thought better than the other, for plentie of liquor: for besides that it shaddoweth not it selfe, it hath the furtherance & help of the Sun-shine continually to ripen the grapes: it hath the benefite also of the wind blowing through it, by which meanes the dew will not long stand upon it. Moreover, it lieth more handsome to the hand for the leaves to be plucked away, and for the clods to be broken under it: & in one word, is readiest for all kind of good husbandrie to be done about it. But above all other commodities it hath this, that it is not long in the flower, but bloumeth most kindly. As for the frame aforesaid that is raunged in one line a length, it is made of perches or poles, reeds and canes, cords and ropes, or else lines of haire, as in Spaine and about Brindis. The other kind of frame with railes and spars overthwart, beareth a Vine more free for plentie of wine than the rest, and called this is *Compluviana vitis*, because it resembleth the hollow course of gutter tiles, that in houses receive all raine water and cast it off. For as the crosse dormant in building shutteth off the raine by foure gutters, even so is this Vine led and caried foure waies, upon as may trailes. Of this Vine and the manner of planting it, we will onely speake, for that the same ordering will serve well ynough in every kind besides: marie there be farre more waies to plant this than the rest, but these three especially. The first and the surest is, to set the Vine in a plot well and thoroughly delved: the next to it, is in the furrow: the last of all, in a trench or ditch. As for digging a plot and planting therein, ynough hath been written alreadie.

A

CHAP. XXII.

Of furrowes and trenches wherein vines are planted: also of pruning Vines.

IT sufficeth that the furrow or trench wherein a vine is to be planted, be a spade or shovels big breadth: but ditches would be three foot long every way. Be it furrow, trench, or ditch, wherein a vine is to be replanted, it ought to bee three foot deepe; and therefore no plant thereof should be removed so little, but that it might over and besides stand above ground, and shew two buds at the least in sight. Needfull it is moreover, that the earth be well loosened and made more tender and gentle, by small furrows raunged and trenched in the bottome of the ditch; yea

B

and to be tempered sufficiently with dung. Now if the vineyard lie pendant upon the hanging of the hill, it requireth deeper ditches, and those raised up well with earth and bedded, from the brims and edges on the lower ground. As for such which shall bee made longer, and able to receive two vine-plants growing contrarie one to the other, they shall bee called in Latine, *Alyei*. Above all, the root of the vine ought to stand just in the mids of the hole or ditch; but the head and wood thereof which resteth upon the sound and firme ground, as neare as possible is, must beare directly into the point of the *Æquinoctiall* Sun-rising: and withall, the first props that it leaneth upon, would be of Reeds and Canes.

C

As touching the bounding and limitation of a vineyard, the * principall way which runneth straight East and West, ought to carie eighteene foot in breadth, to the end that two carts may passe easily one by another, when they meet; the other crosse allies, dividing every acre just in the mids, must be ten foot broad: but if the plot or modell of the vineyard will beare it, these * allies also which lie North and South, would be as large full as the aforesaid principall high way. Moreover, this would bee alwaies considered, That vines be planted by the fives; that is to say, that at every fifth perch or pole that shoreth them up, there be a path dividing every raunge and course, and one bed or quarter from another. If the ground bee stiffe and hard, it must of necessitie be twice digged over, and therein quick-sets onely that have taken root, must be replanted: marie in case it be a loose mould, light, and gentle, you may set very cuttings and sions from the stocke, either in furrow or in trench, chuse you whether. But say it be a high ground and upon the hill, better it is to cast it into furrowes overthwart, than to dig it; that by this means the peaches or

D

props may keepe up the ground better, which by occasion of raine water would settle downward. When the weather is disposed to raine, or the ground by nature drie, it is good planting vine-sets or sions at the fall of the lease, unlesse the constitution of the tract and qualitie of a countrey require the contrarie: for a drie and hot soile would be planted in Autumne or the fall of the lease, whereas a moist and cold coast may tarrie, even untill the end of Spring. Let the soile be drie and hard, bootlesse it will be to plant, yea though it were a very quicke-let, root and all. Neither will it doe well to venter the setting of imps cut from the tree, in a drie place, unlesse it be immediatly upon a good ground showre: but in low grounds, where a man may have water at will, there is no daunger at all to set vine braunches, even with leaves on the head; for they will take well enough at any time before the midsummer sunstead, as we may see by experience

E

in Spaine. When you will plant a vine, chuse a faire day; and if possibly you can, let it be when there is no wind stirring abroad; for such a calme season is best: and yet many are of opinion, that Southern winds be good, and they wish for them; which is cleane contrarie unto *Cato* his mind, who expressly excepteth and rejecteth them. If the ground be of a middle temperature, there ought to bee a space of five foot distance betweene every vine: and in case it be a rich and fertile soile, there would be foure foot at least from one to another; but in a leane hungrie peece of light ground, there should be eight foot at the most: for whereas the *Vmbrians* and *Marrians* leave twentie foot void betweene every raunge of vines, they do it for to plough and sow in the place, and therein they have quarters, beds, and ridges, called *Porculera*. If the place where you plant a vineyard be subject to thicke and darke mists, or to a rainie disposition of the weather, vines ought to be set the thinner: but in a drie quarter, it is meet they should bee planted thicke. Moreover, the wit and industrie of man, hath found out meanes to save charges, and in setting a nource-garden with vine-sions to goe a nearer way, with small expence and no losse of ground: for in replanting a vineyard with quicke-sets upon a levell plot, onely digged and laid even, they have with one and the same labour (as it were by the way) replenished the ground be-

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* *Decumans*
Lines* *Cardines*.

tweene every such rooted plants, with vine-cuttings for store, so as the quicksets may grow in his G
 owne place appointed, and the sion or cutting (which another day is to be transplanted) in the
 mean time take root between every course and ranche of the said vine quick-sets, before they be
 readie to take up much ground. Thus within the compasse of one acre, by just proportion a man
 may have about sixteene thousand quicke-sets. This is the difference onely, that such beare not
 fruit so soone by two yeare: so much later are they that be set of sions, than those that were trans-
 planted and remaine still on foot. When a quick-set of a vine is planted in a vineyard, and hath
 growne one yeare, it is usually cut downe close to the earth, so as but one eye or button be left
 above ground, and one shore or stake must be stickt close to it for to rest upon, and dung laid well
 about the root. In like manner ought it to be cut the second yeare. By this meanes it gathereth
 strength inwardly, and maintaineth the same in such wise, as it may be sufficient another day to H
 beare and sustaine the burden both of braunch and bunch, when it shall be charged with them:
 for otherwise, if it be let alone and suffered to make hast for to beare, it would proove to be slender,
 vinewed, leane, and poore: for surely this is the nature of a vine, That shee groweth most wil-
 lingly: in such sort, that unlesse she be kept under, chastised, and bridled in this manner, (her in-
 ordinate appetite is such) she will run her selfe out of heart, and go all to braunch and leafe.

As touching props and shores to support vines, the best (as wee have said) are those of the
 Oke or Olive tree; for default whereof, ye may take good stakes and forkes of Juniper, Cypresse,
 Laburnium, and the Elder. As for those perches that be of other kinds, they ought to be cut and
 renewed every yeare. Howbeit, to lay over a frame for vines to runne upon; the best poles are of I
 Reeds and Canes, for they will continue good five yeares, being bound many of them together.
 When the shorter braunches of a vine are twisted one within another in manner of cording or
 ropes, and strengthened with the wood of vine-cuttings among, thereof arch-woke is made,
 which in Latine they call Funera. Now by the time that a vine hath growne three yeares in the
 vineyard, it putteth forth apace strong braunches, which in time may make vines themselves;
 these mount quickly up to the frame: and then, some good husbands there be, who put out their
 eyes, that is to say, with a cutting-hooke (turning the edge upward) fetch off the eyes budding
 out beneath: thus by pruning, although they seeme to doe hurt and wrong unto them, yet they
 draw them to shoot out the longer by the meanes: for in good faith, the more profitable way it
 is, thus to use and acquaint it with bearing braunches lustily; and far better and easier is it besides
 to cut away these young imps as the vine lieth fast joyned to the frame, untill such time as a man K
 thinke it be strong enough of the wood. Others there are, who in no case would have a vine tou-
 ched or medled withall, the next yeare after that it is removed into the vineyard; nor yet to
 feele the edge of the cutting-hooke, untill it have five yeares over the head; many then they agree
 it should be pruned & guelled of all the wood it hath, save only three burgeons. You shall have
 some againe that will indeed cut them the very next yeare after they be replanted, but so as they
 may win every yeare three or foure joynts; and when they be foure yeares old, and not before,
 they give them libertie to climbe upon the frame. But this (I assure you) is the next way to make
 the vine fructifise slowly and late: besides, it causeth it to seeme scorched and full of knots, yea
 and to grow like a dwarfe or wreckling. The best simply, is to suffer the stocke or mother to be
 strong first, and afterwards let the braunches and young imps hardly, bee as forward and auda- L
 cious as they will. Neither is it safe trusting that vine which is full of cicatrises or skarres (a thing
 that proceedeth of great error and an unskilfull hand;) for surely all such braunches grow of
 hurts or wounds, and spring not one jot from the mother-stocke indeed: for all the while that
 she gathereth strength, her whole vertue remaineth within her; but when she is suffered to grow
 and fructifise, shee goeth throughly to worke, and emploieith her forces full and whole to bring
 forth that, which yeerely she conceived: for Nature produceth nothing by halves nor by peece-
 meale, but is delivered of all at once. Well then, after that a vine is once full grown and strong
 enough, let it presently run upon perches, or bee led in a traile upon a frame; but in case it be
 yet with the weakest, let it be cut againe, and take up her lodging hardly beneath under the very
 frame: for in this point the question is not, what Age, but what Strength it hath? for that is it M
 which must rule all. And verily great folly and rashnesse it were, to put a vine to it, and let her
 have the will to grow ranke, before she be as big full as a mans thumb. The next yeare after that
 it is gotten to the frame, there would be saved and let to grow one or two braunches, according
 to the strength and abilitie of the mother: and let the same the yeare following also be preserved,
 nourished,

A nourished, and permitted to grow on end, unless her feeblenes be against it: But when the third yeare is come, and not afore, be bold to give her the head with two branches more; and never let her goe but with foure at the most. In one word, hold a vine downe as much as you can, never cocker and cherish her, but rather repress her fruitfulness; for of this nature is the vine, Rather than her life, shee would be alwaies bearing; neither taketh shee such pleasure to live long, as to beare much: and therefore the more you take away of her ranke and superfluous wood, the better will she employ her radicall sap and moisture to fructifie and yeeld good store of grapes: yet by her good will she would be ever putting forth branches for new plants, rather than busie in bearing fruit; for well worth she, that fruit will fall and is but transitorie. Thus to her owne undoing and overthrow, while shee thinketh to spread and gaine more ground, shee spends her strength, her selfe and all. Howbeit in this case, the nature of the soile will guide a man and advise him well: In a leane and hungrie ground, although the vine be strong enough, you ought to keepe it downe with cutting, that it may make abode under the head of the traile and frame above; and howsoever she may have some hope that her young branches shall get up to the top (as being at the verie point to mount above it, and so neare as that they reach thereunto) yet let her stay there and proceed no farther: suffer her not (I say) to lay her head thereupon and couch upon the traile, nor wantonly to spread and run on at her ease. In this manner (I say) hold her head in with the bridle, that she may in the end chuse rather to grow big in bodie and strong withall, than to shoot forth branches about her every way farre and neare. The same branch now that is kept short of the frame, ought to have two or three buds to burgen at, and to bring forth more wood in time: and then let it be drawne and trained close unto the traile and tied fast thereto, that it may seeme to beare upon it and be supported thereby, and not to hang loosely thereupon. Being thus bound to the frame, it must likewise be tied anon, three buds or joynts off: for by this means also the wood is reclaimed and repressed from running out in length beyond all measure, and the burgeons in the way between will come thicker & shoot up on heighth, to furnish the husbandman with store of new sets and sions for the next yeare. The very top end in no wise must be tied. Cerresthis proprietie and qualitie hath the vine, That what part soever of it is dejected and driven downward, or els bound and tied fast, the same ordinarily beareth fruit, and principally in that very place where it is bowed and bent in manner of an arch. As for the other parts which be backward and nearer to the old maine stocke, they send out store of new branches indeed, full of wood, but otherwise fruitlesse that yeare; by reason (I suppose verily) of the spirit or vegetative life, and that marow or pith whereof wee spake before, which findeth many stops and lets in the way. Howbeit these new shoots thus putting forth, will yeeld fruit the next yeare. Thus there offer unto us two kinds of vine branches: for that which springeth out of the hard and old wood, and promiseth for that yeare following nothing but sprigs and twigs onely, is called Pampinarium: whereas that which commeth more forward beyond the cut or cicatrice, and beareth shew of grapes, is named Fructuarium. As for another, springing from a yeare-old branch, it is left alwaies for a breeder and kept short under the frame; as also that which they tearme Custos, *i. the Keeper, or Watch:*] A young branch this is, and no longer than it may well carie three buds; which the next yeare is like to beare wood and repaire all, in case the old vine stocke should miscarrie and spend it selfe by carying too great a burden. Also another burgen there is close unto him, bearing out like a knob, of the bignesse of a wert, (called he is Furunculus) who must serve the turne and make supply, if peradventure the foresaid Watch or Keeper faile.

E Moreover, a vine if it bee suffered to beare before the seventh yeare after it was first set of a cutting or sion, decaieith sensibly and soone dieth: neither is it thought good to let the old wood run on still in length upon the frame, as farre as to the fourth forke that underproppeth it, (such old crooked branches some call Dracones, others Iuniculos) to make thereof huge and great trailes of vines tearmed Masculeta. But worst of all it is, to seeme for to propagate or draw in a long traile within the ground vines in a vineyard, when they be growne hard with age. When the vine is five yeares old, a man may boldly wind and twine the very branches, so as out of everie one there be a twig let to grow at libertie: thus he may proceed forward to the next, cutting away the wood as hee goeth that bare before. The surer way evermore is supposed to leave the Watch or Keeper behind; mary hee must be next unto the vine maine bodie, and nearest the root, and no longer than is before set downe. Now in case the branches proove over ranke,

they must be writhed and twisted in manner aforesaid, so as the vine stock may put forth no more than foure boughs at the most, or twaine if so be it rest but upon one chanter or raunge of perches. If you would order a vine so as it may stand alone without any props, at the beginning it would desire and have some supporter or other (it makes no matter what) to rest upon, untill it have learned to stand of it selfe, & rise upright: afterwards, it is to be used in manner of all other vines, when this training is past. This regard would be had in pruning and cutting the twiggs of these vines called Pollices, That a man well guide and ballance his hand, and goe even withall in every part indifferently, for feare least one side be charged with fruit or branch more than the other: where by the way, he must also remember to keepe downe the head, and not suffer it in any wise to runne up in height: for if this kind of vine be above three foot high, it will hang the head downward. As for others, they may wel grow to five foot and upward, so that they passe not in any case the full height of a man. To come now unto the other vines that creepe along and spread over the ground; they be environed all the way as they run, with pretie short hollow cages as it were, to rest and repose their branches in. They have need moreover of certaine trenches or ditches round about to run in, to the end that as the said branches wander too and fro, they should not encounter one another & strive together. And verily in most parts of the world, they use to gather their vintage of vines thus growing low by the ground: as we may see the manner is in Affricke, Ægypt, Syria, throughout all Asia, and in many places of Europe. For the good usage and dressing of these vines, a speciall care would be had to keepe them downe close to the earth; and to fortifie the root, so long and in the same manner, as hath been shewed before in those, that are shored or beare upon frames; with this charge and regard besides, to leave alwaies the short twigs only called Pollices, with three buds apeece, in case the ground be fruitfull; or * five, if it be light and leane. And in one word, better it is without all question, that they be left many, than long. As for those points which wee have delivered heretofore, as touching the nature of the soile, they will be more effectually seene to proove either the goodnesse or the contrarie, in the grapes of this vine, by how much nearer they lie to the ground, than others. Wherein, consideration is to be had of the fundrie sorts of vines, namely, that they be severed apart; and nothing is better, than to sort every one with the tract or region that agreeth best with it, and therein to plant them accordingly: for these mixtures of divers kinds are never good, but alwaies discordant: naught in old wines that come to our table, much worse then you may see sure, in those that be new and not yet tunned up. But if a man will intermingle plants of fundrie vines together, yet in any case those would be joyned together (and none else) which ripen their fruit at one and the same time.

For frames and trailes wherein vines are to run, the better and more battle that the ground of the vineyard is, the plainer & evener that it lyeth, the higher they would be from the ground; likewise if the place be subject to dewes, fogs, and mists, and nothing exposed to the winds: contrariwise, if the ground be leane and drie, hote, and open to the winds, they must be the lower and nearer to the earth. As concerning the rafters, that lie over and reach from prop to prop, they ought to be tied and fastened thereto with as streight and sure a knot as is possible; whereas the vine would be bound unto them, but slacke. Of the fundrie sorts of vines, as also which were to be planted in this or that soile, and what coasts and climats each one of them loveth, we have shewed sufficiently in the particular treatise of their nature, and of the wines that come of them.

Touching all other points of husbandrie that remaine behind, much doubt and divers questions are made: for many there be that feare nor all Summer long to bee digging in the vineyard about vine roots, after every little raine. Others againe forbid to meddle & be lustie therein, in the budding time: for it cannot be avoided, but that the young oilers will either be smitten off cleane, or else galled and bruised one time or other, with their gate that go in and out between: which is the cause, that they would have all kind of cattell to bee kept out that they come not neare, and especially such as beare wooll on their backs; for sheepe of all others soonest rub off the buds as they passe by, with their shag-coats. Moreover, they are of opinion, that all manner of raking and harrowing, is an enemy to vines when they be in their flowre, and putting forth young grapes: and sufficient it is (say they) if a vineyard be delved thrice in one yeere; to wit, first from the Spring Æquinox, to the apparition of the Brood-hen starre; secondly, at the rising of the great Dog: itarre; and thirdly, when the grape beginneth to change colour and turn blacke. Others set out these times after this manner: If the vineyard be old, they would have it once digged

* Quintis, rather
Sims, 6. twaine.

A ged betweene vintage and mid-winter; howsoever some be of this mind, That it sufficeth them to bare the roots onely of the vines and lay dung thereto. The second delving they would have to be from the Ides of Aprill, and six daies before the Ides of May, that is, before they begin to conceive and bud: and thirdly, before they fall to blossome; also when they have done flourishing; and also at the time when the grapes alter their hew. But the more skilfull and expert husbands affirme constantly, That if the ground be overmuch laboured, and digged too often, the grapes will be so tender skinned, that they will burst againe. Moreover, these rules following are to bee observed, That when any vines do require such delving and digging, the labourers ought to go to worke betimes before the heat of the day: marie if the vineyard stand upon a myrie clay, it is not good then either to care or dig it, but rather to wait for the hot season; for the dust that riseth by digging, is very good (by their saying) both to preserve the vine and grapes from the parching sunne, and also to defend them against the dropping mists.

B As for disburgening of vines and cleansing them of their superfluous leaves, all men accord, that it should be done once in the Spring, to wit, after the Ides of May, for the space of eleven daies following; and in any hand before they begin to put forth flower. And how much thereof must be thus dissoiled for the first time? even all that is under the traile or frame, and no more. As for the second, men be not all of one mind; Some would have the leaves to be disbraunched when the vine hath done flowering: others expect, untill the grapes begin to be ripe. But as touching these points, the rules that *Cato* giveth, will resolve us: for wee are now also to shew the manner of cutting and pruning vines. Many men begin this worke immediately after vintage,

C when the weather is warme and temperate: but in deed (by course of Nature) this should never be done before the rising of the *Ægle* starre (as we will more at large declare in the next booke, where we are to treat of the rising and fall of the fixed stars and of their influences;) or rather in truth, when the Westerne wind Favonius beginneth to blow, forasmuch as there might be daunger in going over soone to worke, considering that hast commonly maketh wast. For this is certaine, that if there come an after-winter, and chaunce to bite the vines newly medicined (as it were) or rather fore with this pruning, if it happen (I say) that when every man makes reckoning that winter is gone, it come upon them againe and whiske with his taile, their buds pinched with cold will loose their vigor, their wounds will cleave and make rifts, in such sort, that when the humiditie is distilled and dropped forth, the oylets will be nipt and burnt away with the bitterness of the unseasonable weather: for who knoweth not, that in frost it is ticklish meddling with vines, and that they be in daunger soone to breake and knap asunder? To say therefore a truth, by order of Nature there would not be such hast made. But here is the matter, they that have a large domaine and much lands to looke unto, they that must go through a great deale of worke, cannot will nor chuse but begin betimes, and make this computation and reckoning aforesaid. And in one word, the sooner that vines be pruned (if the time will serve commodiously) the more they run into wood and leaves; and contrariwise, the later you go to worke, the more plentie of grapes they will yeeld: and therefore it is meet and expedient to prune vines that bee poore and feeble, very timely; but such as bee strong and hardie, last of all.

D As for the maner and fashion of the cut, it ought alwaies to be assaunt, like a goats foot, that no drops of raine may settle and rest thereupon, but that every showre may soon shoot off: also that it turne downward to the ground, that it be even and smooth made with a keen and sharpe edged bill or cutting hooke. Furthermore, this heed would be taken, that the cut be just between two buds, for feare of wounding any of the oylets neere unto that part which is cut off: and commonly this is supposed to be black and duskish, and so long as it is so scene, it ought to be cut and cut againe, untill you come to that which is sound and cleere indeed: for never shall yee have out of a faulty and corrupt wood, any thing come forth that will be worth ought. If the vine be so poore and leane that it affordeth no branches meet and sufficient to beare, cut it down to the very ground, for best it is then to fetch new from the root, and to see whether they will be more lively. Over and beside in disburgening and defoiling a vine, you must beware how

E you pluck off those burgeons that are like to beare the grape, or to go with it; for that were the next way to supplant (as it were) the grapes, yea and kill the vine, unlesse it were a new and young plant. Will you then know which are unprofitable and may be spared? even all those are deemed superfluous, which come not directly from the knot or neere the oylet, but grow out of the side: and no marvaile, since that the very branches of grapes which hang in this maner out of

the hard wood, are ſo ſtiſſe and tough alſo that unneth a man may plucke them off with his fingers. but had need of a knife or hooke to cut them away. G

As for the pitching of props into the ground, ſome are of opinion, that the beſt way is to ſet them between two vines: and in deed that were the eaſier way to come about the vines, for to lay their roots bare when time ſervert. Alſo, better is it farre ſo to doe, in a vineyard where the vines run upon one ſingle traile, in caſe the ſaid traile be ſtrong enough, and the vineyard not ſubject to the daunger of winds: but where a vine runneth foure waies, it muſt be relieved with prop and ſtaies as neare as may be, to ſupport the burden; yet ſo, as they bee no hinderance when as men ſhould come about the foot to lay the root bare: and therefore they would be a cubit off, and no more. Moreover, this is a generall rule, that a vine be cleaſed about the root beneath, before that it be pruned above. H

Cato treating generally of all matters concerning vines, writeth thus by way of rule and precept: Let your vine (quoth he) be as high as poſſibly you can: faſten it to the frame decently, but take heed you bind it not too hard. Dreſſe and order it after this maner: After you have cut away the tips and tops thereof, dig round about the rootes, and begin then to care up and plow the vineyard: draw furrows and ridges too and fro throughout. Whiles vines be yong and tender, couch their branches within the ground for propagation, with all ſpeed: as for old vines, gueld them as little as you can, & keep them with a good head; rather if need require, lay them along on the ground, and two yeeres after cut them hard to the root. If it be a young vine, attend untill it be of ſtrength ſufficient; then will it be time and not afore to cut and prune it. If haply the vineyard be bare and naked of vines, and that they grow but thin here and there, make furrowes and trenches between, and therein plant new quickſets: but rid the weeds well from about thoſe trenches, for overſhadowing them: be ever alſo digging and delving. Then, if it be an old vineyard, ſow drage and pulſe for provender: if it be a leane and light ground, ſow nothing that beareth graine or corne. Befure that ye lay about the heads of the ſaid quickſets, dung, chaffe, reſuſe of grapes preſſed, & ſuch like mullocke. When the vine beginneth to put out leaves & looke green, fall to diſburgeoning. So long as the vines be young and tender, tie them ſurely in many places, for feare left the wood or ſtalke therof doe breake aſunder. But when a vine hath gotten head to perch aloft upon a ſingle traile, gently bind the tender burgeons & branches thereof, extend and ſtretch them out, & lay them ſtreight. Now when they ſtand once upright & are able to beare themſelves, marke when the grapes begin to change colour, bind them well & ſure below. I

As for graſſing of vines, there are two ſeaſons of the year meer therefore: the one in the ſpring, the other when the vine doth flower; and this is held for the beſt. If you purpoſe to tranſlate an old ſtocke of a vine into another place, and there to replant it, cut off the firſt thicke arme only; leaving behind two buds and no more. In taking of it up, bee carefull that you doe it with ſuch dexteritie, as that you raſe not nor wound the root. This done, looke how it grew before, ſo ſet it now, either in trench or furrow: couch it well and cloſe, and cover it throughly with good mould. After the ſame maner as is beforeſaid, under-ſet and prop it up, bind it, turne and wind it; but above all, be every while digging about it. As touching the drage called *Ocyonium*, which *Cato* willetth to be ſowed in a vineyard, it is a kind of forage or provender for hortes, which the Latins in old time named *Pabulum*: it commeth up very ſpeedily and groweth faſt, and beſides can well away with ſhadowie places. K

CHAP. XXIII.

Of trees raunged in rewes, for to ſupport Vines.

IT remaineth now in this diſcourſe and treatiſe of Vines, to write of the manner of trees planted of purpoſe for to ſetue their turne. And here I cannot chuſe but call to minde, firſt, how this point of huſbandry hath been judged naught, and altogether condemned by the two *Sarſenna*, both father and ſonne; but contrariwiſe held for good, and highly commended by *Scrofa*: whereas, all three were reputed the moſt ancient writers, and ſkilfulleſt in this kind, next to *Cato*. And yet *Scrofa*, as great a patron as he is thereof, alloweth not this deviſe in any climate els, but only in Italy. Howbeit, gone this hath for currant many yeeres paſt, and time out of mind, That the beſt and moſt dainty wines came of thoſe grapes only which grew upon ſuch Hautins or trees beforeſaid. Yea, and it was thought generally that the higher a vine climbed upon L

A on these trees, the better grapes it bare, and yeelded more commendable wine : and againe, the lower that those trees were, the greater plentie followed both of the one and the other. By which a man may see how materiall it is to raise Vines on high, and have grapes growing in the top of trees. In which regard, choise also is to bee made of trees for this purpose. And here first and formost is presented unto us the Elme : and yet I must except that kind of it which is called Atinia, by reason that it is overmuch charged with boughes and leaves, and therewith too full of shade. Next unto it may bee raunged the blacke Poplar, even for the same cause, because it is not leaved nor branched so thicke. Many men there be that refuse not the Ash, the Fig free, yea and the Olive, so that it stand not over thicke with boughs, and make too much shade. As for the setting, planting, and ordering of these trees in generall, wee have sufficiently and to the full treated heretofore. But now for this speciall and peculiar use that they be put unto, this would be considered, That Vines which are to be wedded to these trees, must in no wise feele the edge of the cutting hooke, before they bee three yeares old full. After which time, this regard ought to bee had, that every second branch or arme thereof is to be spared: and likewise each other yeare and no oftener they are in this wise to bee pruned : and by that they are six yeares old, it is good time to joine them in marriage unto their husbands aforesaid.

In Piemont, Lumbardie, and those parts of Italie beyond the river Po, they use for this purpose to plant their grounds with these trees over and besides those before named, to wit, the Cornell, the Opiet or Wich-hazell, the Teil or Linden, the wild Ash Ornus, the Carpin Carme or Horn-beame, and the Oke. About Venice and all that tract, the Willowes serve the turne & none else, by reason that the whole foken standeth so much upon water.

C As touching the Elme, named in the first place, it must be kept plaine and bare, and the great water-boughs underneath shred untill you come to the middelt of the tree, or thereabout ; and then the rest ought to bee arranged and digested into good order, whereupon the Vine may climbe as it were upon staires or ladder rounds : and lightly none of these trees upward be above twentie foot high. Now in case it be a high ground upon an hill, and drie, they are permitted to braunch and shut out their armes, within eight foot of the ground. But in plaines and low moist grounds, they begin not to forke before they beare twelve foot. Howbeit, let the place be what it will, the flat of the tree from whence the boughs begin to devide, ought to regard the South sun. And the said branches immediatly from their project must rise somewhat upright in manner of fingers, standing forth from the palm of ones hand: among which, the small sprigs must estfoons be barbed (as it were) and shaven cleane off, for feare they doe not over shade the Vine branches.

D As touching the space or distance betweene one tree and another, the ordinarie proportion is, that a front and behind, in case the ground bee crable, it beare fortie foot : but a flanke, or on the side, twentie. Mane, if it be not well tilled and husbanded, so much will serve every way, to wit, twentie foot and no more. Commonly every one of these trees maintaineth tenne Vines at the foot thereof: and a bad husband he is who hath fewer reared about it than three. But by the way, it is no good husbandrie to suffer a tree thus to bee coupled (as it were) in marriage to so many Vines, before that it bee of sufficient strength to entertaine them : for there is nothing so hurtfull, by reason that the Vines will choke and kill them; so quicke they bee of their growth, and so readie to overcharge them.

E As for planting of Vine-sets to the root of trees, needfull it is to make therefore a ditch three foot deep : and they ought to be distant one from the other a full foot, and so much likewise from the tree. This done, there is no question there of the small twigs or shoots what to do with them: neither is there any charge or expence required for digging and delving: for this is the manner of it, and this peculiar gift have these tree-rows, That in the same ground where they grow, the sowing of corne is nothing hurtfull, nay, it is profitable and good for the Vines. Moreover, this commoditie and easement commeth of their height, that they bee able to save themselves: neither is there any such need, as in other Vineyards, to be at the coast of walls, of mounds, pales, or hedges, ne yet of deepe ditches or other fences, to keepe off the violence or injuries of beasts. Of all other toiles before rehearsed, there is no more required but to looke unto onely the getting of quick-sets, or couching sions : all the matter I say lieth herein, and there is no more to do.

But of couching sions and that kind of propagation, there bee two devises. First within paniers or baskets upon the boughs of the tree, and that is the best way, because it is safest from the daunger of cattell. The second is, to bend the Vine, or a branch thereof, close to the foot of her

owne tree, or else about the next unto it: if it stand single and have no Vine joined unto it. As G
 much of this branch or Vine thus couched as is above the ground, must be kept with scraping;
 that is to say, the buds ought ever and anone to be knapt off, that it spring not forth. Within the
 earth there should bee no fewer than foure joints or budding knots buried and entered for to
 take root; in the head without, two onely are left for to grow. [Where, note by the way, that the
 Vine which groweth to the foot of a tree, must be trenched in a ditch foure foot long in all, three
 in breadth, two and an halfe in deapth.] Now, when the sion thus couched, hath lien one yeare,
 the order is to cut it toward the stock to the very pith or marrow, that so by little and little it may
 be inured to fortifie it selfe upon the owne roots, and not to hang and cling alwaies to the mo-
 ther: as for the other end or head thereof, it would bee cut off also so neare the ground, as that
 there be but two onely buds left. By the third yeare it must bee quite cut in two, (where before it H
 was but guedled to the pith) and that which remaineth of it, laid deeper into the ground, for
 feare it should sprout foorth and beare leaves toward that side where it was cut in twaine. This
 done, no sooner is Vintage past, but this new quicke-set, root and all, must bee taken up and re-
 planted.

Of late daies devised was the manner of couching or planting by a trees side a Vine Dragon
 (for so we use to call the old branch of a Vine past all service, which hath done bearing many a
 yeare, and is now growne to be hard.) And verily, they use to make choise of the biggest they can
 find, which when they have cut from the stocke, they scrape and pill the barked three foure parts
 in length, so farre forth as it is to lie within the ground [whereupon they name it in Latine Rafi-
 lis:] when it is thus couched low within a furrow, the rest that is above the earth they reare up I
 against the tree. And it is thought, that there is not so good nor so readie a mean to make a Vine
 grow and beare than this. If it fall out so, that either the Vine be small and weake, or the ground
 it selfe but leane and hungrie, it is an usuall and ordinarie practise to cut and prune it as near the
 ground as possibly may bee, untill such time as it bee well strengthened in the root: as also, great
 regard is had, that it bee not planted when the dew standeth upon it, ne yet when the wind sits
 full in the North. The old Vine stocke it selfe ought to look into the Northeast, provided alwaies
 that the young branches turne Southward. Moreover, new and tender Vines would not be proi-
 ned and cut in haft: but better it is to expect and tarie untill such time as they be strong ynough
 and able to beare the cutting bill: meane while, to gather the young branches together round
 in manner of an houpe or circle. [Where note by the way, That Vines which are erected upon K
 trees, for the most part beare later by one yeare than those in Vineyards that bee perched or run
 on frames.] Some would not have them to be cut at all, before they have raught up to the top of
 the tree. At the first time when you come with the pruning hooke, the head must be cut off at six
 foot from the ground, leaving underneath one little top twig, which must bee forced to beare by
 bending it downward in the head: and in the same, when it is thus pruned, there must bee left
 behind three buds and no more. The branches which burgen out from thence, ought the next
 yeare to be brought up to the lowest armes of the tree, and there seated: and so from yeare to
 yeare, let them climbe up higher to the upper boughs, leaving alwaies upon every loft or scaffold
 as it were where they rested, one branch of the old hard wood, and another young imp or twig,
 for to grow up and climbe as high as it will. Furthermore, as often as a Vine is pruned after-
 wards, those branches or boughes thereof in any wise must be cut away which were bearets L
 the yeare before: and in stead of them, the new after they be first cleansed from all the hairie & cur-
 led tendrils on every side shred off. The ordinarie manner of pruning and dressing of vines here
 about Rome, is to let the tender branches and sprigs enterlace the boughes, inso much, as the
 whole tree is overspread and clad therewith, like as the very same tendrils be also covered all over
 with grapes. But the French fashion is to draw them in a traile along from bough to bough:
 whereas in Lumbardie and along the causay Æmylia [from Plaifance to Rimino] they use to
 traine them upon forkes and poles: for albeit the Atinian Elmes bee planted round about, yet
 the vine comineth not neare their greene boughs. Some there be, who for want of skill and good
 knowledge about vines, hang them by a strong bond under the boughs: but this is to wrong, yea M
 to stifle and strangle them outright: whereas indeed a vine, as it ought to be kept downe with oi-
 sifier twigs, so it must not be tied over streight. For which cause, even they also who otherwise have
 store and plentie ynough even to spare, of Willowes and Oisiers, yet chuse rather to bind vines
 with some more soft and gentle matter, to wit, with a certaine hearbe, which the Sicilians in their
 language,

A language call Ampelodesmos, [*i.* Vine-bind.] But throughout all Greece they tie their Vines with Rushes, Cyperus, or Gladon, Reeke, and sea-grasse. Over and besides, the manner is otherwhiles to untie the Vine, and for certaine daies together to give it libertie for to wander loosely, and to spread it selfe out of order, yea, and to lie at ease along the ground, which all the yeare besides it only beheld from on high: in which repose it seemeth to take no small contentment and refreshing; for like as draught horses, when they be out of their geeres, and hackneis unfaddled, like as Oxen when they have drawne in the yoke, yea, and greyhounds after they have runne in chafe, love to tumble themselves and wallow upon the earth; even so the Vine also, having been long tied up and restrained, liketh well now to stretch out her lims and loines, and such easement and relaxation doth her much good. Nay, the tree it selfe findeth some comfort and joy thereby, in being discharged of that burden which it carried continually as it were upon the shoulders, and seemeth now to take breath and heart againe. And certes, go through the whole course and worke of Nature, there is nothing, but by imitation of day and night, desireth to have some alternative ease and play-daies betweene. And it is by experience found very hurtfull, and therefore not allowed of, to prune and cut Vines presently upon the Vintage or Grape-gathering, whiles they be still wearie and over-travelled with bearing their fruit so lately: ne yet to bind them (thus pruned) in the same place againe, where they were tied the yeare before: for surely Vines do feele the very prints and marks which the bonds made, and no doubt are vexed and put to pain therewith, and the worfe for them.

C The manner of the Gaules in Lumbardie, in training of Vines from tree to tree, is to take two boughs or branches of both sides, and draw them over, in case the stocke Vines that bear them bee fortie foot asunder: but foure, if they are but twentie foot distant. And these meet one with another in the space betweene, and are interlaced, twisted, and tied together: but where they are somewhat weake and feeble, they bee strengthened with Oisier twigs or such like rods here and there by the way, untill they beare out stiffe: and looke where they bee so short that they will not reach out, they are with an hooke stretched and brought to the next tree that standeth without a Vine coupled thereto.

D A vine branch drawne thus along in a traile, they were woont to cut when it had growne two yeares. For in such vine-stockes as by reason of age bee charged with wood, it is the better way to give time and leisure for to grow and fortifie the said branch that is to passe from tree to tree, so as the thicknesse thereof will give leave: yea, and otherwise it is good for the old maine bough to feed still and thrive in pulpe and carnositie, if wee purpose that it should remaine and carie a length with it.

E Yet is there one manner besides of planting & maintaining Vines, of a mean or middle nature betweene couching or entering a branch (by way of propagation,) and drawing them thus in a traile from one to another: namely, to supplant, that is, lay along upon the ground the whole stocke or maine bodie of a Vine; which done, to cleave it with wedges, and so to couch in many furrowes or raies, as many parcels thereof, comming all together from one. Now in case ech one of these branches or armes proceeding from one bodie, bee of it selfe small, weake, and tender, they must bee strengthened with long rods like staves bound unto them round about; neither ought the small sprigs and twigs that spring out of the side, be cut away.

The husbandmen of Novaria rest not contented with a number of these trailed branches, nor with store of boughs and trees to sustaine and beare them, unlesse they be shored & supported also with posts and overthwart railes, about which the young tendrils may creepe and wind. No marvell therefore if their wines bee after a sort rough, hard, and unpleasant: for besides the badnesse of their soile, the manner of their husbandrie is so crooked and untoward.

Our husbandmen moreover here about us (neare unto the citie of Rome) commit the like fault, and find the same defect thereupon, in the Varracine Vines, that bee pruned but once in two yeares: a peece of husbandrie by them practised, not for any good that it dooth unto the Vine, but because the wine thereof is so cheape, that oftener pruning would not quit cost, neither doth the revenue answere the labour and the charges.

F In the territorie of Carfeoli (a champion and plaine countrey about Rome) the peasants take a better order, and hold a middle and temperate course. For their manner is to proine and cut away from the Vine those parts onely that are faultie and rotten, when they begin once to be drie and to wither, leaving all the rest for to beare grapes: and thus discharging it of the superfluous burden

burden that it caried, they hold opinion, that it is not good to wound it in many places : for by this meanes (say they) it will be nourished and come on very well. But by their leave, unlesse the ground be passing rich and fat, Vines thus overcharged with wood, will for want of pruning degenerate into the bastard wild wines called Labruscæ. G

But to returne againe unto our plors planted with Trees and Vines coupled together : such grounds when they be ploughed, require a good deepe stich, although the corne therein sowne need it not. Also it is not the manner to disburgen or deffoile altogether such trees, and thereby a great deale of toile and labour is saved : but when the Vines are a pruning, they would bee disbraunched at once with them, where the boughes grow thickest; and to make a glade onely through, the superfluous branches would bee cut away, which otherwise might contume the nutriment of the grape. As for the cuts and wounds remaining after such pruning and disbraunching, we have already forbidden, that they should stand either against the North or the South. H And I thinke moreover it were very well, that they did not regard the West where the Sun setteth: for such wounds will smart and be long fore, yea, and hardly heale againe, if either extreame cold pinch, or excessive heat parch them.

Furthermore, a Vine hath not the same libertie in a Vineyard that it hath upon a tree : for better meanes there are, and easier it is to hide the said wounds from the weather flanked as they be within those close sides; than to wryth and wrest them to a mans mind too and fro. In lopping and shredding of trees, when the cut standeth open, there would be no hollow places made like cups, for feare that water should stand therein. Last of all, if a Vine bee to climbe trees that are of any great height, there would bee staies and appuies set to it, whereupon it may take hold, and so by little and little arise and mount up aloft. I

CHAP. XXIII.

¶ The manner of keeping and preserving grapes. Also the maladies whereto trees be subject.

IT is holden for a rule, That the best Vine-plants which run upon a frame of railes, ought to be pruned in mid-March about the feast of *Minerva*, called *Quinquatrus*: and if a man would preserve and keepe their grapes, it would bee done in the wane of the Moone. Also, that such Vines as be cut in the change of the Moone will not be subject to the injurie and hurt of any noisome vermine. Although in some other respect, men are of opinion, that they should bee cut in the night, at the full of the Moone, when the signe is in *Leo*, *Scorpio*, *Sagittarius*, and *Taurus*: and generally it is thought good to set them when the Moon is at the full, or at leastwise when she is croissant. Moreover, this is to be noted, that in *Italie* there need not above ten men for to looke unto a Vineyard of a hundred acres. K

And now that I have discoursed at large as touching the manner of planting, grafting, and dressing of trees, I purpose not here to treat againe of Date-trees and *Tretrifolie*, whereof I have already sufficiently written in the *Treatise of straunge and forraine trees*: but for as much as my meaning is to omit nothing, I will proceed forward to decipher those matters which concern principally the nature of trees, and namely, their maladies and imperfections; whereto they also as well as beasts and other living creatures, be subject. And to say a truth, what creature is there under heaven freed therefrom? And yet some say, that wild and savage trees are in no such danger: onely the haile may hurt them in their budding and blouming time. True it is moreover, that scorched they may be otherwhiles with heat, and bitten with cold blacke winds, comming late and out of season: for cold weather surely in due time is kindly and good for them, as hath been said before. But let me not forget my selfe. See wee not many times the cold frost to kill the very Vines? Yes verily; but this is long of the soile and nothing else: for never happeneth this accident but in a cold ground. So as this conclusion holdeth still, That in *Winter* time wee alwaies find frost and cold weather to doe much good: but wee never allow of a cold and wealie ground. Moreover, it is never seene, that the weakest and smallest trees are endangered by frost, L but they are the greatest and tallest that feele the smart. And therefore no marvell if in such, the tops being nipped therewith, seeme first to fade and wither; by reason that the native and radicall moisture being bitten and dilled before, was never able to reach up thither.

Now, concerning the diseases that haunt trees: some there bee that are common unto all, others

A others againe, that extend peculiarly to some certaine kind or other. As for the former sort, generall it is, that no trees are exempt from the worme, the blasting, and the joint-ach. Hereof it commeth, that we see them more feeble and weake in one part or member than in another; as if they did participate the maladies and miseries of mankind, so common are the names of diseases unto them both. For certes, we use to say indifferently, That trees are headlesse, when they be lopt and topt, as well as men who are beheaded: wee tearme their eies to bee enflamed, sendged, and bloud-shotten, when their buds be blasted: & many other infirmities, according to the like proportion. And thereupon it is, that we say they be hungerstarved and pined: and contrariwise, that they be full of crudites and raw undigested humors; namely, when moisture aboundeth in them. Yea, and some of them are said to be grosse and overfat, to wit, all such as bear rosin; when by the means of too much grease (as it were) they begin to putrifie and turne into Torch-wood: yea, and it falleth out, that they die withall, in case the said grease take once to the roots; even as living creatures being overgrowne with fat. Moreover, yee shall see a kind of pestilence light amongst one peculiar kind of trees: like as it fareth sometimes with men in sundrie states and degrees: whereby one while slaves only die of a plague, another while the Commons, and those either artificians in a citie, or peasants and husbandmen of the countrey.

Now as touching the Worme, some trees are more subject unto it than others: and to say a truth, in manner all, more or lesse; and that, the birds know well ynough, for with their bills they will job upon the barke, and by the sound trie whether they be worme-eaten or no. But what say wee to our gluttons and belli-gods in these daies, who make reckoning among their daintie dishes, of worms breeding in trees; and principally of those great fat ones bred in Okes, which wormes they call Cossi, and are esteemed a most delicat meat? These forsooth they feed in mue; and frankethem up like fat-ware, with good corne-meale. But above all others, Peare trees, Apple trees, and Fig trees, are soonest worme-eaten: and if any trees escape, they be such as are of a bitter wood in tast, and odoriferous in smell. Touching those worms that be found in Fig trees, some are engendred of themselves, and of the very wood: others are bred of a bigger vermine called Cerales. Howbeit, all of them (which way soever they come) are shaped in manner of the said Cerales, and make a certaine small noise like the shrill and creaking sound of a little criquet. The Servise tree likewise is haunted and plagued with little red and hairie wormes, which in the end doe kill it. The Medlar trees also when they be old, are subject to this maladie.

D As for the misliking of trees [called Sideratio] wherby they consume, wither away, and crumble to powder; it is a thing caused onely of the weather and influence of some Planet. And therefore in this ranke are to be raunged Haile, Blasting with some untoward winds, and Frosts which bite and nip them to the heart. And verily it falleth out, that in a mild and warme Spring, when plants bee too forward and put forth their soft buds and tender sprouts over-soone, the blacke wind taketh them on a suddaine, and a certaine rime setteth thereupon, sendging and burning the oilets of the Burgeons, whiles they be full of a milkie sap: which accident, if it light in blooming time upon the blossome, is called properly Carbunculus [i. a Mieldeaw.] As for the Frost at such a time, it is far worse than the blasting aforesaid: for when it falleth upon any trees or plants, it there resteth and remaineth still, it congealeth all into an yce, and no puffe of wind there is to remove and dislodge it: for why? such frosts commonly are not but in time of a still, cleare, and calme aire. Touching that manner of Blasting or misliking called Sideratio, as if they were smitten with the maligne aspect of some planet, this daunger chaunceth peculiarly by some drie and hote winds, which are busse commonly about the rising of the Dog star, at what time we shall see young trees and newly graffed, to die outright, especially Figge trees and Vines. The Olive, over and besides the worme (whereto it is subject as well as the Figge tree) hath another greefe and so- rance called in Latin Clavus, Fungus or Patella [i. a Knur, Puffe, Meazil or Blister] chuse you whether: and nothing is it but a very sendge or burne by the Sunne.

Furthermore, *Cato* saith, That the red mosse is hurtfull unto trees. Oftentimes also we find that as well Olives as Vines, take harme by overmuch fertilitie and fruitfulness. As for scab and skurfe, what tree is cleare of it? The running mange or tetter, is a mischeefe peculiar unto the Fig tree: as also, to breed certaine Hoddy-dods or shell-Snailes sticking hard thereto and eating it. And yet these maladies are not indifferent and alike in all parts of the tree. For thus you must thinke, that some diseases are appropriate to one place more than another. For like as men are troubled with the Arthriticall torments, or the Gout; even so be trees: yea, & after two sorts as well as they.

they: for either doth the disease take the way to the feet, that is to say, to the roots, and there breaketh out and sheweth it selfe; or els it runneth to the exterioriour joynts and fingers, to wit, the small branches and top twigs, which be farthest remote from the maine bodie of the tree. Hereupon then begin they to drie, wither, and wax blacke: and verily the Greekes have proper names and termes respective to the one infirmitie and the other, which we in Latine want. Howbeit we are in some sort able to expresse the Symptomes following thereupon; and namely, when we say, first, That a tree is ill at ease, sicke, and in paine every where: anon, that it falls away, looks ill, poore, and leane, when we see the fresh greene hew gone, and the braunches fraile and brittle: last of all, that it is in a wast, consumption, or fever hecticke, and dieth sensibly, to wit, when it receiveth no nourishment (or not sufficient) to reach unto all parts, and furnish them accordingly: and tame Figge trees of all others, are most subject hereunto; as for the wild, they be exempt wholly from all these inconveniences hitherto named. G
H

Now as touching the scab or scurfe incident unto trees, it commeth of certaine foggie mists and clammy dewes, which light softly and leisurely after the rising of the Brood-hen starre Vergilia: for if they be thin and subtile, they drench and wash the trees well, and do not infect them with the scab: howbeit in case they fall downe right, or that there be an over great glut of showers and raine, the Fig tree taketh harme another way, namely, by foking of too much moisture into the root.

Vines, over and above the Worme and the Blast, have a disease proper unto themselves, called Articulatio, which is a certain barrenesse of theirs when they leese their spring in the verie joynt. And this may come upon three causes: the first, when by unseasonable and ill weather, as frost, heat, haile, or other forcible impressions of the aire, they forgoe their young sprouts: the second, (as *Theophrastus* hath well noted) if in pruning of them, the cut stand upward and open to the weather: the third, when they be hurt by those that have the dressing of them, for want of skill and taking good heed: for all these wrongs and inconveniences they feele in their joynts or knots. A severall kind of blasting or mortification there is besides in vines, after they have done blooming, which is called Roratio; namely, when either the grapes doe fall off, or before they come to their full growth, be baked (as it were) into a thicke and hard callositie. It happeneth also that they be otherwhiles sicke, in case after their pruning, their tender oilets or buds be either bitten with the frost, or singed with some blast. The same befallerh likewise unto them upon some untimely or unseasonable heat: for surely in all things, a certaine measure and moderate temperature doth well, to bring them to their perfection. To say nothing of the wrong that is done unto them by the vine-masters themselves and husbandmen as they dresse and trim them, namely, when they bind them over-streight, as hath been said before; or when the labourer that diggeth about them, chaunceth to doe them one shrewd turne or other by some crooked crosse blow; or else when the ploughman at unawares doth loosen the root, or glance upon it with the share, and so disbarke the bodie of it: finally, they have injurie done unto them, in case the pruning-hooke be over blunt, and so give them a bruise. In regard of all these causes, they are lesse able to beare either cold or heat; for every outward injurie is readie to pierce their fresh galls, and a scald head is soone broken. But the tendereft and weakeft of all others, be the Apple trees, and namely, the hastie kind that bringeth sweet Iennitings. Howbeit some trees there be, which upon such feebleness and hurt done unto them, become barren only, & die not; namely, the Pine and Date tree: for if a man fetch off their heads, you shall see them faile in bearing fruit, but this hurt will not kill them quite. I
K
L

Moreover, it falleth out otherwhiles, that the Apples onely or other such fruits, as they hang, are diseased, when as the tree aileth nothing; to wit, if in due time they wanted raine, warmth, or winds that were needfull; or contrariwise, if they had too much of every one: for by such means they either fall from the tree of themselves, or els they are the worse for it, if they proove worth ought at all.

The greatest displeasure that can happen to Vine or Olive tree, is, when in their very blooming they be pelted with violent showers of raine; for, together with the blossome, downe goeth the fruit of them both. From the same cause, proceed the cankerwormes or caterpillers (a most daungerous and hurtfull kind of vermine to trees) which will eat out the greene bud, knot and all. Others there be that will devour the blossome and leafe of Olives also, as in *Miletum*: and thus having consumed all the greene leaves, leave the trees bare, naked, and ill-favoured to the eye, M

A eye. These wormes doe breed in moist and warme weather, and specially if there be thicke and foggie mists. Of the same vermine, there is another engendred, namely, if there ensue upon the former wet season, hotter gleames of the sunne more than ordinarie, which burne the foresaid wormes, and therefore change them into other vermine. Moreover, there is a fault or imperfection besides, wherto Olives and Vines especially are subject, and this they call in Latine *Ara-neus*, [*i.* the Spider] when cobwebs (as it were) doe enfold and wrap their fruit, keeping them from growing, and so in time killing them. Over and besides, there bee certaine winds which finde and burne Olives and grapes principally, yea and all sorts of fruits whatsoever. In some yeares also ye shall see all fruits worm-eaten, and especially Apples, Peares, Medlars, and Pomegranats, without any such hurt and offence to the trees that beare them. As for Olives, the wor-me sometimes doth them harme, otherwhiles good: for if the wor-me bee engendred and formed before it take the Olive, it consumeth and spoileth the fruit; but in case they breed within the kernel, it causeth the Olive to thrive the better, by eating the said kernell that drew away and sucked the humour which nourished it. The raine that falleth after the rising of the starre *Arcturus*, hindreth the generation of wormes, and preserveth fruits from beeing worm-eaten: and yet if the wind sit Southward in that time when it so raineth, such raines will breed wormes in Olives especially, called *Druxæ*; which beginning but then to ripen, are most readie to fall from the tree. And verily those trees which grow in waterie places or neare rivers, are most subject to have worme-eaten fruit, which although it fall not so soone, yet it is as loathsome every way.

C Over and besides, there is a certaine kind of flie resembling the Gnat, which annoieth some trees and their fruits, and namely, Mast and Figs: and it seemeth that this flie is engendred of a certaine sweet humour that lyeth under their barks. Thus much as touching all diseases to speake of, that trouble trees,

As for the impressions of the Aire at certaine seasons, as also of other accidents occasioned by the climat, they are not properly to be called Maladies, because they kill trees sodainly: as namely, when a tree is blasted outright, or all at once doth wither and drie away: like as when some puffe of an untoward wind peculiar unto any region, doth sucke them: such as in *Apulia* they call* *Arabulus*, and in *Eubœa* named *Olympias*: For if this wind chaunce to blow in mid-winter, it biteh, burneth, and drieth up trees with such cold blasts, as afterwards no heat of the Sunne is able to recover againe. In this sort likewise, all trees growing in vallies or standing

D along rivers sides, be endangered: and above all others, Vines, Olives, and Figge trees. This death that they thus take, is soone after discovered and seene in the budding time when trees begin to put fourth, howsoever it be later ere the Olive shew it. Howbeit, a good signe it is in them all of their recoverie, when they loose their leaves: for you shall see the leaves tarie on in many of them, and when you thinke they are past the worst, sodainly die. Otherwhiles also you shall have the leaves to fade and seeme drie, yet afterwards the same trees to revive againe, and become greene. Furthermore, in the Northerly regions, as in *Pontus* and *Phrygia*, some trees there are that be ordinarily frozen to death; namely, when the frost and yce continueth after mid-winter fortie daies. And not onely there, but also in other countries, if immediatly after that trees have put fourth their fruit, there follow a hard frost, they will die upon it, although the frost last not many daies.

E In a second ranke of causes that may kill trees, are to be raunged the injuries and wrongs that come by mans hand. Pitch, oyle, and greafe, are very enemies and hurtfull to them all, but especially to young trees. Againe, if trees be barked round about, they will die all, unlesse it be the *Corke* tree; for it will thrive and prosper the better, if it bee in that wise discharged of the outward barke; for growing as it doth over thicke, it claspeth and clingeth the tree so hard, that it choketh and strangleteth it againe. Neither doth the tree *Adrachne* find any hurt or offence by disbarking, unlesse the very wood be cut also together with it. As for *Cherrie* trees, *Lindens*, and *Vines*, it is ordinarie with them to cast their barke in some sort, and take no harme thereby; but it is not the vitall and lively inner barke in deed which is next unto the bodie, but that onely which by comming of another underneath fresh and young, is driven forth and thrust out.

F Some trees there be, which naturally have their barke full of chaps and rifts, as the *Planes* for example. As for the *Line* or *Linden* tree, if it chaunce to leefe the barke, it will come in manner whole and entire againe. In such therefore the manner is, by way of cure to close up againe with clay and dung, the naked and bare place, and so to bring it to a cicatrize. And, I at-

* *curfistiu*
Arabulus cala-
 minatus est
 pestem inferens.

sure you, this practise sometimes speeds well, and doth the deed; provided alwaies, that the naked place were not surpris'd before the cure, with extremitie either of coid or heat. Certaine it is, that by this meanes both kinds of the Oke, as well the Robur as the Quercus, live the longer, and die nothing so soone as otherwise they would. And herein the time of the yeere ought to be considered, when a tree is thus pilled and disbarked: for in case that a man pill the barke of the Firre or Pine tree, during those moneths wherein the sunne passeth through the signes of Taurus or Gemini, which is the very season of their budding, there is no way but one with them, for presently they die: but if this wrong should befall them in winter, they would abide it the better and longer live, than beeing so misused either in Aprill or May. The same is the case of the mast Holme, the wild Robur also, and the common Oke. Howbeit, take this note by the way, that if the void place where the tree hath ben barked round about, be but narrow, so as the brims of the barke remaining be not farre asunder, the trees aforesaid will take no harme at all thereby. Many in the tenderer sort, and such as a man may say are but of a weake complexion, and growing besides in a leane and hungrie ground, if the barke be taken away but of one side and no more, it is enough to kill them.

The like may be said of the topping or beheading the Cypresse, the Pitch tree, and the Cedar: for let these have their heads either cut off with an axe, or burnt by fire, they will die, there is no remedie. As much also is to be said, when beasts doe brouse and eat them. As for the Olive tree, if a Goat chauce but to lick thereof, it will thereupon proove barraine and beare no more Olives; so saith *Varro*, as wee have noted heretofore. But as some trees upon the like injurie done unto them, will die, so others againe will be but the worse for it; and such are the Almond trees: for where before they did beare sweet Almonds, they will ever after bring bitter. Moreover, you shall have some trees, that will thrive and doe the better after this hard dealing, and namely, a kind of Peare tree called *Plucis*, in the Iland *Chios*: for you have heard by me already, which trees they be that lopping and shredding is good for.

Most trees, and in manner all (except the Vine, Apple tree, Fig tree, and Pomegranat tree) will die, if their stocke or bodie be cloven: and some be so tender, that upon every little wound or race that is given them, yee shall see them to die: howbeit, the Figge tree, and generally all such trees as breed Rosin, desie all such wrongs and injuries, and will abide any wound or bruse whatsoever.

That trees should die when their roots are cut away, it is no marveile: and yet many there be of them, that will live and prosper well nevertheless, in case they be not all cut off, nor the greatest master roots, ne yet any of the heart or vitall roots among the rest.

Moreover, it is often seene, that trees kill one another when they grow too thicke; and that, either by overshaddowing, or else by robbing one another of their food and nourishment. The Ivie also, that with clipping and clasping bindeth trees too hard, hasteneth their death. Mistle likewise doth them no good; no more than the *Cytisus*, or the herb *Auro*, which the Greekes name *Alimus*, growing about them. The nature of some plants is, not to kill and destroy trees out of hand, but to hurt and offend them onely, either with their smell, or els with the mixture and intermingling of their owne juice with their sap. Thus the Radish and the Lawrell doe harme to the Vine if they grow neare unto it: for surely the Vine is thought to have the sense of smelling, and wonderfully to sent any odours: and therefore it is observed in her by experience, That if shee be neare unto Radish or Lawrell, shee will turne away and withdraw her selfe backward from them, as if shee could not abide their strong breath, but vterly abhorred it as her very enemy. And upon the observation of this secret in Nature, *Androcydes* the Physician devised a medicine against drunkenesse, and prescribed his patients to eat Radish if they would not be overcome with wine. Neither can the Vine away with Coleworts or the Cabbage, nay it hateth generally all Wwoorts or pot-herbs: it abhorreth also the Hazell and Filberd tree; in such sort, as a man shall sensibly perceive it to looke heavily and mislike, if those plants aforesaid grow not farther off from it. And now to conclude and knit up this discourse, would you kill a Vine out of hand? lay to the root thereof nitre or salt-perre, and alumne, drench it with hote sea-water: or doe but apply unto it Beane cods, or the shales or huskes of *...*; pulse Eivile, and you shall soone see the operation and effect of a most ranke and deadly poison.

CHAP. XXV.

Of many and sundrie prodigies or straunge tokens and accidents about trees.
 Also of an Olive plot, which in times past was transported all
 and whole from one side of an high port-
 way to another.

IN this treatise of the faults and imperfections incident to trees, me thinks I should doe well to say somewhat of the supernaturall occurrences in them observed: for we have knowne some of them to grow up and prosper without any leaves at all. And as there have been vines and

B Pomegranats seene to beare fruit, springing immediatly from the trunk, and not from branch or bough; so there have been vines charged with grapes, and not clad with leaves: and Olivés likewise had their berries hanging upon them whole and found, notwithstanding all their leaves were shed and gone.

Moreover, straunge wonders and miracles have happened about trees, by meere chance and fortune: for there was an Olive once, which beeing burnt to the very stump, revived and came againe: and in Bœotia, certaine Fig trees, notwithstanding they were eaten and gnawne most piteously with Locusts, yet budded anew and put forth a fresh spring. Also it hath been marked, that trees have chaunged their colour, from blacke to white. And yet this is not alwaies a monstrous thing beyond naturall reason, and specially in such as come of seed, as we may observe in

C the Aspe, which estfoons turneth to be a Poplar. Some are of opinion, that the Servise tree, if it be transplanted and come into a hotter ground than is agreeable to the nature thereof, will leave bearing and be barrain. But it is taken for no lesse than a monster out of kind, that sweet Apples and such like fruits should proove sowre; or sowre fruit turne to be sweet: as also that a wild Fig tree should become tame, or contrariwise. And it is counted an unluckie signe, if any tree change from the better to the worse; to wit, if a gentle garden Olive degenerate into the wild and savage: if a vine that was wont to beare white grapes, have now black upon it: and so likewise if a Fig tree which used to have white Figs, chaunce afterwards to beare blacke. And here by the way, I can not forget the straunge accident that befell in Laodicea, where (upon the arrivall of *K. Xerxes*) a Plane tree was turned into an Olive. But if any man be desirous to know more of these & such

D like miracles, forasmuch as I love not to run on still and make no end, I referre him over to *Aristander* a Greeke writer, who hath compiled a whole volume and stuffed it full of such like wonders: let him have recourse also to *C. Epidius* a countreyman of ours, whose commentaries are full of such stuffe; where he shall find also, that trees sometimes spake:

A little before the civill warre brake out betweene *Iulius Caesar* and *Pompey* the Great, there was reported an ominous and fearefull sight presaging no good, from out of the territorie of Cumes, namely, That a great tree there sunke downe into the earth so deepe, that a very little of the top-boughs was to be seene. Hereupon were the propheticall bookes of *Sibylla* perused, wherein it was found that this prodigie portended some great carnage of men; and that the nearer that this slaughter & execution should be to Rome, the greater should the bloudshed be.

E A prodigious signe and wonder it is reputed also, when trees seeme to grow in places where they were not wont to be, and which are not agreeable to their natures; as namely, upon the chapters of pillars, the heads of statues, or upon altars: like as to see one tree of a divers and contrarie kind growing upon the top of another; as it befell about the cittie Cyzicum hard before the streight siege that was laid unto it [by *Mitridates*] both by sea and land, where a Fig tree was seene to grow upon a Lawrell. Likewise at Tralleis, about the time of the foresaid civill warre, a Date tree grew out of the base or foot of a colunne that *Caesar* Dictatour caused there to be erected. Semblably at Rome also, twise during the warre betweene the Romans and king *Perseus*, there was a Date tree knowne to grow * upon the lanterne or top of the Capitoll temple; foreshewing those victories and triumphs which afterwards ensued, to the great honour of the people of Rome. And when this was by stormes and tempests overthrowne and laid along, there sprung up of it selfe in the very same place, a Figtree, at what time as *M. Messala* and *Caius Cassius* the two Censors, held their Quinquennall solemne sacrifices for the assailing and purging of the citie of Rome: from which time *Piso* (a renowned Historiographer and writer of good credit) hath noted, that the Romanes were given over to voluptuousnesse and sensualitie,

* or as some read, the head of *Iupiter* within the Capitoll.

and that ever since all chastitie and honest life hath been exiled, But above all the prodigies that were ever seene or heard, there is one that passeth, and the same happened in our age, about the very time that *Nero* the Emperour came to his unhappie end and fall: For in the Marrucine territorie there was an Olive garden belonging to *Vesivus Marcellus*, a right worshipfull knight of Rome, which of it selfe remooved all and whole as it stood over the broad high way, to a place where lay tillage or erable ground: and the corne lands by way of exchange, crossed over the said causey againe, and were found in lieu of the Olive plot or hortyard aforesaid.

CHAP. XXVI.

§ The remedies for the maladies and diseases of Trees.

NOW that I have declared the diseases of trees, meet it is that I should set downe the cure and remedies thereto. Where, this one thing would be first noted, that of Remedies, some be common to all trees, others appropriate to certaine. Common be these following, To bare and cleanse the roots, to hill and banke them again; that is to say, to give aire unto the roots, and let the wind into them: and contrariwise to cover them, & keep both wind and weather from them: to water them, or to derive and divert water from them: to refresh their roots with the fat liquor of dung: to discharge them of their burden, by pruning their superfluous branches. *Item* To give their humors issue, and as it were by way of Phlebotomie to let them blood: and to skice and scrape their barke round about, in manner of scarification. To take downe their strength and keepe them under, that they be not too lustie and proud. Also, if the cold hath caught their buds or burgeons, and therby caused them to looke bunt, rough, and unpleasant; to slicke, polish and smoothe them againe with the pumish stone. These verily bee the divers remedies to cure trees: howbeit, used they must bee with great discretion: for that which is very good for one, is not so good for another: and some trees require this course and others that, to bee taken with them. As for example, the Cypresse tree cannot abide either to be dunged or watered, it hateth all digging and delving about it, it may not away with cutting and pruning, it is the worse for all good Physicke, nay, all remedies to others, are mischeefes to it; and in one word, goe about to medicine it, you kill it. All Vines, and Pomgranat trees especially, love a life river sides, and desire to be watered: for thereby will they thrive and prosper. The Fig tree also it selfe is nourished and fed in waterie grounds: but the fruit that it beareth, is the poorer by that meanes. Almond trees if they be plied with digging, will either not bloume at all, or else shed their flowers before due time. Neither must any yong plants or trees, newly grafted, be digged about their roots, before they have gathered sufficient strength, and begin to beare fruit. Most trees are willing inough to be disburdened of their superfluous and over-ranke branches, like as we men can spare our nailes to be pared, and bush of haire to be cut when they be overgrowne. As for old trees, they would bee cut down hard to the ground, for commonly they rise againe of some shoot springing from the root: and yet not all of them. Regard therefore must be had, that none be so used but such (as wee have noted before,) as are able of nature to abide it. For trees to be watered at the roots in the heat of summer, it is good, but in winter it is as bad. In the fall of the leafe it may be holesome, it may also be hurtfull, and therefore the nature of the soile would be considered: for the grape-gatherer in Spaine, meeteth with a good Vintage, notwithstanding the Vines stand in a marish and fennie ground; howbeit, in most parts of the world besides, it is thought good husbandrie to draine away from their roots the very raine water that falleth from above, in Autumne. About the rising of the Dogge-star, trees desire most of all to be well watered: and yet they would not have too much thereof, even in that time; for in case their rootes bee over-drenched and drowned therewith, they will catch harme. Herein also the age of trees is to bee respected, which in this case prescribeth what is meet and sufficient: for young trees bee lesse thirstie than others. Also, custome is a great matter. For such as have beene used unto watering, must not change their old woont, but they require most of all others to be used so still. Contrariwise, those trees that grow upon drie grounds naturally, desire no more moisture than that which is needfull. In the territorie about Sulmo, in Italie, and namely, within the liberties of Fabianum, the Vines that beare the harder and sower grapes, must of necessitie bee watered: and no marvaile, for the verie lands and corne-fields use to have water let in unto them. And here a wonderfull thing is to be observed, This water cherisheth the corne, but killeth all the hurtfull grasse among: and the

A the river overflowing the lands, is as good as a weeding. In the same countrey the manner is in midwinter to open a sluice or draw up their flood-gates, for to overflow their Vine roots with the river: and so much the rather, if either it be an hard frost, or snow lie upon the ground: And why so? because the pinching cold should not burne them: and this they call there by the name of Tepidare, [*i. to give them a kindly warmth as in a stouue:*] see the memorable nature of this onely river, to be warme in winter; and yet the same in summer is so cold, that hardly a man can endure his hand in it.

CHAP. XXVII.

Of caprification or scarifying trees: also the manner of dunging them.

Touching the remedies for blasting as well by heat as cold, I will treat in the book next following. Meane while I cannot omit one manner of cure by way of Scarification. For when the barke is poore and leane, by reason of some disease or misliking, so as it clengeth together, pressing and binding the quick wood overmuch, whereby the tree is as it were hide-bound, they use to slit the same along with a very sharpe cutting hooke, guiding and gaging the edge thereof with both hands, that it goe not over-deepe: and so by these incisions they doe open it, and as it were losen and enlarge the skin. Now, when this feat is wrought, the onely signe that it is well done and good for the tree, is this, if the incisions in tract of time appeare wide, and the void place incarnate againe and fill up with a kind of callous substance, compounded of the sap and wood together growing betweene. Whereby it appeareth, that in many cases the cure of mens maladies and the diseases of trees is very like: for that even their bones also use to be trepanized and bored through as well as ours. Also for to make sweet Almonds of bitter, first the tree must bee digged round about, and then boared through with an augoer toward the root or butt end, whereby the waterish humor that runneth downward, may issue forth and passe away. Moreover, if a man would discharge Elmes of their superfluous moisture, they must be pierced with a wimble, a little above the ground, as far as to the very heart or pith; if either they bee old, or be perceived to receive overmuch nutriment. In like manner the same excessive humour is let out of Figge trees by the meanes of certaine light slits or gashes made in the barke, a slant or byas, in case it seeme to swell and bee over-streight: and by this devise they prevent the falling of their fruit.

Generally, what trees soever bearing Apples or such like soft fruit without, if they chauce at any time to prove barren, that is to say, to put forth leafe onely without any fruit; the use is, first to make a cleft in the root; then, to put a stone therein, that the edges meet not and rejoin again; and so they become fruitfull. The same is practised in Almond trees also, but in steed of the stone there must a wedge of Okewood be driven in. As for Pyrries and Medlar trees, those wedges must be made of Pine Torch-wood. Moreover, if either Vines or Figge trees, be over ranke of wood, it is very good to cut and skice their roots round about, and when they bee thus served, to cover with ashes the said incisions: but then they must be close covered with ashes and earth aloft. If yee would have trees beare Figges at the latter end of the yeare, plucke off the first greene Figges so soone as they bee somewhat bigger than Beanes: for under them there will other come up in the place, and be later ere they waxe ripe. The same Fig-trees when they begin to spring leafe and looke greene, if the top-twigs of every bough be cut off, become the stronger and more fruitfull by it. For as touching the ripening of Figges by Caprification, true it is, that there bee certaine flies like gnats engender in greene Figs, which are the occasion thereof: for when they are flown out, there are no graines or seeds found within: whereby it is evident, that they bee turned into those flies. And when they doe flie forth, so hastie they are to be gone, that many of them as they breake out, leave either a foot or a wing behind them. Besides, another kind there is of gnats, which they call Centinæ, for slouth and shrewdnesse like in all the world to Drone-bees, so mischeevous they be to the good flies or gnats indeed, that cause the Figs to ripen: for, them they kill, and die themselves when they have done. Moreover, there bee certaine wormes like mothes, that ordinarily doe much hurt to the graines or seeds within Figs, and eat them quite: The onely remedie against this vermine, is to take a twig or impe of the Italian Lentiske tree, and to set or couch it with the wrong or top-end downward, in the very same trench where the Fig tree was planted. For to have Fig trees beare most plentifully, take ruddle or red-earth tempered well with the lees or grounds of oile, after that the same is mixed with dung, poure it to the roots of the

trees when they begin to put forth leaves. Among wild Fig trees, the best are the black and those that grow in stonic grounds: for their Figges are fullest of cornes or graines within. And as for caprification, it would be practised after raine. And take this for a generall rule, That yee beware in any hand in curing of trees, least yee use a mischeefe for a remedie, a thing that commonly happeneth by over many medicines, or the same not applied in due season. For as it is very good for trees, to lop and cut off their boughs where they grow too thicke: so to be hacking and mangling of them every yeare, hurteth them as much. As for the Vine, it requireth pruning once a yeare: but the Myrtle trees, Pomgranate, and Olive trees, every two yeares; because they will quickly spring againe and shoot forth branches thicke. Other trees would not bee lopped so often. Neither is it good to cut or prune any whatsoever it be, at the fall of the leafe. Nay, they are not so much as to bee scraped, but in the pruning time, that is, in the Spring. All wounding of trees goeth to the very heart, and hurt the quicke, unlesse it be of those parts that are superfluous.

As great consideration there would be had in the manner of mucking them. No doubt, they love dung well: but carefull heed would be taken first, that none bee laid to their roots in the hottest season of the yeare. *Item*, That it be not greene, but throughly rotten: lastly, that it bee not over ranke nor stronger than is needfull. Swines dung burnes the roots of Vines, unlesse it bee five yeares old, or the Vines stand in some place where water is at commaundement, for to coole the excessive heat thereof. Also the filth of Tanners ooze and Carriers scrapings doe the like, if they be not well delaid with water. Likewise it must not be laid too thicke. The ordinarie proportion is thought to be for every tenne foot square, three Modij of dung. But herein no certaintie can be set downe: for the nature of the soile must rule all. With Swines and Pigeons dung, they use to foulde the cuts and wounds that are given to trees. In case the Pomgranates grow to bee tart and soure, the manner is to dig about the root and lay it bare, and then to put Hogs dung thereto: for that yeare the Pomgranates will be full of a wine juice; and the next yeare following prove sweet. Some good husbandmen there be, that thinke it meet and requisite foure times a yeare to water their roots with mans urine and shere water together, and upon every one they bestow a whole Amphore. Or else to bedeaw and sprinckle the top-braunches of the Pomgranat trees with wine, wherein Laser hath beene steeped. When the Pomgranate doth cleave and open upon the tree, it is good to wreath the steale thereof. If Figges doe the like, there would bee oile lees cast upon them. Other trees when they are amisse or doe mislike, ought to be drenched with wine lees: and Lupines if they bee set about their roots, will helpe them. The water also or decoction wherein Lupines were sodden, poured about the roots of Apple trees or such like, dooth them much good. If it happen to thunder about the feast Vulcanalia, Figges will fall from the tree. The remedie thereof is to strew the plots before with Barley straw. Would you have hastie Cherries? Lay lime to the roots of the tree, it will cause them to ripen their fruit speedily. Of all fruits these hastie Cheries would bee plucked and gathered as they ripen, to the end that those which be left behind, may thrive and grow big and faire.

CHAP. XXVIII.

¶ Many and sundrie medicines serving for trees: to wit, remedies against venomous vermine and Pismires, likewise against all hurtfull beasts.

Some trees there bee which are the better for wrong and injurie done unto them: yea, and if they be pinched or bitten, they shoot up the rather, as Date trees and the Lentisks; for even the very salt water nourisheth them. And true it is, that ashes hath the like nature and vertue that salt, howbeit, more mild and gentle. Hereupon it commeth also, that Fig trees use to bee strewed therewith, yea, and to be wet with the juice of Rue, to the end, that neither their fruit should prove worme-eaten, nor their roots putrifie and rot. Moreover, if Vines bee too full of moisture, and apt to bleed overmuch, it is an ordinarie thing to poure salt water to their roots. Also, in case their grapes be apt to fall, folke use to take ashes and besprinckle them with vinegre, and so to besinare the roots therewith: or else with red Orpiment, in case the grapes be given to putrification. Say that Vines be barren and will not beare grapes, their roots ought to bee well drenched and dawbed with sharpe vinegre and ashes incorporate together. But what if a Vine bring not her fruit to full maturitie, before it begin to waxe drie and to wither? the superfluous wood ought to bee cut away about the root, and the cuts together with the small strings or beard of the root to be

A bewet and foked in sharpe vinegre and stale chamber-lee, and then they should bee well covered and stopped with a kind of mortar made therewith, and often digged about. As for Olives, if they make shew of small encrease, their roots must be bared and laid open to the cold in winter; for by this manner of chastisement they will amend and doe far better.

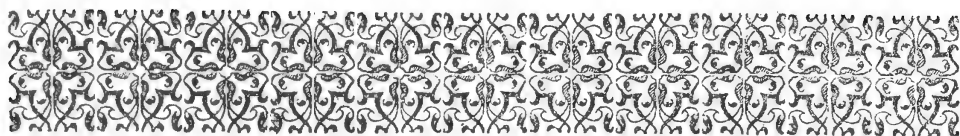
In all these remedies, proceed wee must according to the course of the yeare: for sometime the season requireth, that the meanes should be sooner used, and otherwhiles later. Some plants there be that fire is good for, and namely, canes and reeds: for if they be burnt, they will come up againe the thicker and more smooth. As for *Cato*, hee hath certaine compound medicines for trees, distinct by fundrie measures by him prescribed: for hee hath ordained to the roots of the greater trees an * Amphore, but of the lesse an * Vrna onely, of Oile dregs, with an equal quantity of water: all which being tempered together, he would have to be poured by little and little

B to the roots, but they ought before to be digged about and laid bare. And for the Olive, hee addeeth moreover, that the roots should have a bed of litter or straw made before, and then used accordingly. In like manner also would the Fig tree be served: but especially at the roots of it there should bee raised a banke of old earth: for by that meanes it will come to passe, that the greene Figs will not fall, they will beare more plentifully, and the fruit bee more smooth and pleasant. To prevent in like manner, that the worime * Convulvulus bred not in a Vine, hee appointed two gallons of oile dregs or lees, to be boiled first to the thicke consistence of honie, and then afterwards to take a third part of the slime Bitumen, and a fourth part of brimstone, and sett it all together againe in the open aire; for within dores there would be some danger of letting the house

* Amphora, or, Quadrant, was a measure Roman of liquor, containing 16 Congij, which is, much about 16 wine gallons. * Vrna, is halfe Amphora, to wit, 8 gallons, or thereabout. * Vine fretter, or the Devils gold-ring.

C a fire. With this mixture, if a Vine bee well annointed about the joints, and under their hollow armpits, he assureth us, that there will no such worime breed therein. Some content themselves to perfume Vines onely with the smoke of this composition, so as it bee done on the wind-side, that it may carie the fume directly to them; and this should bee continued for three daies together. Many are of opinion, that wine being mingled with a like quantity of water (because alone of it selfe it is hurtfull) is as good for this purpose as the oile dregs abovesaid, which *Cato* hath prescribed. Another kind of vermine or worime there is, that gnaweth the tender buds or burgeons of the Vine, and the same is called Volvox: To preserve Vines from this harmefull creature, men are wont to take their Vinehookes when they be newly ground & sharpened, then to scoure them with a Beavers skin, and with them to prune the Vines: or else after they bee pruned, to annoint them with Beares bloud. Moreover, Ants or Pismires make foule worke otherwhile among trees. If you would drive them away, dawbe the stock or butt end with red Sinopre and Tar tempered together. Or doe but hang up any fish neare by, and all the Pismires will leave their former haunt, and gather about it. Others make no more adoe, but stampe Lupines with oile, and therewith annoint the roots. Many there are, who kill both them and Moldwarpes with oile dregs. Also, against Palmer-wormes or Caterpillars, and to keepe Apples from rotting, they give order for to annoint the top twigs and branch ends of trees with the gall of a greene Lizard. But more particularly against the said Caterpillars, they would have a woman whiles her monthly sicknes is upon her, to goe round about every tree by it selfe, barefooted and barelegged, unbraced and unlaced, and her haire hanging about her eares. Moreover, to preserve trees from wild and noi-

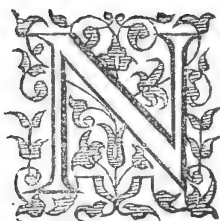
E some beasts, that none of them come neare to bruse and marre their greene spring, they doe appoint to bespreint their leaves with greene Cow or Oxe shearne, and water together, betweene some showers, that the raine may wash away the mallice and hurtfull qualitie of the medicine. A wonder to see how inventive men are to devise remedies for every mischeefe: for many you shall have, who be verily perswaded, that there be certain charmes and inchantments to drive away the haile. But for mine owne part, I thinke it meere mockerie to set downe the very words, although *Cato* hath done it before mee. Who also speaketh of another spell for dislocations or members out of joint (an accident happening to trees) which he would have to bee joined close within the clift of canes. The same writer hath permitted men to cut downe sacred groves, trees also dedicated for religion and sequestred from prophane use (after a solemne sacrifice to the gods first performed:) the reason and manner whereof he hath put downe in a certaine Treatise, which he compiled of purpose as touching that argument.



THE XVIII. BOOKE OF
THE HISTORIE OF NATURE,
WRITTEN BY C. PLINIUS
SECVNDVS.

CHAP. I.

*Of the exceeding love and affection of our aunccestors in old time to Agriculture
and Husbandrie. Also, of their singular paines and diligence
about gardens.*



Ow followeth the treatise of Corne, of Gardens, and Flowers, and generally of all things else, that by the goodnesse of Nature the Earth bringeth forth bountifullly, besides Trees and Shrubs. The speculation whereof verily is infinite, if a man doe but consider the number and varietie of Hearbs and Flowers, together with their odors and colours; the diversitie also of their juices, their severall vertues and properties, whether it be to cure men of their maladies, or to give them pleasure and contentment to their senses. But before that I enter into this discourse, very willing I am to take in hand the cause of the Earth (the common mother of us all) and to assist her against all slanderous imputations, notwithstanding I have in the beginning of this my worke pleaded once already in her defence. For when wee looke into the matter within her contained, we are set on fire inwardly to find fault with her for breeding and bearing noisome things, charging upon her our owne faults, and imputing unto her that, for which wee of right ought to be blamed. Set case shee hath brought forth poison and venime, Who hath searched them out but man? As for the foules of the aire and wild beasts, it is sufficient that they touch them not, nay they know how to beware and avoid them. For say that the Elephants doe file their teeth sharpe against hard trees, say that the Rhinoceroses whet their horns against the rockes, and the wild Bores sharpen their edge tuskes against both stocke and stone; say that all creatures know well enough how to prepare and frobish their weapons to do mischief, Which of them all yet infect them with poison, but man alone? We have the cast to envenime and poison arrowes; we can tell how to put something to our darts of yron and steele, more hurtfull and mischievous than they be. It is ordinarie with us to poison rivers also; yea and the very Elements whereof the world doth stand, are by us infected: for even the Aire it selfe, wherein and whereby all things should live, we corrupt to their mischief and destruction. Neither can we truly say or thinke, that other creatures besides us are ignorant of these poisons; for wee have already shewed, that they are not to seeke either what defensatives to provide against they should fight with serpents, or what remedies to find for their cure after they have fought and are hurt. Moreover, setting man aside, there is no creature furnished or armed with any other venime, but their owne. We cannot chuse therefore but confesse our great fault and deadly malice, in that we rest not contented with naturall poisons, but betake our selves to many mixtures and compositions artificiall, made even with our owne hands. But what say you to this? Are not some men themselves meere poisons by nature? for these slanderers and backbiters in the world, what doe they else but launce poison out of their blacke tongues, like hideous serpents? what doe these envious persons, but with their malicious and poisonfull breath findge and burne all before them that they can reach or meet with, finding fault with every thing whatsoever? Are they not well and fitly compared to these cursed foules flying in the darke, which albeit they sequester themselves from

A from birds of the day, yet they bewray their spight and envie even to the night and the quiet repose thereof, by their heavic grones (the onely voice that they utter) disquieting and troubling those that be at rest: and finally, all one they be with those unluckie creatures, which if they happen either to meet or crosse the way upon a man, presage alwaies some ill toward, opposing themselves (as it were) to all goodnesse, and hindering whatsoever is profitable for this life. Neither doe these monstrous and abominable sprites know any other reward of this their deadly breath, their cursed and detestable malice, but to hate and abhor all things. Howbeit, herein may we acknowledge & see the wonderfull majestie of dame Nature: for like as she hath shewed her selfe more fruitfull and liberall in bringing forth profitable and holesome plants, in greater plentie than hurtfull and noisome; so surely hath she furnished the world better with good men and vertuous for the weale publicke. In which regard and consideration, we also taking no small joy and contentment (leaving these troublesome spirits to themselves for to broile and frie in their owne greace) will goe on forward and proceed to declare the rest of Natures workes; and with the better resolution, for that wee seeke more pleasure and contentment in the paines and travaile that we take, than expect any fame or bruit of men afterwards. For why? we are in hand to speake of the countrey and countrey commodities, such as in old time like as they were most necessarie for this life, so they were accounted and honoured most highly.

CHAP. II.

Of the first guirland or chaplet made of beards and flowers at Rome.

C **T**He first order that king *Romulus* instituted in Rome citie newly built, was the guild or fraternitie of certaine Priests or Wardens over corne fields, which were in number twelve. And for to doe the greater honour to this companie, he caused himselfe to be called the twelfth brother among them: and *Acca Laurentia*, the nource or foster-mother of this Prince, bestowed upon him a guirland of corne eares, twisted and tied together with a white ribband, as the most sacred badge and ensigne of this new priesthood, which he and his brethren should weare with great reverence and devotion: and this was the very first chaplet knowne at Rome. Now the honour of this ornament was perpetuall, and continued for terme of life; so as a man once invested therein, could not be degraded and deprived thereof, though hee were banished or taken prisoner; it accompanied him ever to his dying day. Then, and in those daies, every man within the whole bodie of the people of Rome, contented himselfe with two acres of land, and *K. Romulus* assigned to none of his subjects a greater proportion: whereas now yee shall have those that erewhile were but slaves and servants under the Emperour *Nero* (despising as not sufficient, greene enclosures and gardens of that compasse) must have fishpooles also bigger than so: and well it were if they would stay there and goe no further, for shortly we shall see some one or other of them, never rest untill hee have kitchins also more than two acres wide. And thus much for king *Romulus*.

E King *Numa* his successor, ordained to worship the gods with an oblation of corne, yea and to offer prayers and supplications unto them by no other meanes, than cakes made of salt and meale: yea and as *Hemina* mine author saith, for to induce the people of Rome the better unto it, he allowed them to parch their corne in their sacrifices; for that corne thus parched, was supposed to be a more holesome food: by which meanes, this one thing ensued in the end, that no corne was counted pure and good, nor fit to bee used in divine service, but that which was thus baked or parched. He also instituted the feast *Fornacalia*, to wit, certaine holydaies for the parching and baking of corne: as also another as religiously observed, called *Terminalia*, namely, for the bounds and limits of lands: for these and such like gods, as then, they worshipped first: as also the goddesse *Seia*, so called *à serendo*, [i. of sowing corne and setting plants:] and *Segetia*, which name they gave her *à segetibus*, [i. of corne fields:] whose images wee at this day doe see in the grand Cirque or Shew-place at Rome. A* third goddesse there is among them, whome **F** to name and invoke within-house, they might not with safe conscience. Lastly, so religious and ceremonious they were in old time, that they would not so much as tast of new corn or wine, before the Priests had taken a fey of the first fruits.

* *Tertiam*, to wit, *Tertina*, for pr. sowing of trees planted, & corne sowne: or as some read (*Tertium*) meaning *Tertium*.

¶ Of *Iugerum*, and *Actus*. Of the ancient lawes or dained for cattell in old time. How often and at what times corn and victuals were exceeding cheape at Rome. What noble and famous persons addicted themselves wholly to Husbandrie and Tillage.

AN Acre or Arpen of ground, called in Latine *Iugerum*, was as much as might be eared up or ploughed in one day with a yoke of Oxen. And *Actus* in Latine, is a land, or so much just as two Oxen are driven and occupied in, whiles they plough in one tract without any rest. This contained by the old time, a hundred and twentie foot in length: and being doubled in length, made the Acre or *Iugerum* abovesaid.

In auncient time of the old Romanes, the greatest present that could be given to captaines and souldiors who had borne themselves valiantly in the service of their countrey, was as much ground as they could have eared or broken up in one day. And it was thought a great reward to receive at the hands of the people of Rome halfe a pint (or a pint at the utmost) of corne. Moreover, in so great request was Corne and Husbandrie, that the first and cheefe houses in Rome tooke their surnames from thence: and namely, the *Pilumni*, who devised first the pestill to bray corne withall in their mills and back-houses: also, the familie of the *Pisones*, who tooke their name, à *pisendo*, [*i.* of stamping or pounding corne in a mortar.] The *Fabij* in like manner, the *Lentuli*, and the *Ciceroes*, each one according to the severall pulse that they skilled best to set or sow. Moreover, to the house of the *Iunij*, they gave the surname of *Bubulcus*, by occasion of one of their ancestors, who knew passing well how to use and order Oxen. Over and besides all this, that you may know what regard was had of Corn, among other sacred and holy ceremonies, there was nothing reputed more religious than the bond of Confarration, in knitting up of mariages, and assurance making of the cheefe priests: yea, the manner of the new wedded brides was to carie openly before them a wheaten cake. In times past, the Magistrates called Censors, judged it a trespassse worthis of a great rebuke, to bee an ill husband, that is to say, to bee carelesse and negligent in tilling the ground. And as *Cato* reporteth, if men called one by the name of a good Husbandman, they were thought to have praised & commended him in the highest degree. Hereupon also it came, that rich and substantiall men were tearmed in Latine, *Locupletes*, as one would say, *Loci-pleni*, [*i.* well landed.] And as for the very word, *Pecunia* in Latine, which signifieth money, it tooke the name of *Pecus*, that is to say, cattell. And even at this day (as it appeareth in the Registers of the Censors, and the accounts of the citie chamber) all their rents, revenues, and customes growing unto the people of Rome, are called *Pascua*; for that a long time the whole domaine of Rome, stood upon pasturage and nothing else. The penalties and fines also, which offenders were put to pay, were raised of nothing else but of Kine, Oxen, and Sheepe: where, by the way, I cannot conceale from you the favourable regard that the auncient lawes and ordinances of Rome had; whereby it was expressly forbidden, That no Iudge who had power to enioine or impose any paine and amercement, should name the fine of an Oxe, unlesse hee had passed that of a Sheepe first. The solemne games and plaies also in the honour of Kine and Oxen, they who frequented them, called *Bubetij*. Moreover, king *Servius* at the first when he made brazen coine, stamped the peeces with the portraiture of Sheepe, Kine, and Oxen. By the lawes of the twelve Tables, all persons whatsoever above foureteene yeares of age, were forbidden under paine of death, either by stealth, to feed their cattaille in the night time upon any corne-field of another mans, plowed and sowed; or to cut the same downe by syth or sickle at such a time, and in that manner. By the same lawes also ordained it was, That whosoever was attaint or convicted thereupon, should be hanged by the head and strangled for satisfaction of the goddesse *Ceres*: and in one word, to be more greivously punished than in case of manslaughter. But if the offender were under that age abovesaid, the same law provided, that he should be whipped at the discretion of the Pretor or lord cheefe Iustice for the time being: or, if this punishment were remitted by the partie who sustained the damage, then he should satisfie unto him for the trespassse as a slave, and pay double for the losse, according as honest and indifferent men valued it. Furthermore, in auncient time, the distinction of States and degrees in the cittie of Rome (both for wealth and worship) was according to their lands, and not otherwise. In somuch, as those cittizens were reputed for cheefe and principall, who were possessed of land and living in the countrey: and these made the State, called the Rustick Tribes, in Rome: whereas contrariwise the other estate, reputed

A the meener in degree, was named the Urbane Tribes; consisting of Artificanes & such like as were not landed persons: into which, if a man were transferred from any of the rest, it was thought a great shame and disgrace, as if hee were reproched for idleness and negligence in husbandrie. And hereupon these foure Tribes alone tooke name of those foure principall parts or quarters of the citie wherein they were seated, to wit, Suburrana, Palatina, Collina, and Exquilina. Over and besides, upon faires & market daies, the Rusticke Tribes usually visited the citie: upon which daies therefore no publicke assemblies of the people were holden, to call the Commons away from their market affaires. Also the manner in those daies was to take their sleepe and repose in good straw and litter. Yea, and when speech was of glorie and renowne, men would call it by no other tearme but Adorea, of Ador, a kind of fine red wheat. Where, by the way, I have in great admiration the antique words of those times, and it doth me good to thinke how significant they were. For thus we read in the sacred Pontificall Commentaries of the high priests, *For the Auguric or solemne sacrifice called *Canarium, let there be certain daies appointed, to wit, before that the corne shew eare out of the huse, yea, and before that it come into it.* But to returne againe to the praise of Husbandrie, When the world was thus addicted and given to Agriculture, Italie was not only well provided and sufficiently furnished of corne, without any helpe from our provinces; but also all kind of graine and victuals were in those daies so exceeding cheape, as it is incredible. For *Manius Martius* a Plebeian *Ædile* of Rome, was the first man that served the people wheat at one Assē the Modius: and after him *Minutius Augurinus*, the eleventh Tribune of the Commons, (even he who endured that mutinous and seditious citizen *Sp. Melius*) brought downe the price of wheat for three market daies to an Assē the Modius. The people therefore of Rome, in regard of this good deed of his, erected a statue for him without the gate Trigemina; and that with such affection and devotion, that every man contributed somewhat thereto by way of benevolence. *Trebius* also in the time of his *Ædileship*, caused wheat to bee sold unto the people at the same rate, to wit, one Assē a Modius. For which cause, there were two statues also in memoriall of him set up, both in the Capitoll and also in Palatium: and himselfe when he was departed this life, had this honour done unto him by the people, at his exequies, as to bee carried on their shoulders to his funerall fire. It is reported moreover, That in the very same yeare wherein the great goddesse *Cybele* (called also the mother of the gods) was brought to Rome, there was a more plentifull harvest that Summer, and corne was at a lower price than had been knowne in ten years before. Likewise, *M. Varro* hath left in writing, That when *L. Metellus* made shew of so many Elephants in his triumph at Rome, a Modius of good red wheat, was worth no more than one Assē. Also a gallon of wine cost no more. And as for drie Figges, thirtie pound weight carried no higher price: and a man might have bought a pound of oile Olive, and twelve pound of flesh at the very same reckoning. And yet all this plentie and cheapenesse proceeded not from the great domains and large possessions of those private persons that encroched upon their neighbors, and hemmed them within narrow compasse. For by the law published by *S. C. L. CINCINNUS*, provided it was, That no Romane citizen should hold in private above five hundred Acres. The rigor of which law or statute was extended and practised upon the Law maker himselfe, and by vertue thereof he was condemned: who, for to possess above that proportion, and to defraud the meaning of the said Act, purchased more lands in the name of his sonne. Lo what might be the proportion and measure of possessions allowed even then, when as the State and Common-wealth of Rome was in the prime and began to flourish. And as for the Oration verily of *Manius Cincinus* after such triumphs of his, & when he had subdued and brought under the obeifance of the Roman Empire and laid to their dominion so many forrain nations; what it was, every man knoweth, wherein he delivered this speech, That he was not to be counted a good man, but a dangerous citizen, who could not content himselfe with a close of seven acres of ground. And to say a truth, after that the kings were banished out of Rome, and their regiment abolished, this was the verie proportion of land assigned to a Romane Commoner. If this be so, What might be the cause of so great plentie & abundance aforesaid in those daies? Certes, this & nothing els, Great LL. and generals of the field (as it should seeme) tilled themselves their ground with their own hands: and the Earth again for her part, taking no small pleasure (as it were) to be eared and broken up with ploughs Laureat, and ploughmen Triumphant, strained her selfe to yeeld increase to the uttermost. Like it is also, that these brave men and worthie peronages were as curious in sowing a ground with corne, as in ordinance of a battell in array: as diligent (I say) in disposing and ordering

* Made with a red dog to pacifice the Dogstarre.

ring of their lands, as in pitching of a field: and commonly every thing that commeth under good hands, the more neat and cleane that the usage thereof is, and the greater paines that is taken about it, the better it thriveth and prospereth afterwards. What shall wee say more? was not *C. Attilius Serranus* (when the honourable dignitie of Consulship was presented unto him, with commission to conduct the Romane armie) found sowing his own field and planting trees, whereupon he tooke that surname *Serranus*? As for *Quintius Cincinnatus*, a pursivant or messenger of the Senat brought unto him the letters patents of his Dictatorship, at what time as he was in proper person ploughing a peece of ground of his owne, containing foure acres and no more, which are now called *Prata Quintiana*, [*i. Quintius* his medowes] lying within the Vatican: and (as it is reported) not only bare-headed was hee and open breasted, but also all naked and full of dust. The foresaid officer or sergeante taking him in this manner, Doe on your cloths sir (quoth he) and cover your bodie, that I may deliver unto you the charge that I have from the Senate and people of Rome. Where, note by the way, that such Pursivants and Sergeants in those daies were named *Viatores*; for that estsoons they were sent to fetch both Senatours and Generall captaines out of the fields where they were at worke: but now, see how the times bee changed! They that doe this businesse in the field, what are they but bondslaves fettered, condemned malefactours manacled, and in one word, noted persons and such as are branded and marked in their visage with an hot yron? Howbeit the Earth, whome wee call our Mother, and whome we would seeme to worship, is not so deafe and senselesse, but she knoweth well enough how she is by them deprived of that honour which was done in old time unto her: in so much as we may well weet, that against her will she yeeldeth fruit as she doth; howsoever wee would have it thought, by these glorious titles given unto her, that shee is nothing displeas'd therewith, namely, to be laboured and wrought by such vile and base hirelings. But wee forsooth doe marveile, that the labour of these contemptible bondslaves and abject villaines doth not render the like profit, as that travaile in former times of great Captains and LL. Generals. And in verie truth, even among other foreine nations, it was counted a princelike profession in deed, to be able for to give rules and directions about Husbandrie: for so we may see, that both kings have studied this argument, as namely *Hiero*, *Philometor*, *Attalus*, and *Archelaus*: and also martiall captaines, to wit, *Xenophon*, and *Mago* the Carthaginian. As for *Mago* verily, our Senat did him that honour after Carthage was woen, that in sacking it and giving away among divers LL. of Affricke, the Libraries there found; they thought good to reserve onely 28 volumes of his, and penned by him as touching Agriculture, and to have them translated into the Latine tongue (notwithstanding that *M. Cato* had already beforetime put out in writing and set forth certaine rules and precepts thereof;) giving order for this Translation, to those that were well seen in the Punicke or Carthaginian language: in which businesse, *D. Syllanus* a Romane gentleman of a right worshipfull house, went beyond all others. As for great schollers and men of profound and deepe learning, a number there were besides that travailed in this matter, whome wee have named already in the forefront; and estsoons shall mention in the discourse of this volume. In which raunge we must nominate not unthankfully among the meanest writers, *M. Varro*, who being fourscore yeeres old and one, thought it not amisse to compile a speciall booke and treatise of Husbandrie.

CHAP. IIII.

The manner of Husbandrie in auncient time.

Late it was ere the Romans began to set their minds upon Vines and Vineyards: for at first they tilled only corne fields for very necessitie, even as much as might suffice to serve the citie. The order and manner whereof, I will set in hand to treat of; not after a vulgar and common sort, but according to my usuall manner hitherto, more soundly: as having sought out with all care and diligence, not only the ancient practise in times past, but the inventions also of late daies; and withall, searched into the causes and reasons of every thing, & found them out. My purpose is besides, to speake in this treatise of the fixed Starres, their rising and setting, their apparition and occultation, together with their influences, as they are undoubtedly observed and seen here upon earth. And this, my meaning is to doe after a plaine and familiar sort: for as much as they, who hitherto wrote of this argument, have handled the same so sweetly, and penned

A panned it with so high a style, as they may seeme to any man for to have written bookes for Orators to read, rather than to the capacite of plaine husbandmen for to practise. First and foremost therefore, I will for the most part deale by Oracles, that is to say, sententious Sawes, for to determine this question in hand: concerning which, there are as many to be found in number, and those as true in effect, as in any other part and profession of this our life whatsoever. And least any man should thinke it strange, that I call these rules of Husbandrie, Oracles; who would take them for lesse, considering how they proceed from Time, a god most certein, and are delivered and approved by Experience, the truest prophet of all others. And begin I will with *Cato* first.

CHAP. V.

B ¶ *The praise and commendation of Husbandmen: what things are to be required in the purchasing or taking to ferme of house and land.*

THe children (saith *Cato*) that are begotten by Husbandmen, proove most valiant, the hardiest souldiers, and such as thinke least harme of all others. In buying of land, take heed you be not too hot and agree upon the purchase. In the husbanding of ground, spare for no paine & travell; but in the purchasing therof be you nothing forward: a thing over-bought, hath evermore repentance, and had I wist, attending upon it. They that are about a purchase, ought above all, to see how the ground is watered, what waies and avenues be about it, & what neighbours be neare unto it. Out of every one of these points, matters of great importance and deepe conclusions may be picked, and those most certein and infallible. *Cato* addeth moreover and saith, That there would bee good regard had of the people confinng, and other grounds bounding thereupon, whether they bee well liking, faire, and trim to see unto? For these bee his words, It is a good signe (quoth hee) that the ferme is well seated and in a commodious quarter, if all about looke well. *Atilius Regulus* (he who during the first Punicke warre was twice Consull of Rome) was wont to say, That a man should not purchase an unwholesome peece of land, were it never so rich and fruitfull; nor make choise of a barraine soile, were it never so healthie. Now as touching the healthfulnesse of a place, a man may not alwaies conclude thereof by the colour and fresh hew of the inhabitants: for many times it falleth out, that those who be used to pestilent places, hold out well and have their health; yea and by their looks bewray no harme that they take. Moreover, some quarters and coasts there be, which at some times of the yeare stand found and healthie enough: but I will count none holesome, but such as be healthfull all the year long. An ill peece of land is that, which putteth the lord thereof to paine, and with which he is forced to wrestle for to have his health. *Cato* would have this point especially to be considered, That the soile of a ferme (situate as hath been said) be good of it selfe, and fertile: also, that neare unto it there be store of labourers: and that it be not farre from a good and strong towne: moreover, that it have sufficient meanes for transporting of the commodities which it yeeldeth, either by vessels upon water, or otherwise by waines upon the land. Furthermore, that the manour house be well built, and the land about it as well husbanded. Howbeit, herein I see many men to erre much, and greatly to be deceived: for they hold opinion, that the negligence and ill husbandry of the former lord, is good for him that shall purchase land and come after him. But I say, there is nothing more daungerous and disadvantageous to the buyer, than land so left wast and out of heart: and therefore *Cato* giveth good counsell, to purchase land of a good husband, and not rashly and hand over head to despise and set light by the skill and knowledge of another. Who saith moreover, That as well land as men (which are of great charge and expence) how gainfull soever they may seeme to bee, yeeld not much profit in the end to the master *de claro*, when all counts be cast and recknings made. He therefore judgeth, that the Vine yeeldeth the best revenue, of all commodities belonging to a ferme: and good reason he hath so to say, because above all things he taketh order to cut off expence as much as may be. Next to it, hee reckoneth Hortyards, such especially as have water at command: and good cause why, provided alwaies that they lie under a good towne side. [In the third place he raungeth the Osier plots, and after them Olive rewes:] then he counteth of medows, which our auncestors called *Parata*, as a man would say, *Readie and Provided*. The same *Cato* being asked, What was the most assured profit rising out of land? made this answer, *To feed cattaille well*: being asked againe, What was the next? *Mary* (quoth hee) *to feed in a meane*. By which answers hee, would seeme to conclude, that the

most certain and sure revenue was that, which would cost least. Howbeit, this is not so generall a **G** rule, but it may alter according to the diversitie of places, and sundrie occasions occurrent. Hereunto also is to be referred another speech of his, That a good husbandman ought to be a seller; [and not a buyer:] as also, That a man should make speed in his youth, and not delay to plant and stocke his ground; but not to build thereupon, before it bee well and thoroughly stored that way: and even then also, he should not be forward thereto, but take leisure ere hee be a builder: for it is the best thing in the world (according to the common proverbe) To make use and reape profit of other mens follies: provided alwaies, that a mans land bee not over-built, least the expence of keeping all in good repaire, be chargeable and burdensome. Now when there is a sufficient and competent house builded thereupon, a good husband will use to repaire often thereunto, and take pleasure so to doe: and verily a true saying it is, That the lords eye is far better for **H** the land, than his heele.

CHAP. VI.

¶ How to chuse a convenient place for to build a manour house in the countrey,
Also certain rules observed in ancient time, as touching
Husbandrie and tilling ground.

IN building upon a mans land, this mean and moderation is commended, That the house be answerable in proportion to the ground: for as it is a bad sight to see a large domaine and circuit of ground without a sufficient graunge or home-stall to it; so it is as great a folly to over-**I** build the same, and to make a faire house where there is not land enough lying to it. Like as there were two men at one time living, who faulted diversly in this behalfe; to wit, *L. Lucullus* and *Q. Scævola*, for the one was possessed of faire lands without competent building therto, whereas *Lucullus* contrariwise built a goodly house in the countrey, with little or no living adjoining to it: in which regard, checked he was by the Censors, for sweeping more floures than he ploughed lands. Now in building, there would be Art and cunning shewed: for even of late daies *C. Marius* (who had been seven times Consull of Rome) was the last man that built an house within the territorie of the cape Misenum, and he seated it so, as if he had pitched and fortified a camp right skilfully; in such sort, that when *Sylla* surnamed *Falx*, [*i. Happie*] saw his manner of building, he gave out and said, That all the rest in comparison of him, were blind beetles, and knew neither **K** how to build nor to encampe. Well then, a house in the countrey would be set neither neare unto a fennie and dormant water, ne yet over-against the course and streame of a running river. And yet, what saith *Homer* besides to this purpose? The aire and mists (quoth he, and that right truly) arising from a great river betimes in a morning before day-light, cannot chuse but be ever cold and unholosome. How then? mary if the countrey or climat be hot, an house must stand into the North; but in case the quarter be cold, it ought to affront the South: if the tract bee temperate betweene both, it should lie open upon the East point, where the sun riseth at the *Æquinoxes*.

As touching the goodnesse of the soile, and namely what signes and markes there be of it; although I may seeme to have sufficiently spoken already, in the discourse which I had of the best kind of ground, yet I am content to subscribe to other tokens thereof delivered by other men, **I** and especially by *Cato* in these words following: *When you see* (quoth hee) *growing upon any land, store of Wallow, Skeg trees, Brambles, the little wild Bulbous, Crowtoes,* [called otherwise our ladies Cowslips] *Claver-grasse or Trifoile, Melilote, Oke, wild Pyrries, and Crab-wees; knowyee, that these doe shew a ground good for Wheat, and such like white-corne.* So doth also the blacke mould and that of ashes colour, testifie no lesse. Where there is store of chalke or plaste, the ground is not so fit for corne; for all kind of chalke doth heat over-much, unlessse the same be very leane. The like doth stand also, if it be not passing fine and small. And the effects abovesaid are much more seene in the plaines and champaine vallyes, than upon the hills and mountaines. Our ancestours in old time thought it a principall point of Husbandrie, not to have overmuch ground about one graunge: for they supposed more profit grew by sowing lesse, and tilling it better: of which **M** mind I perceiv **Virgil* was. And to say a truth, confesse we must needs, That these large enclosures and great domaines held by privat persons, have long since been the ruine of Italie, and of late daies have undone the provinces also thereto belonging. Sixlandlords there were and no more, that possessed the one moitie of all Africke; at what time as the Emperour *Nero* defeated and

* *Laudat ingen-
tia vira,
Exiguâ calito.*

A and put them to death. Where, by the way, I may not defraud *Cn. Pompeius* of the due glorie answerable to that greatnesse of his, who never in all his life would purchase any ground that butted or bordered upon his owne land. *Mago* thought it no reason, but a very ungentle and unkind part for the buying of land, to sell a mansion house: and in his conceit, it prejudiced much the weale-publicke. And verily this was the principall point that he recommended in the entrance of his treatise and rules set downe for Husbandrie: so as a man might perceiue very evidently, that he required continuall residence upon the land. Next to these principles abovenamed, great regard would be had in chusing of good and skillfull bayliffs of the Husbandrie, concerning whom *Cato* hath given many rules. For mine owne part, it shall suffice to say thus much onely, that the lord ought to love his bayliffe very well, and set him next to his heart: but himselfe should not let him know so much. Moreover, I hold it the worst thing that is, to set slaves and condemned persons in their gyves and chains, about tilling and husbanding of a ferme: neither do I like of any thing done by such forlorne and hopelesse persons; for lightly nothing thrives under their hand. I would put down one saying more of our ancient forefathers, but that haply it may seem a fond and rash speech, yea and altogether incredible, and that is this, *Nothing is lesse profitable and expedient, than to labour a ground exceeding much, and to overtill it.* *L. Tarius Rufus*, a man of very base and low parentage descended, & yet advanced to the Consular dignitie for his proesse in feats of armes, was otherwise very thrifitie and sparing, after the manner of the old world; inso much as partly by his niggardise and partly through the liberalitie of *Augustus Casar*, hee had gathered good together amounting to the sum of an hundred millions of Setterces: all which masse of money, what with purchasing land to land in the Picene countrey, and what with bestowing such a deale of husbandrie upon it, more ywis of a vaine glorie and ostentation, than for any profit that he reaped thereby, he laid forth and spent every whit of that stock; inso much as hardly he could find any man that would take upon him to be his executour, or to accept simply of the inheritance. What shall we say then? or what good commeth of such houses or lands so chargeable, as that they are like to cost a man his life, and that by famine? I hold therefore, that in all things a meane is best, and bringeth greatest profit in the end. To till and husband ground well, is necessary; to over-doe the same and to exceed, turneth more to the damage than the profit of the lord, unlesse it were done by his owne children, or to maintain the charge of keeping such hinds as otherwise must be found if they sat still and did nothing: for setting that caute aside, it falleth out many times, that the gathering and innig of some harvest (if a man count all the paines employed and the money of the purse) is nothing beneficiall to the matter. In like manner, Olives would not alwaies be tended and looked unto overmuch: neither do some grounds require much diligence, but are the worse for such attendance: as may be seen (by report) in Sicily, which is the cause that new commers thither for to be tenants, and to occupie those lands, are many times deceived and put besides their reckoning.

After what manner then shall we proceed in the Husbandrie of our land to most benefit and behoofe? Learne a rule out of this oracle or sententious riddle, which goeth in this forme; *Malis bonis*, [*i.* Cheapest, Best.] But herein, me thinkes, good reason it is, that our old great grandfathers should be defended and excused for holding these straunge and obscure paradoxes; they (*I* say) who by such rules and precepts, tooke great care and paines to instruct us how to live. Would you know then what they meant by this word *Malis*? surely they understood those that were cheapest and stood them in least. The chiefe point of all their providence and forecast, was to goe the nearest way to worke, and to bee at the smallest cost: and no marveile; for who were they that gave out these thrifitie precepts? even those, who reproached a victorious Generall (and one who triumphed over the enemy) for having a cupbourn of silver plate weighing but ten pound: those (*I* say) who if their bayliffs of husbandrie chanced to die, whereby their lands in the countrey stood void, would make suit to be gone themselves thither, and to returne to their owne fermes, leaving behind them the glory of all their victories by them achieved: and to conclude, even those who whiles they were employed in the conduct of armies, had their grounds looked unto and tilled at the charges of the common-weale, and had no other for their bayliffs than the noble Senators of Rome. From their mouths came these other oracles and wise sentences following: An ill husband is he, who is forced to buy that, which his ferme might affourd him. As bad is that housholder and master of a family, who doth that in the day which might be don by night, unlesse unseasonable weather drive him to it. A worse than either of these is he, who

doth that upon work-daies which should have been done on play daies or idle holidays: but the worst of all other is he, who when the weather is faire, will chuse to work rather within close house than abroad in the open field. And here I cannot hold and rule my selfe, but I must needs alledge one example out of auncient histories, whereby it may bee understood, How it was an ordinarie matter to commense actions and to maintaine pleas in open court before the bodie of the people in the case of Husbandrie: as also in what sort those good Husbandmen of old time were wont to defend their owne cause when they were brought into question. And this was the case. There was one *C. Furius Cresinus*, late a bondslave, and newly enfranchised, who after that hee was set at libertie, purchased a very little peece of ground, out of which hee gathered much more commoditie than all his neighbors about him out of their great and large possessions: whereupon he grew to be greatly envied and hated, infomuch, as they charged him with indirect means, as if he had used forcerie, and by charmes and witch-craft drawne into his owne ground that increase of fruits, which should otherwise have growne in his neighbours fields. Thus upon complaint and information given, he was presented and endited, by *Spiritus Albinus*, an *Ædile Curule* for the time being: and a day was set him downe peremptorily for his personall appearance to answer the matter. He therefore fearing the worst, and doubting that he should be cast to pay some greivous fine; at what time as the Tribes were readie to give their voices, either to acquit or condemne him, brought into the common place his plough, with other instruments and furniture belonging to husbandrie: hee presented likewise in the open face of the court, his owne daughter, a lustie strong lasse and big of bone; yea, and (as *Piso* telleth the tale) well fed, and as well clad: he shewed there (I say) his tooles and plough yrons of the best making, and kept in as good order; maine and heauey coulters, strong and tough spades, massie and weightie plough-shares, and withall his draught Oxen, full and faire. Now, when his course came to plead his owne cause before the people, and to answer for himselfe, thus he began and said: My Maisters (quoth he) you that are citizens of Rome, behold, these are the forceries, charmes, and all the inchaunments that I use (pointing to his daughter, his Oxen, and furniture abovenamed:) I might besides (quoth he) alledge mine owne travell and toile that I take, the carely rising and late sitting up so ordinarie with mee, the carefull watching that I usually abide, and the painefull sweats which I daily endure; but I am not able to represent these to your view, nor to bring them hither with me into this assemblie. The people no sooner heard this plea of his, but with one voice they all acquit him and declared him unguiltie, without any contradiction. By which example verily, a man may soone see, that good Husbandrie goeth not all by much expence: but it is painstaking and carefull diligence that doth the deed. And hereupon came the old said saw, so rise in everie mans mouth, that The only thing to make ground most fertile and fruitfull, is the Maisters Eye. As for all other rules and precepts of Agriculture, respective to this or that peculiar point of husbandrie, I will deliver them in their proper places accordingly. And in the meane time I will not omit such as be more generall, as they shall come into my mind and remembrance. First & foremost, there offereth it selfe unto me one above the rest, whereof *Cato* is the Author, and which of all others I hold to be most profitable and sounding to civilitie, to wit, that in all our doings we aime at this, To have the love and good will of our neighbors: and that for many and sufficient reasons by him alleadged, which I suppose no man will make any doubt of. *Imprimis*, Hee giveth a good caveat, That our servitours and people about us be not shrewd, but well ordered, and that none of our familie be ill disposed to offer any wrong. *Item*, All good husbands agree in this, That nothing would be done too late & when the time is overhipe. And againe, That every work should have the due & convenient season: To the same effect there is a third admonition, namely, That when the opportunitie is once past, in vain we seeke to recall and recover it. As touching a rotten and putrified ground, we have at large shewed already how much *Cato*, doth abhor and curse it. And yet he ceaseth not to forewarne us of it, and besides, to give us these rules following. What worke soever may bee performed by a poore Assle, is thought to cost little or nothing; and to be done very cheape. Fearnie or Brake will die at the root in two yeares, if you will not suffer it to branch and grow above ground: and this shall you hinder most effectually, in case you knap off the head of the first spring with a wand or walking staffe: for the liquid juice dropping downe from them, doth kill the root. It is commonly said also, that if they be pulled up about the Summer Sunnestead, they will not come againe but die: as also, if they bee topt, or their heads whipt off with a reed: or if they be eared up with the plough, so as there be a reed fastened to the

- A** share. Semblably, for to kill reeds, they give order to plough them up, with some Fearnē likewise laid upon the share. A rushe ground must be broken up and turned over & over with the broad spade: but if it be stonie, it would be digged with a mattocke or two tined forkes. Rough grounds and given to beare shrubs, if a man would storke, the best way is to burne them up by the roots. If the place lie low, and be overmoist, the only meanes to make it found and drie, is to draine away the water by trenching. In case a ground do stand upon chalke or plaister, the ditches or trenches therein should bee left wide open: but if the soile bee more loofe and not so fast, they must be strengthened and kept up with quicke-set hedges, for feare of falling: or else they ought to be made in such sort, as both the sides thereof bee well bedded and couched, bearing out a bellie aslope, and not digged plumbe downeright. Some would bee closed up above and made very
- B** streight and narrow, for to run directly into others that are more wide and large: also, if occasion doe so require, the bottome of their channell would bee paved with pebble, or laid with good gravell. As for the mouth and end therof (to wit, for entrance, and issue) they ought both of them to be fortified and underfet with two stones at either side, and a third laid crosse over them. Last of all, if a ground run to wood and bee overgrowne therewith, *Democritus* hath taught us the meanes how to kill the same in this manner, Take Lupine flowers, let them be steeped one whole day in the juice of Hemlocke, and therewith besprinkle and drench the roots of the shrubs that overrun the place, and they will die.

CHAP. VII.

☞ *Sundrie sorts of corne, and their severall natures.*

- C** **N**OW that wee have thus shewed the way how to prepare a field for to beare corne, it remaineth to declare the nature of Corne. And to speake generally of all graine, there are two principall kinds therof, to wit, first Fourment, containing under it Wheat and Barley, and such like: secondly, Pulse, comprising Beanes, Pease, Chiches, &c. The difference observed both in the one sort and the other, is so evident and plaine, that needlesse it is for me to use any words thereof. And as for the former kind called Fourment, it is divided also into sundrie sorts, according to the severall seasons wherein they bee sowne. First there is the Winter corne, which being sowed about the setting of the star Vergilia, *i.* in November, lieth all winter long in the ground, and there is nourished, as for example, Wheat, Rie, and Barley. Secondly, Summer corne, which
- D** is put into the earth in Summer about the rising of the foresaid star Vergilia, *i.* the Brood-hen, to wit, in May, namely, Millet, Panicke, Horminum, and Irio [two kinds of graine.] But note that I speake here of the manner used in Italie. For otherwise in Greece and Asia, they sow all indifferently at the retrait or occultation of Vergilia. And to come again to our Italie, some grain there is which is sowne there, both in Winter and Summer: as also, you shall have other corne sowed in a third season, to wit, in the Spring. Some there be who take for Spring-corne, Millet, Panicke, Lentils, cich Pease, and the graine wherof* Fourmentie is made. But Wheat, Barley, Beanes, Na-
- E** vews, Turneps, and Rapes, they hold for Sementina, *i.* to be sowed at the proper and timely season of seeds, *i.* in Autumne. In that kind of corne which comprehendeth Wheat, there is to be reckoned that graine which serveth for provender and forage, and is sowne for beasts, and namely, that which they call dredge or ballimong. Likewise, in the other kind, to wit, of Pulse, the Verches bee comprised. But that which is good indifferently both for man and beast, is the Lupine. All sorts of Pulse called in Latine Legumina, unlesse it be the Beane, have but one root apeece; and such bee as hard as wood, and full of shoots, and those divided into forked branchues: and the roots of the cich Pease run deepest into the ground. But all other corne under the name of Frumenta, have many small fillets or strings appendant to their roots, and otherwise branch not. As for Barley, it chitteth and begins to shew within seven daies after it is first sowne. All sorts of Pulse appear above ground by the fourth day or the fift at the uttermost. And yet Beanes ordinarily do lie in the ground fifteen or twentie daies. Howsoever in Ægypt all Pulse commeth up by the third day. In Barley, one end of the seed runneth to root downward, and the other into blade, and that
- F** *bloumeth first. Now, if you would know which end serveth for the one and the other; certain it is, that the bigger and thicker part of the grain yeeldeth root, and the smaller the greene blade. In all other seeds there is no such diversitie, for from one and the same end breaketh out both root and greene blade. All kind of corne carying spike or eare, called Frumenta, shew nothing but the greene blade during winter: howbeit, no sooner commeth the spring, but they begin to grow up

* *Alicia*

* No marvell being sowed before winter.

into straw, and to spindle upward pointwise, I meane all that bee of the Winter kind. But Millet and Panicke run up into an hollow stem full of knots and joints: and Sefama by it selfe into a kex or hollow stemme in manner of fowell and such like. The fruit or seed of all graine that is sowne or set, is contained either within eares, as wee see in (bearded) Wheat and Barley, and the same is defended (as it were) with a palliasade of eales, disposed square in foure rankes; or, is enclosed within long cods and huskes, as the Pulse kind; or else lieth in little cups, as Sefame and Poppie. Millet and Panicke onely put forth their fruit grape-wise and openly, without any partitions and defenses, so as their seed is exposed to the little birds of the aire: for no otherwise are they defended, than within small skins and thin huls. And as for Panicke, it taketh the name of certain panicles or chats hanging from the top thereof, whereby the head bendeth and leaneth downward, as if it were weake and wearie of the burden. The stem or stalke therof groweth smaller and smaller, and pointed upward: insomuch, as by little and little it runneth up in manner of a little sprig or sion, and there you shall see a number of seeds or graines clustered together thicke, insomuch as they are sometimes bunched with an head a good foot long. As touching the Miller, the head thereof bearing seed round about, is bent likewise and curbed, beset also with fringes (as it were) of hairie fillets. But to returne to Panicke againe, there be sundrie sorts thereof: for some of it is found with a tuft or bunch, from which depend certain small clustered chats or panicles, and the same also hath two knaps, or heads, and this is called Mammosum: as one would say, the Panicke with bigs or dugs. Moreover, you shall have Panicke seed of sundrie colours, white, blacke, and red, yea, and purple. Of Myll or Myllet, there be diverse sorts of bread made in many places; but of Panicke it is not so common: howbeit, there is no graine more ponderous and weightie than it, or which in the seething or baking swelleth and riseth more; for, out of one Modius or pecke thereof, there is ordinarily made sixtie pound of dough for bread. Moreover, take but three sextares or quarts of it being steeped, and it will yeeld a measure called Modius of thicke grewell or batter, called in Latine Puls. It is not fully tenne yeares, since there was a kind of *Miller brought out of India into Italic, and the same was of colour blacke, the seed or graine in quantitie big and faire, and for stem like unto a reed. It riseth up in height seven foor: the stalkes are mightie and great, some call them Lobæ or Phobæ. Of all sorts of Corne it is most fruitfull & yeeldeth greatest encrease: for of one graine a man shall have three sextars or quarts againe. But it loveth, yea and ought to be sowne in a moist soile.

Moreover, some kinds of spiked corne begin to spindle and gather eare at the third joint: others at the fourth: but there it lieth as yet hidden and enclosed. Now as touching these joints, Wheat beareth usually foure. Beere Barley sixe, and the common Sprit Barley eight, which is well to be considered: for no corne useth to spier before it be fully knotted or jointed in manner abovesaid. And so soone as the said spire sheweth some hope of an eare, within foure or five daies after at the most, they begin to bloume: and in as many daies space, or little more, they will have done, and shed their flowres. And yet I must needs say, that all sorts of Barley are a seven-night at the utmost in so doing. Varro saith, that in foure times nine daies this kinde of corne cometh to perfection: but it ought to stay nine moneths before it be ripe and readie for to be reaped, or mowed downe. As for Beanes, after they be set or cast into the ground, first they put forth leafe, and afterward stalke, that shooteth up even without any partition of joynts or knots betweene. All other pulse, besides the Beane, have a more solide and woodie substance in their straw. Of which, the Cich pease, the Ervile, and Lentils, do spread forth in branches. And some of them runne so low, that they creepe along the ground, unlesse they be borne up and supported with some props, as for example, Pease: which helpe, if they misse, they proue the worse for it. Of all manner of pulse, the Beane alone and Lupine beare but one single stalke a peece: the rest do branch into very small sprigs or tendrels. Howbeit none of them, but their stalke or straw is fistulous and hollow, in manner of reedes. Some pulse put out leaves presently from the roote: others againe from the top or head only: Wheate and Barley both the one and the other: and what corne soever standeth upon a stalke, beareth one leafe in the head or top thereof. But the leaves of Barley are rough, whereas in other corne they be smooth. Contrariwise, Beanes, Chiches, and Pease, have many leaves. In Spiked corne, the leafe resembleth that which groweth to reedes: in Beanes they be round, and so likewise in the most kinds of pulse. Howbeit, in Pease and Ervile we see they be somewhat longer. The leaves of Fafels or Kidney beanes are ribbed and full of veines: of Sefama and *Irio, they be red and resemble bloud. The Lupines onely and the Poppies

* Turkish Miller.

* Turkish Pease.

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A Poppies doe shed their leaves. All pulse is long in the bloome, and namely, Ervile and the Cich pease: but Beanes continue longest, even for the space of fortie daies together. Howbeit, every single stalke beareth not bloume so long: but thus it is, as one hath done and given over, another beginneth afresh. Neither bloumeth the whole field all at once, as spiked corne doth. Also, all kinds of Pulse doe cod at sundrie times, and not upon the same day: beginning first at the bottome, and so likewise the flower riseth up higher by little and litle. All corne growing in spike or eare, so soone as it hath done blouming, waxeth big and strong, and cometh to the maturitie within fortie daies at the farthest, so doe Beanes also: but the cich pease receiveth her full perfection in very few daies: for from the time that it was first sowed, it groweth to bee ripe in fortie daies. Myllet, Panicke, Sefame, and all Summer corne, have their full ripenessse fortie daies after their blouming. But herein there is great diversitie, according to the clime and the soile: in which respects corne ripeneth sooner or later. For in Ægypt, Barly is readie to be reaped in the sixt month after it was sowed, and Wheat in the seventh: but in the region of Hellas in Greece, the Barley tarieth seven months; & in Peloponnesus or Morea, eight. As for Wheat and such like hard corne, longer it is ere it be ripe and ready for the sycle. All corne that groweth aloft upon a stalke or straw, beareth the graines arraunged spike-wise, and as if they were plaited and braided like a border of haire. In Beane stalkes, and other such like Pulse, the cods grow in alternative course, some on the right side, others on the left, in order. Wheat & such like spiked corne, withstand the Winter cold better than Pulse: but these yeeld a stronger food, and fill the bellie sooner. Wheat, Rie, and such like graine, are well lapped within many tunicles. Barley for the most part lieth bare and naked: so doth Arinca, [i. a kind of Rice or Amel-corne] and Oats especially. The straw of Wheat and Rie is commonly taller than that of Barley. But the eiles of Barley are more rough and prickie than those of the other. Pol-Wheat, both red and white, yea, and Barley also is threshed and driven out of the huske upon a floore; and being thus threshed clean and pure, it is either ground or sowne againe, without any parching or drying in a furnace. Contrariwise, the Beare corne or bearded Wheat, Far, Millet, and Panicke, cannot possibly be made cleane, unlesse they be first sendged and so dried. These sorts of graine therefore use to bee sowed raw and rude with their very huls: like as the Beare corne or bearded Far, men are wont to keepe still enclosed within the huske against seed time, and never parch or drie it at the fire. Of all the sorts of graine before rehearsed, Barley is the lightest; for a Modius or pecke thereof seldome weigheth above fifteene pounds: whereas the like measure of Beanes poisseth two and twentie. The bearded corne Far is yet more ponderous than it: and Wheat more than all the rest. In Ægypt they use to make certain fourmentie meat or naked groats of a kind of Rice or white Amel-corne, called Olyra; which is among them holden for the third sort of Spike corne. In Gaule likewise they have a kind of fourmentie corn or gurts by themselves, named in their language Brance, and with us in Italie and about Rome, Sandalum: this graine is of all others most neat and faire, and this singular propertie it hath besides different from the rest, That ordinarily in every measure called Modius, it yeeldeth more bread by foure pound weight, than any other corne husked and dressed in manner aforesaid. *Verrius* reporteth, That the people of Rome for three hundred years together, used no other food than the groats made of common Wheat. And as touching

E Wheat, there be many sorts thereof, distinguished by the names of the regions and countries where they be found growing. Howbeit, for my part I thinke verily, that there is no Wheat in the world comparable to ours here in Italie, for it surpasseth all others both in whitenesse and also in weight: by which two markes especially, as it is knowne from the rest, so it is reputed for the verie best. And yet if you take the Wheat growing in the mountaine countries of Italie, the best haply of forraine regions may match it, and that is the Wheat of Bœotia; the principall of all others, next to it, is that which groweth in Sicilie; and then that of Affricke may bee raunged in the last place: in a third ranke is to be reckoned the Thracian and Syrian Wheat; and after them the Ægyptian, in regard of their weight that it carrieth. Now these degrees of weight wee gather by the proportion assigned to champions and wrestlars, whose allowance was much like to the liurie given to labouring horses, and as much in manner would their paunches both require and receive: for according as they could eat of the one sort more measures than of the other, *so arose these distinct degrees in the weight aforesaid. The Greekes make great account of the Wheat growing by Pontus, and highly commend it: but this never came into Italie, neither know wee what it is. The same Grecians preferred before all other graine, these three sorts, to wit, Dracon-

* For whereas of the Athenian Wheat, five demie sextars, (i. two quarts and a halfe) were but sufficient; three would serve and content them of the Bœotian, i. a quart and a halfe: whereby it was collected how much weightier this was than that.

tias, Strangias, and Selinusium; esteeming the goodnesse of the corne by the thickeesse and bignesse of the straw, and attributing these three kinds by that signe and argument, to the goodnesse and riches of the soile: and therefore they prescribed to sow this corne in a fat and battle ground. But the lightest in weight & poorest in substance, because it required much nutriment, they appointed to be sowed in moist places. Of this opinion and judgement were the auncient Greekes, during the reigne of *Alexander the Great*, at what time as Greece was in the flowre and heighth of her glorie, as having the monarchie and soveraigntie over the whole world. Howbeit, before his death 145 yeares or thereabout, *Sophocles* the Poet in a Tragœdie entituled *Triptolemus*, praised the Italian wheat above all other; for in effect thus he saith word for word:

Et fortunatam Italiam frumento canere candido.

And Italie, a land (I say) so happie and so blest,
Where stand the fields all hoare and gray, with white wheat of the best.

And in very truth, our Italian wheat at this day carrieth the name alone in that regard. I wonder therefore so much the more at the moderne Greekes of late time, who made no mention at all of this our wheat. Now at this present, of all those kinds of outlandish wheat which are transported by sea into Italy, the lightest is that which commeth out of Fraunce, and Chersonesus, [*i. the streights of Callipolis*] for a Modius or pecke thereof containeth not above twentie pound weight, weigh the very graine it selfe as it groweth uncleaned, huske & all. The Sardinian wheat is more weightie than it by halfe a pound in a Modius. And that of Alexandria exceedeth the French, halfe a pound and * one third part, in every measure before-named. And this is the very poise also of the Sicilian wheat. The Bœotian is yet a full pound heavier: and that of Africk as much and * three fourth parts of a pound more. In Lombardie, and that tract of Italy beyond the river Po, I know full well that a Modius of their wheat weighed 25 pounds; and about Clusium, six and twentie. But be the corne whatsoever it will, this is the ordinarie proportion by the course of Nature, That being made into downright household bread for souldiers and to serve the campe, it ought to weigh as much as it did in corn, & one third part over and above. As also this is a rule, That the best wheat is that, which to every Modius will take and drinke up a gallon of water, ere it be made dough. And yet some kinds of wheat there be, that will yeeld the full weight aforesaid in bread, and never count the water going thereto, and namely that which commeth out of the Balear Islands; for a Modius of that wheat yeeldeth in bread 30 pound weight: yet otherwhiles it falleth out in some kinds of wheat (being blended two sorts together, as namely that of Cyprus and Alexandria, wherof neither exceed little or nothing more than 20 pound weight to the Modius) that the bread made thereof will arise to the ordinarie proportion: for the Cyprian wheat is not bright, but brown and duskish, and therefore maketh a black kind of bread; in which regard the Alexandrian wheat, which is faire and white, is mixed with it: and so both together doe yeeld in bread 25 pound weight. The wheat of Thebes addeth a surplusege thereto of one pound.

As for the manner of working and kneading dough, I like not their fashions who take sea-water for that purpose; as most doe that inhabit the sea coasts, thinking thereby to save the charges of salt; for I hold this very hurtfull and daungerous: neither do I thinke, that upon any other cause, mens bodies are made more subject to maladies, than by this meanes. In Fraunce and Spaine, when the Bruers have steeped their wheat or frument in water, and masht it for their * drinke of divers sorts, as heretofore hath been shewed; they take the * skum or froth that gathereth aloft by the working of the woort, and use the same in stead of leaven for to make their bread; which is the reason that their bread is lighter and more houped up than any other.

Moreover, there is a great difference in wheat, by reason of the straw or stalke that beareth it: for the thicker that it is and more full, the better is the corne taken to be. The Thracian wheat is enclosed and well clad (as it were) with many tunicles or coats: throughly provided by that meanes (and good cause why) to resist the excessive cold of that climat; which gave the Thracians just occasion also to cast about and devise to have a kind of wheat that remaineth upon the ground not above three moneths, by reason that the snow over-spreadeth the face of the earth all the yeare besides: and verily this kind of corne is come into other parts of the world, and lightly within three moneths after that it is sowed, you shall have it readie to bee reaped: A practise

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* 4 ounces.

* 5 ounces.

* *Zythum* &
* *Curmi*.
* Yest or barn.

A *Citise* well knowne all the Alps over, and in other cold and winterly regions, where (by the report of the inhabitants) this kind of corne doth wondrous well, and none prospereth better or groweth more ranke than it. Over and besides, there is another kind of wheat that putteth up from every root one stalke and no more in any place whatsoever: the manner is to sow it in no ground but that which is light, and it never misseth. Also about the Thracian gulfe, there is wheat that within fortie daies after the sowing, will be ripe, and thereupon it is called the Two-month wheat. And would you hear a wonder? there is no wheat more weightie than it; and besides, it yeeldeth no bran at all. In Sicilie and Achaia both, there is great use thereof, and namely among the mountainers of those two countries. Much seeking also there is after that corne in the Island Euboea, about Carystus. See how much *Columella* was deceived, who thought that there was not to be found so much as any kind of three-moneth wheat: whereas it is plaine, that such hath been of old and time out of mind. The Greekes also have a proper name for it, and call it *Trimonon*. Furthermore, it is reported, that in the countrey *Bactriana*, there is some corne of that bignesse, that every graine is full as much as one of the eares of ours.

But to returne againe to our Husbandrie, of all spiked corne, Barley is sowed first: but I purpose to set downe the very just time and season appropriate to ech kind, according to the severall nature of every sort, which my meaning also is to declare. Meane while I cannot omit, that there is among the Indians, barley both sowne and also wild, whereof they make the best bread that they have. As for us Italians (to say a truth) we set most store by Rice, whereof (being husked and cleansed) we make *grottes*, like for all the world to those which other men besides doe make of barley husked. The leaves verily that this graine Rice doth beare, be pulpos and stiehie, resembling *Porret* or *Leekes*, but that they be broader: the stem groweth a cubit high, the flower is of purple colour, and the root round like a jem or pearle.

C Barley [husked] was the most auncient meat in old time, as may appeare by the ordinarie custome of the Atheniens (according to the testimonie of *Alexander*) as also by the addition or surname given to sword-fencers, who upon their allowance or pension given them in barley, were called *Hordearii*, [*i. Barley-men.*] The ordinarie drie grout or meale also *Polenta*, which the Greekes so highly commend, was made of nothing els but of barley: and the preparing thereof was after sundrie waies. The manner that the Greekes used, was first to steepe the barley in water, and give it one nights drying; the morrow after, they parched or fried it, and then ground it in a mill. Others there be, who (when it is well fried and parched hard) besprinkle it once againe with a little water, and then drie it before it be ground. There are some againe, who take the eares of barley when they are green, beat and drive the corne out, and while it is fresh and new, cleanse it pure; which done, they infuse it in water, and while it is wet, bray it in a mortar: then, they wash it well in oser paniers, and so let the water run from it; and being dried in the sunne, they pound or stampe it againe; and being thoroughly husked and cleansed, grind it into meale as is aforesaid. Now when it is thus prepared one way or other, to twentie pound of this barley they put of *Line seed* three pound, of *Coriander seed* halfe a pound, of salt about *two ounces and two *drams*: and after they have parched them all well, they blend them together and grind them in a querne. They that would have this meale to keepe long, put up in to new earthen vessels all together both flower and bran. But in Italie they never use to steepe or soke it in water, but presently parch it, and grind it small into a fine meale, putting thereto the former ingredients, and the graine of *Miller* besides.

D As for bread of barley, so much used of our forefathers in old time, the posteritie that lived after, found to be naught and condemned it: in such sort, as they allowed it for provender only to feed their beasts and cattaille with. But in stead thereof came up the use of *husked barley, to be sodden for grewell; so highly commended as a most nutritive and strong meat; and withall, passing holeme for mans bodie: in so much as *Hippocrates* (who for skill and knowledge was the prince of all Physicians) hath written one whole booke in the praises onely of it. Now the best *Pisana* or husked barley, is that which commeth from *Vtica*. As for that which we have from *Egypt*, it is made of the flat barley which groweth upon the eare in two rankes or sides only. *Turannicus* saith, That in the realms of *Granade*, *Andalusia*, and *Africk*, the barley whereof the said *Pisana* is made, is smooth and naked in the eare without eiles or beard at all. Hee also is of opinion, that *Rice* and the graine *Olyra*, are all one. The manner of preparing husked barley and making *Pisana* is so commonly knowne, that I need not to say a word thereof.

As

The eighteenth Booke of

As for *Tragum*, it is a kind of *Ptifane*, made of *Wheat*, after the same order that the former of *Barley*. Howbeit, there is none of it to be found but in *Ægypt* and *Campaine*. Touching *Starch-flower* called *Amylum*, it may be made of all kinds of wheat, and of the fine corne *Siligo*, *i. Winter wheat*: but the principall is that which they make of the three-month or *Summer wheat*. Wee are beholden to the *Island Chios* for the invention of *Starch*: and even at this day, the very best is that which commeth from thence: called it is in *Greeke Amylum*, because it never came into the mill, nor was ground upon stones. The next to it in goodnesse, is made of a certaine *Summer wheat* that is nothing ponderous and weightie. The way to make it, is to steepe the wheat within certaine cooperie vessels made of wood, in fresh water so much as will cover it well. But it would not be forgotten, that the water must be chaunged five times in a day: and if it were so served also in the night, it would be the better, to the end, that being thus soaked and softened, it might be well mixed and incorporated, yea, and resolved (as it were) into a kind of paste, before that it become soure and bitter. This being done, it must be laid to drie either upon linnen cloths, or else in twiggen paniers, that the liquor which is therein may draine away: afterwards upon tiles, besmeared over with some leaven, it is poured forth to take the Sunne, to drie and harden against it. After the *Chian Starch*, that of *Candie* is most esteemed and liked of: and lastly, that which commeth out of *Ægypt*. The good *Starch* ought to be light, smooth, and even, and withall, fresh made: for thoe properties hath *Cato* set downe alreadye.

To returne againe unto our *Barley*: the meale thereof is of great use here with us in *Physicke*. And that which more is, a straunge effect it worketh in *Horses*, *Asses*, and such like labouring beasts: for take *Barley* when it is dried and hardened at the fire, grind it to meale, reduce it into a paste, and make thereof gobbets: let these be put downe by a mans hand into their bellie, after the manner of cramming *Pullen*, and you shall soone see, that this food and manner of feeding, shall make the beasts more strong and lustie, and their flesh more fast and compact.

As for *Barley cares*, some there be which have but two rankes or rewes: others againe have more, even to the number of sixe. In the verie graine also there is much difference: for there be many of them longer than other, lighter, shorter, rounder, whiter, blacker, and last of all, enclining to a reddish or purple colour. This is the worst of all others for to make drie *Grout* or *Poleuta*: and as for the white, it is best for that purpose, but will not abide any tempestuous or hard weather. And to say a truth, of all corne, *Barley* is the softest and tenderest, and will least endure any hardnesse: It would not be sowed, but in a drie and fine ground, laid light, and brought into temper: howbeit, good it must be, and well in heart. The chaffe and pugs that come of *Barley*, is supposed to be as good as the best: but for straw it hath no fellow, especially to make litter of. Moreover, in this regard, *Barley* of all other graine, is least subject unto blasting, for lightly it is cut downe before that *Wheat* is mildewed. And therefore it is, That the wiser sort of *Husbandmen* in the countrey, sowno more *Wheat* than will serve for the provision of their house onely. Furthermore, they say, that *Barley* is sowed with the rake, namely, when the mould lightly covereth it: and therefore it commeth up soonest, and bringeth most encrease and plentie. That which is gathered at *Carthage* in *Spaine*, within the moneth of *Aprill*, is sowed the verie same moneth in *Cekiberia*, so as in one yeare it yeeldeth two crops. It is no sooner ripe, but they make greater hast to cut it downe, and to inneir, than any other corne: for the straw is verie brittle, and the huske which containeth the graine is as thin and small. To conclude, it is thought to yeeld the better groats if it be taken whiles it is somewhat greene, rather than if it should have the full ripenesse.

CHAP. VIII.

That all kinds of *Wheat* or *Fourmentie corne* grow not indifferently in every place. Also, of other sorts of corne in the *Levant* or *East countries*.

You shall not find in all places the same kinds of *Wheat*: and where you meet with the very same, yet they beare not one name, but have sundrie appellations. The red bearded wheat named in *Latine Far*, and which in old time they called *Adorem*; the winter wheat *Siligo*, and the

- A** the ordinarie white Fourmentie wheat *Triticum*, are the commonest of all others. And indeed these grow all in most countries. As for *Arinca*, it loveth *Gaule* best, and that is the native and proper countrey for it: howbeit, there is plentie thereof in *Italie* also. As for *Zea*, *Olyra*, and *Typhē*, they be fundrie sorts of *Wheat* and *Rie* peculiar and appropriate to *Ægypt*, *Syria*, *Cilicia*, *Asia*, and *Greece*. The *Ægyptians* make of their *Wheat* a kind of flower or sifted meale, but nothing comparable to the *Italian*. They that use *Zea* or *Spelt*, have not the fine red wheat *Far*. And yet we are stored therewith in *Italie*, and most of all in *Campaine*, where it is called by the general name of *Seed*. Which name no doubt was given unto it for excellencie and singularity, as shall be shewed anone more at large. This is the very graine for which *Homer* the Poet called the earth *Ζείωνος ἄρρα*, i. yeelding the corne *Zea*: and not because shee giveth life to all living creatures, as some would have to bee meant by that Epithete. Thereof is made also a kind of starch, but grosser than the former, whereof we spake before: for no difference is there else. Of all kinds of wheat, *Far* (which is taken for the red, bearded wheat) is most hardie & best resisteth winter cold: it will well abide the coldest soile that is, and that which is least laboured and tilled: it may endure also hote and drie places: it yeelded the first food and meat to our auncient forefathers in *Latium*; as may appeare by this good argument, that publicke presents and rewards by way of remuneration were given of *Far*, which they called *Adorea*, as hath bin said before. Moreover, that the *Romanes* for a long time lived of a kind of batter or gruell made of meale sodden, and not of bread, is very evident by old records and *Chronicles*: for even at this day such thicke gruels or pottage be called *Pulmentaria* in *Latine*. And *Ennius*, a most auncient Poet, when he would expresse the famin of a citie that had endured long siege, reporteth, That the parents tooke by force from their children their sops, notwithstanding they cried pitteously for verie hunger. Moreover, even in our time wherein we live, the sacred and ceremonious feasts which we observe in memoriall of our Birth daies and *Nativitie*, standeth much upon *Furmentie*, *Gruell*, *Fritters*, and *Pancakes*. It seemeth also, that our gruels and such like pottage were as much unknowne to *Greekes*, as their *Polenta* or dried goats were strange to us here in *Italie*. There is no corne more hungrie and greedie of nourishment, than *Seed* [*Wheat*]; for that draweth more vertue & fat out of the earth for nutriment. As touching the winter graine, called in *Latine* *Siligo*, I may be bold to say, it is the daintiest and most delicate wheat that is, for whitenesse, mildnesse, and lightnesse. It agreeth well with moist countries, such as *Italie* is, & that part of *Gaule* called *Comata*, *Lumbardie*. Beyond the *Alpes* also in *Savoy* onely, and the territorie of the *Meninians*, it will endure and hold the owne very well: marie, in other parts of that countrey, within two yeares it turneth into the common wheat. The onely remedie therefore, is to chuse foorth the heaviest and weightiest cornes, and them to sow.

CHAP. IX.

Of Pastrie, of Grinding, and of Meale.

- T**he best manchet bread for to serve the table, is made of the winter white wheat *Siligo*: and the most excellent workes of *pastrie* likewise are wrought thereof. And yet in *Italie*, it passeth all the rest in case that of *Campaine* bee blended with another sort which groweth about *Pisæ*: for the wheat of *Campaine* bee redder, but this of *Pisæ* whiter: and more weightie it is, if it come from a chalkie ground, or have chalke mingled among. Moreover, this is the ordinarie proportion, that of the very pure corne of *Campaine* wheat, which they call *guelced*, wel husked & cleansed, a measure named *Modius* should yeeld foure sextars or quarts of fine meale: but of the vulgar and common graine, which is not so *guelced*, five sextares, and halfe a *Modius* besides of boulded flower: and for a courser household bread, which they call the second bread, foure sextars of meale, and as many of brans. Also of the *Pisane* wheat, one *Modius* should yeeld five sextars of good meale, and the rest equall to the former. As for the *Clusine* and *Aretine* wheat, in every *Modius* it answereth againe sixe sextars of meale, that is to say, one more than the rest: otherwise they bee all alike. Now if you list to raunge and bould it for cooke flower to make bread, yee shall have of manchet sixteene pound, of course household bread three, & halfe a *Modius* of brans. But this proportion doth not alwaies hold, for it altereth according to the good or bad grinding upon the mill. For that which is ground drie, rendereth againe more meale: but if it be wet or besprinckled with salt water, it maketh the fairer meale, and fuller of fine flower: and then

then shall yee have more goe away in brans. As for the word Farina in Latine, *i. Meale*, it is derived of Far, which in old time was the best and finest red wheat, as may appeare by the very name that it carieth. Finally, a Modius of meale comming of the French Siligo, called Blanchcen or Ble-blanch, maketh in bread two and twentie pound weight: but of our Italian, three or foure pound more in bread pan-baked: for what corne soever it bee, there must bee allowance of two pound vantage over and above, for oven-baked bread.

CHAP. X.

Of the meale called Similago: of the white flower Siligo. Of other sorts of meale: and of the manner of baking.

THe best meale of that kind, which they call in Latine Similago, is made of the common wheat. If the corne come out of Affricke, it yeeldeth ordinarily for every Modius, halfe so much in ordinarie meale, and five sextares besides of flower called Pollen. [For that is the Latine tearme which they use in the finest of the common wheat Triticum, proportionable to that which in the other winter wheat, Siligo they call Flos. And great use hereof there is in copper-smiths forges, and in worke-houses where paper is made.] Over and besides, of courser prodgeons for browne bread foure sextars, and as much of brans. Moreover, the ordinarie proportion goeth thus, that of one Modius of the fine meale Similago, there should bee made 122 loaves of bread: and that a Modius of the pure flower of Siligo, should yeeld 117. As touching the price, thus it goeth commonly in the market one year with another, when corne is at a reasonable and indifferent rate: A Modius of downe right meale is worth *40 Asses: but if the meale bee sifted and raunged from the grosse brans untill it be Similago, it will cost eight Asses more: and if it be boulded yet finer to the nature of the fine flower Siligo, the over-deale in the price will bee double. Another distinction or difference there was knowne of this proportion, when a Modius comming of wheat of Similago, was seene to answer 17 pound in bread: and as much of wheat flower called Pollen, 30 pound and foure ounces: besides, for second household bread, two pound and a halfe; and of the coursest or browneest, as many, and fixe Sextars over and above of brannes.

But to returne to our winter white wheat called Siligo, it never ripeneth kindly and all together, as other corne doth: and for that it is so tender and ticklish, as that no corne will lesse abide delay and tarie on worke, great heed must be taken thereof; for so soone as any is ripe, presently the seed sheddeth and falleth out of the eare. Howbeit, lesse daunger is it subject unto whiles it standeth in the field, than other kinds of wheat, for it beareth alwaies an upright spike or eare: neither will it hold and retaine that mildew, which blasterh corne so much, and turneth it into blacke powder. As for that kind of corne which they call Arinca, it maketh the sweetest bread: the graine it selfe is more fast and full than the fine red wheat Far: it carieth a bigger eare, and is besides more ponderous and weightie. Seldome is it seene, that a Modius of this graine maketh full sixteen pounds. In Greece they have much adoe with it, to thresh it cleane and faltar it from the hulls and eales. For which cause *Homer* saith, That they were wont to give it as provender to horses, and such labouring garrons: and the very same it is which he calleth Olyra. Howbeit this corne in *Ægypt* goeth out easily under the flaile, is better to grind, and withall yeeldeth better, and is more fruitfull. The red wheat called Far, is polled wheat [in *Ægypt*] and carieth no beard or eales about it. So is the white winter wheat Siligo, save only that which is named Laconica.

To these may be adjoynd other kinds also, to wit, *Bromos, the poll wheat Siligo, (differing from all the other of that name) and Tragos: strangers all, brought from the Levant or East parts, and resembling Rice every one. Typhè likewise is of the same kind, whereof in Italy and this part of the world, is made that husksd corne which goeth among us for Rice, for it turneth into it. The Greekes have a kind of wheat called Zea or Spelt: and it is commonly said, that both it and Typhæ (considering that they use to degenerate and proove bastard) will turne to their kind againe and become wheat, if they be husked before a man sowe them: howbeit this change will not be seene presently, nor before the third yeere. As touching our common wheat, there is no graine more fruitfull than it: this gift hath Nature endued it withall, because shee meant thereby to nourish mankind most; for one Modius therof sowne, if the soile be good and agreeable thereto (such as lyeth about Bizacium, the champian cuntry of Affricke) will yeeld an

hundred

* i. 2 lb. 6 d.

* Some take it for a kind of Barley, or rather Otes.

A hundred and fiftie fold againe. The Procurator generall of that province under *Augustus Caesar*, sent from thence unto him one plant thereof (a wondrous thing and incredible to be reported) which had little under 400 straws springing from one graine, & meeting all in one and the same root: as it appeareth upon records by the letters sent, testifying no lesse. Likewise to the Emperour *Nero* he sent 340 straws out of the same countrey, rising all from one quately corne. But to goe no farther than to Sicilie; within the territorie about Leonium, there have been certaine fields knowne, wherein one graine putteth forth no fewer than a hundred stalkes with eares upon them: and not there onely, but also in many other parts of that Island. And this is ordinarie throughout all the kingdome of Granade, and Andalusia in Spaine. But above all, the land of Ægypt may make boast in rendring such interest to the husbandmen: Moreover, of all those kinds of wheat which are so plentifull; there is principall account made of that which brauncheth; as also of another which men call Centegranum, *i.* the wheat that beareth 100 graines.

To leave this kind of graine, and to come to Pulse: there hath been found in Italie, and goe no farther, one beane stalke laden with an hundred beanes. Touching Summer corne, to wit, Sefama, Millet, and Panicke, we have already spoken. As for Sefama, it commeth from the Indians, whereof they make a certaine kind of oile. The colour of this graine is white. Like unto it there is another grain called Erysimum, which is rise in Asia and Greece: and I would say it were the very same, that with us in Latine is named Irio, but that it is more oleous and fattie; and indeed to be counted a medicinable or Physicall plant, rather than a kind of corne. Of the same nature, is that which the Greekes call Hormium: it resembleth Cumin, and is usually sowed with Sefama: howbeit no beast will eat thereof while it is greene, no more than they doe of Irio aforesaid.

To come now to the manner of husking and cleansing of corn: the feat is not so easily done in all, as in some; for in Tuscane, they take the eares of their red wheat called Far, when they be parched and dried at the fire, they pound or bray them with a pestill headed at the nether end with yron, or else fistulous and hollow within, yet bound about with a hoope or ring of yron, and the same withinforth toothed in manner of a staire; so as if they be not headfull in the stamping, the yron-worke at the pestill end will either cut the cornes in twaine, or els bruse and break them cleane. In Italie (for the most part) they use a rude or plain pestill, not headed with yron, to huske and dresse their corne; or els certaine wheels that are turned and driven apace with water, which going very swift doe also grind the said corne. But since wee are false into this treatise concerning husking and grinding of corne, it shall not be amisse for to set downe the opinion and resolution of *M. G.* in this behalfe: First, for common wheat he giveth order, that it be well steeped and soked in good store of water; afterwards, to be rid from the hulls and eiles that it hath, in a mortar: which done, it ought to be dried in the sunne, and followed a second time with a pestill. In like manner (saith he) should barley be used: howbeit, two Sextars or quarts of water will be sufficient to besprinkle and wet twentie Sextars of barley. As for Lentils, hee would have them first parched and dried, and then lightly punned or stamped together with brans: or els to put unto twentie Sextars thereof, a fragment or peece of a broken semeld brick, and halfe a Modius or pecke of sand. Ervile would be cleansed or husked as Lentils be: but Sefama, after it hath been infused or soked in hote water, hee saith, ought to bee laid abroad a sunning; then to be rubbed hard together; afterwards to be put into cold water and therewith covered, so as the hulls or chaffs doe stote and swim aloft: which done, to be laid forth a second time in the sunne upon linnen clothes, for to drie. Now if all this be not done one thing after another and dispatched with the more speed and hast, it will soone vinew or catch a mouldmefse, and besides loose the bright native hew, and looke wan and of a leaden colour. Now, say that corne be cleansed and husked, some one way and some another, it is ground afterwards in divers sorts. If the eares be bolted by themselves alone for goldsmiths worke, the chaffe comming thereof is called in Latine, Acus; but if it be thrashed and beaten upon a paved floore, eare, straw, and all together (as in most parts of the world they use to doe, for to fodder cattaille or give in provender to horses) then it is tearmed Palea: but the refuse or chaffe remaining after that Panicke or Sefama bee cleansed, they call in Latine Appluda, howsoever in other countries it be otherwise named.

To speake more particularly of Miller, there is great store thereof in Campaine, and there they set much by it; for of it they make a kind of white gruell or potage: also the bread thereof is passing favorie and sweet. The Tartarians also and nations in Sarmatia, feed most of this water

gruell made with Millet: as also with the crude and raw meale thereof unfodden and unbaked, G
tempered with mares milke, or els with horse-bloud that runneth out of their master leg-vaines,
by way of incision made for the purpose with the phleame. As for the Æthiopians; they know
no other corne but Millet and Barley. Panicke is eaten in some parts of Gaule, and principally
in Aquitane or Guien: in Piemont also, and all about the Po, it is a great feeding, so there bee
beanes among; for without beanes they cannot skill how to dresse any thing for their daily food.
The regions that confine upon the Euxine sea or Pontus, have no daintier meat than that which
is made of Panick. To conclude, all Summer corne abovenamed, delight more to grow in moist
and watery grounds, than to bee wet with showres and raine from above. And yet I must needs
say, that Millet and Panicke care least for water or moisture, when they begin to put forth their
blade. Last of all, there is no good husbandman but will forbid to sow Millet and Panicke either H
in vineyards, or among trees that beare fruit; being persuaded, that the sowing thereof doth eat
out the heart of the ground.

CHAP. XI.

Of Levains: the manner of making bread: sundrick kinds of bread: about what time
Bakers were first knowne at Rome: of Sieves and Serces, of Raungers and Bul-
ters. Last of all, of the Fruementie called *Alica*.

THE meale of Millet is singular good for Levaines, if it be wrought and incorporate in new
wine, for so it may be kept a whole yeare. The like is made of the better brans of wheat, so I
they be small, fat, and not too near raunged; and the same be kneaded in new white wine of
three daies old, and then dried in the sunne. Hereof is made a dough or past, and the same is re-
duced into certaine round cakes or Troiches to serve for the making of bread; for these must be
foked and dissolved in hote water with the floure of the corne Zea, and therein be fodden: which
done, they use to mingle it with the meale and floure to make past of, which they hold to be the
best way of making bread. The Greeks have set downe this proportion, allowing to every peck or
Modius of meale, eight ounces of levain; and this they thinke to be sufficient. Now these kinds
of levains verily cannot be made, but only in time of vintage. But if a man would make levains
at any other time, he may take of barly meale tempered with water so much as it may be brought
into a past; and when there be certain lumps or cakes hereof made, weighing two pound apeece, K
they must be baked either upon the hearth under hot embres, or els in an earthen pan over the
coles, untill such time as they looke browne and red withall. Afterwards they be put up close
covered in pots or such like vessels, and there remain untill they wax sower. Now when a man would
use levain, hereof he taketh what he will, and dissolveth it as is before said. In old time when they
made barley bread, they used no other levaine for it but only the meale of Ervile or Cich pease;
and ordinarie it was, to take two pound thereof for * two pecks and an halfe of meale: but now a-
daies the order of our huswives is, to make levains of the very same meale which is kneaded and
wrought into dough, before salt be put thereto, which they seeth to the consistence of a pulpe
or thicke batter, and so let it lie untill it become sowe. And yet commonly they doe not boile
their levains, but only reserve some of the past or dough, whereof they make their bread the day
before. As touching the nature of Levain, certein it is that it proceeded of sourenesse, like as it
is generally held, that they be stronger of bodie who feed of levained bread: for in old time it
was verily thought, that of the weightiest and heaviest kind of wheat, there was made the hole-
somest bread. L

Concerning the sundrie sorts of bread that is made, it seemeth a needlesse peece of worke to
set them downe every one in particular: for sometimes bread taketh the name of the meats and
viands that be eaten therwith: as for example, Oister-bread, so called for that it was good with oi-
sters: otherwhiles it beareth the name of some daintie cates, as Artolaganus, [i. pancake, fritter,
or fine cake-bread.] As for the bread called Spenticus, [i. Hattie] it is so called, because it was
made in hast. The manner also of the baking, giveth denomination to some bread; as to Furna-
ceus panis, which was made in a furnace; to Artoptirius, made in a baking-pan called Artopia:
as also to that which was baked in an oven. Not long since also there was a new device of making
bread brought out of Parthia, which because the past is drawne through water (and yet a spungi-
ous, light, and hollow substance it carrieth) they call water-bread: and some give it the denomi-
nation

A nation of Parthicke bread. But howsoever it be, the best bread is of the finest wheat flour, which hath passed through a small tamis bulter. Some countries there be, that knead their dough with milke or eggs; others also put butter thereto: but those bee such nations as are not troubled with wars, since that they can have while to set their minds on sundrie sorts of pastrie. The Picenes in times past invented a way by themselves of making bread, with the very matter or substance of the frumentie Alica; and surely that devise holdeth still and is much used. The manner thereof is this: They take the said frumentie past and steepe it in water nine daies; on the tenth day they worke or knead it with the juice of Raisons, to the fashion of a Parthicke cake driven thin and broad, after this they put it in earthen pots, set them in ovens for to frie and bake, that the said pots may there breake in sunder: and being thus hard baked, it is not to be eaten unlesse it be soaked in some liquor, which ordinarily is milke, or mead especially.

B There were no Bakers knowne at Rome for the space of 580 yeares after the foundation of the citie, untill the Persian warre. Before that time every Romane citizen had his owne bread baked at home, and womens worke commonly it was, like as at this day it is in most countries: for this appeareth by *Plautus*, who in his Comœdie entituled *Aulularia*, maketh mention of **Artopta*, a baking-pan [which men have usually in their houses:] and hereupon is growne much dispute and controversie betweene learned men about this Question, Whether that verse were of that Poets making or no? for certain it is (according to the opinion of *A. Atteius Capito*) that at such mens bourds as kept great houses and delicate fare, there was no other bread eaten but such as Cookes were wont to make them, after the manner of simnels: for *Pistores* were those only then called, who husked and cleansed the bearded red wheat named in Latine *Far*; and other Bakers than they, were there none. Neither had the Romane citizens in ordinarie, any Cookes as their household servants, but hired them out of the market whensoever they had any meat to dresse.

* *Ego hanc Artoptam ex procto imo mundan puto.*

C Divers sorts of sieves and bulters there be. The *Sarce* made of horse haire, was a devise of the Frenchmen: the tamis raunger for course bread, as also the fine flour bulter for mancher, (made both of linnen cloth) the Spaniards invented. In *Ægypt* they made them of papyr reed and rushes. But now that wee are entred so far into this matter as touching corne, I thinke it not amisse before I proceed any farther, to speak (with the first) of the frumentie called *Alica*, and the manner thereof, being (as it is) so excellent and holefome to be eaten; and which, no doubt, thoroughout all Italy, beareth the name for the very best of all corne whatsoever. No question, but there is made thereof in *Ægypt*; howbeit nothing to the other. In Italy, many places there bee where it is to be had, as namely in the territories of *Verona* and *Pisæ*: but that of *Campaine* carrieth the price and praise above all the rest: a champion or plaine country this is, for the space of fortie miles lying as a vale under the hills and mountaines, subject to watery clouds and tempestuous winds. The soile of this whole tract (to speake directly of the nature thereof and defer no longer) is light and dustie, if a man respect the upper coat thereof, but underneath it drinketh in much moisture, whereunto apt it is by reason of certain fistulous porosities therein, like a pumish stone: in which regard, the mountains commaunding these plaines (ill neighbours otherwhiles) doe it much good and mend the soile very well; for many a sound showre (which ordinarie falleth from the hills) passeth and runneth through it, as it were a colander; by means where-

D of, the ground standeth not drenched and soaked with water, but is thereby more pliable & easie to be tilled. Now this soile having thus received store of water, doth not yeeld it up againe boiling out at any springs, but keepeth and cheriseth it still within, as it were the radical and nutritive humour, concocting the same to a very good temperature. All the yeere long a man shall see it sown and standing with corn, one or other; for the same ground beareth one crop of *Panick*, and two of the red wheat *Far*: it never resteth but beareth somewhat: for say that some lands lye fallow between-while, and are not sowed with corne; they yeeld roses in the spring of themselves naturally, and those far sweeter than the garden roses: so fruitfull is it and cannot abide to be idle and do nothing. Hereupon arose the proverb of this land of *Campaine*, *That greater store is there to be found of sweet perfumes and odoriferous ointments, than of simple eyle in other countries whatsoever.* And looke how much this tract of *Campaine* surpasseth all other lands in goodnesse and fertilitye, so much excelleth one quarter thereof (called in Latine *Laboriæ*, and by the Greeks *Phleggræum*) all the rest, and goeth beyond it selfe. This plaine aforesaid named *Laboriæ*, is confined on both sides with the great caufies or high waies raised by the *Consuls*, and thereupon called *Consulares*; the one goeth from *Puteoli*, the other from *Cumes*, and lead both to *Capua*.

But to come againe unto our Frumentie Alica, made it is of the graine Zea, which before wee rearmed by the generall name of Seed. This corne for to make Frumentie, is to bee pound in a wodden mortar, when it should be cleansed from the huske: for if a man beat it in one of stone, the hardnesse thereof would bruse and breake it. The best way of cleansing and husking it, is with a pestill, such as bondslaves and prisoners do use to stampe withall, and to worke by taske for their punishment: in the forepart thereof it hath a circle of yron, made in fashion of a round Boxe: wherewith after the corne is drawne naked out of the huske, the very same instrument serveth againe to stampe and bruse the white marrow and flower thereof within. And thus by this meanes there be three sorts made of Alica or Frumentie aforesaid. The finest, which is the best: the meane, which is the second: and the greatest or grossest, which the Greekes call Aphærema.

When all this is done, yet have they not that whiteneffe of their owne, for which they are so much esteemed; as namely, those that come nowadaies from Alexandria, which are taken to be the best and to excell all other. And therefore there is chalke (a wonderfull thing to be spoken) mingled afterwards and incorporate therewith, and so by that meanes the Frumentie becometh white and tender withall. Now this chalke or plastre is found between Puteoli and Naples, in a little hill which thereupon is called *Leuco-gæon*, [i. white earth.] And in truth when *Augustus Caesar*, late Emperor of Rome, erected a colonie at Capua, and peopled it with Romane citizens, he assigned unto the Neapolitanes (by vertue of a decree, now extant) an yearly rent or pension of twentie thousand deniers to bee paied out of his owne treasure, in regard of the chalke which came from the hill aforesaid, being within their territorie and siegnorie. He rendereth also a reason inducing him thus to doe, Because the inhabitants of Capua, alleaged, that they could not make good Alica or Frumentie without that minerall of chalke. In the same hill there is also found a Brimstone mine, and out of the veines thereof, fountaines springing, called *Oraxi*, the water whereof is singular good to cleare the eies, to cure and heale greene wounds, and to fasten the teeth that are loose in ones head.

As touching a bastard kind of Frumentie, it is made verily for the most part of a Spelt or Zea in Affricke, which there doth degenerate & grow out of kind. The eares that it carieth, are broader and blacker than the other, and the straw is but short. They use to cleanse and huske it by stamping or braying it together with sand: and for all that devise, much adoe they have to fetch off the huls and huskes wherein the graine lieth enclosed: now when it is thus cleansed and naked, it is not past halfe as much in measure as it was before. Which done, there is a fourth part of plastre strewed and mingled among: and when all is together, they sift it downe through a meale sieve. That which remaineth behind and passeth not through, is the grossest part thereof, and is called in Latin *Exceptitia*. That which was thus searced, is driven again through a narrower and finer sieve, and these groats that tarie in the raunger, they call *Secundaria*. In like manner do they a third time, searcing it through so fine a sieve, that nothing can passe but the very small sand and powder: and this last kind of Frumentie gurts they name *Cribraria*. Another way there is besides in all places practised, to sophisticate and counterfeit the right Frumentie groats indeed: They chuse out of our common Wheat, the fairest, fullest, and whitest graines, which being halfe foddren in an earthen pot, they lay out afterwards in the Sunne, untill they be as drie as they were at first: which done, they lightly sprinkle some water over, and then bruse them in a quearne mill. Fairer Frumentie groats be made of Zea than of Wheat, and called it is *Granum* or *Granatum*, although in Alica that be counted a fault. To conclude, they that will not use chalke, doe blaunch and make their Frumentie white by seething milke with it, and mingling all together.

CHAP. XII.

Of Pulse.

It followeth now to write of the nature of Pulse, among which, Beanes doe challenge the first ranke and principall place: for thereof men have assaied to make bread. The meale of Beanes is called in Latine *Lomentum*. There is a not a Pulse weigheth more than it, and Beane meale maketh every thing heavier wherein it is. Now adaies they use to sell it for provender to feed horses. And indeed Beanes are dressed and used many waies, not onely to serve all kind of foure-footed beasts, but also for man especially. For in most countries it is mingled with Frumentie corne: and namely with *Panicke* most of all, whole and entier as it is: but the more delicate and dainrie

A daintie way is to breake and bruise it first. Moreover, by auncient rites and religious ceremonies; at the solemne sacrifice called Fabaria, the manner was to offer unto certain gods and goddesses Beane cakes. This was taken for a strong food, being eaten with a thicke grewell or pottage; howbeit, men thought that it dulled a mans senses and understanding, yea, and caused troublesome dreames in the night. In regard of which inconveniences, *Pythagoras* expressely forbid to eat Beanes: but as some have thought and taught, it was because folke imagined, that the soules of such as were departed, had residence therein: which is the reason also, that they be ordinarily used and eaten at the funerals and obsequies of the dead. *Varro* also affirmeth, That the great Priest or Sacrificer called the Flamine, abstaineth from Beanes both in those respects aforesaid, as also for that there are to be seene in the flower thereof certaine letters or characters that shew heavynesse and signes of death. Furthermore, there was observed in old time a religious ceremonie in Beanes: for when they had sowed their grounds, their manner was, of all other corne to bring backe with them out of the field some Beanes, for good lucke sake; presaging thereby, that their corne would returne home againe unto them; and these Beanes thereupon were called in Latine *Refrivæ*, or *Referivæ*. Likewise in all port-sales it was thought, that if Beanes were entermingled with the goods offered to be sold, they would be luckie and gainefull to the seller. This is certain, that of all fruits of the earth, this onely will bee full and sound when the Moone is croissant, notwithstanding it were gnawne and halfe eaten with some thing before. Set them over the fire in a pan with sea water or any other that is saltish, they will never be throughly sodden. They are set or sowne before the retreat of the Starre *Vergilia*, [*i. the Brood-hen*] the first of all other Pulse, because they might take root betimes & prevent the Winter. And yet *Virgill* would have them to bee put into the ground in the Spring: like as the manner is in Piemont and Lumbardie, all about the river Po.

**Vere fabis facto
Georg. lib. 1.*

But the greater part of good Husbandmen are of this opinion, That the stalke or straw of Beanes sowne early or set betimes, are better than the very fruit it selfe, which hath had but three moneths being in the ground. For the cods and stalkes onely of Beanes are passing good fodder and forrage for cattell. Beanes when they are blouming, and in their flower, desire most of all to be refreshed with good store of raine: but after they have done flouing, they care for little. The sowing of this Pulse in any ground, is as good as a mucking unto it, for it enricheth it mightily. And therefore towards Macedonie and about Thessalie, the manner is when Beanes begin to

Much like to the proverbe here in England, *March Oze-straw is better than April Oze.*

D blossome, for to turne them into the ground with the plough. Beanes come up and grow in most places, of their own accord without sowing; and namely, in certain Islands lying within the Northern Ocean, which our countrey men thereupon have named Fabaria. Semblably, they grow wild commonly throughout all Mauritania, but exceeding hard and tough they bee, and such as possibly cannot be sodden tender. There are likewise in *Ægypt* to be found Beanes, with a stalke beset full of prickes or thornes: which is the cause that Crocodiles will not come neare them, for feare of hurting their eyes. The stemme of these Beanes is foure cubites in height, but exceeding thicke and big withall: tender it is notwithstanding, and soft, running up even and smooth without any knots or joints at all: it carieth a head in the top like Chesboul or Poppie, of a rose red colour: wherein are contained not above 30 Beanes at the most. The leaves be large: the fruit it selfe (or the Bean) is bitter in tast, and the smell not pleasant: howbeit the root is a most daintie meat, which the inhabitants doe eat as well raw as sodden; and like it is to reed and cane roots. These grow in Syria and Cilicia, as also about the lake Torone, within Chalcis.

E As touching other Pulse, Lentils be sowed in November, and so are Pease, but in Greece onely. Lentils love a light ground better than a fat and heavie: they like also drie and faire weather. Two kinds thereof bee found in *Ægypt*: the one more round and blacke than the other; the rest bee fashioned as common Lentils. According to the manifold use and diverse effects of Lentils, there have sundrie names and denominations been borrowed from them: for I find in writers, that the eating of Lentils maketh men to bee mild and patient, whereupon they bee called *Lenti* and *Lenes*. As for Pease, it ought to be sowed in warme places lying well upon the Sunne, for of all things it cannot abide the cold. Which is the cause, that in Italie and in other countries where the climate is rough and hard, they are not sowne usually but in the Spring, and folke chuse a gentle, light, and loose ground.

To come now to the Cich pease, the nature of it is to be nitrous and saltish, and therefore it burneth the ground where it groweth. Neither must it be sowne, unlesse it were well steeped and

foked in water the day before. Many sorts there be of these Cich pease, different in bignes, form, colour, and tast: for there are both blacke and white, and those in fashion shaped like to a Rams head, and thereupon they are so called. There is a second kind named Columbinum, or by others Venerium. These are white, round, light, lesse than the former Rams-head Ciches, which men doe eat ceremoniously with great religion, when they meane to watch throughly all night long. There is a little Cich pease also, called Cicercula, made cornered and otherwise uneven, like unto a Pease. But the best Ciches and most pleasant are those that come nearest in resemblance to the Ervise: and generally the red kind and the black are more firme and fast than the white. Cich pease grow within round cods, whereas other Pulse be contained in long and flat, according to the forme and figure of the seed which they hold: Pease by themselves have a long round cod in forme of a Cylinder.

The Pulse called Phaseoli, [i. Kidney Beanes] use to be eaten cod and all together. These may be set or sowne in what ground you list, from the Ides of October to the Calends of November. Finally, all kinds of Pulse, so soone as they begin to ripen, are to be gathered or plucked hastily: for stay never so little, they leape out of their cods and shed, and being once fallen, they lie hidden in the ground; like as the Lupine also.

CHAP. XIII.

Of Rapes or Navewes: of Amiternum Turneps.

Now let us proceed and passe to other matters: & yet in this discourse, it were meet to write somewhat as touching Rapes or Navewes. The Latine writers, our countrey men, have slightly passed by and touched them onely by the way. The Greekes have treated of them somewhat more diligently, and yet among pot-herbs and woorts growing in gardens; whereas indeed according to good order they would be spoken off immediatly after Corne, or Beanes at least wise, considering there is not a plant of more or better use than is the Rape or Navew. First and formost, they grow not onely for beasts of the earth and the Foules of the aire, but also for men. For all kinds of Pullen about a Farme-house in the countrey, doe feed upon the seed thereof as much as of any thing else, especially if they bee boiled first in water. As for foure-footed beasts, they eat the leaves thereof with great delight, and waxe fat therewith. Last of all, men also take as great pleasure and delight in eating the leaves and heads of Rapes or Navewes in their season; as they doe of young Coly-Flories, Cabbages, or any tender crops of hearbes whatsoever: yea, when they are faded, flaggie, and dead in the Barne, they are esteemed better, than being fresh and Greene. As for Rapes or Navewes, they will keepe long and last all Winter, both within the ground where they grew: and beeing well wintered, they will continue afterwards out of the earth lying abroad even almost till new come: so as they yeeld men great comfort to withstand all hunger and famine. In Piemont, Lumbardie, & those countries beyond the Po, the people make the most account of gaine by gathering Rapes, next to wine vintage and corne harvest. It is not choise and daintie, of the ground where it will grow: for lightly it will prosper where nothing els can be sowed. In foggie mists, hard frosts, and other cold weather, it thriveth passing wel, & groweth to a wonderfull bignesse. I have seene one of their roots weigh above fortie pounds. As touching the handling and dressing of them for our table, there be many waies and devises to commend and set them out. Preserved they may be untill new come, especially condite with sharp and biting Senvie or Mustard seed. Moreover, our Cookes know how to give them six other colours besides their owne which is pure and naturall; they have the cast to set even a purple hew upon them. And to say a truth, there is no kind of viands besides that, being thus painted & coloured, hath the like grace. The Greeke writers have divided them by the sexe, and thereby made two principall kinds thereof, to wit, the male and the female. Nay, more than that, out of one and the same seed, according as it is sowed, they can make male or female, whether they please. For if they sow thicke, and chuse thereto a hard and churlish ground, it will prove of the male kind. Also, the smaller that the seed is, the better is it esteemed. But of all Rapes male or female, three especiall sorts there be and no more. For some roots spread flat and broad, others are knit round like a ball; the third sort which runneth downe into the ground with a long root in manner of a Raddish, they call the wild Rape or Navew: this beareth a rough lease and full of angles or corners; the juice that it yeeldeth is sharpe, hote, and biting, which being gathered in harvest time & reserved,

A mundifieth the eies, and cleareth the sight, especially being tempered with breast-milke. If the weather be cold, they are thought not onely to thrive in bignesse of the root, but also to proove the sweeter, whereas contrariwise in a warme season they run up all to stalke and leafe. The best simply are those that grow in the Nursine territorie. For they are sold by the weight: and everie pound is worth a Romane Sesterce, yea, and otherwhiles twaine, if there be any scarcitie of them.

Next to these in goodnes be those that come out of Algidum. Thus much of Rapes or Navews.

As for the Turneps of Amiternum, they bee in a manner of the same nature that the Rapes aforesaid, and cold they love as well. Sowne they are before the Calends of March: & four quartts of their seed will take up a whole acre of ground. The best Husbandmen, and such as are more exquisite in their practise of Agriculture, give order, That the ground for Turneps should have

B five tilthes, whereas Rapes or Navewes are content with foure: but both the one & the other had need of a soile well enriched with dung or compost. By their sayings also, Rapes will prosper the better and come up thicker, if they be sowed in their huls, chaffe and all together. Moreover, they would have the seeds-man to be naked when he soweth them, and in sowing to protest, That this which he doth is for himselfe and his neighbours, and withal to pray as he goeth. The proper season for the seednes of them both, is betweene the feasts of the two gods, to wit, *Neptune* and *Vulcane*.

To conclude, there is a subtile and curious observation that many go by and doe hold, namely this, To marke how many daies old the Moone was, when the first Snow fell the Winter next before: for if a man doe sow Rapes or Turneps, within the foresaid compassse of that time, the

C Moone being so many daies old, they will come to be wonderous great, and encrease exceedingly. Men use to sow them also in the Spring: but then they make chioise of moist and hote grounds.

CHAP. XIII.

Of Lupines.

AFTER Rapes and Turneps, the Lupines have greatest use, and deserve to be raunged next: for that they indifferently serve both men and also all foure footed beasts that be housed, either whole or cloven. Now for that the stalke is very stuttle in mowing, and therefore flyeth from the edge of the syth, the onely remedie therefore (that the mower may catch it) is

D to go to worke presently after a good showre. And verily there is not a plant growing upon the earth (I meane of such as are sowne of seed) more admirable than the Lupine, in regard of the great amitie and sympathie betweene the earth and it. Looke how the sunne keepeth his course in our Horizon above, so doth it turne and goe withall; in so much as the husbandmen of the countrey go by no other clocke to know how the day passeth, in close and clowdie weather, than this observation. Moreover, it hath three seasons of blowing: it loveth the earth well, but yet willingly it would not be covered over with mould: for this is the onely seed that is sowne upon ground without any ploughing or digging: it would grow to chuse, in a most gravelly, drie, and sandie soile; and in no case can it abide any tending or husbandrie about it: so affected is it to the earth, that cast it upon any rough ground, among bushes, leaves, briers and brambles, it will chut

E and spurt neverthelesse, and never lin till it take root within the earth. If Lupines be sowed either in vineyards or upon corne lands, they enrich the same and make the ground better, as we have before written: and so little need have they of dung, that they stand in stead of the very best. To say a truth, there is no graine lesse chargeable to bee sowne, than it; nay there is none costeth nought at all, but it; for it needeth not so much as to be brought into the field: and why? it soweth it selfe presently in the same field where it grew: and shedding as it doth of the owne accord, a man never needs to cast and throw it upon the land, as other corne. It is first sowne, and last gathered: and lightly both these seasons fall out in the moneth of September; for if the Seednes prevent not the winter, so as it may have good root before it commeth, it will bee in daunger of the cold. Over and besides, if it chauce to lie bare and uncovered above-ground, left carelessly without any keeping, and that no rain come upon it presently for to drive it into the ground, it is safe enough and catcheth no harme; for so bitter it is, that no living creature will touch it: and yet for the most part the husbandmen bestow a light furrow upon it, and so cover it very shallow. If the ground be fast and heavie, it loveth that best which standeth upon a red clay. And for the maintaining and enriching of this kind of soile, it must be turned up or eared

after

after the third flouring : but in case it be gravelly or sandie, it will serve to doe it after the second. Chalkie grounds onely and myrie it hateth, and therein it will not grow. As bitter as otherwise it is, yet if it be steeped and foked in hote water, it is mans meat also. Moreover, one Modius or pecke of Lupines is sufficient for to satisfie and feed an oxe or a cow at a time: and this kind of provender will make beasts strong and healthfull. Moreover, the meale of Lupines applied to the bellies of young children that have the wormes, is a singular remedie. For the good keeping of Lupines, all men agree that they should bee laid up in some chimney or smokie place especially; for if they lie in a moist roome, there be certaine little worms that will nibble off and eat the tip or navell that it hath, and by that meanes marre it for ever sprouting againe. Finally, if Lupines be eaten downe by beasts, while they be greene in the leafe, the ground where they grew must presently be ploughed up.

CHAP. XV.

¶ Of Vetches and Ervile.

Vetches also doe manure and fat the ground where they be sowed; neither be they chargeable or stand the husbandman in much: they be sown with one tilth; otherwise there needs no harrowing nor weeding: there is required no mucking; only they would be covered with mould and the clods broken. For sowing of Vetches, there be three sundrie times: first, about the setting of the starre Arcturus, that by the moneth of December it may get a good head for to be eaten with beasts; and it is generally holden, that beeing sowed in this season, it will bring the best feed; for say it be eaten downe then, it will carrie the burden neverthelesse: the second Seednes is in Ianuarie: the last in March; and beeing then put into the ground, it will run up most to blade, and yeeld the best forage for cattell. Of all seeds that are cast into the earth, it loveth drought most: it can brooke also thadie places well enough. The chaffe that commeth of the feed thereof, is excellent good; and better than any other, in case it were ripe when it was gathered. It robbeth vines of their nourishment, if it bee sowed neare those trees whereto vines are wedded; insomuch as a man may see evidently how they languish.

As touching Ervile, it asketh no great hand or travaile about it: yet thus much more attendance it requireth than Vetches, for that it must be weeded and grubbed about the roots. Besides, this kind of pulse is of great use in Physicke; for *Augustus Caesar* was cured of a disease that he had, and recovered his health by the meanes of Ervile, as himselfe reporteth in some of his letters now extant. Moreover, five Modij or pecks of Ervile sowne, is sufficient to maintain and find a yoke of oxen. As for that which is sowne in March, it is hurtfull forage (men say) for kine and oxen: as also that which they sow in Autumne, maketh beasts heavie and stuffed in the head: but that which is put into the ground in the beginning of the Spring, is harmelesse.

CHAP. XVI.

¶ Of Fœnigreeke: of Rie: of Dredge: of the provender corne or Bolimong *Ocymum*:
of Spanish Trefoile or horned Claver-grasse, called in Latine *Medica*:
of the shrub Trifoile, named *Cytisus*.

For the sowing of Silicia or Siliqua, otherwise called Fœnigreeke, there needs no more but to carrise or scrape it lightly up with a furrow not above foure fingers breadth deepe; for the lesse cost and husbandrie that is bestowed about it, and the worke that it is used, the better it prospereth and yeeldeth greater encrease: a straunge thing to be spoken and seldome verified, *but Negligence should be any waies profitable*; and yet herein it prooveth true. That which is called *Secale and Farrago in Latine, [*i. Rie*] needeth no more adoe but to be harrowed and the clods well broken. There is a kind of Secale or Rie, which the people called Taurines dwelling under the Alpes, doe call Asia: it is simply worst of all other, and good for nothing but onely to drive away hunger: plentifull enough this corne is and yeeldeth good encrease, but the straw is slender: blacke it is and of an unpleasant colour, howbeit exceeding weightie and ponderous: they use to mingle the red wheat Far therewith, and make thereof a Mascelline, to allay the bitterness thereof; and yet for all that, the bread which it maketh is most unfavorie to the mouth and ill for the stomack. It will come up in any ground whatsoever, and bring forth a hundred fold

ordina-

A ordinarily; neither doth it eat the ground out of heart, but rather maketh it more battie, and fet-
veth in stead of compōst or mucke.

As for that kind of dredge or farrage which commeth of the refuse and light corne purged
from the red wheat Far, it ought to be sowne very thicke, with Vetches otherwhiles mingled a-
mong. In Africke, the same mixture is made of Barley. All these are good onely for provender
and beasts forage: as also a bastard kind of Vetches called *Cracca, which pigeons love so well,
that if they be fed once therewith, they will never leave the place where they tasted it, nor flie far
from thence. In time past our auncestours had a kind of fodder or provender, which *Cato* called
Ocyumum, wherewith they *uled to stay the gurrie in kine and oxen. This forrage was made of
*beane stalkes cut downe greene as it stood before it was joynted and codded. But *Sura Manlius*

*or, rather
Arabis.

*Sisymbant, Varro
saith Cicia-
bant, which is
clean contrary.

*Sabalij segete
antiqua generis.

B taketh this dredge to be another thing, saying, That in old time they used to put unto ten Modij
of Beanes, twaine of Vetches and as many of Ervile, and so were wont to blend all together
and sow them in an acre of ground at the fall of the lease: and (saith hee) it would be the better
balimong if there were some Greeke Otes mingled withall, such as never shed the seed out of
the haw. This manner of dredge was called usually Ocyumum, and was wont to be sowne for a
kind of forrage to serve kine and oxen. *Varro* saith, that it tooke that name because it commeth
up so speedily, as being derived from the Greeke word *ωρεος*, which signifieth, Quicke, or Swift.

As for the grasse or hearb *Medica* [a kind of Claver or Trefolie] the Greekes held it in old
time for a meere straunger, as being brought into Greece from Media during the Persian wars;
which King *Darius* levied against Greece: howbeit, an excellent Simple it is, and worthy to be
written of in the first place. And to begin withall, this singular proprietie it hath, That with once
sowing, it continueth above thirtie yeeres without any need of renewing. Like it is to Claver or
three-leaved grasse, both in leafe and stalke, but that the stemme is parted by knots and joints.
Moreover, as it riseth higher and runneth up in the stalke, the leaves grow narrower. Of this herb
alone and of *Cytisus*, *Amphilochus* compiled one whole booke; howbeit, he wrate of them both
confusedly. The ground wherein it is to bee sowed, after it is well rid of stones and cleansed, must
be broken up and well tilled in the fall of the lease. Soone after it needeth to have another fallow
and be harrowed withall, and then covered with hardles: this would bee done two or three times
(five daies betweene) and therewith it ought to bee thoroughly dunged. This hearbe requireth a
found drie ground, and yet such as is full of succulent moisture within, or else where water is neare

C at hand to commaund. The ground beeing thus prepared, ought to bee sowed in the moneth of
May following, for otherwise the frost would take it and marre all. Moreover, requisite it is, that
it be sowed very thicke, so as every place be taken up therewith, thereby to exclude all other weeds
and give them no rounge there to grow. To this effect therefore every acre will take twentie Mo-
dij or pecks of seed. But take heed withall, that it be not burnt so soon as it is put into the ground,
and therefore immediately it must be covered with mould. If the foile be moist and given to bear
other grasse, the seed is soone overgrowne and choked, and then all will run to grasse, and turne
to be a meddow. Which grasse or coich when you see begin to overrun the ground, it must be all
weeded out presently an inch deepe within the ground, and by hand rather than any weeding
hooke or thistle-spade. Now, when this hearbe *Medica* or Claver grasse beginneth once to flour,
cut it downe: and so often as it floureth againe, downe with it. Thus you may have fixe mathes in
one yeare, or foure at the least. You must never let it spindle and beare seed: for better is it to take
it thus in the growth, while it is but young and greene grasse, for three yeares together: and the
forrage or fodder is most profitable. Sowne (I say) it must bee in the Spring, and weeded for the
first three yeares. The greene sould afterwards ought to bee pared away with hooles and spades
close to the ground: for by this means you shall bee sure, that all other weeds will die, and this
hearbe take no harme by it, for that by this time it is deeply rooted. If the weeds doe get head
and overcome it, the onely remedie is by the plough, to turne up the ground over and over so
many times, untill all other roots be killed. Moreover, heed must bee taken, that of this herbage
or fodder, beasts doe not eat their fill; for feare you be driven of necessitie to let them bloud, and
take downe their rankenesse. The greener that it is, the more profite commeth thereof: for it dri-
eth braunch after braunch, untill at length it will crumble like dust or powder, and then is it good
for nothing.

D **E** **F**

As touching *Cytisus*, [i. the Shrub *Trifolium*] which is a singular kind of pasturage, and passeth
all the rest, I have written at full in my discourse of Shrubs. For now at this present I am to prose-
cute

The eighteenth Booke of

cute and goe through the treatise of other sorts of corne and their nature, if I had once written G
somewhat in one part thereof as touching the accidents and imperfections that happen among
them.

CHAP. xvii.

⌘ *The faults incident to corne, and their remedies. Also what corne is respectiue to
this or that soile, for to be sowne therein.*

THe first and principall defect observed in bread-corne, and Wheat especially, is when it
doth degenerate and turne into Otes: and not onely it, but Barley also doth the like. Sem-
blably, Otes otherwhiles serue the turne in steed of bread corne: as wee may see in some H
countries of Almaine, where they do usuallly sow it, and commonly they have no other pottage
there, than Oatmeale gruell [which they call Abremouz.] The foresaid defect and imperfection
is occasioned cheefely by the moist soile or overwet weather. Another cause there followeth also
thereupon, proceeding from the feebleness and weakenesse of the seed, namely, when it lieth
long sobbing in the ground, before it come up: and hereto may be referred the faultines of the
seed otherwise, namely, if it were worme-eaten or otherwise rotten at the time of sowing. And
verily, no sooner appeareth it above ground, but the foresaid change or bastardie may be seene,
whereby it doth appeare, that the cause is in the root.

A second defect or imperfection there is also incident to corne, which hath some near resem-
blance to the Otes afore said; namely, when the graine being formed and newly come to the iust
proportion of bignesse (howbeit, not yet full and ripe) before that it is firme and hard, is smitten I
with a noisome blast, and so, like an abortive fruit, decayeth and windereth away within the eare;
in such sort, as there is no substance left therein, but appeareth void and emptie. Now these ad-
uerse and malignant winds hurt all spiked corne, as well Wheat as Barley, at three severall times:
to wit, in their flower; presently upon their blouming; and last of all, when they begin to ripen;
for then, namely when they are upon the point of maturitie, those blasts consume the graine, and
bring it to nothing, which before was full: whereas at the two former seasons they hinder it alto-
gether from knitting and growing. The hote gleames moreover of the Sunne, betweene often
clouding, doe much harme to corne.

Furthermore, there be certaine little wormes breeding in the root, that doe eat it: which hap-
peneth by occasion of much raine falling immediately after the seednes, especially, when some
some suddaine heat and drowth ensueth therupon; which bindeth the earth above, and so, enclo- K
seth the moisture conceived within, the very cause & nourice of putrifaction. Ye shall have other
such like vermine engender likewise in the very graine of the corne, namely, when the eare doth
glow within, and is chafed with sultrie hote raines. Over and besides, there be certaine [green] flies
like small Beetles, called Cantharides, which doe gnaw and eat the corne. But all these, and such
like wormes or flies die presently, when the corne (which was their food) is gone. Moreover, Oile,
Pitch, and Tarre, all manner of greace also, bee contrarie to seed-corne especially; and therefore
take heed that you sow none such as hath caught Oile, Pitch, or Greace. As for showers of raine,
good they are for corne, so long onely as it is in the greene blade: when corne is blouming (be it
either Wheat or Barley, or such like) raine is hurtfull. Marie Pulse takes no harme therby, unlesse L
it be the Cich-pease.

All kinds of Wheat and other bread corne, when they be toward ripeness, catch hurt by
showers; but Barley more than any. Besides all this, there is a certaine white heabe or weed re-
sembling Panicke, growing among corne, and overspreading whole fields: which not onely hin-
dereth corne, but also killeth all the cattell that feedeth thereupon. For as touching ray or dar-
nell, burs, thistles, and brambles, I may hold and reckon them, not so much for faults and imper-
fections of corne, as rather the plagues and infections proceeding from the very earth. And for
blasting, which commeth of some distemperature of the aire (a mischeefe common as well to
corne, as vines) it is as hurtfull as any other maladic whatsoever. This unhappie blast falleth most M
often in places subject to mists and dewes, and namely, hollow vallies and low grounds lying
under the wind: for contrariwise, windie quarters, and such as are mounted high, are not subject to
this inconvenience. Also, wee may number among the faults incident to corne, their rankeness;
namely, when the blade is so overgrowne, and the stalke so charged and loden with a heaue head
that the corne standeth not upright, but is lodged and lieth along. Moreover, when there falleth
a great

A a great glut of raine, inſomuch as the ground ſtands with water, there befallerh unto all corn and pulſe, yea, and whatſoever is ſowne, a certaine diſeaſe called in Latine Vrica: inſomuch, as the very Cich-peaſe taketh hurt thereby: for by reaſon that the raine waſhed from them that ſalt qualitie which is naturall thereunto, it becommeth ſweeter than it ſhould bee, and looſeth the kind taſt. There is a weed that claſpeth and tieth about Ciches and Ervile, whereby it choketh and killeth them both: and thereupon it is called Orobanctum, i. Choke Ervile. After the ſame manner dealeth *Raie or Darnell by VVheat; wild Otes likewiſe, named by ſome Ægilops, with Barley; as alſo the weed Securidaca, i. Ax-fitch, which the Greekes alſo (for the reſemblance that it hath to an axe head) call Pelecinon, *with Lentils. Theſe weeds (I ſay) kill corne by winding about it. Another herb there is, growing neare to the citie Philippi, which killeth Beans: if the ground be fat and good, they name the ſaid weed Ateramnon: but if it bee found in a hungrie and lean ſoile, and namely, when being wet, ſome unhappie wind bloweth upon it, they call it Teramnon. As for the graine of Raie or Darnell, it is very ſmall, and lieth enclodſed with a ſharpe-pointed huſke. The bread which hath any of this ſeed in it, ſoone cauſeth dizzineſſe and ſwimming of the head. And (by report) in Aſia and Greece the maſters of the common Baines and Stuphs, when they would keepe away the great reſort of multitude thither, have a deviſe to caſt Darnell ſeeds upon burning coales; for this perfume will quickly ſet them farther off. Moreover, if the VVinter prove to be wet and wateriſh, yee ſhall have in the Pulſe called Ervile, a little vermine engendred there, called Phalangion, and it is of the kind of theſe Spiders. Likewiſe upon Vetches there will breed naked dew-ſnails, yea, and otherwhile thoſe little ones with ſhells or houſes on their backs, which creeping from the ground, will gnaw & eat them, that it is a wonder to ſee what foule work they will make. Thus much concerning all the maladies and inconveniences (to ſpeake of) incident to corne. It remaineth now to ſpeake of the remedies.

*Eru. 4.
*said, but more truly deſcribed, out of Theophr. ſus. Thus I ſhould miſtake in many places: and for example immediately in the word Ateramnon, which is appropriate to all Pulſe that require much ſerthing, or be hard of digeſtion. Theophr. cap. 17. & 14. lib. 4. de Plant.

As touching the cure of thoſe harmes that come by hurtfull weeds to the corne in blade, it conſiſteth principally in two things: namely, either in the uſe of the weeding knife or hooke, when they be newly come up; or elſe in ſtrewing aſhes when the corne is a ſowing. But as for thoſe dangers that touch the ſeed or graine in the eare and cod, as alſo that fettle about the roor, they muſt be prevented by good forecaſt, even before it be thrown into the ground. It is generally thought that if ſeed-corne lie ſteeped beforehand in VVine, it will bee better able afterwards to reſiſt all diſeaſes whatſoever. *Virgil* giveth order to infuſe or ſoke the Beanes that muſt be ſowne, in Nitre and Oile lees or dregs; and hee aſſureth us, that they will proſper mightily beſides, and become exceeding great. But others are of opinion, That if for 3 daies before they bee caſt into the earth they lie in urine and ſhree water mingled together, they will being thus prepared, come on apace, and thrive paſſing well. It is ſaid moreover, That if Beanes bee thrice raked and rid from weeds, one Modius of them being whole and ſolide, will yeeld a Modius againe after it is huſked & broken. As for other ſeed-corne, it will eſcape the danger of the worme, if either it lie before among Cypreſſe leaves bruifed; or be ſowed in and about the change of the Moone, namely, when ſhe is not to be ſeene above the earth in our hemiſphere. Many there be who pracliſe other remedies: and namely for the Miller, they would have a toad to be carried round about the field before that it be harrowed: which done, to bee put cloſe within an earthen pot, and ſo buried in the middeſt of the ſaid field: and by this meanes forfooth, neither Sparrows will lie upon the corne, nor any worne hurt it. Marie, in any caſe this ſame toad muſt be digged out of the ground againe before the field bee mowed, elſe will the Millet proove bitter in taſt. The like experiment they ſay is of a Moldwarpe ſhoulder, for if any corne be ſowed or touched therewith before, it will come up the better and bring more encreaſe. *Democritus* had a deviſe by himſelfe for all ſeed & corne whatſoever, namely, to temper & ſoke the ſame corne in the juce of the hearb Houſleeke or Sea-green, growing upon houſes either tiled or ſhinded; which in Greeke is called Aizoon, and in Latine Sedum or Digitellum; for this medicine will ſerve for all maladies. The common pracliſe of our Husbandmen is this, In caſe through the overſweet ſap or juce in greene corne, wormes take to the roots: for to ſprinckle them with ſimple oile lees pure and cleane without any ſalt, and afterwards to rake it in. Alſo, when the corn begins to joint and gather into knots, then to cleaſe the ground, and put off no longer, for feare leaſt the weeds do get head and overgrow. This I am ſure upon mine owne knowledge, that there is an hearbe (but what proper name it hath I wote not) which if it bee entered in the foure corners of a field that is ſowne with Millet, it will drive away Stares and Sparrowes, which otherwiſe would by whole flights and flockes lie thereupon and doe much

much harme: nay I will speake a greater word and which may seeme wonderfull, There is not a **G** bird of the aire one or other, that dare enter or approach such a field. Field-mice and Rats are skared away and will not touch corne, which before the sowing was either bestrewed with the ashes of Weasils or Cats, or else drenched with the liquor and decoction of water wherein they were boiled: howbeit this inconvenience ensueth hereupon, That bread made of such corn will have a smach, and sent strongly of such Cats and Weasils: and therefore it is supposed a more expedient and safer way to medicine our seed-corne with oxen gale, for to preserve it from the said Mice and Rats. But what remedie against the blast and mildew, the greatest plague that can befall upon corne? Mary pricke downe certaine Lawrell boughs here and there among the standing corne, all the said mists and mildews will leave the corne and passe to the Bay leaves, and there settle. What shall we doe then to corne when it is over-ranke? Eat it me downe with sheep **H** and spare not, whiles it is young and in the blade onely, before (I say) it be knotted: and never feare harme by the sheeps teeth as neare as they go to the ground: for let it be thus eaten many times, the corne will be the better, yea and the head will take no harme thereby but proove the fairer. If such ranke corne be once cut downe with the syth, and no more, certein it is that the graine in the eare will bee the longer to see to, howbeit void and without any floure within it: for sow such seed againe, and it will never grow nor come up. And yet about Babylon, the manner is to mow it twice first, and the third time to put in sheepe to it for to eat it downe; otherwise the corne would never spindle, but blade still, and run all to leafe. But being thus cut and cut againe, and eaten in the end, yee shall have it to encrease and multiply fiftie for one, * so fertile is the soile: and if the owner be a good husband besides, and use the ground accordingly, hee shall reape thrice as much, even a hundred and fiftie fold. And what carefull diligence is that which is here required? Surely neither much, nor difficult: onely he must be sure to keepe the ground well with watering for a long time together, to the end that it may be discharged of the overmuch fat within it, which by this meanes will be washed well away, and the ranknesse delaied. Yet as rich and fertile as this soile is, the two rivers Euphrates and Tigris (which use to overflow and water the countrey) bring no slimie mud with them, as Nilus doth in Ægypt, whereby the ground is made so fat as it is: neither is the nature of the earth there, given to breed hearbs that it should need any weeding: and yet so plenteous and fruitfull it is, that it soweth it selfe against the next yeere; for the corne that sheddeth in the reaping and mowing, being troden under foot into the ground, is as good as a sowing, and riseth of it selfe without any further labour.

Seeing then there is so great difference in the soile, I am put in mind therby to fit every ground **K** with seed respectively, according to the nature and goodnesse thereof. This therefore is the opinion of *Cato*, That in a grosse and fat soile, there would be wheat and such like hard corne sowne: and if the same bee subject also to mists and dewes, there may be sowed therein Radish. Miller, and Panicke, must be sowed first in a cold and waterish ground; and afterwards for change, in a hot soile. *Item*, the red bearded wheat *Far* or *Adoreum*, requireth a chalkie and sandie ground, and namely if it be well watered. *Item*, the common wheat loveth a drie soile, exposed to the sunne, and not given much to breed superfluous weeds. *Item*, Beans will doe well in a sound and fast soile. As for Vetches, they care not how little they be sowed in a moist peece of ground, and such as is apt to run to grasse. Moreover, for the fine winter wheat *Siligo*, whereof the best manchet is made, as also for the common frumentie wheat, there would be chosen an open & high **L** ground, lying pleasantly upon the sunne, that it may have the heat thereof to parch it as long and as much as is possible. As for Lentils, they doe like a good rough and shrubbie soile, full of red earth, so as it be not apt quickly to gather a green-ford. * Barley would gladly grow upon a restie ground new broken up, or else such as be in heart to beare every yeere. And as for summer (barley) of three moneths, it would bee sowne in a ground where it could not have an early or timely Seednes, and which is so fat and rich, as it may affourd to beare crop, yeer by yeer. Finally, to speake to the purpose indeed, this also is *Catoes* wittie resolution in one word for all: If the soile be light and leane, seed it with such graine or forage seed, as require no great nourishment, as for example, with *Cytisus*; and excepting the *Cich* pease, with all pulse that are used to be plucked **M** out of the earth, and not mowed downe: and thereupon indeed are these pulse called in Latine *Legumina*, because they are plucked and gathered in that sort: but in case the ground be good and fat, sow such things as require fuller food and nutriment; and namely, all garden woorts and pothearbs; wheat, both the common and the fine; and *Linesed*. Then, according to this rule, a leane

* *Faliscan* soile.* *δίνυς ἐν κρημῶσι*
κατακλιθεὶς ἐν κρημῶσι
Plutarch.

A leane and hungrie soile will well agree with barley, for the root is contented with lesse nutrature: whereas contrariwise we allow both lighter, and also more massie and richer ground for our ordinarie wheat. In a low and wet peece of ground, it is good to sow the red wheat *Ardoreum*, rather than the common wheat *Triticum*: but both it and barley will fort well with a soile of a middle temperature. The hills yeeld a firme, fast, and strong kind of wheat, but the graine is but small. And to conclude, the best kinds of wheat, to wit, *Far* and *Siligo*, challenge for their lot to be sared in a chalkie soile, and therewith alwaies wet and foked in water.

CHAP. XVIII.

Of strange prodigies and wonders observed in corne: the knowledge and skill of earing and silling the ground: also divers sorts of plough-shares.

B **A**lbeit I have in the title of this chapter purposed to write of prodigies seene in corne, yet to my knowledge, there never happened but once the like wonder and portenteous sight to this which I shall tell, and which befell in the time that *P. Ælius* and *Cn. Cornelius* were Consuls of Rome; that very yeare wherein *Anniball* with his whole armie was defeated and vanquished: for then (by report) there was corne grew upon trees.

But forasmuch as I have discoursed at large of the sundrie kinds as well of corne as of ground, I will proceed now forward and come to the manner of ploughing the earth, after I have first set downe before all things else, how easie the husbandrie is in *Ægypt*: for there the river *Nilus* serving in stead of a good ploughman, beginneth to swell and overflow (as wee have before rehearsed) at the first new moone after the Summer sunstead. He beginneth faire and softly, and so encreaseth more and more by little and little; but all the while that the Sunne passeth under the signe *Leo*, he higheth apace untill he be risen to his full heighth: being entred once into *Virgo*, his furie slaketh; then decreaseth hee as fast, untill he be falne againe into his wonted channell; which ordinarily happeneth by the time that the sunne is in *Libra*. Now this is observed, That if he rise not plumb above twelve cubits high, the people are sure to have a famine of corne that yeere: the like also doe they make account of, in case hee passe the gage of sixteene cubits: for the higher that he is risen, the longer it is againe ere he be fully falne, by which time the Seednes is past, and men cannot sow the ground in due season. It hath been generally received for a truth, That presently upon the departure of this deluge and overflowing of *Nilus*, they were wont to cast their seed-corne upon the floten ground, and presently let in their swine after for to trample it with their feet into the earth whiles it was soft and drenched. And verily, for mine owne part, I beleve well, they used so to doe in old time: for even nowadaies also, much more ado they make not about it. Howbeit, this is certain, that first they cast their seed upon the slime and mud so soone as the river is downe, which commonly falleth out in the very beginning of November: which done, they goe over it with the plough and give it a light tith, so as it may be covered only & lie under a small furrow. Some few there be that afterwards fall to weeding, which point of husbandrie they call *Botanismo*: but the most part, after they have once sowed and turned their seed into the ground, never after make a step into field to see how their corne groweth, untill they go once for all with syth on necke or sickle in hand, namely at the end of March; for then they fall to reaping and cutting it downe: so as by the moneth of May they sung in *Ægypt*, *Harvelt in*, and all is done for that yeare. As touching this corne gathered in Base *Ægypt*, the straw is never a cubit long: the reason is, because the seed lyeth very eb, and hath no other nutriment than from the mud and slime aforesaid; for under it is nothing but sand and gravell. But those that inhabit higher up into the countrey, namely about *Thebais*, they be farre better provided for corne, because *Ægypt* indeed (for the most part) lyeth low upon marais ground. Toward *Babylon* likewise and *Seleucia* (where the rivers *Euphrates* and *Tigris* doe swell over their banks and water the countrey) the same husbandrie is practised, but to better effect & greater profit, by reason that the people may let in the water at sluices and floud-gates, more or lesse with their owne hands, according as they list themselves. Also in *Syria*, they have their small ploughs for the nones to take a shallow sitch and make light worke: whereas in many places here with us in *Italie*, eight oxen are little enough to every plough, and to goe away withall they must labour at it till they blow and pant againe. It is an old said Saw, and may goe for an oracle to be practised in all parts of husbandrie, but in this point of ploughing especiall, *Bee ruled by*

the nature of every country, and see what each ground will abide. To come new unto our ploughs. **G**
 Of Shares, there be many sorts: first, there is that instrument called a Culter, which serveth to
 make way before, cutting and cleaving the hard and thicke ground as it goeth, before it be bro-
 ken up and turned atoneside: this sheweth by the slits and incisions that it maketh (as it were by
 a true line drawn) how the furrowes shall go; after which, commeth the broad bit of the plough-
 share indeed, lying flatwise, and in earing casteth up all before it, and cleareth the furrow. A se-
 cond sort there is, commonly used in many places, and it is no more but a bar of yron pointed
 sharpe in manner of a beake-head or stem of a ship; and it may be called, a Rostle. And when
 the ground is not stubborne but gentle to be wrought, there is a third kind used, which is no
 other thing but a peece of yron not reaching all over the * plough head and shooing it to the
 full, but turning up like a snout with a small point sharp at the end. This nee is somewhat broader **H**
 in a fourth kind of shares; but as it is broader in blade and trenchant withall, so it is sharper also
 at the end, inasmuch, that both with the point forward & the edges of the sides, it not only pier-
 ceth the ground before it pointant like a sword, but also cutteth the roots of weeds which it en-
 countreth: a devise invented not long since in Rhœtia. As for the Gauls, they set too besides, cer-
 taine small roundles or wheelles; & a plough thus shod & harnaised, they call in their language
 *Planarati: the head of their share is broad, fashioned like unto the bit of a spade: and thus they
 sow their ground for the most part, new broken up and not tilled nor eared before. And for that
 their plough-shares be large and broad, so much the easier turne they up good turfs of earth and
 make broad furrowes. Presently after the plough, they throw in their seed, and mould or cover it
 afterwards with yron-rooted harrowes drawne aloft. Lands in this manner sown, need no other **I**
 raking or weeding; for commonly they make not past two or three bouts in a land, and as many
 ridges. Finally it is thought, that in this manner there may be sowne in one yeere by the helpe
 of one yoke of oxen, fortie arpens or acres of land ordinarily, if the ground be gentle and easie
 to be eared; but if it be stiffe and stubborne, they shall have worke enough to go through thirtie.

CHAP. XIX.

¶ *The seasons that be proper for tilling the ground: also the manner of
 coupling oxen in yoke.*

IN this operation of ploughing ground, I am of mind to follow that Oracle or Aphorisme
 of *Cato*, who being asked which was the first and principall point of Agriculture, answered **K**
 thus, *Even to husband, order, and tend ground well*: being demaunded againe, what was the se-
 cond, he made answer, *To plough well*: and when the question was propounded concerning the
 third point of husbandrie, he said, *That it consisted in manuring and dunging it*. There be other
 necessarie rules besides, set downe by him as touching this matter; namely, Make no unequal
 furrowes in ploughing, but lay them alike with one and the same plough. Passe not the kindly
 season, but care the ground in due time. In the warmer countries, lands would be broken up
 and fallowes made, immediately after the winter Solstice or Sunstead. In colder regions, touch
 them not before the spring Æquinox or mid-March. In a drie quarter, plough more early than
 in a moist: sooner also in a fast and compact soile, than in a loose and light ground: in a fat and
 rich field, than in a leane and poore land. Looke in what climat the Summer is ordinarily drie **L**
 and hot, it is thought more profitable to care up a chalkie or a light and lean ground, betwene
 the summer Sunstead and the Æquinoctiall in the fall of the leate. If the climat be such as yeel-
 deth but little heat in Summer, and therewith many showrs of raine, where the soile also is fat and
 beareth a thicke greene-ford, it were better to breake up ground and fallow in the hottest season:
 where the soile is heave, grosse, and fat, and wherein a man may tread deepe, I like well that it
 should be tilled and stirred in winter: but in case it be very light and drie withall, it would not be
 medled with but a little before * Seednes. Here also be other proper rules set down by *Cato*, per-
 tinent to Agriculture: Touch not (qd. he) in any hand a peece of ground that soon will turne to
 dust and mire. When thou doest plough indeed for to sow, employ thy whole strength thereto:
 but before thou take a deep stich for all, give it a pin-fallow before; this commoditie commeth **M**
 thereof, That by turning up the turfe with the botom upward, the roots of weeds are killed. Some
 are of this opinion, That howsoever we do els, a ground should have the first breaking up about
 the spring Æquinox. A land that thus hath ben once plowed in the spring, is called in Latin Ver-
 vactum, & hath that name of the foresaid time Ver, [i. the Spring.] Indeed ley grounds & such as
 rest

* Dentab.

* or as some
 thinke, Pfitu-
 gyade.

* bene colere.

* bene arare.

* bene stercoreare.

* in the Spring.

A rest each other yeer, must be in this wise followed. Now if you would know what the Latins meane by *Novale*, they take it for a field that is sowed every second yeere. And thus much of the Land.

To come now unto our draught oxen that must labour at the plough: they ought to be coupled in yoke, as close together & as streight as is possible, to the end that whiles they be at worke and ploughing, they may beare up their heads; for by that meanes they least doe gall or bruise their necks. If they chaunce to goe to plough among trees and vines, they must be muzled with some frailes or devises made of twigs, to the end they should not brouse and crop off the young springs and soft tendrils. Moreover, there ought a little hachet to hang evermore fast to the plough beame before, therewith to cut through roots within the ground, that might breake or stay the plough: for better is it so to doe, than to put the plough to it, to keep a plucking at them;

B or to force the poore oxen to lie tugging and wrestling with them. Also in ploughing, this order is to be kept, That when the oxen are * gone downe with one furrow to the lands end, they turne and goe up againe with another; so that in ploughing of a land they * rest betweene-whiles as little as may be, but evermore goe forward in their labour untill they have made an end of their * halfe acre, or halfe daies worke: and verily it is thought sufficient for a teeme of oxen to breake up (at the first tith) in one day of restie or ley ground, one acre, taking a furrow or flitch of nine inches; but at the second tith or stirring, an acre and a halfe: which is to be understood, of an easie and mellow soile to be wrought: for if it be tough and churlish, it is well if they eare up at the first, halfe an acre; and at the next time they may go through with one whole acre, how hard soever the ground be: for thus poore beasts have their taske set, and their labour limited by Na-

C tures lore and appointment. Every field to be sown, must be eared at first with streight and direct furrowes; but those that follow after, ought to goe byas and winding. If a ground upon the pendant or hanging of the hill bee to be broken up, the furrowes must goe crosse and overthwart: howbeit, the point and beake of the plough-share must be so guided, that one while it bear hard above of the one side, and another while beneath on the other side: and verily in this mountaine worke, the ploughman that holdeth the plough hath toile enough, and laboureth at it as hard as the oxen doe. Certes, there bee some mountaines that have no use at all of this beast, but they eare their ground with raking and scraping hookes onely. The ploughman, unlesse he bend and stoupe forward with his bodie, must needs make slight worke, and leave much undone as it ought to be; a fault which in Latine we call *Prevarication*: and this tearme appropriate unto Husbandrie, is borrowed from thence by Lawyers, and translated by them into their courts and halls of pleas: if it be then a reprochfull crime for Lawyers to abuse their clients by way of collusion, we ought to take heed how wee deceive and mocke the ground, where this fault was first found and discovered. To proceed, the ploughman ever and anon had need to cleanse the culker and the share with his staffe, tipped and pointed at the end like a thistle-spade: hee must beware that betweene two furrowes, he leave no naked balkes raw and untilled: also that the clots ride not one upon anothers backe. Badly is that land ploughed, which after the com is sowed, needs the great harrowes and clotting. Contrariwise, a man may know where there is good worke, namely, if the turfe be so close couched that there be no seames to be seene where the plough-share went. Finally, it is a profitable point of husbandrie and much practised (where the ground doth both beare and require it) For to draw here and there broad gutters or furrowes, to drain away the water into ditches and trenches cast for the nones between the lands, that otherwise would stand within and drowne the come.

D

E

CHAP. XX.

Of harrowing and breaking clods. Of a certaine kind of ploughing used in old time. Of the second tith or fallow called Stirring: and of Cutting.

After the second fallow called Stirring, done with crosse and overthwart furrow to the first, then followeth clodding, if need be, either with rakes or great harrowes: upon which entueth sowing; & when the seed is in the ground, harrowing a second time with the small harrow. In some places, where the manner of the countrey doth so require, this is performed with a tined or toothed harrow, or else with a broad planke fastened unto the plough taile, which dooth hide and cover the seed newly sowne: and in this manner to rake or harrow, is called in Latine *Litare*, from whence came first the word *Delicare*, which is to leave bare balkes uncovered, and by a Metaphore and borrowed speech, to rave and speake idly.

Illa seges de-
um: ualis re-
sponder a uari:
Agricola, bis
que sub bis fri-
gora sensit.
 1 Bickaking.
 2 Stirring.
 3 Crushing.
 4 Setting up.
 5 Casting
 downe.

It should seeme that **Virgil* prescribed, that the ground should have foure tithes in all, by these words, when he said, That the corne was best, which had two Summers and two Winters. But if the ground bee strong and tough, as in most parts of Italie, there needs a *fift tith before sowing: and in Tuscane verily they give their ground, otherwhiles no fewer than nine fallowes; before it be brought into tillage. As for Beanes and Vetches, they may be sowed under furrow, without breaking up the ground before; for this is a readie way, gaining time, saving charges, and sparing labour.

And here I cannot overpasse one invention more as touching earing and ploughing the ground, devised in Piemont and those parts beyond the Po, by occasion of some hard measure and wrong offered to the people and paisants of that country during the warres; And thus stood the case. The Salassians making rodes into the vale lying under the Alpes, as they forraied and harried the country all over, assailed also to overrun their fields of Panicke and Millet being now come up and well growne, meaning thereby to destroy it: but seeing the nature of that graine to be such, as to rise againe and to checke this injurie, they set ploughes into it, and turned all under furrow, imagining by that meanes to spoile it for ever. But see! what ensued therupon? those fields thus misused (in their conceit) bare a two-fold crop, in proportion to other years; and yielded so plentifull an harvest, as that thereby the paisants aforesaid learned the devise of turning corne in the blade into the ground, which I suppose in those daies when it new came up, they called *Aratrare*. And this point of Husbandrie they put in practise, when the corne begins to gather and shew the stem or straw, to wit, so soone as it hath put forth two or three leaves and no more.

Neither will I conceale from you another new devise, practised and invented first, not above three years past in the territorie of Treviers, neare to Ferrara. For at what time as their corn fields by reason of an extreame cold winter, seemed to be frost-bitten and spoiled, they sowed the same againe in the month of March, raking and scraping the upper coat of the ground onely without more adoe: and never in their lives had they the like encrease when harvest came. Now as touching all other Tillage and Husbandrie meet for the ground, I will write thereof respectively to the severall kinds of corne.

CHAP. XXI.

Of the tillage and ordering of the ground.

THe fine Wheat *Siligo*, the red bearded Wheat *Far*, and the common Wheat *Triticum*, Spelt or *Zea* (generally called *Seeq*), and Barley, when they be new sown, would be well clotted and covered first, harrowed afterwards, and weeded at the last to the very root; all at such seasons as shall be shewed hereafter. And to say a truth, every one of these is a sufficient worke for one man to doe in a day throughout an acre. As for the Sarcing or second harrowing, it doeth much good to corne: for by loosening the ground about it, which by the Winter cold was hardened, clunged, and (as it were) hide-bound, it is somewhat enlarged and at libertie against the Spring tide, and full gladly admitteth and receiveth the benefite of the fresh and new come Sunshine daies. Let him take heed who thus sarceth or raketh the ground, that he neither undermine the roots of the corne, nor yet race or disquiet and loosen them. The common wheat, Barley, the Seed *Zea*, (*i. Spelt*) and Beanes, would doe the better if they were thus sarcled, and the earth laid loose about them twice. The grubbing up of weeds by the root, at what time as the corn is jointed, (namely, when the unprofitable & hurtfull hearbs are plucked forth and rid out of the way) much helpeth the root of the corne, discharging it from noisome weeds, procuring it more nutriment, and severing it apart from the other greene sould of common grasse. Of all Pulse, the Cich pease asketh the same dressing and ordering, as the red wheat *Far*. As for Beanes, they passe not at all for weeding: and why? they overgrow all the weeds about, and choke them. The Lupines require nought else to bee done unto them but onely weeding. Millet and Panicke, must bee clotted and once harrowed untill they bee covered: they call not for a second raking and scraping about them, for to loosen the earth, and to lay fresh mould unto them; much lesse to be weeded. As for *Silicia* or *Siliqua*, **Fenigreeke*, and *Fafels*, *Kidney Beanes*, they care onely for clodding, and there an end.

Moreover, there be certaine grounds so fertile, that the corne coming up so thicke and rank in the blade, ought then to be kembed (as it were) & raked with a kind of harrow set with teeth or spikes

* For so he interpreteth it himselfe in the 16 chap. of this booke.

A spikes of yron : and yet for all this, they must be grafed or eaten downe besides neverthelesse with Sheep. Now we must remember, that after such cattell hath gone over it with their teeth, the same corne thus eaten downe, must of necessitie bee sarked, and the earth lightly raked and raised up fresh againe. Howbeit, in Bactriana, Affricke, and Cyrene, there needs no such hand at all : for the climate is so good, so kind, and beneficiall, that none of all this paines is required : for after the seed is once sowne, they never visite it but once for all at nine moneths end, at what time they returne to cut it downe and lay it upon their thrashing floores: the reason is, because the drought keepeth downe all weeds ; and the dewes that fall by night, are sufficient to refresh and nourish the corne.

B *Virgil* is of opinion, That fallowes would be made every yeare, and that our corn field should rest betweene whiles, and beare but each other yeare. And surely, I doe find this rule of his most true, and doubtlesse right profitable; in case a man have land ynough for to let his grounds play them, and rest every second yeare. But how if a man is streighted that way, and hath no such reach and circuit lying to his living? Let him helpe himselfe this way : let him (I say) sow his good red wheat Far against the next yeare, upon that ground from whence he gathered this yeare a crop of Lupines, Vetches, or Beanes, or some such graine as doth enrich and mucke the ground. For this also is principally to be noted, that some corne is sowne for no other purpose, but by the way as it were to advance and helpe others to fructifie: howbeit, small fruit and encrease (to speake of) ariseth thereby, as I have observed once for all in the booke immediately going before, because I would not willingly reiterate and inculcate one thing often. For herein regard especially ought

C to be had, unto the nature and propertie of every soile.

CHAP. XXII.

Of certaine countries exceeding fertile and fruitfull. Of a Vine bearing grapes twice in one yeare. Of the difference and diversitie observed in waters.

T Here is in Affricke or Barbarie a citie called Tacape, situate in the midst of the sands, as men goe to the Syrts and Leptis the great : the territorie lying about which citie, by reason that it is so well watered, is marvellous fruitfull, and indeed passeth a wonder and is incredible. Within this tract there is a fountaine, which serveth abundantly for three miles well neere,

D every way; the head thereof verily is large ynough otherwise, howbeit the inhabitants about it are served with water from thence by turnes, and dispensed it is among them at certaine set houres, and not otherwise. Ther standeth there a mightie great Date tree, having under it growing an Olive, under which there is a Figge tree, and that overspreadeth a Pomgranate tree, under the shade whereof there is a Vine : and under the compasse thereof, first they sow Frumentie or eared corne, after that Pulse, and then worts and hearbes for the pot, all in one and the same yeare. Every one of these rehearsed, live, joy, and thrive under the shade of others. Every foure cubites square of this soile (taking the measure of a cubite from the elbow, not to the fingers ends stretched out in length, but clasped together into the fist) is sold for * foure deniers Romane. But this one surpasseth all the rest : The Vines in the said territorie beare twice a yeare, and yeld their grapes ripe for a double Vintage. So exceeding fruitfull is the soile, that unlesse the rankenesse thereof were abated and taken downe, by bearing sundrie fruits one under and after another, so that it were employed to one thing alone, the inhabitants should never have any good thereof: for by reason of the over-rankenesse, each severall fruit would perish and come to naught. But now by means of plying and following it still with seed, a man shall gather one fruit or other ripe, all the yeare long. And for certaine it is knowne, that men cannot overcharge the ground, no nor feed the fertilitie of it sufficiently.

* 2 lb 6 d. sterl. By which reckoning one acre would cost above 20 pound sterling: so much in proportion of the whole, as this cubit is under our halfe yard or 18 inches.

Moreover, all kinds of water are not of like nature nor of equall goodnes, for to drench and refresh the ground. In the province of Narbone, now Languedoc, there is a famous well or fountaine named Orge, within the very head whereof there grow certain hearbes, so much desired and

F fought for by kine and oxen, that to seeke and get a mouth full of them, they will thrust in their whole heads over their eares, untill they meet therewith. But howsoever these hearbes seeme to spring & grow within the water, certain it is, that nourished they are not, but by rain from above. And therefore to conclude and knit up all in one word, Let every man be well acquainted with the nature both of his owne land which he hath, and also of the water wherewith he is served.

CHAP. XXIII.

¶ *Of the diverse qualities of the soile. Also, the manner of dunging or manuring grounds.*

IF you meet with a ground of your owne, which wee called heretofore by the name of Tenara, the floure indeed and principall of all others: after you have taken off a crop of Barley, you may very well sow Millet thereupon: and when that is inned and laid up in the barne, proceed to Raddish. Last of all, after they bee drawne, there may bee Barley or common Wheat sowed in the place, like as they doe in Campaine: for surely such a peece of ground needs no other tillage, but often sowing. Another order there is besides this in sowing of such soile, namely, that where there grew the red wheat Adoreum or Far, there the ground should rest all the foure Winter moneths, and in the Spring be sowed againe with Beanes; so that it alwaies be employed & kept occupied untill Winter without any intermission. And say that the ground be not altogether so fat, yet it may be ordered so, that it be ever bearing by turnes in this sort, that after the Frumentie or Spike corn be taken off, there be pulse sowed three times, one after another. But in case the ground be over poore and leane, it must bee suffered to rest and take repose two yeares in three. Moreover, many Husbandmen do hold, that it is not good to sow white corne or Frument upon any land, but such as lay fallow and rested the yeare before.

However it be, the principall thing in this part of Agriculture, consisteth in dunging: whereof I have written already in the former booke next to this. This one point only is resolved upon by all men, that none of our grounds ought to be sowed, unlesse they bee manured and mucked before. And yet herein must we be directed by certaine rules peculiar and proper thereunto, as follow. Millet, Panicke, Rapes, Turneps or Navewes, ought never to be sowed but in a ground that is dunged. If there bee no compost laid upon a ground, sow upon it Frument or bread corne, rather than Barley. Likewise in grounds that rest and lie fallow every other yeare, albeit in all mens opinion, they are thought good for to beare Beanes, yet notwithstanding Beanes love better wherefoever they come to be sowed in a ground but newly mucked. Hee that mindeth to sow at the fall of the leafe, must in the month of September before, spread his dung, turne it in with the plough, and so incorporate it with the soile presently after a shower of rain. Even so also, if a man purpose to sow in the Spring, let him in the Winter time dispose of his mucke upon the lands and spread it. The ordinarie proportion is, to lay eighteen tumbrels or loads thereof upon every acre. Thrown abroad it must bee also before it bee dried, and ere you sow, or else so soone as the seed is in the ground, that it may be harrowed in with the corne. But in case this manner of dunging be neglected, it followeth then, before that you doe harrow, to strew the short small dung in manner of dust gathered out of Coupes, Mues, and Bartons, where foule are fed; or else to cast Goats-tredles upon the land, as if you would sow seed, and then with rakes and harrowes to mingle it with the soile.

To the end now that we may determine fully as touching this care also, belonging to dung, every sheepe or goat and such small cattell, should by right yeeld ordinarily in dung one load in
 *ten daies: and every head of bigger beasts ten load: for unlesse this proportion and quantitie of
 mucke bee gathered, plaine it is, that the graunger or maister of Husbandrie, hath not done his
 part, but failed in littering of his cattell. Some hold opinion, that the best way of mucking a land
 is, to fold sheepe and such like small cattell thereupon, even in the broad open field; and to this
 purpose they enclose or imparke them within hurdles. In a word, a ground not dunged at all, groweth
 to be cold: and againe if it be overmuch dunged, the heart thereof is burned away. And therefore
 the better and safer way is to mucke by little at once and often, rather than to overdoe it at
 once. The hotter that a soile is, it stands by good reason, that the lesse compost it requireth.

CHAP. XXIII.

¶ *Of good seed-corne. The manner of sowing ground well. How much seed of every kind of graine an acre will take. The due seasons of Seednes.*

THe best corne or Zea for feed, is of one yeares age, two yeares old is not so good: that of three, is worst of all: for beyond that time, the heart is dead, and such corn will never spurr. And

*or rather (after Columella) thirtie daies.

A And verily this that is said of one sort, may bee verified of all kinds. The corne that settlieth to the bottome of the mowgh in a barne toward the floore, is ever to be reserved for seed. And that must needs bee best, because it is weightiest; for therein lieth the goodnesse: neither is there a better way to discerne and distinguish good corne from other. If you see an eare of corn having graines in it here and there staring distant asunder, be sure the corne is not good for this purpose, and therefore it must be cast aside. The best graine looketh reddish, and being broken betweene ones teeth, retaineth still the same colour within: the worse corne for seed is that, which sheweth more of the white floure within.

Furthermore, this is certaine, that some grounds take more seed, and some lesse. And hereby verily doe Husbandmen gather their first presage religiously, of a good or bad harvest: for when they see the ground swallow more seed than ordinarie, they have a ceremonie to say and beleeve, that it is hungrie and hath greedily eaten the seed. When a man is to sow a moist ground, good reason there is to make the quicker dispatch, and to doe it betimes, for feare least raine come to rot it. But contrariwise, in drie places it is not amisse to stay the later and attend till raine follow, least by lying long in the earth, and not conceiving for want of moisture, it loose the heart, and turne to nothing. Semblably, when a man soweth earely, hee must bestow the more seed and sow thicke, because it is long ere it swell & be readie to chit. But if he be late in his seednes, he should cast it thin into the ground, for thicke sowing will choke and kill the seed. Moreover, in this feat of sowing there is a pretie skill and cunning, namely, to carie an even hand, & cast the seed equally throughout the whole field. The hand (in any case) of the seeds-man must agree with his gate and march: it ought alwaies to goe just with his right foot. Herein also this would not bee forgotten, That one is more fortunate and hath a more luckie hand than another, and the seed will prosper better and yeeld more increase that such a one soweth: a hidden secret surely in Nature, and whereof we can yeeld no sound reason. Over and besides, this is to be considered, That corn comming from a cold soile, must not be sowne in a hot ground; nor that which grew in a forward and hastie field, ought not to be transferred into lateward lands. Howsoever, some there bee that have given rule cleane contrarie: howbeit, they have deceived themselves with all their foolish curiositie.

Now as touching the quantitie of seed that must be given, according to the varietie both of ground and grain, these principles following are to be observed. In a reasonable good ground of a meane temperature, an acre in ordinarie proportion will ask of common wheat Triticum, or of the fine wheat Siligo, five Modij; of the red wheat Far, or of *Seed [for so we call a kind of bread-corne] ten Modij; of Barley sixe; of Beanes as much as of common wheat, and a fift part or one Modius over; of Vetches twelve; of Cich-pease the greater, Cichlings the lesse, & of Pease, three; of Lupines ten; of Lentils three; [as for these, folke would have them sowed together with drie dung] of Ervile six; of Silicia or Feni-greke six; of Phaseols or Kidney beanes foure; of Dradge or Balsimong for horse-provender, twentie; but of Mullet and Panicke foure Sextars. Howbeit, herein can be set down no just proportion, for the soile may alter all. And in one word, a fat ground will receive more, and a leane lesse. Besides, there doth arise a difference another way, in this manner: if it be a massie, fast, chalkie, and moist ground, you may bestow in one acre thereof sixe Modij, either of common wheat or of fine wheat Siligo; but in case it be loose and light, naked, drie, and yet in good heart and free, it will aske but foure. For the leaner that a ground is, unlesse it be sowne scant, and the straw come up also thin, the shorter eare will the corn have, & the same light in the head, and nothing therein. Be the ground rich and fat, yee shall see out of one root a number of stems to spring; so that although the graine be thin sowne, yet will it come up thicke, and beare a faire and full eare. And therefore in an Acre of ground you shall not doe amisse, to keepe a meane betweene foure and sixe Modij, having respect to the nature of the soile. And yet some there be that would have [of VVhear] five Modij sowne at all adventure, and neither more nor lesse, whatsoever the ground be. To conclude, if the ground be set with trees, or lying on the side of an hill, all is one, as if it were leane, hungrie, and out of heart. And hereto may be reduced that notable Aphorisme, worthie to bee kept and observed as a divine Oracle, Take not too much of a land, weare not out all the fatnesse, but leave it in some heart. Over and above the Rules aforesaid, *Accius* in his Treatise called *Praxidicus*, commeth in with one more of his owne, Sow your ground (saith hee) when the Moone is in any of these signes, Aries, Gemini, Leo, Libra, and Aquarius. And *Zoroastres* hath another Astronomical observation

by

by himselfe, that the Sunne should be entred into Scorpio, and past twelve degrees thereof, the Moone being at the same time in Taurus. G

Now followeth the deepe question to be discuffed & determined, As touching the fit time and season of sowing corne: which I have put off and deferred to this present place. And this would bee handled and considered upon with exceeding great care and regard; as depending for the most part of Astronomie, and requiring good insight in the course and motion of the Planets, in the order also and influence of the fixed stars: and therefore I purpose to lay abroad the opinions and judgements of auncient writers principally in that behalfe. To begin therefore with *Hesiodus*, esteemed the prince and cheefe of all those that gave precepts of Agriculture; he hath set downe one certaine time of Seednes, to wit, presently after the fall or occultation of the star Vergiliæ, i. the Brood-hen: and no marvell, for he wrote that booke of his in Bœotia, a countrey in the very heart of Hellas or Greece, respectively to his owne countrey men and that climate: and in very truth that was the time of sowing there, as we have noted and specified already. The best Authors of name, and who have written most exactly of this argument, are all agreed upon this point and conclusion, saying, That as all foules of the aire and four-footed beasts have their due season of engendring; even so there is a certaine time, when as the earth is as it were in the ruit, and hath a lust to be conceived. The Greekes in general tearmes have described that season in this wise, namely, When the earth is hote and moist. *Virgil* giveth a precept to sow the common wheat Triticum, and the red bearded wheat Far, after the retrait or departure aforesaid of the Brood-hen Vergiliæ. As for Barley, he would have it cast into the ground between the Æquinox in Autumne, and the Winter Sunne-sted: but Vetches, Kidney beanes, and Lentils, at the setting or going downe of the star Bootes. Which being so, it would do well to digest the rising and falling both of these stars and also of others, into their set daies; to shew (I say) at what fixed time they appeare, and when againe they are hidden. Some there bee who are of opinion, That it is good sowing even before the occultation of the said star Vergiliæ, but in a drie ground only and in hote countries: for so (say they) will the seed swell & mortifie the better; which the naturall humiditie onely of the earth is sufficient to putrifie and prepare so, that when the next raine falleth, it will be readie to spurt and chit within a day. Others attend and wait seven daies after the retrait of the foresaid Brood-hen, for the raine that commonly falleth about that time. There be againe that begin to sow in cold regions immediately after the Æquinox in Autumne: but in hot countries they be later in their seednes, for feare that the corne would bee Winter-prowd, and grow overmuch before the cold weather come. But all writers accord herein, that it is not good sowing about the Winter Solstice, when the daies be at the shortest: the reason is very pregnant & apparant, for Winter seed if it be sowne before midwinter, will spurt and spring at the seven-nights end; sow after that time, you shall have it lie in the ground fortie daies before it make any shew of coming up. Many make haft and put their seed into the ground betimes, and this proverbe they have usually in their mouth, *Well may overtimely and hastie sowing ofentimes faile, but late sowing shall ever misse and deceive the Maister*. Contrariwise, others there are of this mind, That it were better staying untill the Spring to doe it well & surely, rather than to sow in a bad Autumne, and put it to the hazard of loosing all. If there bee no remedie therefore, but to take the Spring season, a man must make choice of the time betweene the middest of Februarie [at what time as the West wind Favonius doth rise and begin to blow] and the Æquinox in March. Some have no regard at all to the constitution and figure of the heavens in this case; thinking the rising and falling of starres, the course and motions of coelestiall bodies, to be frivolous matters & nothing pertinent to this purpose, but content themselves onely with observing the cardinall seasons of the yeare, and some other times, in a generalitie. In the Spring (say they) sow Linefeed, Otes, and Poppies, and so hold on unto the festivall holydaies of *Minerva*, called Quinquarvus; like as at this day throughout all Lombardie and beyond the Po, they goe by no other rule. As for Beanes, and the fine wheat Siligo, put them into the ground in the moneth of November. Let the Winter red wheat Far take his fortune and bee entered, from the end of September, untill the middest or fiftenth day of October. Others goe beyond that day, and continue their Seednes unto the Calends or first day of November. Now, as these men have no regard at all to the speculation of Nature, and the course of the stars; so the other before named, are given too much thereto, and rapt they are so high among the stars and planets, that their owne eyes bee dazeled therewith: and besides, their subtilties and quiddities doe blind others, considering that the pra-
ctise

A *Disc* of these matters must passe through the hands of rusticall peasants, who are so far off from conceiving Astronomie, & the constellations above, that they know not one letter of the book, nor never learned their A.B.C. Howbeit, wee cannot chuse but confesse, that the true reason and knowledge of Agriculture, dependeth principally upon the observation of the order in heavenly bodies: for *Virgil* saith very well, That before all other things, a husbandman should be skilfull in the winds, and have the foreknowledge and prediction of them: also to have an insight into the nature and influence of the starres: and in one word, to observe both the one and the other, as well as the Sailers and mariners at sea. Certes, a hard peece of worke it is, and infinite; and small hope I have that ever I shall be able to drive into their heads that are so ignorant and grosse of conceit, this high learning and heavenly divinitie, as touching the Planets, the fixed Starres, together with the reason of their orderly motions and coelestiall powers: howbeit considering the great profit that may arise and grow thereupon to mankind, I will cast a proffer and give the attempt to make ploughmen Astrologers, or Astronomers at leastwise, if it may be. But first my purpose is, to lay open before their eies certaine difficulties (which troubled also some of the auncient writers, and those not unskilfull in this part of Philosophie) as touching the course and order of the Starres: which being not only discovered, but also assailed and cleared, their minds with better contentment may goe from the contemplation of heaven to the rest of Natures workes, and see those things by the effects, which they could not possibly foresee by their causes.

C H A P. XXV.

*The times and seasons of the rising and setting of Starres, digested into order, as well by * day as night.*

* i. Evening and mornings

I N the first place, there offereth it selfe unto us one difficultie above the rest, so intricate, as hardly is it possible to resolve upon it; namely, as touching the very daies of the yeare, how many they be in number; and the revolution of the Sunne, how and when he returneth again to the same point? For whereas some doe account the Solare yeere to be 365 daies just; others adde thereunto certaine quadrants or fourth parts of day and night together, to wit, six houres every yeere; which being put together, make the fourth yeare Bissextile or Leape yeare: so as it is in manner impossible to assigne the certaine daies and houres of the Starres apparition or occultation. Over and besides, how obscure, how darke and confused all this matter is, appeareth manifestly herein, That the times and seasons of the yeare, prefixed by auncient writers, fall not out accordingly; and namely, in the observation of the winter seasons and tempests by them set downe: for one while you shall have them to prevent and come sooner by many daies than ordinarie, which the Greeks call προχρημαζειν; another while to draw back and come later, which they tearme επιχρημαζειν. Yea and for the most part this hapneth, by reason that the influence of the coelestiall stars reacheth sooner or later to the earth, and thereafter sheweth the effects: so as the common people, when they see the said foule weather past, and all cleare and faire again, say then and not before, That such a Planet or Star hath performed his course, and is upon the point of his Tropie or returne againe. Moreover considering that all these occurrents depend much upon those starres which bee set and fixed in the firmament, yet shall yee have the Planets play their parts besides, which by their motions and operations, worke no small effects upon the earth, as we have shewed before; and namely, causing between-whiles storms of raine and hail out of course: no marveile then, if they trouble our heads & put us out of our account, interrupting that order of the fixed Stars, upon which we conceived and built our hope of the faire season, and our new spring. And herein, nor wee onely that be men faile of our reckoning, but other living creatures also be deceived, which naturally have much more sense & understanding of these workes of Nature, than wee, in as much as their whole life standeth thereupon: for the Summer birds (as great fore-sigt as they have of such seasons and tempests) are over-taken and killed by Winter frosts and cold, comming sooner than they looked for, and before they be gone out of the countrey: as also winter-foules miscarrie by the hote weather of summer, continuing longer than it was woont, and holding on still after they be come. Hereupon it is, that *Virgil* expressly willet us to learne throughly the skill of the wandering Stars or Planets also, and principally giveth us warning to marke the course of that cold Planet Saturne.

But

But now to come more particularly to the signes which fore-token the Spring: some there be that goe by the Butterflie, and hold that their brood coming abroad, is an assured token that the Spring is come, for that these creatures so feeble, are not able to abide any cold: howbeit, this was checked that very yeare, wherein I wrote this Booke or Historie of Natures worke: for seen it was and marked very well, that three flights of them one after another were killed with the cold weather that surpris'd them thrice, for that they were stirring too earely, and came abroad over-soone. Yea, and the very birds who are our guests in warme weather, visited us five or sixe daies before Februarie, and made a goodly shew of a timely Spring, putting us in good hope, that all cold weather was gone: howbeit, there ensued a most bitter after-winter: streight upon it, that nipped and killed them in manner every one. Hard and doubtfull therefore is the case, that whereas first and principally we were to fetch our rule from the heavens to guide and direct us, then afterwards we should be driven to goe by other signes and arguments meere conjecturall. But above all, the cause of this incertitude and difficultie, is partly the convexitie of the cope of heaven, and partly the diverse climates observed in the globe of the earth: by meanes whereof, one and the same star seemeth to rise at sundrie times in diverse countries, and appeareth sooner or later to some than to others: and therefore the cause depending thereupon, is not in all places of like validitie, nor sheweth the same effects alwaies at the same times. And yet there is one difficultie more, arising from those Authors who writing of one and the same thing, have delivered diverse opinions, according to the sundrie climates wherein they were, at what time as they observed the figure and constitution of the heavens. Now were there of these Astronomers three Sects, to wit, the Chaldeians, the Ægyptians, and the Greekes. To which there may be added a fourth, which among us *Cæsar* the Dictatour first created: who observing the courte of the Sun, and taking with him the advise also of *Sosigenes* (a learned Mathematician and skilfull Astronomer in his time) reduced the yeare unto the said revolution. Howbeit, in this calculation of his, there was found an error, and short he came of the marke which he aimed at, by reason that there was no bissextile or leape yeare by him inserted, but after twelve yeares. Now, when it was observed by this reckoning, that the Sunne had performed his revolution sooner than the year turned about, which before was wont to prevent the course of the Sunne, this error was reformed; and after every fourth yeare expired, came about the Bissextile aforesaid, and made all streight. *Sosigenes* also himselfe, albeit hee were reputed a more curious and exquisite Mathematician than the rest, yet in three severall treatises that he made, retracting or correcting that in one booke which he had set downe in another, seemed evermore to write doubtfully, and left the thing in as great ambiguitie and undetermined as he found it. As for these writers, whose names I have alleaded and prefixed in the front of this present volume now in hand, they have likewise delivered their opinions as touching this point: but hardly shall you find two of them in one & the same mind. Lesse marvell then, if the rest have varied one from another, who may pretend for their excuse the diverse tracts and climates wherein they wrote. As for those who lived in the same region, and yet wrote contrarie, I cannot tell what to make of them. Howbeit, I care not much to set downe one example of their discord and disagreement, *Hesiodus* the Poet (for under his name also there goeth a Treatise of Astrologie) hath put downe in writing the matutine setting of the star Vergilia (which is the occultation thereof by the raies and beames of the Sunne toward morning) to begin ordinarily upon the day of the Æquinox in Autumne. *Thales* the Milesian saith, That it falleth out upon the five and twentieth day after the said Æquinox. *Anaximander* writeth, That it is nine and twentie daies after: and finally, *Euctemon* hath noted the eight and fortieth day following the said Æquinox, for the retrait or occultation of the forenamed Brood-hen star Vergilia. Loe what varietie there is among these deepe cleaikes and great Astrologers.

For mine owne part I hold well with *Cæsars* calculation, and will keepe me to his observations as neare as I can, for that the same will fit best with our meridian here in all Italie. Yet nevertheless I will not sticke to set downe the opinions of others, because my desseigne tendeth not to one particular place alone, but I purpose and profess to represent unto the Reader the universall Historie of Nature, and the whole world. But my meaning is not to rehearse the names of everie Author one by one (for that were a tedious peece of worke, and would require a long traine of superfluous words) but onely to put downe the regions of every climate, and that as succinctly and briefely as I can. Where, by the way I must advertise the Readers, that they remember well this one thing, how when for brevities sake I nominate the land or region Attica, they must with-

A all understand the Islands Cyclades: when I name Macedonie, I comprehend therewith Magnesia and Thracia: under Ægypt I comprise Phœnice, Cyprus, and Cilicia: under Bœotia, the regions of Locris and Phocis: and in one word, alwaies the tracts and countries adjacent and confining together. *Item*, In making mention of Hellespontus onely, I take together with it Cherfoneus, and all the continent or maine firme land, as farre as to the mountaine Athos: in naming Ionia, I reckon also Asia the lesse or Natolia, and the Isles thereto adjoining: under the name of Peloponnesus I count Achaia, and other lands in that climate lying to the West. Finally, the Chaldæans shall make demonstration, as in a map, of Assyria and Babylonia. As for Affricke or Barbarie, Spaine, and Fraunce, marvell not if I passe them over in silence: for there is not a writer in all these nations, one or other, who hath either observed or penned down the time when these fixed stars rise or fall. Howbeit, it were no hard matter to come to the distinct knowledge thereof in those climates and countries also, by the meridionall lines and conformitie of the Parallele circles, which I digested orderly in the sixt booke of this worke. For thereby a man may understand the uniforme agreement in the position of the heaven, not onely for whole climates and countries, but also for every severall citie by it selfe, under the same meridian or Parallele: following still the knowne paralleles of these regions which we have named, and taking withall the elevation of any circle pertaining to every such land as a man will seeke, and respectiue to the rising of the stars, according to the equall shaddowes, throughout all those parallele circles. Moreover, it ought to be shewed and declared that ordinarily the times and seasons have their temperature and influence every foure yeares together: and those lightly returne the same without any great alteration, from yeare to yeare duly according to the course and recourse of the Sunne, during that tearme: marie in eight yeares they sensibly doe encrease, namely by what time as the Moone is in her hundreth revolution.

B Now all the knowledge of the heavens pertinent to Agriculture, standeth principally upon three sorts of observations, to wit, The rising of the fixed stars; the setting of the same; & the four cardinall points, to wit, of the two Tropickes or Sunsteads, and the double Æquinox, which deuide the whole yeare into foure quarters and notable seasons. Where note, that the rise and fall of those stars before said is to be considered and taken two waies. For first when the Sunne approacheth unto them with his beames, they be hidden and no more seene: likewise, after his departure they shew themselves againe: and as the one, me thinkes, might have been more aptly called an Apparition than a Rising, so wee should have framed our tongue in common speech to have termed the other Occultation, rather than Setting. Secondly, according as the said stars begin either to shine out or bee hidden in the morning before the Sun be up, or at evening after the Sunne is set, they be said to rise and goe downe, and thereupon are named * Matutine or Vespertine, Orientall or Occidentall, according as the one or the other happeneth unto them in the twy-light, morning or evening. Certes, when they are to be seene Matutine or Vespertine, it must be at the least three quarters of an houre either before the Sunne is up, or after he is downe: for within that space there is no looking after them. Moreover, some stars there bee that rise and fall twice. But take this with you, ere I proceed further, that all this speech of mine is to bee understood of the fixed stars, which beeing settled fast in the skie, move not of themselves: and in no wise, of the Planets.

C As touching the foure cardinall seasons of the yeare, whereby it is deuided into foure quarters: limited they be according to the light more or lesse, and as the daies be longer or shorter: for so soone as the Winter Sunnestead is past, the daies do lengthen; and by that time that ninetie daies and three houres be gone and past, they be just as long as the night, & this is called the Spring Æquinox. From which very day for ninetie three daies together & twelve houres, namely, unto the Summer Sunnestead, the daies be longer than the night, and so continue untill the Autumne Æquinox, at what time the daies and nights be equall againe; from which time they shorten and decrease as they grew in length & encreased before, for eightie nine daies together, and three houres, untill the foresaid Winter Sunnestead, when as the daies bee shortest. And here you must note, that in all these additions of houres at this present, I meane those onely that be Æquinoctiall, which deuide the day and night equally in foure and twentie parts, and not the common houres of any other day artificiall whatsoever. Also take this with you, that all these distinctions and diuisions of the foure seasons, begin alwaies in the eight degree of those signes under which the Sunne is at those times: as for example, The winter Sunnestead or shortest day

* oris & occid
sus Heliacus.
* oris & occid.
sus Cosmicus.

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of the year, called in Latine Bruma, falleth out in the eight degree of Capricorn, which light-ly is upon the *18 day before the Calends of Januarie. The Spring Æquinox, when nights and daies be of a length in the eight degree of Aries. Semblably, the Summer Sunnestead or longest day of the year, is alwaies when the Sunne is entred eight degrees into Cancer. Last of all, the other Æquinox in Autumn, when day and night is equall, lighteth upon the eight degree of Libra. And certes, seldome or never shall you see any of these foure daies without evident shew of some notable change in the weather. Againe, these cardinall seasons or quarters of the year, admit also their sub-divisiones still into some notable and speciall times, observed in *the very middle space from the one and the other. For betweene the Summer Sunnestead and the Æquinox in Autumn, just upon the five and fortie day after the same Sunnestead, the retrait or setting of the star called in Latine Fidicula, *i.* the Harpe, beginneth the Autumn. Likewise, betweene that Æquinox and the Winter Sunnestead or shortest day of the year, the Matutine or morning fall of the star Vergiliæ, upon the three and fortieth day after the said Æquinox, setteth the beginning of the Winter. So likewise upon the five and fortieth day betweene mid-winter or the shortest day of the year and the Spring Æquinox, the blowing of the Westerne wind Favonius beginneth the Spring. And last of all, upon the three and fortieth day from the said Æquinox toward the Summer Sunnestead, at what time as the star Vergiliæ doth rise Matutine, begins the Summer.

But to returne againe to our Agriculture, begin I will at the Seednes of Frument corne, that is to say, at the rising or apparition of the star Vergiliæ in the morning, without making any mention at all of other petie stars, for to interrupt the traine and course of our Treatise, and to heape difficulties one upon another; considering that the fierce and vehement star Orion is departed a great way off from us by that time. I am not ignorant, that many fail to sowing corne long before, & prevent this time, beginning their Seednes within eleven daies after the Æquinox in Autumn, namely, at the approach and rising of the star Corona, *i.* the Crowne: promising themselves assuredly to have raine upon it for certaine daies together. *Xenophon* would not have us begin to sow before that God give us some good signe and token so to doe. And *Cicero* our countreyman expounding this saying of *Xenophon*, taketh the raines in *November to bee that signe which God giveth: whereas in very deed the true and undoubted rule to goe by, is to make no great hast into the field for to sow, before the leaves begin to fall; and this every man holderth to be at the very occultation or retrait of the star Vergiliæ. Some as we have before said, have observed it about three daies before the Ides of November: and for that the said star is so evident in the heaven, and easiest to be knowne of all others, called it is by the name of a garment hanging out at a Brokers shop. And therefore by the fall or retrait thereof, as many men as have a care and fore-cast to prevent the covetous dealing of the merchant Taylor (as commonly such occupiers lie in the wind for gaine) guesse aforehand what Winter will follow: for if it bee a cloudie season when this star doth retire, it threateneth a rainie Winter, and then these merchants presently raise the price of the clokes which they sell: but if the weather be faire and cleare at the setting or occultation thereof, it sheweth a pinching and hard Winter toward: and then they hold other garments also very deere. But this Husbandman of ours, who cannot skill at all to look up and to learne the order and position of the heavens, must spie this signe of Winter among his briars and brambles, hee must find (I say) the time of Seednes as hee lookes downward upon the ground, namely, when hee sees the leaves fallen and lying under his feet. Thus may a man know the temperature of the climate, and the yeare, according as hee perceiveth the leaves bee fallen more at one time than another, sooner also in some places, and later elsewhere. For as the season is forward or late, as the climate also is affected, so are the trees knowne to shed their leaves accordingly. And in very truth, this is the truest signe of all others. And the best thing therein is this, that being generall throughout the whole world, and yet peculiar to each place, it never faileth. A man might make a wonder hereat, if hee did not see and remember, that upon the very shortest day in the year, even in midwinter when the Sun is entred Capricorn, the hearb Peniroyall useth of it selfe to floure, either set in chaplets, or otherwise hanging and sticking in the shambles; so willing is Nature to shew us all her secrets, and to keepe nothing hidden from us. For loe what signes, and markes she hath given us, whereby we might know the time of sowing corn: and verely, this is the onely true and infallible direction, grounded upon approved experience, and the same shewed first by dame Nature; for by this dropping and fall of leaves, what doth she else teach

* 15 of December.

* Called *Intervalla* afterward in this chapter, and containe much about six weekes.

* Called by our Husbandmen *Gore-moone*.

A teach and counsell us but to have our eie upon the ground, and to cast seed into it: assuring us of a certaine supplie of dung and compost by overspreading the ground with such mullock, that soone will turne into mucke? what doth shee else (I say) but by covering the earth in this manner with leaves, shew how carefull she is to defend it against hard frosts and pinching winds, and in one word, thereby putteth us in mind to make the more hast and get our seed under mould? As for *Varro*, he is of the same opinion for Beanes also, and willeth us to observe the said rule in sowing them at the fall of the leafe. Others are of this mind, that the best sowing thereof is in the full Moone. But for Lentils, we should attend the last quarter toward the change, to wit, from the five and twentieth day to the thirtieth. Also, that Vetches must be sowed at the said age of the Moone: for in so doing we shall preserve such pulse from the naked snail. Howbeit, some others **B** there bee, that indeed would have these kinds of pulse to bee sowed at this time of the yeare and age of the Moone for provender and forrage to be spent out of hand; marie if wee would keepe the same for seed, then we should take the season of the Spring.

Besides those rules and tokens above specified, there is one more, which Nature upon an extraordinary providence over us, hath presented unto our eies after a wonderfull manner, the which *Cicero* expresseth in these tearmes:

*Iam vero semper viridis, semperq; gravata
Lentiscus, triplici solita est grandescere fetu:
Ter fruges fundens, tria tempora monstrat arandi.*

C

The Masticke tree,	As shee therefore,
All times you see,	By Natures lore,
Is clad and richly dight,	Doth fruit thrice yearly beare:
With greene in cold,	So thereby wee,
With fruit three-fold,	Know seasons three,
A faire and goodly sight.	Our land to duly care.

Of which three seasons, one is appropriate for the sowing both of Poppey and also of Line seed. But since I have named Poppey, I will tell you what *Cato* saith as touching the sowing thereof: Vpon that land (quoth hee) where you meane to sow Poppey, burne your winding rods; the **D** cuttings also and twigs of vines, which remained and were left at the pruning time: when you have burnt them, sow wild Poppey seed in the place; for it is a singular medicine beeing boiled up to a syrrop in honey, for to cure the maladies incident to the chawes and throat. As for the garden Poppey, it hath an excellent and effectuall vertue to procure sleepe. And thus much concerning Winter corne and the Seednes thereof.

CHAP. XXVI.

☞ *A summarie and recapitulation of all points of Husbandrie: and to what out-
workes in the field a Husbandman should be employed, respectively
to every moneth of the yeare.*

E **B** Vt now to comprise under a certaine brieve Abridgement and Breviarie, all points of Husbandrie together: At the same time before-named, [to wit, at the fall of the leafe] it is good also to lay dung unto the roots of trees; likewise to mould and banke vines: and one workman is sufficient for one acre. Also, where the nature of the ground will bear it, the husbandman shall not doe amisse to disbranch and lop his tree-groves, to prune his vineyards, to hollow the ground of his seminaries and nource-plots with mattocke and spade, & dresse the mould light; to open his sluces and trenches for water-course, to drive and draine it out of the fields; and finally, to wash his wine-presses first, and then to shut and lay them up drie and safe. *Item*, after the Calends or first day of Novembre, let him set no Hens upon eggs untill the winter Sunstead **F** be past: when that time is come and gone, set Hens hardly, and let them couve thirteene eggs; marry better it were all summer long to put so many under them: for in winter fewer will serve; howbeit never under nine.

Democritus giveth a guesse what Winter we shall have, by the very day of the Winter Sunstead: for looke what weather is then and for three daies about it, the like winter (he supposeth)

The eighteenth Booke of

will ensue. Semblably, for the Summer, hee goeth by the other Sunstead or longest day of the yeare: and yet commonly for a fortnight about the shortest day in the yeare, (to wit, during the time that the foules Halcyones doe lay, couve, and hatch their eggs in the sea) the winds lie and the weather is more mild and temperate. But as well by these signes as all other whatsoever, we must guesse the influences and effects of the Stars, according to the event, within some latitude of time; and not so precisely to limit and tie them alwaies to certaine daies prefixed, as if they were bound to make their apparance preemtorily in court, just then, and faile not.

Moreover, in mid-winter, meddle not at all with vines, touch them not in any hand, but let them alone. What then is the Husbandman to doe? Mary then (quoth *Hyginus*) after seven daies be once past from the Sunstead, he is to refine his wines from the lees and let them settle, yea and to poure them out of one vessell into another, provided withall, that the moone be a quarter old. Also about that season (to wit, when the Sunne is in Capricorne) it is not amisse to plant Cherritrees, and set their stones: then is it good also to give oxen Mast to feed them; and one Modius or pecke is sufficient to serve a yoke at one refection: allow them more at once, you glut them and fill them full of diseases: but at what time soever you make them this allowance, unlesse you hold on thirtie daies together, (folke say) they will be scabbed and mangie when the spring commeth, that you will repent for cutting them so short. As for felling timber trees, this was the proper season which we appointed heretofore. All other winter workes for an husbandman to be busied in, would be done in the night for the most part: sit up hee must late, and rise betimes by candle-light, and watch hardly about them, for that the nights bee so much longer than the daies: let him a Gods name, find himselfe occupied with making wicker baskets & hampers, winding of hurdles, and twisting of frailes and paniers: let him thwite torch-wood taper-wife for linkes and lights: and when he hath by day-light made readie and prepared thirtie poles or railes for vines to run on, and sixtie stakes or props to support them, hee may in the evening make five poles or peaches, and ten forkes or supporters; and likewise as many early in the morning before day-light.

But now to come to *Cæsars* reckoning of the times and digestion of the coelestiall signs: these be the notable starres which are significant and doe rule that quarter which is betweene the winter Sunstead and the rising of the Westerne wind Favonius. Vpon the third day (saith hee) before the Calends of Ianuarie, which is the thirtieth day of December, the Dog-starre goeth downe in the morning: upon which day in Attica and the whole tract thereto adjoyning, the starre Aquila, [*i.* the *Ægle*] setteth (by report) in the evening, and looseth her light. The even before the Nones of Ianuarie, *i.* the fourth day thereof by *Cæsars* account [I meane for the meridian of Italic] the Dolphin starre riseth in the morning, and the morrow after, the Harp-starre Fidicula: upon which day, in *Ægypt*, the starre Sagitta, [*i.* the Arrow] setteth in the evening. *Item*, from that time to the sixth day before the Ides of Ianuarie, [*i.* the eighth day of that month] when as the same Dolphin goeth downe or retireth out of sight in the evening, usually we have in Italy continuall frost and winter weather: as also when the sunne is perceived to enter into Aquarius, which ordinarily falleth out sixteen daies before the Calends of Februarie, [*i.* the seventeenth of Ianuarie.] As for the cleare and bright starre called the Star-Royall, appearing in the breast of the signe *Leo*, *Tubero* mine authour saith, that eight daies before the Calends of Februarie, to wit, the 25 day of Ianuarie, it goeth out of our sight in the morning: also over night before the Nones of Februarie, [*i.* the fourth day of the same moneth] the Harpe-starre Fidicula goeth downe, and is no more seene. Toward the latter end of this quarter, it is good and necessarie to dig and turne up fresh mould with mattocke and spade against the time that roses or vines shall be set, wheresoever the temperature of the climat will beare it: and for an acre of such worke, sixtie labourers in a day are sufficient to doe it well. At which time also, old trenches and ditches would be scoured or new made. For morning worke before day, the husbandman must looke to his yron tooles, that they be ground, whetted, and sharpened; that their steales, helves, or handles, be fitted and set to their heads; that shaken tubs, barrels, and such like vessels, be new cowed, bound with hoops, and calfretted; that their staves be well scraped and cleansed, or else new set into them. And thus much of this Winter quarter, as farre as to the comming of the Westerne wind Favonius.

Now as touching the entrance of the new Spring, which is from the rising of the said wind to the *Æquinox* in March: *Cæsar* setteth downe for it the time, which for three daies together is variable

A riable and inconstant weather, to wit, seventeen daies before the Calends of March, which is the thirteenth of Februarie. Also eight daies before the said Calends, which is the 22 of Februarie, upon the sight of the * first Swallow; and the morrow after, upon which day the star Arcturus riseth Vespertine, *i.* appeareth in the evening. In like manner, *Cæsar* hath observed, that the said wind hath begun to blow three daies before the Nones of March, to wit, the fifth of March, just with the rising or apparition of the Crab-star Cancer. Howbeit most writers of Astrologie do assigne the first entrie of the Spring and the comming of this wind, to the eighth day before the Ides of March, which is the eighth of that moneth, when as the star Vindemiator, *id est*, the Grape-gatherer, beginneth to appeare: at what time also the Northerly starre called the Fish, doth arise: upon the morrow whereof, to wit, the ninth day, the great starre Orion sheweth himselfe in his likenesse. In the region Attica where Athens standeth, it is observed, that the star Milvus, *i.* the Kite or Glede, appeareth then in that climat. *Cæsar* moreover noted, that the star Scorpio riseth upon the * Ides of March, those farall Ides (I say) that were so unfortunate unto himselfe: also, that upon the 15 Calends of Aprill, which is the 18 of March, the foresaid Milvus, *i.* the Kite-star, appeareth to them in Italie: and three daies after, the Horse-star is hidden toward the morning. This is the frehest, the most busie and stirring Intervall or time betweene, that husbandmen have; and yet therein be they ofteneft deceived, for commonly called they are not to their worke the very same day that the wind Favonius should by course blow, but when it begins to be aloft; which is a point to be considered and observed with right great regard: for if a man would take heed and marke well, this is that moneth wherein God giveth us that sure and infallible signe which never faileth. Now from what quarter or coast this wind doth blow, and which way it commeth, albeit I have shewed already in the second booke of this storie, yet will I speake thereof more distinctly and exactly anon; meane while, from that day (whensoever it hapneth) on which that wind beginneth to blow, come it sooner (as namely, when it is a timely and forward Spring) or come it later, if it be a long winter (for it is not alwaies the * sixth day just before the Ides of Februarie) from that time, I say, must the rusticall paissants fettle to their worke, then are they to goe about a world of toilesome labour, then must they plie their businesse and make speed to dispatch those things first that may not be deferred and put off: then or never would their summer three-month come be sown, their vines be pruned in manner above-said, their Olive trees dressed and trimmed accordingly: Apple-tree stockes and such like fruits, are then to be set and grafted; then is the time to be digging & delving in vineyards, to remove some young plants out of their seminaries, and digest them in order as they must grow, and to supply their plots with new seeds and imps: Canes and Reeds, Willows and Osiers, Broome also would then some be set, and others cut downe: Elmes, Poplars, and Plane trees, ought then to be planted, as hath been said before: then is the meetest season to cleanse the come fields, to sarelc and rid the winter-corne from weeds, and especially the bearded red wheat Far: in doing whereof, this must be the certein rule to direct the husbandman, namely, when the root of the said Far begins to have four strings or threeds to it. As for Beans, they must not be medled withall in that order, before they have put out three leaves; and then verily they must be lightly gone over, and cleansed rather with a light hooke, than otherwise. When Beanes be blowmed, for fifteen daies together they ought not to be touched. As touching Barley, it would not be *sarelcd or raked, but in a drie ground, and when the weather holds up. Order the matter so, that by the Æquinox in March, all your pruning and binding of vines be done and finished. If it be a vineyard, foure men are enough to cut and tie an acre of vines: and if they grow to trees, one good workerman will be able to overcome fifteene trees in one day. This is the very time moreover of gardening and dressing rose-plots or rosiers [whereof I meane to treat apart and severally in the booke next following] of drawing vinets also, knots, and fine storie workes in gardens: this is the only season to make trenches and ditches: the ground also would now be broken up for a fallow against the next yeare, according to the mind and counsell of *Virgil* especially, to the end that the Sunne might throughly parch and concoct the clots, and thereby make it more mellow for the Seednes. Howbeit I doe like better of their opinion (as the more thriftie and profitable of the twaine) who advise to plough no ground in the mids of Spring, but that which is of a mean temperature: for if it be rich and fat, presently the weeds will over-grow & take up the seams and furrowes: againe, say it be poore and leane, the hot weather comming so soone upon the fallow, will dry it too fast, spend all the moisture, and kill the heart thereof, which should maintaine the

* Whereupon the said wind Favonius, is called *Chelidamas* and *Ornes thias*.

* 13 of March: for upon that day was hee murdered.

* *i.* the seventh of Februarie.

* *Sarriso*.

The eighteenth Booke of

seed to be sown therein. *Cato* setteth downe the Husbandmens worke for the Spring time, in these tearmes: Cast trenches (quoth he) couch young branches, and interre them for seminaries by way of propagation, in case the ground bee strong, fat, and moist withall. Lay dung to your Elmes, Fig trees, Apple trees, and others of like fruit; to Olives, also doe the like: neither forget to manure and muck your medow grounds; but all in a drie moone & about the change. Such fields as are not well watered, defend them as well as you can from the West wind Favonius: downe with superfluous weeds and rid them out of the way; but and if they be hurtfull besides, plucke them up by the roots. Cleanse Fig trees betweene, where need is: make new seminaries and nource-gardens, and repaire the old. All this would be done before the vine begin to floure. Moreover, so soone as the Peare tree sheweth blossome, begin to plough leane, light, and sandie grounds; but afterwards you may be bold to goe in hand with the fattest, fastest, and most waterish that be: let these (I say) be last tilled. And to conclude briefly, as touching this time of ploughing, let this be the marke and rule to guide you; namely, to set unto your worke and put plough in ground, when you see either the Lentiske tree to shew the hope of her first fruit, or the Peare tree to blossome and have a white head. There would bee also a third tilth or crushing of the ground, observed by the sea-onyon Squilla, among those hearbs which have bulbous roots: likewise among floures, by the Daffodill. For as these do bloume thrice, so they point unto three times of ploughing. For by their first blossome, they shew the first tilth or breaking up of the ground, by their middle flourishing, the second fallow or stirring: and by their third, the last crushing. Wherein a man may see the wonderfull chaine (as it were) that linketh this world together, whereby all creatures therein contained, give lightsome tokens and signes one to another. And this may bee observed also in the yvie (a thing verily not of the least and last regard) which must not in any case be touched or meddled withall, so long as Beanes bee in their bloume; for that is the very time and meane to hurt it most and kill it for ever. Now, as some plants there bee that serve for signes unto others, so there be other that caue about them their owne marke, as for example, the Fig-trees: for looke when they put forth in the head a few leaves hollow, and with the edges turning upward in manner of a sawcer or goblet, be sure that is the right season & best time to plant them.

Now is it time to returne from whence wee were digressed, namely, to the calculation of the principall times and quarters of the yeares, and namely, to the Spring Æquinox, which seemeth to be come and gone alwaies by the 3 day before the Calends of Aprill, to wit, the 25 of March. From which day forward, by *Cæsars* calculation, the Calends of Aprill, to wit, the first day of Aprill are significant, as whereupon the star Vergiliæ, *i.* the Brood-hen, beginneth to rise or appeare in the morning; howsoever in Attica and the parts thereabout, the said star seemeth to set or be hidden in the evening upon the third day before the Nones of Aprill, *i.* the third of that month: and the morrow after, the same starre doth the like in Bœotia. Howbeit, according to *Cæsars* Ephemerides for Italie, and the Chaldæans for Assyria and Babylon, the foresaid starre goeth downe or retireth out of sight upon the Nones of Aprill, *i.* the fift of Aprill: at what time in Ægypt, as well *Orion* as his Sword [both stars in heaven so called] begin to be hidden. After *Cæsars* reckoning, the signe or star Libra setteth in Italy the sixt day before the Ides of Aprill, which is the eighth of the same moneth, and signifieth store of raine. The fourteenth day before the Calends of May, which is the eighteenth of Aprill, the * *Suculæ* (a violent and troublesome star, causing stormes and tempests raging both on land and sea) goe downe at evening in Ægypt; but in Attica two daies before, to wit, the sixteenth of Aprill: and in Italy, by *Cæsars* booke, the day betweene both; that is to say, the seventeenth day of the said moneth; the influence whereof is effectually for three daies together; but in Assyria it falleth out twelve daies before the Calends of May, *i.* the nineteenth of Aprill. This is the star or signe in the heavens, commonly named *Palladium*; because the eleventh day before the Calends of May, *i.* the 20 of Aprill, the very birthday and memoriall feast of Rome cities foundation (on which day the weather commonly cleareth up and is faire againe) gave folke a notable occasion of observing the said stars retreat or occultation: howsoever the Greekes have tearmed them * *Hyades*, by reason of the rain and foule weather which ordinarily they bring. And whereas our countrey men have called them in Latine *Suculæ*, *i.* porkets or small swine (according to the apparent Greeke denomination, which they thought to be derived of *ῥῆς*, founding in Latine *Sus*, *i.* a swine) their supposall was false, and betrayed their great ignorance. Moreover, *Cæsar* noteth the eighth day before the Calends

May,

* or *Hyades*, which some say, are five in number, as *Hesiodus*: others seven, as *Proclus*.

* *Sus* is *ῥῆς* *i.* of rain.

A May, which is the 24 of Aprill, for the time that the star Hoedi, *i.* the Kids, doe rise in Italy: but the next day after, they are observed to appeare in Ægypt: the morrow following, within Bœotia and Attica, the Dog-star is marked to be hidden and gone in the evening, when as the Harpe-star is seene in the morning. Now the day after that, which is the fifth day before the Calends of May, *i.* the 27 of Aprill, in Assyria Orion is quite hidden; and two daies after, the Dog-star. Also the sixth day before the Nones of May, which is the second of that moneth, *Cæsar* obserueth, That in Italy the foresaid starres *Suculæ*, rise matutine and shew in the morning: like as also the rainie Goat-star *Capella*, upon the eighth day before the Ides of May, which also is the eighth day of that moneth: and the very same day the Ægyptians doe observe in their countrey, that the great Dog-star goeth downe in the evening, and is no more seene. Thus you see how these fixed stars and signes above rehearsed, doe ordinarily keepe their courses, ruling and governing this time betweene, to wit, from the spring Æquinox in March, unto the sixth day before the Ides of May, which is the ninth of the said moneth. During the first fiftene daies of which halfe quarter, the husbandman must make hast and take in hand that worke which he was not able to goe through with and dispatch before the Æquinox; knowing full well, that upon neglect of this businesse, arose first, the opprobrious reproches that vine-pruners and cutters doe heare on both sides of their eares, from passengers and wayfaring men, by way of counterfeiting the song of that Summer-bird which they call the Cuckow: for it is counted so foule a shame, worthe a checke and rebuke, that the said bird should come and find a pruning booke or bill in a vine at that time of the yeare; that folke therefore stick not to let flie at them bold taunts, and broad biting scoffes, even in the first beginning of the Spring. And verily as these birds, so their song counterfeited in this sort, seemeth to carrie an ominous and cursed presage with them. See how the least things belonging to Agriculture, are guided and caried by naturall reasons! As for the later end of this foresaid time, it must be employed in the sowing of Panicke and Miller; for it is ordinarie and usuall to sow this kind of graine after that hastie Barley is ripe, and also upon the very same lands where it grew. Now the signe common to them both, testifying as well the ripenesse of the one as the Seednes of the other, are the Glo-birds or Glo-wormes *Cicindela*, shining in the evening over the corne fields: for so the rusticall paissants and countrey clownes call certaine flies or wormes glowing and glittering star-like; and the Greekes name them *Lampyrides*: wherein we may see the wonderfull bountie and incredible goodnesse of Nature, in teaching

B us by that sillie creature.

C

D

CHAP. XXVII.

That Husbandmen should not gaze at starres so much, but rather goe by the seasons of the yeare meet for sowing. Also, that they should marke the rising, the setting, and the course of the Sun in some hearbes. And of the rising and setting of other stars.

Nature contented not her selfe to assemble a troupe of stars together in a knot (I meane the Brood-hen *Vergilia*, whereby it is a signe in heaven above, conspicuous ynough already, and of great mark) but she would needs give the Husbandman other stars beneath upon the earth, as signes to shew him the true seasons and times when and how to goe to worke: as if shee cried out and spake unto him after this manner: Why shouldest thou looke up to the heavens, thou that art to till thy ground? Why keepest thou a seeking among the stars for thy countrey worke? Take thy rest and repose thy wearied lims good man, for the nights bee now shorter than they were: to bed therefore, for thou hast but a while to sleepe: Behold I scatter and spread here and there among thy very weeds and grasse growing upon the ground, other especial shining stars, and those I represent unto thine eies in the evening, & when thou doest unyoke and give over thy daies worke: and that thou shouldest not either plead ignorance, or neglect the same, I provoke thee to regard and looke thereat, as a strange wonder. Seest thou not these flies or glo-birds aforesaid cover their bright and glittering light, resembling sparkles of fire, when they keepe their wings close together, and carie fire-light about them even in the night? More than so, I have given thee certain hearbes to tell thee what is a clocke, and how the day goes: and to ease thee more, that thou needest not paine to avert thine eies away from the earth where thy worke lieth, and cast them so much as up to the Sunne; loe the hearbe *Heliotropium*

and the Lupine, turne about with him. What standest thou staring still into the skie, and holdest up thy nose aloft into the aire? why art thou amused upon the course of the stars, and searchest into heaven? Hast thou not I pray thee another Brood hen star, other Vergiliæ, I say, even before and under thy very feet, I meane these pretie glo-wormes? Surely these come duly at their set daies: these keepe time just with those of the heaven, and so long as they appeare and shine above, these gloe and glitter beneath: as if they were linked to that star by some neere alliance and affinitie: in such sort, as a man may resolve and hold for certaine that engendred they be no otherwise but by the influence therof, and are the very chickens and brood of the foresaid Hen. And therefore conclude we may, that whosoever soweth his summer corn, and looketh to reape fruit accordingly before these are to bee seene, deceiveth himselfe, and looseth all his cost and paines. In this meane time and space betweene, the pretie Bee commeth abroad, and tellet us that Beanes bloume, for it is the Beane blossome that calleth her forth of her hive. G
H

Wouldst thou know another signe yet, that winter is past and all the cold cleane gone? when thou seest the Mulberrie tree to bud and put out young leaves, feare no more frost nor hard weather to doe any harme for that year. Then (hardly) go to thy worke appropriate for this season: now is it good to plant young sions and quick-sets of Olives; now is the time to scrape & cleanse here and there where need is, the old Olive trees; and now would meddows be watered, even presently after the Æquinox. What is else to be done in the field this Spring time? Mary, so soone as the grasse in the meddow is growne to a stem and begins once to spindle, then let forth the water, and draine your meddows. Then doe the Vines looke for to be disburgened and rid from their superfluous leaves and needlesse branches: And herein there is a certain gage set, and a rule to goe by, namely, when as the said burgeons are shot out foure fingers in length. Where, note by the way, that the disbraunching of an acre in Vineyard, is one mans work a day and no more. This is the season to give corne lands their stirring, that is to say, the second tilth or fallow. As for the farceling or weeding of [Winter] corne, it would bee done within twentie daies. For let this Æquinoctiall season passe, it is thought that farceling and weeding will hurt not only corne, but vines also. To conclude, this is the very time also to wash sheepe. I

And now to come againe unto our stars where we left. The morrow after the rising or apparition of the star Vergiliæ before said, *Cæsar* reckoneth, that the signe Arcturus looseth his light and is hidden in the morning. Also, that the third day before the Ides of May, to wit, the thirteenth of that moneth, the Harpe star ariseth and begins to shine. Moreover, twelve daies before the Calends of Iune, which is the one and twentieth day thereof, the Kid-star goeth down in the evening: at what time as in the region of Attica the Dog-star also setteth after the same manner. The next day after (by *Cæsars* account for the Meridian of Italy) Orions Sword beginneth by little and little to retire and goe out of our sight. The third day before the Nones of Iune, *i.* the third day of that moneth (after *Cæsars* Ephemerides for our climate of Italie, as also according to the Chaldaens calculation for the Meridian of Assyria) the Eagle-star beginneth to rise and appear in the evening. In which region, Arcturus goeth downe, and wee loose the sight thereof in the morning, eight daies before the Ides of Iune, which is the sixt of the month: howsoever with us here in Italie, he setteth two daies later. As also two daies after that, the tenth of Iune, the Dolphin star appeareth and giveth light in the evening. But seventene daies before the Calends of Iulie, which is the fiteenth of Iune, we in Italie see the rising of Orions Sword, which they in Ægypt do observe foure daies after. And eleven daies before the said Calends, to wit, the one and twentieth day of Iune, the same star (I meane the Sword of Orion) beginneth to go down and be obscured in Italie, if *Cæsars* Almanacke bee true. Now are wee come to the eight day before the Calends of Iulie, namely, that foure and twentieth day of Iune, the very longest day and shortest night of the whole year, and the Summer Sunnestead. In this season also be vines disburgened and cleaned from their unprofitable leaves and branches: then required it is, and care would be had, that an old Vineyard should have once digging, and the new, twice. This is the time of sheepe-shearing. Now, would Lupines bee turned in with the plough, for to enrich and manure the ground. Now are the lands to be crushed and set up against the seed time. Now Vetches would stand no longer, but bee cut for to make forrage. Beanes also would bee now mowed downe, and thrashed out of the way soone after. K
L
M

CHAP. XXVIII.

Of meddowes and lay grounds for hay and pasture. The manner how to refresh and repaire a meddow. Of sith-stones and whet-stones: of Siths and Sickles. Also, the time for sowing corne, and the description of those fixed stars that governe this season.

THe ordinarie season to mow meddowes, is about the Calends or beginning of Iune. And verely, albeit these kind of grounds aske least care and toile about them for to bee maintained, and stand the Husbandman in as little charges, yet something would bee said thereof,

B and these few rules following observed. First therefore, a ground would be hained in, left lay, and kept for grasse and hey, which is for soile good and fat, for situation lying either low and moist, or else having water at commaund from a brook or river neare at hand: but above all, if it be possible, it must lie so, that it may have the benefite of the raine by letting in land-floods into it (running along the lanes and high waies) for to refresh and water the same. Also it is passing good otherwhiles to plough up a meddow ground [for the grasse will come and grow afterwards the better] so it be well harrowed or raked thereupon, and laid even and level. Provided alwaies, that hey-seeds, flowers & all, be sowed upon it (such as be found in hey-lofts and ricks, or els that shed out from the rake into the crib or maunger) which would bee done before the same ground bee harrowed as is above said. Howbeit, neither ought a meddow that is laid for hey and pasture, bee

C watered the first yeare, ne yet grased with cattell, before the second math; for feare least the beasts pluck up the grasse quite ere it be well rooted, or kill the heart thereof by steining and trampling it under their feet. Moreover, it is to bee noted, that such meddow grounds in time will age (as it were) and decay: in which regard, they ought to be helped and restored to their heart againe, by sowing therein either Beanes, Rapes, Navews, or Miller: and when you have taken a crop of one of these from thence, the yeare following they would bee sowne with some Frument or bread-corne: and so the third yeare left lay for meddow againe. Over and besides, this would not be forgotten, that at every math, so often as the grasse is mowed for hey with the syth, there come one after with an hooke, to cut downe those tufts and manes which the mowiers passed over and left standing behind them: for there is nothing worse for a meddow, than to suffer grasse grow to

D feed. The best hearbe in a meddow is the Claver grasse or Trefoile: next to it is the common grasse called Gramen, *z.* Coich or Dogs-tooth: the worst is *Mimmulus. Also the Camocke or VVhin, called Rest-harrow, and such like codded grasse, is not for mowiers, for they crie out upon such and curse it. Moreover, they cannot away with the hearbe Equisetis, *z.* Horse-taile, so called for the resemblance it hath to an horse-taile or mane.

* Someread
Mimmulus,
i. Mimmularis,
Peny-grasse.

The fit time to mow downe grasse, is when the spike or head thereof beginneth once to shed flowers, and to waxe stiffe: for in no case must it stand untill it be drie and withered. Bee not too late (quoth *Cato*) in your hey harvest, but downe with your meddowes, before the seed of your grasse bee ripe. Some, the day before that they set syth into their meddowes, water them, if there be a brooke at hand to be let in. And indeed the best cutting downe of grasse is presently upon

E some good dewes that have fallen overnight. * In some parts of Italie the manner is to cut their meddows after corne harvest. Moreover, in old time it was more costly and painefull to mow (by far) than it is now adaies: for they used no other whetstones, but such as were knowne and ordinarie, as brought out of Candie and from beyond sea, which would not give an edge to their sythes and make them keene, without they were whetted with oile [as Barbers doe their rasours, and gravers their fine chezils and carving yrons:] and to that purpose the mowier went ever with a horn full of oile, tied fast to his shanke. Since which time there have been found in Italie other maner of grindstones, with water, which will bring any yron toole to an edge quickly, aswell as a file. But these water grindstones soone get a swarth and ptesently become greene.

* Haply he
meaneh a se-
cond math.

As touching the very Sythes, there bee two sorts of them. For those of Italie be shorter than other, easie to handle and weld, and it were among bushes, briers, and brambles. In France where their fields and meddowes be large, they goe a nearer and shorter way to worke, for they make no more adoe, but cut the grasse down at the middle, and let that alone which is short. Our mowiers here in Italie, take but one hand to it, and that is commonly their right, and so cut downe their grasse: thus you shall have a man ordinarily in one day goe over an acre and cut it downe clean.

Also

Also it is one mans worke to bind the hey of one acre into bottels: and usually you shall have in G
 so much ground* 1200 pretie ones, of foure pound weight apeece. So soone as the graffe is cut
 downe and laid in swath, it must bee tedded, brought into windrowes, and turned estwoones with
 the Sunne: neither ought it to be cocked up but drie: for otherwise, if this bee not carefully loo-
 ked unto, you shall see it reeke and smoke again by the morning, for the heat that it hath caught
 within: but let the Sunne take it besides, you shall bee sure to see the cockes kindle and bee of a
 light fire.

So soone as this first graffe is downe and the hey made, the meddow must presently bee wa-
 tered againe, to the end there may be a second math of rowen hey in * Autumne, which the La-
 tines call Cordum. In the territorie of Interamna they use commonly to mow their meddowes H
 foure times a yeare, yea, though they lie high and far from the benefit of water. And in most
 places of Italic, thrice is ordinarie: and the rowen graffe afterwards commeth up so thicke and
 high for pasture and forrage, that it yeeldeth as great a benefit as the crops of hey before: ma-
 rie, to raise this commoditie and gaine, those know full well who are drovers of greater cattaile,
 breeders also of young colts, and principally, chariottiers that keepe coach-hories; for all these
 have the best meanes to employ this graffe for their most behoofe.

To proceed now to the consideration of the heavens. The Summer Sunnestead, falleth out
 alwaies [in Italic] to be just upon the foure and twentie day of Iune, at what time as the Sunne is
 enred eight degrees within Cancer, as hath been said before. This is that great point and Tro-
 picke of the world: now is the heaven in most force, and the Sunne at the highest of his power
 and vertue. From the midwinter or shortest day of the yeare, unto this present, during the space I
 of six moneths the daies lengthen: and now the Sunne being passed farre into the North, and
 having mounted and raught to the highest pitch of his intended laborious journey, beginneth
 to turne againe from this Tropicke of Cancer in the North, and bendeth his courte toward the
 other Tropicke of Capricorne in the South; intending by this meanes for other six moneths to
 lengthen the nights and to shorten the daies, proportionably. Which the Husbandman no soone-
 r seeth, but he taketh his opportunitie, and woteth well, that now is the time wherein hee must
 of necessitie make hast to gather and inn the fruits of the yeare, each one respectively in their se-
 verall seasons: now or never ought hee to lay in his provision against the Winter: now must hee
 arme and prepare himselfe (no remedie) to withstand the rigor of cold and frostie weather. And
 therefore meet it was, that dame Nature (our kind nource and tender mother) should give us warn- K
 ing hereof, and forshew this alteration of the yeare, by most undoubted and infallible argu-
 ments. Hereupon she hath presented these markes and signes to the Husbandman, and brought
 them even to his hand: commaunding sundrie trees upon that very day of the Sunnestead to
 turne their leaves toward the Sunne, as if shee pointed unto them by the finger, and shewed how
 that Planet began to retire from whence hee came: so willing shee is, not to conceale from him
 these secrets, that shee hath not set these markes upon wild and savage trees far remote out of the
 way, (because shee would not have him take so much paines as to go into desert Forrests, unpassa-
 ble wilds and mountaines, to seeke for the signes and tokens aforesaid) ne yet upon such as grow
 within good townes and cities, much lesse then those that serve and are in request for arbors and
 vinets onely in hortyards and gardens of pleasure, that he should be faine to leave his ferme in L
 the countrey and goe thither (and yet these trees also testifie of the Sunnestead and his returne:)
 what hath shee done then? Marie shee hath caused the Olive tree, which he seeth every hour plan-
 ted at his very foot, to turne about her leafe: shee hath willed the Linden, a tree that hee hath re-
 course unto every foot for a thousand uses, to doe the like: shee hath enjoined the white Poplar or
 Aspe also the seemblable, wedded as it is so commonly to Vines. Haft not thou ynough yet (quoth
 shee) and will not all this make thee perfect? Look then to the Elme, at the foot wherof thou plan-
 test thy Vine, and which thou seest continually endowed and enriched therewith, I will make it
 also to turne the leafe when the Sunne returns. Thou strippest her of her leaves and braunches
 for thy cattell to eat and brouse; thou gettest up into it for to prune the Vine; How canst thou
 chuse but see the leaves turned? How canst thou be ignorant, but take knowledge of the Solstice M
 and Sunnes returne? Surely that side of the leafe which was from the Sunne but yesterday, is
 now cleane contrarie, and lookes toward him; and in one word, all are turned upside downe. Thou
 occupiest the oisier and willow twigs ever and anone, to bind and tie one thing or other; lowest
 they grow of all the rest, and higher thou art than they by the head: never look up nor cast thine
 eie

*Which is al-
 most three of
 our sale lodes.

*Some call it
 woodcock hey.

A eie aloft for the matter: thou shalt see how I will have them also, growing even under thy nose, to turne their leaves about and follow the Sunne. Why complainest thou and whineft, saying, I am a simple countreyman, I am not booke learned, I never went to Grammer schoole, and I wot not what? Certes, I cannot doe withall if thou be ignorant of the heavens, and canst not skill of the coelestiall signs and course of the stars: it shall not be long of me, but thou maist be an Astronomer and Clarke sufficient. For if all this teaching will not serve, in case, I say, thine eies will not instruct thee ynough to learne these signes: one signe more will I present unto thine eare. Doe but listen to the groning tune and pitifull mone that the Quoiſt and Stock-dove makes: and never thinke that the Sunneſtead is paſt, before ſhe have left ſinging, and that thou ſeeſt her coave and ſitting upon heregs.

B But now to goe on ſtill with our Astrologie and Speculation of Heaven as wee have begun: among thoſe ſtars that rule this ſeaſon from the Sunneſtead beforeſaid, unto the ſetting or occultation of the *Harpe-ſtar; *Cæſar* ſaith, that ſix daies before the Calends of Iulie, to wit, the ſix and twentieth of Iune, Orion riſeth to the inhabitants of Italic: howſoever the ſtar called Orions *girdle, appeareth not to the Aſſyrians before the fourth day of Iulie, upon which day, in Ægypt the ſtar Procyon, *i.* the fore-runner of the Dogſtar Sirius ſheweth in the morning, and commeth in very hote and fierie: and ſurely what Latine name this ſtar ſhould have among the Romanes, I wote not, unleſſe we would have it to bee Canicula, that is to ſay, the Leſſe Dog ſtar, according to the pourtrait that it ſeemeth to reſemble among thoſe fixed ſtars in the firmament: and yet is this a ſigne in the heaven of great marke and conſequence, as anone we will declare more plainly.

C The third day before the Nones of Iulie, *i.* the fiſt of the ſaid moneth, after the Chaldaæans account, in Aſſyria and Babylon, the ſtar named Corona, *i.* the Crowne, goeth downe in the morning: but on the very ſame day to the people of Attica, Orion is ſeene to riſe all whole as hee is. The even of the Ides of Iulie, which is the foureteenth of that moneth, the ſame Orion ceaſeth to be ſeene of them that dwell in Ægypt: and ſixteene daies before the Calends of Auguſt, to wit, the ſeventeenth of Iulie, the foreſaid ſtar Procyon riſeth to them in Aſſyria. The morrow after, which is the eighteenth day, all writers in manner doe agree upon the riſing of that ſignificant and notorious ſigne, which commonly we call the Dog-ſtar, to wit, when as the Sunne is entered the fiſt degree of Leo, which falleth out to be the three & twentieth day after the Summer Sunneſtead. And in truth both ſea and land, doe find and feele the arrivall or coming of this ſtar, yea, and many a wild beaſt beſides, according as we have ſhewed already in place convenient. Neither is this ſtar leſſe worſhipped and adored than thoſe renowned Planets which carie the names of gods and goddeſſes, and have divine honours done unto them. He it is that enflameth and ſetteth the Sunne on fire: to him is imputed the greateſt cauſe of that extreame hot weather, during the canicular daies. Two daies before, which is the fifteenth of Iulie, in Ægypt, the Æagle ſtar goeth downe in the morning, and then the Eteſian winds (called the Avant-curriers) begin, which *Cæſar* thought were not felt nor knowne in Italic untill eight daies after, namely, the three and twentieth of Iulie: on which day the Ægle ſtar is knowne to ſet and goe out of ſight in the region of Attica and that tract, in the morning. As for the Roiall ſtar ſeated in the breaſt of Leo, *Cæſar* affirmeth, That it goeth downe and is all hidden betimes in the morning, the thirtieth day of Iulie, which is three daies before the Kalends of Auguſt. Now the eight day before the Ides of Auguſt, which is the ſixt day of the month, the one moietie or halfe of Arcturus goeth down: but the third day before the ſame Ides, which is the eleventh of that moneth, the Harpe ſtar by his occultation or going downe, beginneth Autumne, according as the ſame *Cæſar* noteth: but indeed and verely, as it hath been found by true demonſtration, it is the ſixt day before the Ides, to wit, the eight of Auguſt. This halfe quarter or ſix weekes ſpace, is that which determineth of vines and vintage, by the meanes of that ſtar which we called Canicula, the very ruler indeed over Vineyards, and whereupon dependeth the good or bad ſeaſon for all our grapes and wine the next yeare. From hence it is, and not otherwiſe, that the Vines are ſaid to be blaſted, & the grapes burnt (as it were) to a coale. No haile ſtormes, no tempeſt of wind or raine is comparable hereunto, nor doth the like harme to corne and grapes: this cauſeth many a time ſcarcitie, and bringeth extream dearth and famine, which neither haile nor tempeſt doth. As for theſe tempeſts, they endomage haply and hurt ſome fields here and there: but the blaſt beforeſaid plagueth whole countries, farre and neare. Howbeit, it were no hard matter to deviſe how to withſtand and remedie this miſcheefe, but that men take more pleaſure to take occaſion for to blame Nature and her workes, under pre-

tence and colour of such untoward blasts, than to seeke and find meanes to do themselves good. G
 It is reported of *Democritus*, the first Philosopher who understood himselfe, and afterwards shew-
 ed unto the world, the great affinitie and agreement that was between heaven and earth (which
 fundry of his the richest and wealthiest citizens where he lived, seemed to scorne and despise) fore-
 seeing by the course of the stars, & namely, by the rising that would be of the *Vergilia* or *Brood-*
hen (according as I have shewed alreadie, and will anon declare more at large) that *Olives* would
 faile that year, and consequently a dearth ensue of oile; bought up all the oile in that tract & coun-
 trie, which as then for the hope of great plentie of *Olives*, bare no price: whereat the great mer-
 chants of the citie (who dreamed of nothing lesse than of a scarcitie of oile, considering the *Olives*
 made so fair a shew upon the trees) were astonied & marvelled much, that *Democritus* so learned a
 Philosopher, & a man who they knew, was wont by his profession to content himselfe with pover- H
 tie, to set his mind upon nothing so much as a quiet life, & wholly to busie his braine in attaining
 of knowledge and learning, was now on a suddain become a merchant. In the end, they perceived
 what the cause was, & acknowledged his divine skill in foreseeing & preventing a dearth: and he
 for his part shewed plainly, That it was not avarice and desire of lucre that moved him to take this
 course, but to let the world know, that if he were so disposed, he could by the means of his learning
 only, be soon a rich man (as indeed he grew hereby to exceeding wealth); for presently of his own
 accord he restored again unto the former owners, who God wot were displeas'd with themselves
 for that they had done, & wished with all their harts, that they had met with the like bargaine; he
 remitted (I say) all this commoditie which he had gotten into his own hands, at their owne price:
 resting herein, that he had made good prooffe, how soon & easily he could be rich whensoever he
 would. Long time after him, *Sextius* one of our Roman Philosophers, did the like at *Athens*, and
 after the same manner: whereby we may see, in what stead learning and literature serveth, if a man
 will employ the same to his own benefit. And I care not much verily to give the countriman a task
 thereof, as much as may concern the cause of the Blasting aforesaid, and to intermeddle the same
 with his rustick affairs, but as plainly and with as great facilitie & lightfomenesse as possibly I can.
 Most are of this opinion & have delivered in writing, That as well the blasting in corn called *Ru-*
ligo, as the singeing & burning of vines named *Carbunculus*, proceed from certain dews setting
 upon them, which caught a causticke qualitie from the acrimonie and extraordinarie heat of the
 Sun. This conjecture and reason of theirs, I hold in some part to be false, for the Sun never doth
 harme either to the one or the other in this respect; but looke what blast soever it be that sing- K
 geth or burneth corne and vines, it is occasioned by cold onely: and if you take good heed and
 marke how this commeth about, you will say it is cleare and past all peradventure: for first and
 foremost this is well knowne, That it never hapneth but in the night, or at leastwise before the
 Sunne is risen: so as we may conclude well and truly, that all this dependeth upon the influence
 of the moone. For never shall a man see any of these hurtfull blasts, but either about the change
 or full of the moone, that is to say, when shee is in her greatest force: for at both these times, as
 well in the conjunction with the Sunne, as in opposition, powerfull shee is, and in some sort may
 be tearmed Full, as I have many a time alreadie said. But at the change, looke what light shee
 received from the Sunne, the same shee sendeth all up againe to heaven. Great difference ther-
 fore there is in the effects of the moon in both these habits, and the same very evident and appa- L
 rant: for be it in summer, hottest shee is in the change; but in winter, cold: contrariwise, the moon
 in summer being at the full, maketh cold nights, and in winter is warme: the cause whereof is
 plaine and manifest. Howbeit, *Fabianus* and the Greeke writers, render another reason: for in
 summer time, the moone being in conjunction with the sunne, and meeting with him when he
 is in a circle nearest unto us, must of necessitie be enflamed with the fire that it receiveth from
 the sunne, so neare unto her and us both: whereas contrariwise, during winter, in the time of the
 change or conjunction, she cannot chuse but be cold, as being remote far from us; like as the
 sunne also, who is retired far South toward the Tropicke of *Capricorne*. Semblably, at the full
 in Summer, she is far off from us, as being opposite unto the sunne so neare unto us: no marveile
 therefore if shee be cold in regard of our climat: but in winter, at the same time of her opposi- M
 tion as shee is nearer unto us, taking her course through the summer circle of the sunne; so we may
 conclude, she doth moderate the rigour of winter cold, and consequently that then, ordinarily
 she is warme. Considering then that the moone being (at the full in summer) so cold, and charg-
 ed ordinarily as shee is of her owne nature with much dew, what wonder is it if at such a time the
 the

A the frosts and dewes that fall bee exceeding cold and congealed againe, which are the cause of all the said blastings? But above all we must remember, that there be two sorts of accidents coming from above, that mightily doe wrong and annoy the fruits of the earth. The one wee call Tempests, which comprehend hailes, stormes of wind and raine, and such like impressions of the aire, which whensoever they doe light, are tearmed by the Lawyers, *Vis major*, i. the greater violence: and these for the most part proceed from some of the horrible and dreadfull Stars, as we have many times noted, to wit, Arcturus, Orion, and the Kids. Of the second sort of these calamities, be they which happen when the weather is still and quiet without any trouble of winds, in the fairest and clearest nights, and no man ever perceiveth them untill the harme be done: these be more publicke and universall, these differ much from the former; some call them Mieldewes, others Hot-planets; some againe tearme them Blasts and singding Carbuncles: but it skills not much what names they have, for all men confesse that scarcitie and dearth is their effect. And for as much as no man hitherto hath written of these Blasts, &c. I meane to deliver mine opinion of them, and first to set downe the cause and reason thereof.

or, the hand
of God.

CHAP. XXIX.

Of the tempests and calamities incident to the fruits of the earth, as well in Winter as Summer: the meanes also to remedie such accidents causing sterilitie and scarcitie.

C These Blasts, these wicked Planets, that singde and burne the fruits of the earth, besides the influence and power of the moone, proceed from other causes, and twaine especially, and those are not to be found in many coasts and quarters of the heaven: for the starre Vergiliae, regardeth principally the fruits of the earth, and over them is very predominant; as being the only star, which in her rising and apparition begins summer; in her fall and occultation, sheweth the entrance of winter; by which meanes for six moneths space, whiles shee is in sight, shee compriseth harvest and vintage, and generally causeth all fruits to ripen kindly or unkindly.

There is besides in the heaven, a certain white circle called the Milkeway [or Watling-streer] which is not imaginarie as others, but very conspicuous and easie to be seene. By the influence of this circle, as it were out of some udder, all plants receive their milke, their humiditie, and nutriment, and namely, by the meanes of two notable stars observed therein; to wit, the Ægle in the North side thereof, and the Dog Canicula (whereof we made mention in place convenient) situate toward the South. This circle then passing through the signes of the Zodiacke, Sagittarius and Gemini, and stretching by the centre of the Sunne, cutteth the Æquinoctiall line twice in two severall places: the commissures or joynts of which two signes, are possessed of the one side with the Ægle star, and on the other side with the Dog Canicula before said. No marveile therefore if all countries habitable and fruitfull, be subject to the influence of these two stars and feele their effects; because in those parts onely of the Zodiacke wherein they are placed, the centre and middle of the earth, together with the centre also of the Sunne, agree and meet just in one and the same point of the Æquinoctiall. Hereupon it is, that if in the severall seasons of these

E two stars above said, (to wit, when the Ægle and the Dog Canicula, do either rise or fall, appeare or couch) the aire be pure, cleare, and mild, and thereby the humor generall distilling from that Milkeway or circle afore said downe to the earth, meet with that faire and calme aire, then all plants and fruits of the earth are the better for it, and prosper mightily. Now in case the moon either at change or full, doe send downe and sprinkle upon them a cold congealed dew (in manner above said) the humor and nouriture likewise descending from the Milke-circle, is infected therewith and becommeth bitter, killing all the fruit upon which it falleth: much like as if a yong babe or infant new borne, should sucke bitter and unholosome milke, and thereupon soone after die. Thus you see, how in every climat whatsoever, the correspondence of the moone and the stars above said more or lesse, causeth those untoward Blasts, Mieldewes, and such like; not in like

F measure at one time and in every place. Which is the cause that this kind of injurie and calamitie is not felt at one instant throughout the world, no more than the day is one and the same in all parts of the earth: for the Ægle (as I have said before) ariseth to us in Italie thirteen daies before the Calends of Ianuarie, i. the 20 of December: now before that day be past (by the ordinarie course of Nature) there can be no assured hope of the fruits of the earth, but that they

may

may miscarrie: but if it fall out besides, that the moone upon that day doe change, all fruits as well winter fruits as those which be called Hastic, must of necessitie take harme and bee hurt thereby. Rude and simple, I confesse, were our auncestors in old time, and altogether unlettered, howbeit as wittie (as shall appeare) in their observations and ceremonies, as our Moderns in these daies be resolute, with all their skill they have, grounded upon reason and consequence: for according as they feared three seasons above the rest, least they should doe harme unto the fruits of the earth; so they instituted as many Holydaies and festiuales, to wit, Rubigalia, Floralia, and Vinalia. As touching Rubigalia, they were ordained first by King *Numa* in the eleventh yeare of his reigne, which now we celebrate a * seven-night before May day, to wit, the 25 of April: the reason is, for that about this time corne is subiect to the blast. Howbeit, *Varro* following the order observed in his daies, setteth downe this dangerous time to be, when the Sun is in the tenth degree of Taurus, and occasioned thereby. But in deed, according to the calcul of others, the true reason and cause is this, That about nineteen daies after the Spring *Æquinox*, divers nations have observed foure malignant daies, which reach to the 28 of April: in which time, the Dog-star *Canis coucheth* (a violent and dangerous star of himselfe by nature) and before which of necessitie the other little star *Canicula* must retire and gye downe. And therefore those auncestors and forefathers of ours, instituted the feast of Floralia, as they were advised out of the bookes of *Sibylla*, in the 516 yeare after the foundation of Rome citie: who ordained also, that the said feast should be held the fourth day before the Calends of May, to wit, the 28 day before-named of April, for this intent, That all plants might blowne kindly, and shed their blossoms as well. *Varro* setteth downe this day to fall out, when as the Sunne is entred fourteen degrees into Taurus. Therefore in case it be full moone during these foure daies of the feast Floralia, not onely corne, but all other plants whatsoever that shall blossome, are sure to take grear harme thereby. As for the former feast called Vinalia, which is kept five daies before, to wit, the * 23 of April, it concerneth nothing at all the fruits of the earth, but was appointed only as a fit time for to tast wines. And yet for all these observations before-named, there is none of them pertinent either to Vines or Olive trees, for their time of conception beginneth at the rising of the star *Vergilia*, to wit, six daies before the Ides of May, which is the tenth of that moneth, as we have before declared. About which time, there be other foure dangerous daies, in which husbandmen in no wise would have any grosse and filthy stinking dewes to fall, for feare of their Vines and Olives, (for above all, they stand in dread of the star *Arcturus*, which goeth downe the morrow after the rising of *Vergilia*, and commonly brings with it raw and unkindly times) and much lesse that the moone should happen to be in the full at such a time. The fourth day before the Nones of Iune, which is the second of the same moneth, the *Ægle* starre appeareth the second time in the evening: a judiciall day is this day, and it will go hard with Olives and Vines now in their floure, especially if the full moone also light thereupon, and give evidence against them. For mine owne part, I would thinke verily, that the Summer Sunstead ordinarily upon the 25 of Iune is as dangerous; as also the rising of the great Dog star which alwaies falleth out to be 23 daies after the said Sunstead, if so bee that the moone doe change in any of those two daies; for then commeth the harme by extremitie of heat, which doth so bake & harden the young kernels of the grapes and Olives new knit, that they be tanned as it were into a rough callositie, that they can thrive and grow no more from that day forward. Againe, the full of the moone is as hurtfull as it, to vines and Olives, if it happen the fourth day before the Nones of Iuly, to wit, the fourth day of the said moneth, at what time the lesse Dog-star *Canicula* riseth to them in *Ægypt*; or at leastwise the sixteenth day before the Calends of August, which is the seventeenth of Iuly, when we in Italy discover the rising of the said *Canicula*. Likewise if the moone chauce to be in the full betweene the twentie and three and twentie daies of the said Iulie, what time the *Ægle* star goeth downe, the same daunger befallerh vines and Olives. As touching the second feast Vinalia, which is observed and kept thirteene daies before September, to wit, the 20 of August, it is not to be raunged among these, as being of another nature, and instituted at first for other causes. *Varro* would have this feast to begin at the departure of the Harpe-star *Fidicula*, which beginneth to retire in the morning, and which day he setteth downe for the first entrie of Autumne: saying moreover, that this feast was instituted for appeasing the stormes and tempests incident to that season. And now observed it is, that the said Harpe-starre *Fidicula* setteth six daies before the Ides of August, which is the eighth day of that month.

much

* S. Marks day
with us.* S. Georges day
with us.

A much as touching the causes of sterilitie and dearth, occasioned by the constellations, according to sundrie seasons of the yeere, after that calculation which I goe by: But I will not bind every man thereto, for well I know and cannot denie, but the readers may change and alter the same at their pleasures, according to the diversitie of the climats; in regard whereof, the observation also of those dangerous daies may vary from mine account. For this present, it sufficeth my turne that I have set downe the true cause in Nature, from whence proceed those calamities: all the rest besides, I refer to ech mans consideration, who for any thing that I have said, may take their libertie and observe what they think good. Certes this shall be found cleare and doubtlesse in the end, That these unkind dews and dangerous blasts are occasioned by one of these two causes, to wit, either the full or change of the Moone. And herein verily, I cannot chuse but meditate upon and admire the wonderfull goodnesse and bountie of dame Nature; first in this, That she hath so limited and determined the set course of the stars, that these calamities cannot possibly happen every yeare; neither yet oftentimes in the same yeare, but onely some few nights, to wit, in the change or full of the Moone: and when they will come, it is easie to foreknow and fore-tell. And to the end that we should not need to feare these daungers every moneth, shee hath so ordered the matter, and divided the influence of the Moone by night in such sort, that setting aside two daies in Summer, the changes of the Moon do no harme at all: no more than the full in Winter: neither are these two new Moones to bee feared, but in Summer nights, and those shortest of all other, wherby they have lesse time and leasure to offend the earth: for all the day long they have not the same force, nor work the like effects. Over and besides, so easie a matter shee would have it for to know either the conjunction or opposition of the Moone, that the very Pismire (the silliest and least creature of all other) by instinct of Nature, is our guide to the one and the other: for in the change she is seene commonly to rest and take her repose; whereas at the full Moone she workes and labours both night and day. And that we should not bee ignorant of the Dogge-star Sirius his rising, looke what day he sheweth first, the little Nonett or bird, called in Latine Parra, goeth aside, and appeareth not again before he be hidde n and gone downe. Contrariwise, the Liorot, Greene-finch, or Canarie bird Vireo, commeth abroad the very day of the Summers Sunnestead, and not before, that we should not pretend ignorance of the longest day in the yeare, a time whereon dependeth so great a consequence. But be it change or be it full, neither the one nor the other habite of the Moone is dangerous, no not in the very night season, unlesse it be cleare and calme, that is to say, faire star light, and all winds laid: for neither in cloudie and close weather, ne yet when the winds are aloft, doe any dewes fall. And at such times also as they use to come, there is a remedie provided against them: for when thou fearest a blast or Mieldeaw, lay me altogether all over the fields and Vineyards (by heaps) Vine-cuttings and such drie stickes, chaffe, straw, and other like mullocke, drie weeds & shrubs which have been plucked out of the ground, and set them all on fire; the very smoke will helpe this matter, and avert the daunger from corne and grapes. And as for the fume of chaffe and straw, it is good against stinking fogs and mists, when they are thought to doe harme. Some there bee that prescribe to take three Crab-fishes alive, and to burne them in Horryards among the trees, to preserve and defend them against the sending blast called the Carbuncle. Others take the flesh of the fish Silurus, & rost or broile it softly upon the fire, on the wind side, to the end, that the fume and smoke thereof might be caried and dispersed all over the Vineyard, to chase away the scorching blast aforesaid. *Varro* affirmeth, That if about the retrait of the Harpe-star Fidicula, which is the beginning of Autumne, a man paint a cluster of grapes, and consecrate it to the gods among the Vines, the stormes and tempests of wind and raine will do lesse harme to the fruit hanging thereupon. *Archibius* in a booke that hee wrote to king *Antiochus*, saith, That if a land-toad be put into a new earthen pot that never was occupied before, & the same enterred and covered within the ground in the middest of a corne field, the corne shall take no harme that yeare by any tempests whatsoever.

F As touching the rusticall worke which should be done in these six weekes space, the Husbandman ought to give his lands a second fallow, to dig about the roots of trees, and (where the heat of the countrey doth so require) to mould and banke them againe: howbeit, such as be budding and putting forth new shoors, would not be digged, unlesse the soile be very good and rank. Seminaries or nource-gardens would now be sarclad and cleansed. Adresse himselfe he must, and make all readie against Barley harvest. Now is he to prepare his barne plot and thrashing floore,

The eighteenth Booke of

and to pave it with a coat of chalke, tempered well and wrought with oile dregs, by *Catoes* advise; howsoever *Virgil* is more curious in this behalfe. For the most part of Husbandmen, after they have laid it even and levell, they goe over it againe with Oxe dung, tempered to a thin consistence with water, for to bind the said floore: and this is thought to bee a sufficient remedie, that the dust shall not rise.

CHAP. XXX.

¶ Of Corne-harvest: of common Wheat: of Chaffe: and the order how to keepe corne.

AS touching the manner of cutting downe or reaping corne, there be diverse and sundry devises. In Fraunce where the fields be large, they use to set a jade or an asse unto the taile of a mightie great wheelebarrow or cart made in manner of a Van, and the same set with keene and trenchant teeth sticking out on both sides: now is this carre driven forward before the said beast upon two wheeles, into the standing ripe corne (contrarie to the manner of other carts that are drawne after) the said teeth or sharpe tines fastened to the sides of the wheelebarrow or car aforesaid, catch hold of the corne eares, and cut them off: yet so, as they fall presently into the bodie of the wheelebarrow. In some places the fashion is to cut with a hooke or syccle the straw in the midst: and betweene every two sheaves they sit downe, and then crop off the eares just at the straw. In other countries they use to plucke up the standing corne by the root: and in so doing, persuaded they are that this is a very neare and readie way to save charges, & may serve for one tith well ynough: but by their leave, they rob the ground by the meanes of her kind and naturall moisture. The reason of this diversitie and difference is this: in such countries where they use to thatch their houses with straw, they save it to the full length, and goe as neare as possibly they can: againe, where there is but small store of hay, they make account of their short chaffe for to litter, yea, and fodder their beasts. As for Panicke haulme, it never serveth the turne in any place for thatch. And for Millet straw, they burne it ordinarily. Barley straw is kept and saved very carefully for an excellent fodder, that kine and oxen love very well. To conclude, in France they have another way to gather their Panicke and Millet especially, to wit, cutting the same care by care upon a combe with a handle to it [as Barbers use to clip or poll mens heads.]

Concerning the devise of thrashing, it is practised sundrie waies. In some places they use to crush the corne out of the eares with heavie and rugged dreies drawne over it, as it lieth upon the barne floore. In others, they set Mares to stampe and trample it under their feet, and so drive it out: and there be againe who beat and flap it forth with flails or cudgels.

Common wheat, the later that it is reaped, the better it is found of cast: but the sooner that it goeth downe, the fairer is the graine, and more full and weightie. The best rule for the one and the other, is this, to goe downe with it, and lay it along, before the corne bee verie hard, and when it begins once to looke ruffet, and to have a browne or reddish blee. And here, remember the old said Saw that may goe well for an Oracle, Better two daies too soone, than as many too late.

For the inning of the fine wheat *Siligo*, and the common *Triticum*, it is much after one sort, and they would be ordered alike, both in barne, rike, and thrashing floore. The good red bearded wheat *Far*, because it commeth hardly out of the huske, and asketh some painefull thrashing, ought to bee laid up in the garner, huske and all together, even in the chaffe; onely it would be rid from the maine straw, and deposed of the eiles or beard growing to the care. Chaffe is good chaffe in many countries, and serves in stead of hay. Where note, that the finer and smaller that the chaffe is, and enclining nearer to powder, the better it is thought to be. And therefore the best simply is that which commeth of Millet: the next in goodnesse, Barley maketh: but the common wheat *Triticum* yeeldeth the worst, unlesse it bee for poore hungrie jades and such labouring garrons.

The straw or haulme that remaineth standing as boltings when corne is reaped by the care or after it be well dried, the manner is to lay upon some hard, craggie, and stonie ground, then all to beat and belabour it with cudgels, that it may bee soft and serve in stead of litter to lie under cattell. If chaffe faile for fodder, the very haulme or straw left in the field, ought to bee braied and beaten short, to supplie forrage in manner following. Cut it downe so much the sooner, let it bee well

A well sprinkled and drenched a long time in brine: and when it is dried againe, make it up round into certaine bottles or bals, and so give it to kine and oxen for their fodder. There bee that set fire on it, and straw both, in the field whereas it grew. And surely, *Virgil* highly commendeth this for a great point of Husbandrie: the cheefe reason hereof was, to burne the seed that the weeds shed, and to kill their roots that remaine upon arable ground. In summe, the diverse fashions and manners of reaping, proceed from this, That in some countries the harvests bee greater than in others: and besides, Reapers and mowers are not to bee had in all places alike, nor so casily hired.

It followeth now by good order, as a matter hereunto annexed, to write of the manner how to lay up and keepe corne for store. Some are very curious and indeed over precise in this point, and namely in building of barnes and garner. For they give order, that in any wise their walls be raised of bricke, and those three foot in thicknesse. Also, that they be filled top full and closed up aloft, that they have no windows at all, nor any place open to let in or admit wind. Others would have windowes, but those onely toward the Northeast wind, where the Sunneriseth in Summer, or else into the North: and in any hand the bricke must not bee laid with lime, for that it is most hurtfull to corne. For as touching oile dregs or lees, how they would have it to bee used, I have declared already. Contrariwise, in some countries they build their garner of timber, and set them aloft in the aire hollow from the ground, bearing upon piles and posts of wood: and such are devised of purpose with many ouvertures on every side to receive wind, in so much, as from beneath also the boards and planks bee open to take all aire. And yet others

C there bee who mislike altogether these kind of frames, being of this opinion, That in such solars and lofts reared so high into the aire, the corne will diminish and wither: yea, and if it lie neare to a rouse of tiles, it will bee in daunger to catch a fire and burne. There bee that would not have corne to bee turned in the garner, for to breath and take the wind: for that the mite or weevill that eateth graine, never commeth within foure fingers of the bottome of the heape, so that beneath that gage there is no danger, and therefore it needs no such stirring at all. *Columella* saith, That it were good to have a garner open into the West, for that the wind *Favonius* is kind for corne: whereat I marvaile very much, considering that otherwise he is carefull to seeke out the driest places. Last of all, there be some that would have a land-toad tied by one of her hinder or longer legges, and so to hang at the dore and entrie of the garner or barne where

D corne lieth. For mine owne part, if I should speake what I thinke, I hold, that the cheefe and principall thing for the keeping of corne well, is to know and use the verie fit time and season of laying it up. For if it bee gathered when it is not fully ripe, and before it have the due parching from the Sunne, and the firme substance hardened as it ought, likewise if it bee brought unto the barne or garner hote, it cannot bee avoided, but vermine will breed therein to doe it much hurt.

That some kind of graine will continue good and sound, yea, and last longer than other, there bee many causes. For either it proceedeth from the skin or huske, when it is manifold, as in Millet; or the fatnesse of the marrow and flour within, which maintaineth and feedeth the graine as the radical and nutritive humour, as in Sefama; or lastly, of bitternesse, as in Lupines and the small bitter Cichets. As for the Frument or wheat *Triticum*, apt it is most of all other to engender and breed weevils and such like wormes, because it soone catcheth a heate, and is quickly enchaufed, by reason of the thicke and fast substance of the owne, and besides enclosed and clad it is within a thicke and grosse skin, which is the bran. Barley hath a finer and slenderer huske: and some Pulse a thinner than it: such therefore are not subject to the said vermine. Howbeit, Beanes bee covered with thicke pillings or tunicles, and therefore easie to take an unnatural heat and putrifie. Some use a devise to keepe Frument corne a long time, with oile lees, bestowing onely the sprinkle of one Quadrantall, to a thousand Modij thereof. Others bestrew among it the poudre of Chalke brought either from Chalcis or Caria; or else lay some Wormewood among it. There is a kind of earth in Olynthus and Cerynthus within Eubœa,

F which is highly commended in this case, for it will not suffer corne to corrupt. And lightly, what corne soever it be that is laid up in the eare, never taketh any harme, keepe it as long as you will. Howbeit, the best and most assured way to preserve corne, is in caves or vaults under the ground, which in Latine be called *Siri*, as the practise is in Cappadocia and Thracia. In Ægypt and Barbarie, above all things they looke to this, That their garner stand upon a drie ground:

and how drie soever the floore be, yet they lay a course of chaffe rinderneath betweene it and the corne. Moreover, they put up their corne in garners and bins, together with their spike or eare: by which devise they are sure (if no aire come in) that no hurtfull worme or vermine will breed among it. And verely *Varro* saith for certein, That wheat in that manner laid up, will last fiftie yeeres, and Millet an hundred. Hee affirmeth moreover, that beans and other pulse will keepe good a long time in oile-barrels, if they bee calked with ashes. Hee avoucheth moreover, that beans were knowne to have continued from the time wherein king *Pyrrhus* lived, unto the Pyrats warre, which under the conduct of *Pompey* the Great was dispatched and brought to an end; which provision of beans had been laid up 120 yeares before, and kept close in a certaine cave under the ground, within the cittie of *Ambracia*. The Cich pease is the only graine that is subject to no vermin breeding in it while it lyeth in garner or barne. Some there are who take certein pitchers of earth having vinegre in them, upon which beeing well bedded in ashes and done over with pitch, they make their heaps of pulse, and by this meanes they are verily persuaded, that no mævils, mites, or other wormes will breed therein to doe harme. Others, for to preserve their pulse, put them into salt-fish barrels, but they dawbe the same first with a certain kind of mortar made of plastre. Last of all, for to keepe Lentils, there be that drench them with the vinegre confected with *Laserpitium*, and when they bee dried againe besmeare them over with oile. But will you have indeed one short rule for all? To be sure that no worme or vermin shall breed in your corne, cut it downe and gather it about the change of the moone. Therefore it skilleth very much to know a mans intention, whether hee meane to keepe or to sell his corne: for certein it is, that as the moone groweth, so doth corne wax full and great, and therefore filleth the strike a great deale better.

CHAP. XXXI

Of Vintage: and the particular seasons in Autumne.

According to our partition of the yeare into four-quarters, it followeth now by course and order, to treat of the Autumne, which beginneth at the retreat or occultation of the *Harpstar* *Fidicula*; and so forward to the *Æquinox* in September: from whence I will proceed to the couching or going down of the *Brood-hen* *Vergiliæ*, the very beginning & first entrance of the winter. In which meane spaces and equall distaunces, both before & after the said *Æquinox*, these stars following are significant, and set out the particular seasons: First, the day before the *Ides* of August, [*i. the twelfth of the month*] the star called the *Horse*, appeareth in the *Hæmisphære* to the people of *Attica*; but at eventide the same day, the *Dolphin* star setteth to them in *Ægypt*, and likewise to us here in *Italy*, according to *Cæsars* account. Also eleven daies before the *Calends* of September, which is the 22 day of August, (by the calculation of *Cæsar* and the *Chaldæans*) the star named in Latine * *Vindemiator*, *i. the Vintager*, beginneth to shew in the morning, both to the *Affyrians* and the *Italians*; a trustie vaunt-curriour, bringing certaine tidings with him, and promising assured hope of a vintage, and that the grapes will be ripe anon: and for a farther token and apparence thereof, make the grapes then, for now begin they to change colour. To the people of *Affyria*, the fifth day before the *Calends* of September, *id est*, the 28 of August, both the star *Sagitta* seemeth to goe downe, and withall the *Etesian* winds lie, and give over blowing. The *Vintager* himselfe, to wit, the star so called, to the inhabitants of *Ægypt* riseth upon the *Nones* of September, *i. the fifth day of the month*: upon which day to the people of *Attica*, the star *Arcturus* riseth in the morning; and the *Sagitta*, *i. the Shaft*, goeth downe in the evening. To come now to the *Ides* of September: five daies before them, that is to say, the ninth day of the moneth (after *Cæsars* card) the star called *Capella*, *i. the Kid*, sheweth it selfe here in *Italy* toward evening: but the day before the said *Ides*, *i. the twelfth day of the moneth*, the one halfe of *Arcturus* appeareth to rise: and then for five daies together (his influence is such) he keepeth such foule worke both by sea and land, that both *Sailer* and *Husbandman* feele the violence of his arrivall: and this reason is given therof; For if (say they) at the fall or occultation of the *Dolphin* star, there be no showres of raine, none will *Arcturus* bring with him at his comming. An evident signe there is, that the star *Arcturus* will not be long before he arise, and that is this, The departure of the *Swallows*: for this is certein, if hee chaunce to surprise any of them, and that they be not gone before out of the country, they are sure to pay for their

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- A** their long tarrying and to die for it. The sixteenth day before the Calends of October, which is the sixteenth day of September, the star called Spica, *i.* the Eare of come, which the signe Virgo (*i.* the Virgin) holdeth in her hand, riseth in the morning to them in *Ægypt*; and then the Ectopian winds also are quiet and laid in that country. Howbeit after *Cæsars* calculation, this falleth out upon the fourteenth day before the Calends of October, *i.* the 18 of September, to us in Italy: and by the account of the Chaldeans, a day after to them that dwell in *Assyria*. Moreover, the 21 of September (after the suppuration of *Cæsar*) the Knot of the two fishes, a signe or star so called, goeth downe to our sight in *Italie*; like as the very *Æquinoctiall* star it selfe three daies after. After which time, *Philippus*, *Calippus*, *Dositheus*, *Parmeniscus*, *Conon*, *Criton*, *Democritus*, *Eudoxus*, and *Iōn*, agree all in this, (and that is marveile to see so many Astrologers to accord)
- B** That foure daies before the Calends of October, the star Capella, *i.* the Kid, riseth in the morning: and the morrow after, the [two] Kids doe the like. The sixt day before the Nones of October, which is the second day of the moneth, in *Attica* and the regions adjoyning, the star named the Crowne appeareth betimes in the morning: but in *Asia*, and to us *Italians* (after the reckoning of *Cæsar*) the next day following, the star Heniochus goeth downe in the morning. Two daies after that, to wit, the fifth of October (according to *Cæsars* computation) the star named Corona, *i.* the Crowne, beginneth to shine in *Italie*: the next day after, the stars called the Kids, loose their light in the evening. The eighth day of October, which is eight daies before the Ides thereof, the shining star within the foresaid Corona, sheweth it selfe in *Italie*, by *Cæsars* booke: but the 13 day of the same moneth, the star Vergiliæ, *i.* the Brood-hen, sheweth in the evening:
- C** and upon the very Ides, which is the 15 day of the moneth, the Crowne star aforesaid appeareth full and whole. Now six daies before the Calends of November, *i.* the 27 of October, the stars called *Suculæ*, or the rainie *Hyades*, begin to shew in the evening: and the last day of October, which is the even of the Calends of November, (if *Cæsar* say true) *Arcturus* setteth in *Italy*, and the said *Suculæ* or *Hyades* rise the same day together with the Sunne. Foure daies before the Nones of November, *i.* the second day of the moneth, *Arcturus* goeth downe in the evening: like as the fift day before the Ides, *i.* the ninth day of November, the star named *Orions* sword beginneth to retire: and likewise two daies after, the Brood-hen *Vergiliæ* is hidden and appeareth no more.

- As touching now the countrey worke that Husbandmen are to employ themselves about during this space of time or halfe quarter thus described, they ought if they did well, to sow *Nawewes*, *Turneps*, and *Radishes*, upon those daies that I have appointed heretofore: and let them never goe by the voice of the rurall sort, who thinke it not good to sow so much as *Rapes*, after the departure of the *Storke*: for bold may we be here in *Italy*, even after the feast *Vulcanalia* to put them into the ground; as also our early white corne, together with *Panicke*. But after the going downe of the *Harpe*-star, good I hold it to sow *Vetches*, *Phaseols*, or *Kidney-beans*; as also the dradge or bollemong for horses, called *Pabulum*, *i.* Forage: howbeit, folke say, that this forage would not be sowne but about the new moone. This is the time also to strip green leaves, and slip tendrons from trees, thereof to make fodder for beasts in winter: and one good daies worke it is for a man to fill foure hampers made of purpose for such brouse. Now if these leaves
- E** be gathered and prepared before-hand when the moone is in the wane, they will never corrupt and putrifie. Greene must this brouse be in any wise when it is gathered, and not seere or withered.

- To come now unto *Vintage*: men thought in old time that it was not readie nor the grapes ripe enough, before the *Æquinox* in September: but now adaies I see how they goe to worke every where sooner, and fall hastily to gather grapes halfe ripe. Therefore it were not amisse to set downe certaine markes and signes to direct the husbandman for this season. The rules therefore to guide him, be these: Gather no grapes hot, that is to say, when they be drie, nor unlesse a good showre of raine come betweene: yet take heed you must, that you plucke them not full of dew, namely while the dew that fell over night, doth stand upon them; nor before the Sun hath drunke up the said moisture, and dried them. Set into thy vintage hardly and fall to gathering, when either the vine leaves or greene braunches called the *Portoires*, doe fall and rest upon the old wood: or when, after you have taken one grape from the rest of his fellowes standing thicke together in the cluster, you see the void place not to fill up againe, whereby it appeareth that the grapes and kernels about it, grow no more. Very good it is for grapes, if they be gathered when

the moone is croissant, to wit, before the full. At one pressing ordinarily, there should be filled G
 twentie measures called Culei, *i. e.* Cowles: now is this measure for liquors the greatest of all o-
 thers, and by which the rest ought to be proportioned justly. For to presse thus many cowles at
 once, and to serve twentie acres of vineyard, one wine-presse is sufficient; and likewise to hold
 the same, one vessell or keelvat. Some use but one planke or stocke to presse withall, but better
 it is to have them double: although those that be single be exceeding huge. As touching these
 pressing planks, it is not so much their thickeesse and massive substance that is to be regarded, as
 their length; for in deed the longer and larger they bee, the better they doe their deed. In old
 time they used ropes, leather thongs, and leavers, and by force of them pulled downe and forced
 it hard the presse-planks. Within this hundred yeares were the frames devised which wee call
 Græcæica; wherein the maine planke or upper stocke of the presse, went with a vice in manner H
 of a skrew; for the wrinkles of the spindle were fitted and served in an engin or windlace in man-
 ner and forme of a star, set fast to the worme or vice of the spindle aforesaid, and which as it was
 turned and wrested, lifted up or let downe the presse-planke or lid, together with the weights of
 stones thereupon: and verely this fashion of presses was held to bee best and most approved.
 Howbeit, it is not 22 yeares since there came up another devise and invention to make small
 presse-planks; lesse winding peeces also, and the whole frame shorter: howbeit in the mids ther-
 of stood up the spindle of the said skrew or vice. Now when they purposed to squeeze out the
 grapes, they laid certain lids or planks thereupon called Tympana, and those they forced with a
 wrest from aloft, using also the poise and weight of such matters as they heaped upon the planks
 aforesaid.

Moreover, the custome is to gather apples and such like soft fruit, about this time, with this I
 observation or direction, namely, To go in hand with this businesse when any are seene to fall of
 themselves, as mellow and ripe, and not blowne downe by force of wind and tempest. Now is the
 season also to presse out the lees or sediment of the grapes: now the time serveth to seeth new
 wine to the halfe, and make cuit thereof; with this regard and consideration, that if the moon be
 upon the change, this be done by night; but if in the full, by day-light. As for other daies, it
 matters not much, so that the cuit be boiled either before the moone rise, or after she be gone
 downe. Moreover, heed is to be taken, that the grapes of yong vines or such as grow upon low
 and marsh grounds, be not used hereabout; and much lesse those that be not fully ripe. In the
 scumming also and clarifying of the liquor while it boileth, no other thing but leaves are meet
 for that purpose: for if any wood come neare and touch the vessell or lead wherein the liquor K
 is sodden, it is thought that the cuit will be smoakie and smell of the fire. Furthermore, the ordi-
 narie time of vintage holdeth 44 daies, to wit, from the Æquinoctiall in September, unto the
 going downe or occultation of the Brood-hen Vergilia: after which time, remember the ora-
 cle and common proverbe, That wine vessels are not to be rofined, calked, and trimmed in cold;
 for good husbands would do this before-hand in hot weather. Howbeit in these daies I have seen
 those that for want of vessels have gone in hand to run up their wine in the beginning of ^{*} Janu-
 arie: yea I have knowne when the vintage hath been so great, that wines newly pressed have been
 kept in fish cisterns: and for default of other pipes and tuns, when the wine-cellar have been L
 full alreadie, I have seen them that would let the old run out into such cisterns, for to make room
 for the new, and such as a man would say were neither made nor unmade. And yet this is not so
 often practised by occasion of the exceeding store of new wine that lyeth upon mens hands, as
 of a wicked and covetous mind that some carie to gather a deale together for to set up a mono-
 polie, thinking thereby to make a dearth and to raise the price of their wines, to the great detri-
 ment and hinderance of a common-weale. But a good and honest minded householder will rest
 contented to furnish himselfe with a competent provision of wine, and lay up no more than he
 shall spend every year: and this is found also by experience the most profitable way for his pur-
 se. As for all other matters concerning wine, because I have alreadie spoken at large thereof, I will
 here lay a straw and make an end. But this would not be forgotten, that so soone as grapes be ga-
 thered, men must high them apace and make hast to get in their Olives: for presently after vin-
 tage and wine-pressing, they must thinke of drawing their oile, and employ themselves in other M
 workes of this season, which are to bee done a little before and after the retreat of the Brood-hen
 star Vergilia.

^b Culei con-
 taineth 20
 Amphors,
 which is 220
 Congi or gal-
 lons.

^{*} Some read,
 November.

A

CHAP. XXXII.

☞ *The consideration of the Moone and her course, respective unto Husbandrie.*

B

C

D

E

F

Hereunto shall bee annexed a discourse as touching the Moone and the Winds, together with the Prognostication depending thereupon, as much as may bee thought necessarie and pertinent to Agriculture; to the end, that our rusticke Astrologie may in all points be accomplished and perfect. For *Virgil* also was of this opinion, That some businesse and workes of Husbandrie were to be digested and divided just according to the daies of every Moon in order as they goe, following herein the vanitie and ostentation of *Democritus*. For mine owne part as I have hitherto in all my worke throughout rested upon the good and profitable rules of our auncestors, so in this point also I meane to take their direction, and goe by no other. According to their ordinances and precepts therefore, this first is to be observed, That whatsoever is to be cut, gathered, or laid up, be it wood, fruiet, or graine, it ought to be done rather in the wane of the Moone, than whiles shee is croissant toward the full, & lesse daunger is it subject unto. *Item*, Touch no mucke, nor lay it upon thy lands but after the full, when shee is in the wane. *Item*, Dung thy ground, whiles the Moone is in conjunction with the Sunne, and in the first or last quarter. Gueld Bores and Steeres, lib Rams and Kids or young Goats in the old moone. *Item*, Set Hens to coue eggs in the new of the Moone. Make thy trenches by night in the full Moone. Likewise, cover the roots of trees with mould when the Moone is at the full. *Item*, In moist grounds sow and set either in the very change, or seure daies before and after. As for the winnowing, vanning, and laying up either of corne or pulse, they would have it done in the old Moone, about the last quarter. As also, That Pepiniers, Seminaries or Nource-gardens, be made when the Moon appeareth above the earth, But grapes ought to be troden, and new wine pressed, whiles shee is under our horizon. Likewise, timber is to bee hewed, and many things else to bee done accordingly, whereof wee have written already in their severall places. And albeit the observation of the Moone, her age and change is easie ynough, and nothing more familiar: whereof also I have written sufficiently in the second volume of this worke: yet further to instruct the simple countreyman who knoweth never a letter of his booke, and to set before his eies the true order and course of her motion and mutation, let him but observe and marke thus much, That so often as shee is seene Westward after the Sunne is gone downe, and shineth the forepart of the night onely, shee is croissant, and in her first quarter, and then shall a man discern evidently by the eie the one halfe of her bodie light: but looke when, as the Sunne setteth in the West, shee riseth at the same instant over-against him in the East, so as they may be both seene at once, be sure shee is in the full. Again, whensoever shee riseth late in the West, and shineth not in the fore-part of the night, but toward the morning, make account shee is in the wane, and sheweth but her halfe part againe. But so long as shee appeareth not at all, and giveth no light, assure your selfe shee is in the conjunction with the Sunne at that while, and this in Latine is called *Interlunium*, [i. the change.] Now at the verie instant of her conjunction or change, and the first day, untill shee bee one day old, shee will remaine above the earth so long as the Sunne is there also with her: the second day shee will bee in our hemisphaere by night, tenne * twelve parts of an houre, and a quarter of one twelfth part. Thus in proportion will shee rise unto the fiftenth day after her change, multiplying everie day the said portion of the houres. When this fiftenth day is come, shee will be all the night whole above the earth, and all day long under. Vpon the sixteenth day of her age shee will remaine beneath our Hemisphaere, after the first day, tenne parts of twelve, and one quarter of a twelfth part within sight before shee rise and shew her selfe, and so will shee keepe daily the foresaid proportion juſt, in late rising: deminishing still her light by the same degrees, untill the change. And looke how much shee staieth in the beginning of the night under the earth ere shee appeare in our Horizon, so long in the next morning will it bee after day-light, ere shee goe downe. Finally, every second moneth the Moone hath thirtie daies full out: like as each other moneth betweene shee wanteth one of that number, and hath but nine and twentie. Thus much concerning the course of the Moone in regard of Husbandrie.

The consideration of the Winds, respective to Agriculture.

AS touching winds, the reason and quartering of them is more intricate, fuller also of scrupulous doubts and difficulties, than was the observation of the Moone: notwithstanding that, there is not a day in the yeare goeth over our head, but wee may easily find and marke both South and North. For if a man doe observe the Sunne rising any day whensoever hee will, and upon the sixt houre of the same day (to wit at noone) stand so as he have his left shoulder directly turned against the said Sunne rising, he may be assured, that hee hath the South full upon his face, or before him, and the North behind his backe. Now the line or streight way that runneth in this manner through a field North and South, is called in Latine *Cardo. When a man standeth thus, if he would see his owne shadow, he shall doe well to turn his bodie round about: for otherwise it will be behind him. Chaunging sides therefore, so as he have the Sunnerising or Levant of that day just against his right shoulder, and the setting upon his left, hee may know the mid day or South point as well as before, namely, when his bodie casteth just before him the shortest shadow, enclining to the one hand no more than to the other. Let there bee then either a small furrow rased along just through the middest of the shadow with a spittle spade, or the point of some hooke; or else a line drawne with a traine of ashes, for the length of some twentie foot or thereabout (to make the thing more plaine.) Which done, cut the said line or furrow crosse overthwart the middle, to wit, at the tenth foot, if the whole bee twentie: and then make a round small circle about it, which may serve in steed of a Navill, and bee so called. That part of the line then which goeth directly forward from the crown of the head in the foresaid shadow, pointeth out the North wind. Thou therefore that art to lop or prune trees, take heed thou makest not thy cuts so, as they looke into that coast: neither let thine hortyards or vineyards stand open to that wind, unlesse it be in Affricke, Cyrene, and Ægypt. Againe, so long as the wind sits in that corner beware Ploughman [for now I speake to thee] thou breake up or care no ground, nor enter into any such worke in the field as thou art already forbidden by mee to doe. But marke what part of the line shall come from the foresaid Circle straight before thy feet, regarding the noone-tide or mid-day, assure thy selfe the same telleth thee which is the South wind, called by the Greekes Notus, as we have declared already. Doth the wind rise and blow from that side? meddle not Husbandman during that time with thy vine. Carpenter, fell no trees then for timber I advise thee. A wet wind this is and hote, within the climate of Italic. In Affricke verily drie enough it is, and bringeth faire weather with it, but with all his faire looks, he kindleth fire otherwhiles, and burneth many things. Let hardly the Vine spread her braunches, and run into this wind, in all places of Italic: but leave not the cuts either of tree or vine looking that way. He that setteth out a plot of ground for Olives, and planteth them, hath cause to bee afraid of this wind, especially for foure daies together, about the rising or apparition of the star Vergiliae or Brood-hen. They also that graffe sions in the stocke by cleft, or set bud in the scutchon by way of inoculation, must take heed how they meddle in this wind.

Moreover, it will not be amisse to give some caveat as touching the very houre of the noone-day, which giveth us knowledge of this wind and this quarter; namely, what is to be done at such a time, and what not? Thou woodman and forrager both, see thou neither cut nor lop trees, see thou gather no greene leaves and tendrils for thy fodder at noone-tide. Thou sheepeheard, thou heardman whatsoever, when thou perceivest in Summer time by thy shadow growing short, that noonestead is at hand, drive thy sheepe and cattaille out of the Sunne, into some worme-stall and place of shade. More yet I have to say to thee, If thou keepe sheepe or other beasts at their pasture in Summer time, lead them or drive them before thee all the morning into the West, before mid-day: but after noone turne thy face Eastward with thy flocke and thy heard. Otherwise, and at other seasons, as namely, all Winter and in the Spring, thou shouldest doe thy cattaille hurt, to conduct or lead them after this manner out of the warme Sunne into moist places, and where the dew falleth. As charie also and heedfull must thou be to drive thy cattaille Northward from the Sunne, and there to let them graze: for marke what I say, In so doing, they will not be able to hold open their eies; this wind will make them bleared & bloudshotten; nay, it will drive them into a garric or flux of the bellie, which will soone make an end of them. Howbeit, if thou wouldest

A. wouldst have the beasts conceive and bring forth females, force them when they be leaped and covered, to stand with their heads into this wind, and thou shalt see the prooffe hereof.

CHAP. XXXIII.

Of the lines and limits that divide and bound fields.

WE have shewed in the next chapter before, the manner how to draw a line or furrow North & South; and how in the midst thereof there should be a round compasse, made in manner of a Navill, which in Latine is called *Vmbilicus*. Now if you would know likewise the other parts of the heaven, let there run such another line overthwart the Navill or Circle just in the middest: and then shalt thou see, that this line will direct thee to the East and West points, *Equinoctiall*. [Now the way that thus cutteth through any field East and West, ought to be called *Decumanus* in Latine, or the Broad-way.] Which done, draw other two lines through the centre of the foresaid circle, cutting one another a slant [like *S. Andrews crosse*] in manner of the letter X, so as that line which at the one end pointeth to the right hand of the North, reach to the left hand of the South at the other. Likewise, that which regardeth the left side of the north at the one end, run directly to the right hand of the South with the other. All these lines must be of an even length, of equall distance one from another, and passe through the same Circle which we call the Navell. Having thus made the foure crosse pathes or waies in every field once for all, thou maist ever after know how the winds doe stand. But if thou list to have such a devite to serve thy use many times after, make a little instrument of wood, but the same as round as can bee by the compasse, and therein draw or print foure lines of an even length and equall distance, passing as *Diameters* all through the center, to the circumference of the rundle: and this may serve thee in stead of a *Quadrant*, where & whensoever thou needest. The manner how to make and use this instrument, I am content thus to shew, because I have to deale with simple ignorant men of dull wit and shallow conceit, who may soon erre & do amisse. Let us see then first, for the meridian line and the South point of the noone day, for to bee perfect therein; because it is ever the same, and chaungeth not from one end of the yeare to another, whereas the *Levant* varieth every day, for that the Sunne never riseth the morrow morning, from the same point just that hee rose the day before: which I note, least haply any man should take one certaine line for to point out the Sunne rising or the East, and make his *Quadrant* or compasse thereby. Now when thou hast in this wise exactly set out the principall regions and quarters of the heaven, observe this, that the end or head of the line which is next to the North point *Septentrio*: on the East side, the same sheweth the very place where the Sunne riseth at the Summer Sunnestead, to wit, the longest day of the yeare; and the wind there seated, is called in Latine *Aquilo*, i. the Northeast wind, and in Greeke *Boreas*. Thou knowing this perfectly, set thy trees and plant thy Vines full upon it. But so long as this wind bloweth, plough no lands, set no trees or plants that are to beare fruit, cast no graine nor seed into the ground. For why? this wind peirceth, pincheth, and killeth the heart of any tree root above the ground, that thou shalt bring to replant. Take warning therefore beforehand, and be advised: for Experience hath taught, That one thing is good for strong and sturdie trees, and another for young and tender plants. Neither am I ignorant or forgetfull, that the Greekes have placed in this corner the wind which they name *Cæcias*: but *Aristotle* himselfe a Philosopher of an infinite spirit and high conceit (the man that hath so done) sheweth a reason drawne from the convexitie and bending cope of the heaven, whereby the Northeast wind or *Aquilo* bloweth full opposite to the Southwest *Africus*. Howbeit, the Husbandman is not afraid of this Northeast wind *Aquilo* all the yeare long, in those particularities whereof hee is forewarned. For in the middest of Summer this wind doth moderate and temper the ardent heat of the stars raining and raging in that time: then chaungeth he his name, and [during the *Dog-daies*] is called *Etesias*. When thou therefore seelest him blow cold, take heed and be not too bold. But learne this withall, that howsoever this wind may doe harme, in some such respect, for which thou art forewarned; yet the wind *Septentrio* that bloweth plumb North, is far more dangerous and mischievous than he. Against the Northeast wind aforesaid, let both hortyards, tree-rows, groves, and vineyards, be ranged; in all *Natolia*, *Greece*, *Spain*, maritime coasts of *Italie*, *Campain*, and *Apulia*. If thou desirest to breed males, keepe thy cattell with their heads into this wind, and in that sort let the females be covered.

Dextratus & Sinistratus, Antiquus.

When

When thou hast found out in this manner the Northeast wind Aquilo, before that the wind which bloweth full against it, from the point where the Sun setteth in mid-winter when daies be shortest, is the Southwest, called in Latin, Africus; and in Greeke, Lybs. Observe this wind well, for if a beaft after she be covered, turne about directly into this wind, shee will for certaine conceive a female. And thus much of the Line in thy quadrant next to the North point on the East side.

The third Line from the North point (which we drew first through the latitude of the shadow before said, and which we called Decumana) pointeth out the Æquinoctiall Sun-rising in March and September; directeth thee also to the East wind under it, called in Latine Subfolanus, and in Greeke Apeliotes. Where the climat is healthfull and temperate, let vineyards be planted and arraunged into this wind: let ferme-houses also in the countrey be so built, as the dores and windows open into it. This wind loveth well to be dropping, and to distill gentle showres of raine; howbeit dryer it is than the West wind Favonius, which bloweth over against him from the Æquinoctiall sun-setting full West, called in Greeke * Zephyrus. Upon this Westerne wind, Olive rows should stand, according to *Catoes* mind: this wind is hee that beginneth the Spring: this wind openeth the veines and pores of the earth, and with his mild coldnesse is healthfull and holeesome for all plants, for man also and beaft. This wind governeth this whole season, and prescribeth the time for pruning vines, for sardling and dressing corne, for planting trees, for grafting fruit, for trimming and ordering Olives; and to say all in one word, so kind he doth breath, that he cherisheth and fostereth the earth, and all things thereupon.

The fourth Line in your Quadrant or Compassé (reckoning from the North point, which also reacheth next to the South point on the East side) noteth the Sun-rising in mid-winter when the day is shortest; and withall the Southeast wind called in Latine Vulturinus, and in Greeke Eurus; which as it is a drier wind than the two last named, so is it also warmer: in regard whereof, it is good to set bee-hives and plant vines tending into this coast, I meane in other parts of Italy remote from the sea, and also in Gaule. Then shall you have to blow full opposite unto it, the wind Corus, directly from the sun-setting in mid-summer when the day is longest, by-west from the North; and this Northwest wind the Greekes call Argestes: one of the coldest he is, like as all they be which blow from any point of the North. No marveile therefore if hee be as much dread & feared as the North wind Septentrio, for commonly he bringeth with him haile storms good store.

As touching the Southeast wind Vulturinus, if the coast be cleare where and when he beginneth to rise, it will not be long ere he lie, and commonly he is downe before night; but the East wind in deed continueth most part of the night. But be the wind what he will be, if he blow sensibly hot, you shall have him hold many daies together. And to conclude, would you know when to have a Northwest wind? marke when the earth drieth suddainly at one instant, it will not be long but he will be with you: contrariwise, when you see the ground moist and wet with a kind of ferer dew unseene and unknowne, reckon upon it that shortly you shall have a South wind to blow. And thus much for Winds.

CHAP. XXXV.

Signes to prognosticate what weather is toward.

Having thus set downe sufficiently a discourse of the Winds, because I would not reiterate one thing often, what remaineth now, but in good order to passe and proceed to the prognostication and foreknowledge of the weather? and the rather, for that I see that *Virgil* tooke great pleasure herein and stood much upon this point: for thus he relateth unto the rude and ignorant men of the countrey, That oftentimes in the very mids of harvest, hee hath seene whirle-puffs and contrarie winds, encounter and charge one another as it were in battaile, doing much harme to corne. Moreover, it is reported, that *Democritus* at what time as his brother *Damasus* was entred well into harvest-worke, taking the opportunitie (as he thought) of a most hot season, besought him earnestly to let the rest of his corne to stand still a while longer, and to make hast to get that into the barne under rouse which was cut and reaped downe; & this he did without any reason by him made, why and wherefore. And what ensued hereupon? Surely within few houes after, there powred downe a mightie showre of raine, and proved *Democri-*

A *ius* to be a wise man and a true prophet. Moreover, it is a rule commonly given and observed; That neither Reeds would be set and planted but toward raine, nor corn sowed but against a good showre. And therefore since this skill is of such importance, I am content briefly to touch those signes that foreshew what weather will be, and make choice of such which by search and experience are knowne principall and make most for this purpose.

And first begin I will at the Sun, the best prognosticator of all others: When he riseth cleare and not fiery red, it is a signe that the day will be faire; but if he shew pale and wan, it presageth a cold winter-like haile-storme that very day: but in case hee went downe over-night cleare and bright, and so rose the next morning, so much surer may you bee of faire weather. If the Sun in rising seeme hollow, he foretelleth raine: and when before his rising the clouds be red, the winds

B will bee aloft that day: but in case there be some blacke clouds intermingled among, you shall have raine withall. If the raies and beames of the Sun be red, both when he riseth and when hee setteth, there will fall good store of raine. Are the clouds red about the Sun as he goeth downe? you shall have a faire day the morrow after. If when the Sun doth rise you see flying clouds dispersed, some into the South and others Northward (say all be cleare and faire otherwise about him) make reckoning that day of wind and raine both. Marke at his rising or going downe, if his beames be short and as it were drawne in, be sure of a good showre. If at the Suns setting it raine, or that his raies either looke darke and blew, or gather a banke of clouds, surely these be great tokens of tempestuous weather & storms the morrow after. When in his rising the beams shine not bright and cleare, although they be not over-cast with a clowd, yet they portend rain.

C If before he rise, the clouds gather round together like globes, they threaten sharpe, cold, and winter weather: but in case hee drive them before him out of the East so as they retire into the West, we have a promise thereby of a faire time. If there appeare about the bodie of the Sun, a circle of clouds compassing it round, the nearer they come about him and the lesse light that they leave him, the more troubled and tempestuous weather will follow: but in case he be environed with a double circle, so much more outrageous and terrible will the tempest be. If peradventure this happen at his rising, so as the said clouds be red againe which compassse the Sunne, looke for a mightie tempest one time or other of that day. If haply these clouds enclose him not round, but confront and seeme as if they charged upon him, looke from whence they come, from that quarter they portend great wind: and if they encounter him from the South, there

D will be raine good store and wind both. If as the Sun riseth he be compassed with a circle, marke on what side the same breaketh and openeth first, and from thence looke for wind without faile: but if the said circle passe and vanish away all at once equally, as well of one part as another, you shall have faire weather upon it. If at his rising you see him to cast his beams afar off among the clouds, and the mids between be void thereof, it signifieth raine. If he spread his beams before he be up and appeare in our Horizon, looke for wind and water both. If about him toward his going downe there be seene a white circle, there will bee some little tempest and troublesome weather that night ensuing: but if in stead thereof hee be over-cast with a thicke mist, the tempest will be the greater and more violent. If the Sun couchant appeare fiery and ardent, there is like to bee wind. Finally, if the circle aforesaid bee blacke, marke on which side the same breaketh, from thence shall you have blustering winds. And so an end of the Sunne and his prognostications.

E Now by right, the Moone challengeth the next place for her presages of weather to come: First and foremost, the Egyptians observe most her Prime, or the fourth day after the change: for if she appeare then, pure, faire, and shining bright, they are verily persuaded that it will bee faire weather: if red, they make no other reeking but of winds: if dim and blackish, they looke for no better than a foule and rainie moneth. Marke the tips of her hornes when she is five daies old, if they be blunt, they foreshew raine: if pricking upright and sharpe pointed withall, they alwayes tell of winds toward: but upon the fourth day especially, this rule faileth not, for that day telleth truest. Now if that upper horne of hers only which bendeth Northward, appeare sharpe pointed and stiffe withall, it presageth wind from that coast: if the nether horne alone seeme so, the wind will come from the South: if both stand streight and pricking at the point, the night following will be windie. If the fourth day after her change, she have a red circle or Halo about her, the same giveth warning of wind and raine. As for *Varro*, hee (treating of the presages gathered from the Moone) writeth thus: If (quoth he) the new moone when she is just foure daies

old, put her horns direct and streight forth, she presageth thereby some great tempest at sea presently to follow, unlesse it be so that she have a guirland or circle about her, and the same cleare and pure; for then there is good hope that there will be no foule nor rough weather before the full. If at the full, one halfe of her seeme pure and neat, a signe it is of a faire season; if it be red, the wind will be busie; if enclined ro blacke, what else but raine, raine. Doe you see at any time a darke mist or clowd round about the body of the moone? it betokeneth winds from that part where it first breaketh: and in case there bee two such clowdie and mistie circles environing her, the tempest will bee the greater: but how if there bee three of them for failing, and those either blacke, or interrupted, distracted and not united? surely then there will be more stormes & more. The new moone whiles shee is croissant, if shee rise with the upper tip or horne blackish, telleth beforehand that there will be store of raine after the full, and when she is in the wane: but if the nether tip be so affected, the rain will fall before she be at the full. But what if that blacknesse appeare in the middle of her bodie between? then (saith *Varro*) it will powre of rain in the very full. A full moone having about her a round circle, sheweth that there will bee wind from that part, where the said circle is most splendant. If her hornes appeare when she riseth, more grosse and thicke than ordinarie, looke soone after for a terrible tempest and stormie weather. If shee shew not in our Horizon before the prime or fourth day after the change, and the West wind blow withall, then that moone throughout threatneth cold and winter weather: and if the day after the full she seeme extraordinarily enflamed, she emenaceth unto us sharpe showres and bitter tempests. Finally, in every moone there be eight points and so many daies (according as she lighteth upon the angles of the Sunne) which most men observe onely, and take their presages of future weather by, to wit, the third, seventh, eleventh, fiftenth, nineteenth, one and twentieth, seven and twentieth, and the very day of her conjunction or change.

In the third place, a man may know the disposition of the seasons by the fixed stars, & therefore it behooveth to observe and marke them. They seeme otherwhiles in the skie to flit and run too and fro, and then wee shall not be long without great winds, rising from that quarter where such appeared and gave token.

The starrie skie, if it shew cleare and bright all over, and in every part alike, during that particular season [namely, betweene the occultation of the Harp-star, and the Æquinoctiall point] which I propofed and set downe heretofore, it is a fore-token of a faire and drie Autumne, but yet cold.

If the Spring and Summer both, passed not cleare without some raine and wet weather, it will bee an occasion that the Autumne following shall be drie, and lesse disposed to wind; howbeit, thicke, muddie, and enclined to mists. A faire and drie Autumne, bringeth in alwaies a windie winter.

When all on a sodaine the stars loofe their brightnesse and looke dim, and that neither upon a clowd nor a mist in the aire, it signifieth either raine, or grievous tempests.

If the starres make semblance as if they flew up and downe many together, and in their flying seeme whitish, they denounce winds from that coast where they thus do shoot. Now if it seeme to the eye, as if they ran and kept one certaine place, those winds will hold and sit long in one corner: but in case they do so in many quarters of the heaven, they betoken variable and inconsistent winds, going and comming, and never at rest. [When you see a circle about any of the other five planets or wandring stars, you shall have powring showres soone after.] Within the signe Cancer, there be two pretie stars which the Mathematicians call *Aselli*, [i. little Asses] betweene which there seemeth to be a small clowd taking up some little roome, and this they name in Latine *Præsepia*, [i. a Crib, Crarch, Bowzey, or Manger:] now if it chauce that this Racke or Crib appeare nor, and yet the aire be faire and cleare otherwise, a signe it is of cold, foule, and winter weather. Also if the one of those two litle stars, to wit, that which standeth Northerly, be hidden with a mist, then shall you have the South wind to rage; but in case the other which is more Southerly, be out of sight, then the Northeast wind will play his part.

As touching the Rainbow, if it appeare double as if there were two of them at once, it telleth of raine toward. A Rainbow presently after raine, is a signe of faire weather: but this is not so certein, neither will it hold long. Also, when a man seeth new circles still about any planets, there will be much raine soone after.

In Summer time, if there chauce to be more thunder than lightning, it threatneth winds from

A from that coast where it thundred: contrariwise, if it lighten much & thunder little, looke for rain plentie: when you see it lighten, and the skie otherwise cleare and faire, it is a token that rain and thunder will follow thereupon, yea and rigorous cold weather besides: but the cruellest and most bitter impressions of the aire, ensue upon such lightnings as come from all the foure quarters of heaven at once: if it lighten from the Northwest onely, it betokeneth raine the day following; if from North, it is a signe of wind from thence: if from the South, Northwest, or full West, it happen to lighten in the night & the same be faire, it sheweth wind and rain from out of those coasts: morning thunders foreshew winds; but if they be heard at noone, they presage store of raine.

As touching clouds, if you see the racke ride apace in the aire, the weather beeing faire and drie, looke for wind from that quarter whence those clouds do come; and if they seeme to gather thicke in that place, dispersed they will bee and scattered when the Sun approacheth: but more particularly, if this happen from the Northeast, they portend raine; if from the South, storme and tempest: if at the Suns setting the racke seeme to ride from both sides of him into the open aire, they shew of tempests toward: if the clouds be exceeding black, flying out of the East, they threaten raine against night; but if they come out of the West, it will surely raine the morrow after: if the clouds be sparkled many together out of the East, and flie like fleeces or flockes of wooll, they shew raine for three daies after: when clouds flie low, and seeme to settle upon the tops of the hills, looke shortly for cold weather: contrariwise, if you perceive those tops of mountaines cleare without mist or cloud, the weather will soon take up and turn to be faire: when the clouds seeme to be heavily charged and full, and yet looke white withall (which * constitution of the aire

* Some call them Towers.

C is called commonly the white weather) there is an haile-storme at hand: moreover, bee the skie never so cleare, the least cloud appearing therein, is enough to engender and foreshew wind and storme: mists if they come downe and fall from the mountains, or otherwise descend from heaven and settle upon the vallies, promise a faire and drie season.

Leaving the starres and clouds above, let us come to our fires that we make and keepe in our houses here beneath, for they are to be raunged in the next place of our prognostication. If the fire then burne in the chimney pale, and keepe therewith a huzzing noise, wee find by experience that it foresheweth tempest and stormie weather: as also we may be sure of raine, in case wee see a fungous substance or soot gathered about lamps and candle snuffs: if you see the flame either of fire or candle mount winding and waving as it were, long you shall not be without wind. The like is to be said of fire and candle light, if either they seeme to goe out of themselves, or to kinde and take fire with much adoe. Also, when we discern in the fire a number of sparkles gathered together and hanging one to another: or if when the pot is taken off from the fire, the coles sticke to the bottome and sides: or when the fire being raked in embres, keepeth a spitting and sparkling from it: also, if the ashes lying upon the hearth grow together: and last of all, when the live-cole shineth brighter or scorcherh more than ordinarie: all these be signs of raine.

Goe we a little lower to the water, for that element also giveth signes of the weather: and first of all, if you see the sea within the haven, after the flood is gone, in a low and ebb water to bee calme, and yet heare it keepe a rumbling noise within, it foresheweth wind: if it doe thus by times and fits one after another, resting still and quiet between-whiles, it presageth cold weather & rain:

E Item, if in calme and faire weather the sea strand or water banks resound and make a noise, it is a token of a bitter tempest: so it fareth also with the very sea it selfe; for if it be calme, & yet make a roaring; or if the some thereof be seen to scatter too & fro, or the verie water to boile & buble, you may be bold to foretell of tempests: the Puffins also of the sea, [i. fishes named in Latin Pulmones] if they appeare swimming above water, do foreshignifie cold wether for many daies together: oftentimes the sea being otherwise calme, swelleth, & by hooving higher than ordinarie, sheweth that she hath wind good store enclosed within her, which soon after will breake out to a tempest.

Let us come a land againe, and marke the disposition of woods and hills: you shall heare the mountains and forests both, keep a scounding and rumbling noise, and then do they foretell some change of weather: nay you shall marke the leaves of trees to move, sticke & play themselves, and yet no wind at all stirring; but be sure then that you shall not be long without. The like prediction is to be gathered by the light downe either of poplars or thistles flying too and fro in the aire; also of plumes and feathers floating upon the water. Goe downe lower to the vales and plaines: if a man chance to heare a bustling there, he may make account that a tempest will follow. As for the rumbling in the aire, it is an undoubted signe and token thereof.

Moreover, the verie bruit and dumbe creatures presage and give warning, what weather there will be. To begin with fishes of the Sea: the dolphins playing and disporting themselves in a calme water, doe certainly fore-shew wind comming from that coast whence they fetch these frisks and gambols: contrariwise, if they sling and dash water this way and that way, the sea at that time being rough and troubled, it is an infallible signe of a calme and of faire weather toward. The Cuttle or little Calamarie Loligo, launching it selfe and flying above the water; the Cockles and Winkles cleaving and sticking hard to the gravell; the Sea-urchins thrusting themselves into the owfe and mud, or otherwise balaifed and covered with sand, be all signs of tempests neare. The like may bee said of Frogs, when they crie more than their custome is; and of Seamews also, when they gaggle in a morning betimes extraordinarily: semblably, the Cormorants, Gulls, Mallards, and Ducks, when they keepe a proining of their feathers with their bills, foreshew wind: and generally, when you see other water-foule to gather and assemble together and then combat one with another, or Cranes make hast to flie into the midland parts of the maine. The Cormorants and Gulls flying from the sea and standing lakes, and Cranes soaring aloft in the aire still, without any noife, doe put in comfort of a faire and drie season: so doth the Howlat also, when thee cries chuit in rainie weather: but if it be then faire and drie, we shall be sure to have foule tempests for it afterwards: Ravens crying one to another as if they sobbed or yexed therewith, and besides clapping themselves with their wings, if they continue this note, doe portend winds; but if they give over between-whiles, and cut their crie short as if they swallow it backe againe, they presage raine and wind both. Iacke-clawes, if it be late ere they returne from their reliefe abroad, foretoken cold and hard weather; so doe the white-birds when they assemble and flock together, as also when land-foule (and the crow especially) keepe a crying against the water, clapping their wings, washing also and bathing themselves. If the swallow flie low and so neare the water, that she flap the same oftentimes with her wings, it is a signe of raine and foule weather. Semblably, all other birds that nestle in trees, if they seeme to make many flights out, but returne quickly againe to their nests. Moreover, if Geese hold on a continuall gagging out of all order untunably, a man may guesse no better by them, no more than he can of the Heron which he seeth heavie and lad upon the sands.

And no marveile that these river-foules, or generally any other birds of the aire whatsoever, should have a secreet presage and foreknowledge of the disposition of the aire; for the very four-footed beasts of the earth doe make shew thereof by their behaviour. The sheepe and such small cattail, leaping and playing wantonly, dauncing also as untowardly without measure, doe testifie some change of weather: nay the dull and heavie oxen holding up their nose and muzzles, snuffe and smell into the aire, yea and keepe a licking against the haire [toward raine.] Also, when you see the foule and filthie hoggs, rend, teare, and sling about them bottles of haie, and yet they care not for it when they have done, because it is no meat for them: likewise if you perceive the pismires or ants either lying close and idle, full against their nature (whose propertie is to be industrious and ever busie) or encountring one another in bataille-wise, or els carrying their eggs abroad out of their holes. Finally, when the mads or earthworms come forth and appeare, a man may be bold to foretell of a change in the weather.

What should I say more? It is knowne for certaine, that the Claver-grasse or hearbe Trefoile will looke rough against a tempest, yea and the leaves thereof will stand staring up as if it were afraid thereof. And to conclude and make an end once of this discourse, whensoever you see at any feast the dishes and platters wherein your meat is served up to the bourd, sweat or stand of a dew, and leaving that sweat which is resolved from them, either upon dresser, cupbourd, or table, be assured that it is a token of terrible tempests approaching.

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