

The Project Gutenberg eBook of A Profitable Instruction of the Perfite Ordering of Bees, by Thomas Hill

This ebook is for the use of anyone anywhere in the United States and most other parts of the world at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this ebook or online at www.gutenberg.org. If you are not located in the United States, you'll have to check the laws of the country where you are located before using this eBook.

Title: A Profitable Instruction of the Perfite Ordering of Bees

Author: Thomas Hill

Release date: December 24, 2014 [EBook #47765]

Language: English

Credits: Produced by The Online Distributed Proofreading Team at <http://www.pgdp.net> (This file was produced from images generously made available by The Internet Archive)

*** START OF THE PROJECT GUTENBERG EBOOK A PROFITABLE INSTRUCTION OF THE PERFITE ORDERING OF BEES ***

A profitable instruction of the perfite ordering of Bees

Transcriber's note:

The final four chapters of the second Treatise, "Certaine husbandly coniectures of dearth and plentie for euer," are absent. No known copy of this edition is complete. Entries in the Table of Contents referring to them have been removed.

A profitable instructi-
on of the perfit ordering of
Bees, with the maruellous nature,
propertie, and gouernemente of
them : and the necessarie vses
both of their Honie and waxe,
seruing diuersly, as well in
inward as outward causes:
gathered out of the
best writers.

To vvhich is annexed a proper Trea-
tise, intituled : Certaine husbandly coniec-
tures of dearth and plentie for euer,
and other matters also méete
for Husbandmen to
knowe. &c.

By THOMAS HYLL Londoner.

Imprinted at London, by
Henrie Bynneman.

ANNO. 1579.

A profitable instruction
of the perfit ordering of
Bees, with the maruellous nature,
propertie, and gouernemente of
them: and the necessarie vses
both of their Honie and waxe,
seruing diuersly, as well in
inward as outward causes:
gathered out of the
best writers.

To which is annexed a proper Treatise,
intituled: Certaine husbandly coniectures
of dearth and plentie for euer,
and other matters also méete
for Husbandmen to
knowe. &c.

By THOMAS HYLL Londoner.

Imprinted at London, by
Henrie Bynneman.

ANNO. 1579.

The Authors out of the
which this Treatise is
gathered.

C. Plinius.
Aristotle.
Albertus.
M. Cato.
Iunius Columella.
M. Varro.
Palladius Rutilius.
Theophrastus.
Guilhelmus de Conchis.
Galen.
Paule Aegineta.
Cornelius Agrippa.
Hieronimus Cardanus.
And sundrie others.

To the worshipfull maister M.
Gentleman, Thomas Hill wisheth all
health and felicitie.



s it hath beene, and is yet (worshipfull Sir) a trade commonly vsed among most men, to choose out from a greate number, some one, vnder whose name and title they may publishe their workes: Euen so I (following the steps of the learned, though in all other poyntes most inferiour) hauing finished this little treatise of Bees, and casting with my selfe to whome I mighte presente it, founde my selfe much bounden vnto your worship, both for your gentlenesse which I haue of late tasted, and also for youre friendship which I finde alwayes readie towards me. And therefore hauing none other wayes to recompence the least parte of youre curtesie and gentlenesse, thought it best to gratifie youre worship with such a simple gifte as mine abilitie will suffer me to bestow on such a friend. And although Sir this Treatise is farre

dissonant from youre studyes, yet considering your earnest desire to knowledge and learning, and agayne pondering the pleasantnesse of the matter, thoughte this might be made a recreation for your grauer studyes. For when your mind shall bee searching for profound reasons, and oppressed with deepe cogitations, then taking and reading this little Pamphlet, it will bring a forgetfulnesse vnto your former weerynesse, and cause a newe delighte vnto your mind: For heerein may you see, first the maruellous gouernement of the Bees, through the onely instincte of nature, as in their obedience to their King, and other officers, in punishing the ydle loyterers, in cherishing the true labourers in their manner of fighting, with suche like a greate many, as it is wonderfull to reade, and almost vncredible to beleeeue: secondly, the liuely effectes and commodities that arise of their Honie and Waxe. And lastly, howe profitable they are for common wealth, and howe necessarie for mans vse, I mighte heerespeake muche in the prayse of the Bee, which all I will omitte, seeyng onely myne intente is to shewe my selfe myndfull of your good turnes and benefites, desiring you to take this in good parte, whyche proceedeth from a well willing minde. And I am sorie that at this presente I had none other matter more worthy to haue gratified your worship withall: but that whiche wanteth in power, aboundeth in good will. Thus troubling your worship no longer, I commit you to the keeping of the Almightye, praying him to increase in you all vertue and godlynesse, and to grant you the long yeares of Nestor.

*Yours most bounden
Thomas Hill.*



The Preface into the instruction
of Bees.



lthough (gentle Reader) I haue not given thee anye labour of mine owne, but rather haue collected the sayings and writings of manye aunciente authours, yet I trust they shall be well accepted of thee without offence. For as he that setteth forth vnto the view & reading of all men such knowledge, as by his long study & experience he hath gotten, is worthy to haue his due reward of commendation: euen so he is not to be discommended, who painfully reuoluing the bookes and volumes of many and diuers ancient writers, reduceth them into one little Treatise, for the commoditie and profyte of the simple and vnlearned sorte, for whose onely sakes I haue trauelled in the translation of this worthy matter, touching the right vsage and handling of Bees: a thing very rare, and seldome seene in the Englishe tongue, and yet verie profitable for a common wealth, and commonlye vsed among the poore husbandmen, though not in euery poynt as they ought to be, yet according to their knowledge and experience. But I, to the intente that a further learning mighte be added to their skill, haue so trauelled therein, that I trust their knowledge shal be increased, & such as haue no knowledge at all, may be instructed without any other teaching. I haue ioyned this little Treatise vnto my booke of Gardening, for that most men do ioyne them both together, as when they place their Bees in their Gardens, whereas they may with lesse paine and easilier, gather of the sweete smelling flowers, their Honie, and Waxe. And for all these my paynes gentle Reader, I craue nought else of thee, but to giue me that which of dutie in a maner I ought to haue, for if thou doest receyue any commoditie or fruite eyther by this, or by my other Treatise hereto annexed, whiche hathe to name the Husbandly coniectures, with sundry rules of Phisicke, then giue me the reward of thy good report, and friendly accepting of these two Treatises, and if not, yet accept mine endeouours in good part, which be meant to do thee good. And thus leauing (gentle reader) to trouble thee farther, I commit thee to God, who giue thee the furtherance of knowledge, both in these and all other needefull artes.

(∴)



A necessarie Table setting forth the
contents of these two Treatises.

These treated of in the first Treatise.

Why Bees are named to be crested or parted betweene, or as it were ringed or rather pleighted: what worke the swarme new gathered in the Hiue firste taketh in hande: and whether they may liue after their stings be gone.	Cap.j.
Who first taught the preparation and increasing of Bees, and found out the vse of honie.	cap.ij.
How Bees do naturally ingender.	cap.iiij.
Of the vnperfit Bees, which men properly name drone Bees.	cap.iiij.
Whether the Bees draw breath, or haue any bloud in them.	cap.v.
Of the great vtilitie and profit of the Bees vnto mans vse.	cap.vj.
Of the care and diligence of the Bees.	cap.vij.
Of the maruellous gouernement of the King of honie Bees, and of the obedience which they vse to hym.	cap.viiij.
What kind of Bees be best, and rather to be chosen.	cap.ix.
Where the Hiues of Bees ought especially to be placed.	cap.x.
What things Bees do chiefly abhorre, and greatly hate.	cap.xj.
By what signes men may knowe when the honie Bees are diseased, and how men may cure them.	cap.xij.
What maner of person the keper of the Bees ought to be.	cap.xiiij.
By what means the swarme come forth, may be preserued from flying away.	cap.xiiij.
Of the Bees new settled in a swarme together, and taken and recouered againe.	cap.xv.
Which are the best and fittest hyues for the honie Bees.	cap.xvj.
Of the cleanlinesse and sweetenesse of the keeper of Bees, and howe hiues ought to be fenced about, and prepared within.	cap.xvij.
How Bees lacking honie may be fed in that present neede.	cap.xviiij.
How the dead Bees may be restored to life againe.	cap.xix.
Of the battell that Bees sometime haue within themselves.	cap.xx.
How Bees lost, may be recouered and found againe.	cap.xxj.

That the Bees sting no person comming neere to their hiues.	cap.xxij.
When and how the hiues ought to be gelded.	cap.xxiiij.
What the honie is, and how from the hiues the same may be prepared to vse.	cap.xxiiiij.
Which honie is accounted best.	cap.xxv.
Of the venomous honie, and of the wonderful hony of Creta.	cap.xxvj.
Of the miraculous worthinesse of honie.	cap.xxvij.
How profitable the vse of honie is in medicine.	cap.xxviiij.
Of the drinke of hony whiche they call the Mulse water, or sweete water of the Romaines.	cap.xxix.
Of the drinke <i>Oenomet</i> , which is made of pure wine & hony.	cap.xxx.
Of the singular water of hony gotten by order of distillation.	cap.xxxj.
Another maner of distilling the hony more at large taught.	cap.xxxij.
The maner of distilling a water of hony named the Quintessence.	cap.xxxiiij.
The maner of drawing and making waxe of the combes.	cap.xxxiiiij.
What waxe is best allowed, &c.	cap.xxxv.
Of the great commoditie and benefite of waxe in medicines.	cap.xxxvj.
Of that whiche is a stay of the combes, and made for a defence of Bees.	cap.xxxvij.
How to make waxe white.	cap.xxxviiij.
How to make red waxe.	cap.xxxix.
How to draw a profitable oyle out of waxe for sundry vses.	cap.xl.
Another way of drawing the oyle of waxe most noble, and dothe maruellously help the cold goute, the sciaticke, the swelling of the legges, and all other griefes of a colde cause.	cap.xlj.

These described in the other Treatise.

Certaine Husbandly coniectures of dearth & plenty for euer.	cap.j.
An euerlasting Prognostication of the state and condition of euery yeare, by the only calends of Ianuary, written by the ancient & learned <i>Leopol. Aust.</i> & other for the commodity of the wise husbandmen.	cap.ij.
How to foreknow the state of the yeare by the only rising of the dog starre, out of the husbandrie of <i>Diophanes</i> .	cap.iiij.
Other profitabl instructions, right necessary for husbandmen to know.	cap.iiiij.

¶ The firste Treatise setteth foorth the *strange government, propertie, and benifite* of the Bees, with the commoditie of their Hony and Waxe, whiche serue vnto many good vses, as well *in outward as inwarde causes applied, gathered out of Plinie, Albertus, Varro, Columella, Palladius, Aristotle, Theophrastus, Cardanus, Guilielmus de Conchis, Agrippa, and diuers other singular Authours.*

¶ Why Bees are named to be creasted or parted betweene, or as it were ringed, or rather plighted. What work the swarme newe gathered in the Hiue, first taketh in hande, and whether they maye liue after their stings bee gone. Cap.first.



linie nameth Bées Cleft beasts, bicause of the diuision or parting betwéene of the head & shoulders: and *Aristotle* nameth them plighted or ringed, in that their bodies are diuided with plights and rings. And most men know, that the Bées haue neyther sinews, bones, fleshe, gristle, backe-bone, nor fat, but are only created of a certaine mixture, being a meane betwéen these, and hauing a very few intrailles. And againe, no man néedeth to doubt, but that the Bées be a kinde of beasts, greatly to be set by for mans vse, & for mans prouision, are nourished of the aire, passing throughe the diuided places, which they by great diligence and care preserue from being stopped, for as soone as they be stopped, they shortly after die, like as the same we may learne, when anye happeneth to fall or light into Oyle, which straight way after die, throughe the Oyle stopping then their powers. They haue and fly with foure wings, that they maye the better carrye in their bellies the stings of reuengement. For when two of them striue together in flight, then do they hold and kéepe their stings in their mouths by a gréedy desire, or for eagernesse sake. Now after the seauen starres named *Vergiliæ*, be once risen in sight aboue our horizon, then do they hyde them in their proper holes, so that they go seldome after abroade, vntill the Beanes doe bud, and if they happen to beginne at any tyme to flye abroade when as a fayre daye moueth them forward, then slacke they no suche dayes afterwarde, but occupy themselues. And firste they prepare and make their combes, which they fashion into apt houses, or rather celles of waxe, after this they haue yong, and then beginne they to gather hony. They liue also the longer by hauing their stings, for that once gone, or taken away, they dye forthwith through the lacke of their intrailles, whiche they lose together with their stings.

¶ Who first taught the preparation and increasing of Bees, and founde out the vse of Honny. Cap.ij.

The reporte goeth, that one *Aristomachus* first founde out and taught the increasing of Bées, whome *Plinie* writeth to be so earnest in the same, that setting apart al other affayres, he only studied night & day how he might best intreate and vse Bées, according to their kinde. But others ascribe this inuention to one *Thassius*, who (as they saye) deserued no lesse commendation, both for his diligence and skill among Bées: but this he specially followed in the felde, and that farre from the Towne. And of this the common people (as by a nickname) no more named him *Thassius*, but *Agrius*, for his wilde or rather straunge life, whiche he then led in the felde, Whome *Plinie* also affyrmeth to haue written a Booke of the increasing and multiplying of Bées. And *Columella* ascribeth this inuention, to the inhabitants of the hill (named *Hymetus*) being in the Countrey of *Attica*, for there (saieth he,) was one *Ericthonius*, who taught (as men write) the true and perfect ordering of them. *Plinie* againe ascribeth the inuention of Hony to one *Aristeus* a man of *Athens*. *Diodorus Siculus* in the sixte Booke of hys workes, writeth, that *Curetes*, a people of *Creta*, did firste finde out the Hony, *Macrobius* ascribeth the same to one *Saturnus*. Others to the *Thessalians*. And many to *Melissus*, an auntient King of *Creta*, others to *Nassus Liber Pater*, thus writing, that *Liber* hath obtayned the renoune for finding out of Honnye.

¶ How Bees do naturally engender. Cap.iiij.

Firste the Bées procéde of Bées, by the actuall doing togyther, after whiche they lay egges, sitting vpon them, as the Hens do on their eggs. And when they haue sit on them for the space of .xlv. daies, then do they hatch their yong ones, whiche yong (at the first) come forth, much like to white Worms, except the King, who onely as he is hatched, hath wings. At the firste time, one of them hatcheth fife young together, the nexte time fewer, and so fewer & fewer, vntill she commeth to one at a time, bicause the abundaunce whiche is in them, dothe in the continuaunce of time weaken. In the time of their sitting they make much noise to gette them heate withall. And aboute the sides of the combes, be sometimes greater Bées bred, which men for their sound & noise do properly name Trumpeters, and they also haue whole hornes, of which come the bastarde Bées. There be also other Bées bigger in

body, muche-like to the Kings, but they be ydle, and haue no sting, bicause of the heauinesse of their body. All which kindes, *Guilielmus de Conchis* didde obserue in the Hyues of a certaine Consull of Rome, whiche properly were made of verye thinne and cleare horne. Some write, that Bées are also engendred and bredde monstrously, and that contrary to Nature, without the mutuall coniunction, if that a whole calfe be buried in the earth, and there lye rotting whiles the wind blow out of the Weste, for by that meanes, as writeth *Maro*, doth the same bréede Bées. And not vnlike to this doeth *Cornelius Agrippa* in his firste Booke *de Occulta Philosophia*, and *Hiero. Cardanus* in hys ninth booke of Subtilties write, that of a rotten horse do waspes procéede: of an Asse, Humble bées: of a Mule, hornettes: of the haire of a woman (hauing then hir motherly courses) Serpents: and of Creuisses (the shelles plucked off,) Scorpions.

¶ Of the vnperfect Bees, which men properly name
Drone Bees. Cap.iiij.

The Drone Bées (as writeth *Plinie*) are vnperfect Bées, without sting, and the least weary, yet be they verye heauy of body, and slow in doing their businesse. They also doe the seruices and trauels of the true Bées, although the right and perfect Bées doe rule and gouerne them, yea and put them formost in their laboures, so that if they happen to be slow in their doings, then doe the right Bées punish them without pitie. Also these doe helpe the right Bées, so well in their workes as in their bréeding, for that the multitude of them, cause the more heat and warmeth together. And howe muche the greater the multitude of them shall be, and so muche more will the increase come of the swarme. When the hony waxeth ripe, then are the Drone Bées driuen forth, and the kinde also of these are onely séene abroade in the Spring time.

¶ Whether the Bees drawe breath, or haue any bloud
in them. Cap.v.

Now some affyrme, that the clouen beasts draw no breth, in that they haue not the fan of the hart, which is the lights or lungs, for as they write, nothing without them can breath. But *Aristotle* writeth, that the same is possible among Bées, hauing the sting (although they haue no bladder) to breath by their sting. And the Bées haue no bloude, bicause they haue neither hart nor lungs: yet *Plinie* affirmeth, that nothing done by nature may be thought or iudged incredible: for the same is fully persuaded in wise men, that the Bées haue a certain liuely moisture, like as the Cuttle in the Sea, which hath a kinde of ynke in it, and is as the iuyce of it, with the whiche the Diers (at this day) do make their Purple colour.

¶ Of the great vtilitie and profite of the Bees vnto
mans vse. Cap.vj.

A great profite ariseth by Bées, if they be set in a conuenient and fit place, and that both carefully & wisely guided, as *Plinie* writeth in his xj. booke, where he willeth, that of al other clouen beastes, the Bées to bee principallye cherished, bicause to mans vse they gather a subtile and wholsome iuyce, beynge very swéete, and besides they frame by a maruelous skill and cunning, theyr cotages of waxe vnto mans vse, that no workman (be he neuer so ingenious) can do the like. The profite also comming by them in a short time, if the weather hindereth not, is so greate, that they increase in a shorte time into manye swarmes, which swarmes againe increase others, so that the firste swarmes increased, they especially thrust forth from them in the moneth of May, or Iune, by whych meanes they cause a great increase of them. As *Varro* affirmeth the same of two head Gentlemen in Spaine, which only by the means of their Bées, gayned yerely ten thousand pound (but I rather thinke fiue thousand pounce, which also is very muche) yet here is to be noted, that the swarmes of syxe yeares olde, doe seldome encrease after other swarmes of themselues, although in waxe they giue a great yéelde and gayne to the owners.

¶ Of the great care and diligence of the Bees. Cap.vij.

First certain Bées as the skilfull practisers do write, stand in the day time at the mouthes of the Hyues, diligently loking to their businesse, like warders placed at the gates of a Castel, that they maye so defend in safegarde whom they will within. In the night time they setle themselues to rest vnto the morning, vntil one of them by humming twice or thrice about, doeth so styrre them forward to flye out after the other. For if they happen to kéepe themselues in the morning within the Hyues, then doth the same declare a tempest to insue that daye. But being a cleare and fayre morning, then do they flye forth and returne againe to their Hiues, laden with the substaunce of the floures on their legges, for their businesse, and this especiallye doe the yonger Bées, so that the other Bées besides do eyther carrye the water in their bils, or on the soft mossinesse of the whole bodie. The elder Bées remayning still within, do also folow their businesse, as in diligently laying vp, and aptly dressing the same, as they wold dispose their kindly foode. Such as be sluggish & not labouring they diligently note, which for their sluggishnes, they bitterly punish to death.

And flying abroade in a mightye winde, they maruelouslye stay and guyde themselues, by waying their bodies down with little stones, caryed in their legges. They at the euening comming to rest, do make lesse and lesse noyse in the hyue, vntill one of them flyeth about, which by a like order as he moued them forewarde in the morning, euen so by the same noyse and humming doth he procure them to take their rest, and to be all silent within the hiue. If the Bées happen to scatter in their flying abroade, then do they call and gather them together into a swarme, by the helpe of making a shrill sounde, eyther with pan or bason, or other loude cymball. They also followe their king whether soeuer

he taketh his flight, who beyng wearie, and not further able to flie, they carrye hym betwéene them.

Wherefore that the king may not often attempte forth with the swarme, for feare of loosing them, the skilful practisers wil, the wings of the kings be broken off. Whiche féeling himsef thus depriued of his wings, will not after attempt to flye forth of his boundes, but remayning still within, will so cause the other Bées to abide continually with him, not leauing the Hiue at any time after. They also haue counsels priuily and rulers among them.

And *Aristotle* declareth the Bées to be the clenlyest amongst all other beastes, bycause in flying abroad, they shed then their dung from them, leaste anye sauour or stincke of their dung be felte in their cotages or hoales. If these want honny at anye time, then doe they eyther kill, or driue quite away the drone Bées.

¶ Of the maruellous gouernement of the kings of honny Bees, and of the obedience which they vse to him. Cap.viiij.

Nature hath not onlye committed hir lawes to bookes, the which men may lerne by, but hath especially set forth conditions and properties, as for an example of the lyke, by the bées, whose kings for doubt of reuenging, haue by the prouidence of nature no stings. Whereby is to be vnderstanded, that the kings ruling in power, thorough the lacke of their stings maye be by that meanes the slower to hurt, and offer reuengement. Yet some affirme the kings to haue stings, but they suppose them not to vse their stings. And of this *Plinie* maketh a doubt whether the king be armed as the other bées, or lacketh a sting. Which *Columella* putteth out of doubt, writing of the king that he hath no sting, vnlesse any perhappes thinketh that big head as it were, whiche the king carrieth in his belly, to be his sting, with the which at no time they vse to sting or hurt anye. This king only do Bées reuerence, and honor him in such sort, that any of them is obedient and very ready at his bidding, to do whatsoever he assigneth them vnto. Also this obedience and seruice whiche they vse to their king, they do not the same for feare of punishment, but onely of a loue which they owe vnto him. Yet they punish one another in such sorte, that after their stings be lost, they dye forthwith. *Aristotle* writeth of two maner of kings, the one as he affirmeth to be red, which he iudgeth the better, the other king black of colour, which he confesseth to be lesser of body, yet howsoeuer the kings be, they are notwithstanding far bigger of body, than the honny bées, & haue a brighter and goodlier head then the other Bées, yet shorter wings. So that their king created among them, goeth not any time forth of the hiue, without the whole swarm folow him. The king flying forth of the hiue at anye time, the other folow him, in such sort, that eche couet to flie next him, & ioyeth to be séen of the king in office, and whersoever the king settleth him or resteth, there be other Bées placed like strong holds or castels about him. About the king also be placed certaine rulers, which wayte vpon him by a dayly auctoritie, If anye happeneth, as writeth *Plinie*, to breake of the kings right wing, then from the king will not the swarme after departe, as the like was rehearsed afore. Besides these, the Bées haue a maruelous order among them, if their king happen to die, for then they shal bitterly mourne for their king deade, and for the lacke of another, as such whiche cannot be guided and ruled without a king among them, and of this they be in continuall mourning. So that for the time, they carry no foode into theyr Hyues, nor flye not forth, but with a sadde bewailyng and humming, after theyr King, they heape thicke togyther aboute the deade body, and vnlesse another King increaseth by little and lyttle among them, they dye for hunger. Theyr king laboureth not, but as the other flye foorthe, hee in the meane tyme as an exhorter moueth and encourageth forwarde euerye one to hys worke, by his flying aboute in the Hiue.

¶ What kinde of Bees are beste, and rather to be chosen. Cap.ix.

In this point, & for true knowledge of these, doth *M. Varro* discribe those Bées to be best, which be small of body, and diuerse and round, bycause they be earnest in labour, and make a thinne honny, and better endure labour, and gather their honny on hilles, but the worser Bées gather their honny of the garden floures onlye, whiche be somewhat long of bodye, lyke to waspes. *Virgil* doth especially commend the small Bées, beyng somewhat long, light, and clenly in their businesse, and glistening to golde. So that the greater and rounder Bée, is discommended of all writers. Although the fierce Bées are very ill, yet is their yrefulnesse, a note of the better Bées, whiche may easily be appeased, by the daylye haunting among them, for if the keepers do often handle the Hyues, then do they become gentle in a short time.

The Bées also endure if they be diligently loked vnto, for the space of ten yeares, and beyonde this age no swarme can passe, although the kéepers supplye the Hyues yearelye with yong Bées, in the steade of the olde deade, for in the tenth yere, in a manner, of the generall death of them, the vniuersall kinde of the whole Hyue is then consumed. And therefore, that thys maye not happen throughe all the Hyues in that place you must alwayes increase your Hyues with yong Bées, which diligently Hyue in the springtime, or beginning of Sommer, when as the swarmes be first and newe thrust forth of the Hiues, and so maye the number of your Hiues be encreased. Agayne some wryte, that in the Countrey of *Pontus*, the beste Bées bée white, bycause they gyue theyr yéelde of Honny twyce in a moneth. And *Gulihelmus de couchis* affirmeth the beste Bées to be aboute *Thermoodon* in *Capadocia*, abyding in the Earthe, for that these doe buylde and make a tryple yéelde of waxe, and giue also aboundaunce of Honny.

The foresayde *Varro*, affirmeth those Bées to be in healtie, which often kepe and be in a swarme together, that be clenly & can do their businesse and worke alike, and that quicke & light in the same, beyng neyther hearie nor foule of body, or appearing dustie, such also which be not ouerleane of body, and that out of any of their cotages no dead bées be carried thence, & forth of their Hiues. For all

these notes do declare suche like Bées, to be both euill and vnprofytable. *Palladius* declareth, that the best Bées may be knowen by the fulnesse or emptinesse of their vessels, for if the Hiues be full, then those Bées doth he best commende, if the Hiues be nothing so full stuffed, those Bées doeth he greatly dissalowe. And he also praiseth those Bées, whiche excelleth or passeth others in the loudnesse of humming, or do abound in the great haunte of the swarme, not broughte to the Hiues from farre places, so that there maye be such agreement, that they be not after feared awaye, with the newnesse of the aire and place.

¶ Where the Hiues of Bees ought especially to be placed. Cap.x.

Aristotle willeth the Hiues of Bées in the winter time to be placed in a warme place, and in the hotte season of Sommer, in a colde place. *Palladius Rutilius* in his firste Booke of husbandrie teacheth that the fittest place for bées, is that, whiche is in a Garden, not farre or rather neare to the owners house, which by that meanes suffereth not the windes, nor the accesse of théeues or beastes.

Which also nourisheth Trées growing on the Northside of the place, the better to defend the cold ayre from them, & cleare springs or faire riuer water running by. *Columella* willeth the Hiues to be set open toward the south, far from noyse, & haunte of people and beastes, neyther in a hote nor colde place, for eyther of these do molest and harme the bées. Also that the hyues stande in the bottome of a valley, or if not so possible, then placed neare to the valley, the better and easier for the Bées to bring their foode gathered to their hiues, and in anye case farre from stincking puddels, ditches, dung-heapes, and such like filthy stinckes, which greatly annoy and endamage the bées beyng neare hande to their hiues, *M. Varro* writing in his second booke vnto a huswife of the cuntry, willeth hir also to set the Hiues close to hir house, and vnder some shed, & that far from the noyse of formes, whiche is mente from a groue or wood, leaste through the woodde or groue neare hande, the same may giue a sounding noyse, like to that whiche men commonlye name the Eccho, whiche sounde in verye déede the Bées do greatly hate. *Virgil* willeth bushie trées to be planted and stand right before their hiues, like as the Peare trée is, the Peach trée, the Oake trée, many kyndes of Apple trées, the birche trée, Holy trée, the Iuy trée also, not allowed for his goodnesse, but bycause the same giueth out muche honny, and al other trées which beare no bitter floures. And he willeth these plantes and hearbes to grow neare hande, as the Rosemary, the red and damaske Rose, the white Lillie, the Violets, the Flouredeluce, the Organye, the Time, the running Time, the Sauery, swéete Maiorome, the Saffron floure, which coloureth the honny and maketh it smel swéete, the beane floures, the French beane floures, the Mellylot floures, the hearbe Baulme, the white Poppie floures, the Bitonie floures, the Borage and Buglosse floures, and manye other swéete and wholesome floures, not here named. But the Boxe trée, the Masticke trée, the dogge or Gatten trée, or as some suppose the long and high Chéeri trée they greatly hate, for that tasting of the floures of anye of these, they die forthwyth. *Maro* wylleth standing waters, to be neare to their hiues, & so shallow, that smal stones thrown into them, may appeare aboue the water, & serue in stéede of bridges for their often recourse to them, & that they may aptly stretch their wings abroad on the stones, at the heate of the sun. The standings for hiues ought to be thrée foote distant from the ground, & wittily stopped about with red clay, leas vermene, and Myse créepe into the hiues, and spoyle the honny combes. The Hiues also oughte to be set a little asunder the one from the other, leas by loking into them, you shake one another by cleauing together, and so disquiet the bées nexte to, which feare al manner of shaking leas the same throw not downe their weake workes of waxe. And the mouthes of the hiues ought to stand somewhat stiper than the back part, leas rain beating in, might not lightly run out again by their entry or hole. For remedy of the which, some make a couer ouer theyr hole the better to kéepe off the weather & raine. And no manner of heate so much harmeth them, as doth the bitter cold, & for this the faces of hiues ought to be toward the winter rising of the sun, that the Bées may so receiue the warme comfort, in the morning comming forth, & be the liuelier, for colde doth cause them to be sluggish, and for that cause their holes ought to be very narrow, that as little colde as is possible, may enter into them, and so narrowe made, that the Bées within may receiue the encrease but of one Bée at once, For by that meanes can neither the Béetil, butterflie, nor great moath enter, to annoy them. Besides for their often recourse home, *Maro* willeth to make two or thrée commings into the hiue, somewhat distant asunder.

¶ What things Bees doe chiefly abhorre, or greatly hate. Cap.xj.

To bées, is that (named the Eccho) vngratefull or much displeasing, which as *Plinie* writeth, doth greatly fear them, through the straunge sounde rebounding againe, and the miste also doth muche molest and trouble them, besides the spinner through hir web hanging downe before the Hiue, and the sluggish butterflye (which *Plinie* nameth dishonorable) that is two wayes pestiferous, as the one, when he spoyleth the waxe, and dungeth within the Hiue, and the other, breading Magottes or little wormes within the combes. They greatly hate oyle, like as all the kindes of the other Bées doe, and a stinking sauoure, which evidently appeareth by that kind of herbe named Mugworte, that they especially hate, bycause the same is of a strange stincke to them. The hornettes also of the like sorte creast, but bazer of kynde, they greatlye feare, for that to the Hornets the Honny Bées are a speciall foode. Also they be meate to swallows, to sparrowes, and to all other small byrdes.

The frogs besides, they do greatly feare, which only lye in waite for them, both in Marishes, running springs, shallowe waters, and little ditches, and the like doe the Toades lye in wayte for the Bées, whiche destroye manye of them. And the shéepe doe greatlye trouble the Honnye Bées, if so be they happen to fall or lighte into the Wooll of theyr backes, out of whyche, they cannot easylye wynde or gette themselues againe.

And if any happeneth to boyle or seathe Riuer Creausses, or sea Crabbes neare to the Hiues, and that the Bées féele the sauour therof, they die forthwith.

¶ By what signes men may know, when the hony Bees are diseased, and how men may cure them. Cap.xij.

This is a speciall argument and note, that the Bées, are diseased, if that they fly scattering in the swarme, if they kéep not their proper colour, but be (as it were) of a strange and contrarie colour: if they also are ouer leane, if they appeare dustie and hairy, and that out of their cottages bée dead Bées carryed thence. When al these notes and signes are espied in the Bées, it is then highe time to séeke remedye for them, leaste helpe (by longer running) be sought too late. Therefore *Palladius* willeth to minister the kernels of *Pomegranats*, brused and mixed with swéete and pleasaunt Wine, and the same powred into the chanel or gutters of halfe canes, set nere to the mouths of hiues, or honny, with Rose leaues well beaten together, and so ministred to them, or the berries of the Saruice trée brused, and mixed with Honny: for lacke of these helpes, a man may make a smoake of drie Oxe or Cowe dung, whiche smoake mucche delygtheth and comforteth them, so that the same be often vsed vnto Haruest.

But if through the Maggots or little wormes of the Butter-flyes the Bées be diseased, *Rutilius* then iudgeth it beste, to set a brasen Candlesticke, or suche like vessell, with lighte burning in it at Euening, within the hyue, that to the same light (the Butter-flyes gathering, and flying about) may so fall down into it, and be destroyed.

Aristomachus writeth, that the diseased Bées maye bée couered in this maner, if that all the corrupt combe within the hiue be taken forth, and freshe foode anewe put in of the whole, and the hiue after smoaked within. Also he affyrmeth, that Rosemarie sodden with water and honny together, and beyng colde, poured into halfe canes or Elder stickes, made hollow like gutters, and the same set by the mouthes of the hiues, for the Bées to drinke on, doth recouer the Bées again. *Hyginus* affirmeth that eyther the Oxe or mans vrine set in like manner (as aboue saide) by the mouthes of the hyues, doth also recouer the diseased Bées. Nowe all these, and suche like muste the kéeper of the Bées doe, whiche is bothe sober and chaste, and féedeth not vppon sowre or tarte meates, nor filthy or strong of sauour, nor any salt meates.

¶ What manner of person, the keeper of Bees ought to be. Cap.xij.

The Bées for that they mucche abhorre all filthye stinkes and smells, *Palladius* willeth the kéeper of them to eschewe dilligently al strong and yll smelling sauoures, one also that delighteth to be chaste of body, and frée from filthinesse, among these not breathing sowrely, or of a stinking breath, not sweating, nor sauouring of sweat, not one besides of wicked conditions, or suche a person as standing among the flight of the Bées, doth not earnestly moue and procure them to fly to him, or as one stinged endeuoreth to defend himselfe from them, but rather as a flatterer among his acquaintance, and children, hath learned to entreate, and please the Bées by a more gentle manner. He also whiche mindeth to haue also in a readinesse the hiues vnto his vse, in which he may receiue forthwith the rude youth of the swarmes put forth, which if they be not dilligently preserued, they flye quite away at the full heate of Sunne. But how these hiues ought aptly to be prepared, shall hereafter bée taught in the sixtéenth Chapter.

If the Dorre Bées, or Bées without sting, be ouer manye in the Hiue, and that you woulde gladly ridde them forth, then do on this manner: first take and plucke off the wings of one of those Dorre Bées, which lay or put within the Hiue, and incontinent the Honny Bées espying the same, will fal vppon the other Dorre Bées, and both kill and driue them quite away.

¶ By what subtil meanes, the swarmes come forth, may be preserued from flying quite away. Cap.xij.

Palladius in his second Booke writeth, that the swarms of the honny Bées fly away especiallye in the moneth of Iune. But with vs the same oftner happeneth in the moneth of May, as hathe bin noted by sundrye, diuerse times, especially if the yong Bées be sounde and hartie within the Hyues. Therefore the kéeper muste dilligently looke to the Hyues, and at no time be absent, especially when the young Bées increase and abound in the Hyues, for if they be not then carefully looked vnto, and stayed by the diligence of the kéeper, they al fly quite away. For such is the nature and propertie of the Bées, that as soone as the swarms of the yong Bées, are bred with the Kings, and that they be strong & able to flye away, then as disdayning the swarms of the olde Bées, they séeke the more gouernment. For that they be suche liuing things, that delight to rule alone, not séeking ayde and counsell of the elder Bées: and therefore do the newe kings flye forth, with the young swarmes following them, which for a day or two before their flying away, remaine heaping together before the mouths of the Hyues, & right vnder the Hiues, so that by their comming forth, and heaping in suche order, they properly shewe the desire of a newe place, and be as yet contented to remaine thereabout, if so be the kéeper prouide for them a place and an apt Hiue. But if they haue no kéeper to looke dilligently to them, then as it were by an iniurie repulsed, they after séeke a newe place. That this may not happen, let then the warye and diligent kéeper, looke circumspectlye to the Hyues in the Spring time, aboute the eight houre of the daye, (when as the swarmes are not yet flowen away,) that he maye the diligenter marke and see the flying oute and comming in of the yong Bées.

Now the readinesse of the Bées in flying away, is known two waies, as the first is, when for certaine daies before, in a maner at the setting of the Sun, they plentifully or abundantly gather on a heape

righte before the mouthe of the Hyue, like vnto greate clusters of Grapes, and doe hang together on heapes one vpon another.

The other note is, that when they be minded within thrée daies after to flye awaye, they make as meruellous noise and sturring too and fro within the hiues at euening, as Souldiours at the Alarme within a Castell, whiche you maye easilye knowe, (this readinesse of them) if that you lay your eare to ech hiue. And when some of the Bées are flowen awaye, then doe those waite for the others, vntill the whole swarme be come together. That the Bées fly not awaye, *Plinie* teacheth in the .xj. Booke of his Naturall Historie, that the hiues ought to be annointed about with the iuyce of the herb named Balme. Also other affyrme, that the swarme to settle and stay againe through the onely throwing of fine duste on them, if so be the same be thrown on light, and that ouer the bées. Some beside affirme, that the Bées will not flye awaye, if that the dung of the first calfe of any Cowe, be smeared about the mouths of the hiues. *Plinie* writeth, that by the only binding of the fresh white Vine (running in hedges) rounde about the bodies of the Hyues, it stayeth the swarme from flying away.

¶ Of the Bees newe settled in a swarme togyther, and taken or recouered agayne. Cap.xv.

When the Bées are nowe in a tumulte in the ayre, by throwing fine earth on high ouer the Bées, or ringing a basen or kettle, they be with the shrill sound made astonied, that they maye the sooner settle downe neare to the kéeper, whiche if the same happen to be on the branch of a trée, or on a graft or yong set, then with a very sharpe sawe, gently sawe that off, and laye it on the grounde, and spéedily set a Hiue on the same prepared for the purpose. For by that meanes (without doubte) will the whole swarme flye vp to the toppe and head of the Hiue. Yet it often happeneth, that they doe not wholly cleaue on a heape to the braunch of a trée, but to the stocke or body of the trée, whych by that meanes muste néedes be cutte by a greater force, so that not able to be recouered by this meanes, the swarme muste be quickly swépte off, either with the hand, or with a Gose wing, that they may so fall together into the hiue. If the swarme happen to be clustred together on the top of a trée, so high, that they cannot be climed vnto, to take them downe, then after the shaking of them into the Hiue (turned vppe) either with a pole or high forke, the hiue must spéedily be turned down to the earth. And if they be not thus taken or recouered, yet if the King shal be still in the Hiue, then doth the swarme fly in againe, if he remayneth not, then wil none of the swarme abide in the hiue, but flye forthwith vnto the former place. Wherefore, that they may be moued to abide, you muste then sprinckle the hiue with water and hony together, and couer the same within with the gréene Nettle, or rather the gréene Fennell, or some such swéete herbe, annointed a little with Hony, and after set at the Euening in their proper place. For the hiue in the day time, after the recouering thus of the Bées, may not be stirred vntil the Euening, that the Bées so quietly resting all that night, may in the morning leisurely go forth. But for thrée daies together in a manner, muste the kéeper dayly looke, whether the swarme kéepeth belowe in the Hiue, for if it doth, then are the Bées purposed to flye awaye. And if none of al these remedies, may yet moue the Bées to stay and tarry in the hiue, then be-smoke the hiue with flaxe, and they will after enter in and abide in the hiue. Which so staying in the hiues, set at the Euening in his proper place. Here learne a farther instruction, that if the swarme of Bées cannot be gathered and recouered together all at one time then may you gather the swarme at two or more times together, and alwaies put eche part gathered vnder the hiue. If it happeneth that you haue gotten the King, with a part of the swarme, then will all the others soone come to hiue (without further trauaile) of their owne accorde. If the Bées also be entred into the hollowe of a trée, then to the hole, whiche they vse to go in and out at, as their proper doore, sette a prepared hiue, and beneath their hole, neare to the roote and bottome of the hollow (as you can gesse) boare another bigge hole, that ye may wel put in a smoke of Brimstone to them, whiche may so cause all the Bées to fly out at their hole into the Hiue, set ouer the mouth of it. For no better deuise or inuention can be had in this matter, than by such a smoake made. If the same hollowe trée be so thinne, that it may easily be sawed asunder, then with a sharpe sawe lette that hollowe parte be cutte asunder, bothe aboue and beneath, and after couering it with a cleane shéete, carrie the swarme home, which at euening couer with a newe Hiue sprinckled with water and honny mixed together. For so they will tarrye the willinglier, being all shaken forth of the body of the trée, and couered with the Hiue. Besides the hearbe Mugworte (whiche the Bées by a naturall hatred do abhorre) doth chase them with the onely smell from place to place.

¶ Which are the best and fittest Hiues for the Honny Bees. Cap.xvj.

Palladivs writeth, that the best Hiues be those, which are made of the barkes and light corke of trées, bicause they be neither too colde in the Winter time, nor too hote in the Sommer. And of this, those Hiues whiche be wroughte and made of the small Osier or Willow trée, or of the Vine stickes knit together, or Canes cleft in the middes (whiche be of like condition to the barke) wroughte close together, and stopped close aboute wyth flockes and clay, tempered together with water and salte, may aptly serue, if you will. But if neither of those fashioned Hiues like you, then may you make the Hiues of the woodde of a hollowe trée, or of light bourdes made square, and stowpyng somewhat afore. The worste Hiues be those, which be made of turfes or earth, bycause they be ouer hote in the Sommer, and ouer colde in the Winter. There be other two kinds of hiues, as the one made of drie hard Cow dung, and the other of tiles. Of whiche the one doth *Celsus* rightly condemne, bycause the same is so lightly burned, and the other he alloweth, although he dissembleth the speciall commoditie of it, bycause the same, if néede requireth, cannot easily be remoued and carried into an other place. And among these, I suppose oure forme of Hiues here in Englande, are not altogether to be disallowed, although they be in like daunger, to be easily burned, as the other Hiues aboue taughte, in that they be made with strawe. But to be briefe, for a greate swarme you ought to haue in a readinesse a greate

hiue, and for a small swarme a little Hiue. And the Hiue also oughte to be a foote and a halfe, or two foote high, and in breadth about two foote and a halfe, or somewhat larger. Hauing besides two very small and narrowe holes, somewhat asunder, and so little ought the mouths to be, that neyther Béetle, Butterflie, gret Moth, Humble Bées, Euet nor Mouse may enter in, to spoile the Honny combes. Some suppose, or rather affyrme of experience, that the Bées are delighted with this closenesse, in that they more ioy to do their works and businesse in the darke, than otherwise.

¶ Of the clenlinesse and sweetenesse of the keeper of Bees, and howe Hiues ought to be fenced aboute, and prepared within. Cap.xvij.

The kéeper of Bées which mindeth to handle and looke into hiues, ought the day before to refraine the veneriall acte, not a person fearefull, nor comming to the hiue with vnwashed handes and face. And one that oughte to refraine in a manner from all smelling meates, poudered meates, fryed meates, and all other meats that doe stinke, like as the Léekes, the Onions, the Garlike, and suche like, whiche the Bées greatlye abhorre. Besides, to be then swéete of body, and clenly in apparell, minding to come to their hiues, for in all clenlinesse and swéetnesse the Bées are muche delighted. Nowe thus prepared & in a readinesse, open the hiues first of the Bées, about the .vij. or .x. day of Aprill, being then a cleare & warme day, & purge the hiues of all such filth which be gathered in them all the winter before, like as Spiders webs, which oughte especially to be wiped awaye, bicause they corrupt the combes, not with hands, but with a goose wing, the same ought to be done. After that, the Hiue oughte to be smoaked with Oxe or Cowe dung, for in that (as it were, by an affinitie of the kinde) do the Bées greatly delight. The little wormes also, whiche some name Maggots, that bréede in the combes, throughe the blowing of the Butterflies, and also the Butter-flyes ought to be killed and purged oute of the hiue. If the combes happen to fall throughe infection or corruption in them, then make a smoake with the drie dung and marowe of an Oxe or Cowe mixed together, that the sauour may go vppe to them, whiche for that time will cure the weake combes, strengthen the Bées, & cause them to worke the lustier afterward. And from the beginning of May, vnto the last of Iune, the hiues ought then to be diligently looked vnto, that the yong swarmes flye not away. Also from the tenth of Iune, vnto the tenth of August, the hiues ought to be opened now & then, & to be smoked with such like as afore is taught. Whiche althoughe it be grieuous for the time to Bées, yet the same is very profitable, and strengthneth them. And from the beginyng of the Dog dayes, vnto the eighteenth of September, ought the Bées to be carefully looked vnto and defended, from the violence of the Hornet Bées, which often awaite before the mouthes of the Hiues, to set vppon and eate the Honny Bées. Nowe the kéeper in a fayre sunny daye, ought to clense the Hiues of al maner annoyances as before is taught, and diligently to stop the chincks, or clefts about, sauing the mouthes of the Hiues, with Oxe dung & clay mixed together. And this ought to be done, for two or thrée daies before the change of the Moone, the better to defend the Butter flye and others, from créeping in. The Hyues besides ought to haue two bigge stickes cleane scraped, and running a crosse from side to side, and sprinkled rounde about within, and swéete and pleasant wine, or else the stickes to be harde rubbed ouer, with the gréene braunches of the Fennell or other swéete smelling herbs, or with a little honny & leaues of the Pere-trée, together, or with the branches of the herb Time flouring, or Sanerie, or Maiorame, or the hearbe Balme, and Honny together. Some annoint the stickes and hiue within, with the swéete creame of the newe Cowe milke, or with Water and Honny sodden together, and that sprinkled aboute within the Hyue, that the Bées maye be the rather and sooner moued to tarrie and dwell stil in the Hiues.

¶ How Bees lacking honnie may be fedde in that present neede. Cap.xvij.

Bycause the boysterousnesse of the ayre doth sometimes constraine the Bées to abyde in their hiues, and that they may not only féede of Honny, but at the rysing of the constellation (named *Vergiliæ*) they maye be fed and cherished, and the same done in this manner without greate cost. As firste, if you take the number of ten figges, séething them in sixe pintes of fayre conduite or spring water, vnto a pynte wasted, whych after set the one side of the hiue within, laying many smal stickes a crosse ouer the Lycour, that those may serue in stead of bridgs, the apter for them to drinke of the Licour, without drowning in the same. Others wyll to séeth Honny and water together, & the same to be poured into dishes set at the one side of the Hiue, in the whiche they will to put fine carded wooll, that the Bées maye the better drinke now and then, and be not cloyed with too much drinking of the licour, by lighting into it. Others take figs & raisons beating them together, and after boyling them in the swéete lycour named Cuyte, they poure into dishes, couering the same with Oaten strawes a crosse. Others also will to take a little Hony, putting into the same a fewe Oate cornes, that the Bées lighting on them, maye so kepe their wings from wetting in the licour. Now all these meanes may well suffice to cherish and féed the bées in the Winter time, lacking then foode, beyng set neare to the mouthes of the Hiues. So that if a longer hunger oppresseth them, then with the hiues fast by the entring in, set little gutters made of halfe canes, or greate elder stickes cleft, into which poure of the swéete licours aboute taught, for by that meanes may they be wel recouered and strengthned in the déepe of Winter, when their foode fayleth them. Some wil to put fresh birdes cleane drawne, or the fleshe of a Henne finely shred into hiues, for the Bées to féede and sucke vpon in the déepe of Winter, & the fine feathers also they will put into the Hiue, that they may giue then a warmth to the Bées lying in them. And others also will to put the meate of rosted Chickens into their Hiues, to féede and sucke vppon, and not the boanes withall, least the sauour of the bones after the meate eaten off, might annoy the bées by lying still in the hiues, in that they so greatly abhorre all sowre and stinking sauours. Also these kinds of flesh ordered (as aboute sayde) may well serue the Bées in another drie Sommer, when as the

most floures are then faded or quite gone away. Here note, that in the Spring and Sommer time, the bée-hiues ought to be loked vnto thrice in the moneth, gently smoking the Bées, to clense the Hiues of al maner filth, and to swéepe forth the wormes. Also *Menecrates* willeth the kéeper of Bées, to kill the king blacke of colour, whiche by hys malice disquieteth the other king, and corrupteth the Hiue, in that he flieth out alone, or with a company of the bées folowing. So by that meanes (as *Virgil* writeth) shall the battel of Bées be stayed. *Palladius* writeth, that the swarmes be increased in the moneth of May, and that in the outmost sides of the combes be the drone Bées bred, which ought to be killed, in that those do muche disquiet the rest of the swarme. The Butterflies also do abounde, which he willeth diligently to kill, for their greate annoyaunce to the honny Bées.

About the beginning of Nouember ought the Hyues then to be cleared of their filth, so that al the Winter following they may neyther be remoued nor opened. And this may not be done but in a warme sunny daye, the combes maye not be touched with hands, but with the feathers of a stiffe goose wing, or such bigge foule. After that to stoppe the chinkes round about wyth Oxe dung and clay finely laboured together, and to lay strawe thicke ouer the toppes of the Hiues, the better to defende the Bées from the cold and tempestes.

¶ How the dead Bees may be restored to life againe.
Cap.xix.

The kéeper of bées ought to foresée and take héede, that the Bées perysh not through ouer great heate, or ouer mighty cold. If at any time by a sodaine showre in the séeking for foode, Bées happen to be beaten downe, or nipped wyth a sodaine colde (which seldome so commeth to passe that the Honny bées are so deceyued,) that harmed with the droppes, they lye grouelyng and flatte on the earth, as dead in a manner, then gather the Bées togyther, putting them into some vessel for the nonce, which after set in a warm chamber or Parloure, & couer warm ymbers, being somewhat more than hote, on the Bées, whiche gently shake with the ashes, but in suche sorte that you touche them not wyth your hande. And setting the Bées in the sunne, and neare to their hiues, they will after recouer, and flie again into their cotages.

¶ Of the battel that Bees sometime haue among
themselues. Cap.xx.

Vergill writeth, that the Bées sometimes minding to fighte, do hastily brust out of the Hiues, and as it were in ciuill battels among themselues, do fight lyke strangers one against the other, & smite eagerly in their fight one at an other. If so be one hyue hath especially two kings bred vp in the same, whych very well may be knowne, when as the bées clustered and heaped together, doe represente or repress as it were the forme of two beardes hangyng downe. Now theyr readinesse to fight is knowen, when in the ayre is heard a greate sounde and noyse among the Bées lyke to the manner of Trumpets, whiles they fiercely and cruelly fighte together among themselues, & in this battell they glitter with the wings, sharpen the stings with their beakes, beare forth their breastes, and about the king they gather and swarme. So that they shoute wyth great noyse, flying and dashing together, and that in heapes and rounde companies mixed or ioyned together, and greate is the noyse made among them. And to be shorte, in this strong and eager battell, many of them fal headlong downe, and that thicker then haile stones to the ground.

The kings themselues in the meane time flying in the middel frontes, doe fight with a fierce courage within themselues, and they also are séene to flie hither and thither among thicke heapes and swarmes of the Bées, (like as valiaunte Capytaines are wont to do in the time of a battell) with their glistering wings and beakes, beating downe of the swarmes, here & there and on eche side of them, of both partes. So that of themselues not giuyng ouer this eager battell, until the one part be forced to turne the backe to the other, and flye away with expedition. Therefore that this doubtful battel in the meane time may be ceased and quieted betwene them, the wise practisers wyll that the kéeper of Bées, do staye and appease this broyle of them, by the casting of fine earth ouer the Bées, whiles they be thus fighting, which (as the wise affirme) of experience doth forthewith pacifie the great stomackes and courages of both partes. But if this auayleth not, then with honny and water sodden together, or raysons in like order, or with any other swéete licour sprinckled on them, is their furie appeased, whiche doth as it were with the pleasaunt swéetenesse, quiet the irefulness of the warriours, and wyth the same in this controuersie they are maruelously appeased. If neyther of these remedies do yet preuaile, then let the keper marke diligentely those Bées whyche fyghte in the fronte, and bee moste eager Capytaines, that hee maye kill them with expedition, for by that meanes, and with the other remedies aboue taughte, maye the battels and fight of the wariours be throughly ceased.

Now after the Bées are thus quieted, and the swarme settled rounde on some gréene bowe nexte hande, then marke whether the whole swarme hangeth downe like a cluster of grapes, whiche so séeing, declareth there to bee eyther one king or two, by good agréement reconciled, whiche let alone on such wise, vntil they flye backe vnto their proper home. But if the swarme shal be deuided into two or many round clusters, then iudge that there be yet manye Captaynes left, and that their yre is not ceased: and in those partes, where you especially see the bées to cluster moste thicke and rounde togyther, there diligently seeke out the Captaynes. Yet annoynt your hand before with the iuyce of the hearbe Baulme, that touching or handling the Bées, they flye not hither and thither, after which put in your fingers gently, and seuering the Bées asunder, seke diligently among them, vntil you finde out the author and procurer of the battell, whiche you oughte likewise to kill. *Vergill* writeth, that the kings sometimes flye forth for a vaine delight, to sport them flying in the aire, which you may easily stay and let, if that you pluck of the kings wings, that he cannot afterward flye.

¶ How Bees, may be recovered and founde againe.
Cap.xxj.

If it so happeneth that bées are flowen away, & that you be in doubt whether they be lodged neare hande, or farre off, *Palladius* doth instructe and teache many goodly wayes to finde them againe. First he teacheth to take red leade, or red Oker infused in water, or any other colour, stayning, and to carry the same wyth you in a little shallow dishe. Vnto suche a spring or running water as the honny bées haunte, especially in the moneth of Aprill. And there sitting downe, awayte the comming of the Béés to drinke, which after they be come, and there drinkyng, stayne in the meane whiles such bées, with your rush coloured redde at the ende, as you may well retche with the same, sitting yet stil, and watching the comming againe of those Béés marked to drinke, whiche if they shortlye returne, then is it an euidente note and token, that their lodging and cottages be neare hande, but if those Béés are long before they returne and come againe to the place, then maye you suppose and iudge them to be farre off, and the distaunce you may gesse, according to their long tarrying and soone comming againe. That you maye easily finde the place where the Béés lodge, whether the same bee farre or neare hand, *Palladius* teacheth the same wittily in this manner.

Firste he willeth to take one whole ioynt of a bigge cane or Elder sticke stopped at the one end, and the other end left open, to annoynt within, with a little honny, whiche laye neare to that spring or running water, that the Béés daylye haunte vnto.

When Béés resort to the same, and that certayne be entred within the quil through the sauor thereof, then stop the hole with your thumb, letting one of the Béés afterward to flye forth, whiche dylygently marke, and follow that way it flyeth, for it wyll shewe you part of the way to their home. And after you can sée the same no further, then quicklye set forth another bée, whose flight in like manner marke, and followe after, for that it maye also shewe parte of the way vnto their home. And so let flie the béés by one and one, vntil they bring you vnto the place of the swarme. Nowe if the same place be déepe in the earthe, then with a smoake made eyther of drye flaxe or Brimstone, driue the Béés out, and when the swarme is come forthe, then ring on a bason or shrill panne, for being by and by feared with the shryll sounde of the same, the swarme eyther lighteth on a yong trée, or on the opener bowe of a bigge trée, which so founde out, couer ouer with a hiue prepared for the nonce. But if the swarm be placed in the hollowe of a trée, and hauing bowes, or in the stocke of the same trée, then with a verye sharpe sawe (if the meanes of the same will giue leaue) cutte it asunder. And in such sort, that the parte emptie aboute the béés be first cut, and the parte beneath it which it séemeth the Béés to be lodged, to be like cut asunder, and the stocke thus cut asunder, at both the endes, couer with a faire shéete, leaste any large cliftes appeare after the cutting, whiche also annoynt with honnye, for the better staying in of the béés, and after carrye the same home, which place by your other hiues making smal holes in the same, for theyr flying in and out (as afore was taught) in the ordering of the other hiues. But it behoueth the diligent sercher, to chose the morning times for the finding out of Béés, wherby you may haue the space & libertie of the day before you, to finde out the resort of Béés. For by loking late after them, it falleth out so, that although the Béés are neare hande, yet bycause they haue then done their busie and careful laboure, they flye no longer abroad to séeke foode, nor yet resorte to drinke.

Throughe whiche it so commeth to passe, that the searcher after Béés knoweth not then howe neare, or far off, the swarm is from the spring or running water. Some take the iuyce of the hearb Baulme in the Spring time, and annoint the same round about the hiue, whereby the sauour of the iuyce maye cleaue and abide on the vessell, whiche afterwarde being fayre within, sprinckle aboute with a little honny, setting the same hiue downe neare to the woodde or groue of trées fast by that spring or water running by it, and after the same be filled with a swarme, carry it gently home. Yet doeth not this like, but in such places where the swarmes of Béés do abounde, for that oftentimes it so hapneth, that vnlesse the hiues be dailye watched, that the goers by do take them away. But to lose sundrie hiues, gretly hindreth not, so that you may in the mean whiles enjoy one or two of them full.

Nowe hitherto hathe béene sufficientlye taughte, suche remedies and helpes, as necessarily serue, to the taking, and recouering of Béés loste, and otherwise to finde oute straunge swarmes.

¶ That the Bees sting no person, comming neare their
Hiues. Cap.xxij.

Plinie in his twentieth book writeth, that the hearb Sperage, brused and mixed with oyle, and annoynted with the same, doth defende the person from being stinged, by comming nygh to their hiues. And in his .xxvij. booke he also wryteth, that if any happeneth to be stinged by a Scorpion, that he shall neuer after be stinged of any Bée, but yet being stinged, he teacheth to drinke the iuyce of Hearbe-grace and Rue mixed with wine, and to lay the leaues also in plaister forme on the stinged places. In the 21. booke he writeth the like, that béés stings are by nature venomous, against the which he teacheth to take & vse the iuyce of Mallowes, or the iuyce of Iuie leaues, and to annoint eyther of the two, on the stinged places, as a souerain remedy. And in the 23. booke, he teacheth wyne for a remedy, as boyled with bay leaues, and after drunke. In the 24. booke he teacheth to take a drop of that molten, whiche the honny Béés make at the entrye of the Hiue, to be a like remedy, as of the water *Bezoar* to be vsed against venemous bittes. *Auicen* in his seconde rule teacheth, that the decoction of the March Mallowes wyth vineger or wine, and the same anynted on the stinged places, to be a perfit remedie.

Whiche also in his fourth rule affirmeth, that the Honnye Bée hath like dispositions to the waspe, sauing that they leaue their stings behinde them: wherfore for remedie of the wasps, you may vse those which we haue afore taughte againste the stings of Béés.

Palladius Rutilius in his first booke teacheth, that the hiues of Bées ought not to be gelded, before you consider and see whether they be ripe, vnto the coming of the true Honny, whyche in a manner (as hee teacheth) commeth to vse in the moneth of Iune, or as others affirme, in the ende of Auguste, vnto the midle of September.

Now there be certaine notes and tokens, by whyche we trye and fynde out the ripenesse of them, whiche be these, firste if the hiues be ful, then do the Honny Bées drive forth the ydle drone Bées out of the Hiues, and there is also hearde within a small or shrill humming of the Bées for that the emptie cottages of the combs, as they were hollow buildings, do receiue a sound & noise, procured then bigger, so that when there is hearde a big & hoarse sound of the humming of them, then is it not yet meet to geld the combs. *Varro* writeth, that it is then time to geld hiues, when as you see within, that the Bées hang clustring round, & that the holes of the hony combs be couered ouer, as it were with thin caules, for then be they full of honny. Now the day of gelding the hiues ought to be done timely in the morning, when as the Bées are astonied through the colde aire, and not done in the heate of the day, when they be procured to fly forth of the hiues, and being then very angry, to sting those persons which come to the hiues. The maner of gelding the hiues is on this wise, first stop the holes of the hiues, that the Bées passe not forth, with grasse or some other hearbe, after that putte vnder fine linnen ragges, or strawe, making a little smoake with the same, whiche smoake so flying vppe, causeth the Bées after to breake & leaue their clustering together.

After these, with two instruments or tooles of yron, made for the only purpose, of a foote and a halfe long, or rather somewhat longer made, of whiche the one ought to be a long knife, and broade of either side the edge, with a hafte, and hauing a crooked file on the one end. The other at the beginning plaine, and very sharpe, whereby with this the combs may the readier and quicklier be cutte downe, with that other instrument scraped cleane, and whatsouer filth falleth off, drawne away, and throwne aside. But where the hiue of the hinder parte, or parte behinde, shall haue no voide place emptie, then make a smoake (as *Varro* commaundeth) with *Galbanum* and drie Oxe dung, which ought to be made in a earthen fuming pan, filled with quicke coles, or a pan of earth with a narrow mouth, and a handle like to it. So that the one part oughte to be sharper or narrower vpwarde, by whiche the smoake may passe by the little holes, and the other parte where the coles are, broader, and with a large mouth of the one side of it, by which the person may blowe the coles: Nowe suche a pot when it is set within the hiue, and the smoake stirred vp to the Bées, whiche by and by not quieted with the sauour, flie vnto the foreparte of the hiue, & sometimes flie quite oute of the hiue, wherby any may looke into the Hiue without harme, in a maner, to the person. If there happen to be two swarmes in one hiue, then are there also two kindes or formes of honny combs. For euerye company of Bées in agrément together, doth fashion & frame the waxe, as liketh them best. But all the honny combs being hollowe wrought, and a little cleauing to the sides of the hiue, do hang, whereby they may not touch the floure or bourde, for that otherwise it causeth the swarmes to flye quite away. Yet the forme of their waxe is such, as the condition of their cottages is. For that some Bées doe make both square and rounde spaces, and some long, so that eche frameth, as it were certain formes in the combs, according to his kinde. So that the hony combs, are not founde alwaies alike in fashion, but these combs of what forme soeuer they be, are not to be taken all out of the hiues. For in the beginning of Haruest, while the fieldes yet flourishe, take a fift parte of the combs, but after, when Winter is at hande, then leaue a thirde parte behinde.

Palladius willeth the hiues to be gelded in the moneth of October, and that a third part be left behind. Yet consider, that if there be store, to take the more: if but a meane, then the halfe part of that leave for the winter time: if the cottages appeare but halfe full then take nothing away. But *Varro* teacheth, that a third part of the combs may be taken away, & the other parte left for the winter, although the combs be ful of honny. If you fear (saith he) a sharp winter to follow, then take nothing at al: & of the same mind is the learned *Vergil* in this. But the expert practisers of our time in such matters, do affirme, that the honny ought to be taken away but once in the yeare, & this in the end of the moneth of August, vnto the middle of September. But the waxe being corrupt, then, both before and at any time maye be taken forth of the hiues. Also as touching the honny which the Bées giue, whether you maye take awaye either little or much, must be considered according to the finalnesse or plentifulnesse of the hony being in the hiue. And according to the smalnesse or greatnesse also of the swarm to be nourished, so that about the fourth part of the combs may not be taken from any hiue. Yet this order may not be vsed alike in countries, because a man must consider the dealing with the hiues, according to the multitude of floures, & plentifulnesse of foode for the Bées. If the waxie combs hanging down do run into a length, then with the same yron toole which is made like to a knife, being oftentimes dipped in water, that the waxe cleaue not to it, nor that the combs remaining may be harmed, & the hiue holden on the one side cut the combs away. After this, put both your armes into the hiue, gathering together, and taking forth the combs. But if the combs hang ouerthwart in the hiue, then must you vse your scraping yron, that the combs of the further side thruste together, may so be cut away. Also the old & corrupt combs are to be taken forth, the whole and full of hony to be especially left. And if there be any yong Bées in them, those keepe or preserue to increase the swarm in that hiue. After that, carry al the store of the hony combs into one place, whereas you mind to make the hony, & stop diligently the sides and edges of the hiues round about, that none of the Bées may enter in, which for the hony and waxe taken away, do eagerly seeke after, and finding the same, do vtterly consume the same if they may.

Therefore, of the former matters must a smoake be made, & that (at the entry) or mouth of the hiues, that the Bées assaying to fly in, may through the smoke be driuen to flye backe again. Now after the

hiues be gelded, and that anye shall haue ouerthwart or crossed combes at the entrance of the hiue, those then shall be so conuerted, that the parts behind maye be emptied & left void for another time. So that when they shal be next gelded the old combs rather than the new are to be taken forth, & the waxe renewed, for that the older the waxie combes are, so muche the worser they be.

If it happeneth, that the hiue be so made, that the same may not be remoued out of the place then ought you to geld first the hinder parte, and after the foreparte: and this especialye ought to be done afore fiue a clocke in the morning, and after nine of the clocke at night, or in the nexte morrowe. Nowe the Bées when they knowe this, all come to fill the emptie place, so that after they haue repaired and filled the same, and fulfilled all the reste aboute it, then flye they to the forepart, and do worke in like order. By whiche we may euidently learne, that they haue filled the same empty place also, by their abiding stil there. Besides these, as the great plentie of honny, doeth cause sluggishnesse in the Bées, euen so doeth the much abatement, and excéeding taking awaye of their honny, bothe dull the quickenesse and diligence of them, and cause them also to bée sluggish.

¶ What the honny is, and howe from the hiues the same maye be prepared to vse. Cap.xxiiij.

As we firste gather the honny from the combes, so do we the waxe for the comferte of the light, and other commoditie besides. Nowe what the honny is, and howe the same taken from hiues, maye be prepared to vse, shall hereafter bée taughte.

Firste the learned *Isidore* writeth, the honny to be of the deawe of some lyquide matter, and affyrmeth also the same to be founde sometimes in the leaues of the greate Canes. To whiche in a manner doth *Publius Maro* agrée in this verse, writing, that hitherto the heauenlye giftes are of the Aereall honny. Others teach the honny in *India* and *Arabia*, to be like to salte gathered there on the leaues of trées. Others do doubt whether the honny be a sweat from heauen, or a certaine spittle of the starres, or a iuyce of the aire purging it selfe. But whatsoeuer substance the same is, yet is it a moste swéete, subtyll, and healthfull iuyce, *Plinie* witnesseth, which at the first gathering of it, is as a cleare water, but after the boyling a while, and purging of it selfe, as the newe wine (after the pressing forth) is wonte to do, doth by the twenty day after come to a perfect thickenesse of honny, throughe the often repeating and working of it in the hote dayes, from the beginning of May and vnto the middle of Iune.

Nowe the honny is gathered in this maner: first, before the honny be pressed out of the combes, must those corrupt combes hauing red filth, and hauing yong in them (if any such be there) be pressed oute, bicause they bothe procure an euill taste, and with that iuyce corrupt the hony. The combs brused together, ought to be put into a cleane presse, being yet warme, and new gathered out of the Hyues the same day, whiche lette lye there, vntil the hony by little and little be run forth, or rather for the more expedition, pressed forthe with a heauy waighte, and the same which is then come forth, is very faire rawe hony. After that the honny with the waxe muste be boyled together, as hereafter shall be taught.

Nowe when the combes be thus brused together, and the yong Bées killed and cast forth, then must you make youre hony in this maner. As first in the Moneth of September or October, take the heauier and older hiues, which are of two or thrée yeares olde, and not hauing bred swarmes in the Sommer before: and that ouer smoke and flame of strawe, drie flaxe, or yellowe Brimstone, the hiue a little whiles be holden, that the Bées may so flie vppe to the toppe of the hiue, or else suche remaining below burne their wings.

After that, turne downe the head of the hiue on the ground, and with a sharpe knife cutte the crossed stickes asunder in the Hiue, or plucke them forth with your hand. For by that meanes are the combes wel brused together, and the Bées either killed with the fall of them, or else flye away. After this putte all the combes on a heape, being gathered oute of the hiues here and there into a presse, leaning somewhat on the one side, but some put the combs into a wine basket made of smal willow or Osier stickes finely knitte and wroughte together, that hanged vppe in a darke place, the Honny maye runne thourghe by little and little from it. After that the honny hath thus runne forthe into a cleane earthen panne or boll standing vnder it, then the same after poure into an earthen potte, or pottes, being as yet rawe honny, but clearer and better than the other licour of the honny. Which for certaine daies let stand open, that the swéete licor may throughly coole, and the same in the mean whiles often skimme or purge with a spoone. Nowe after this, the fine péeces or crummes of the combes, which yet remaine in the bagge of wicker, or wine basket, or presse, putte into an earthen potte, panne, or kettle, ouer a verye softe fire, that the same may heate without boyling, and alwayes kéepe youre hande in the vessell, to stirre still aboute hither and thither the honny and waxe, and to open also the waxe by péece meale vntill the honny and not the waxe, shall be throughlye molten. When the honny through the heate, beginneth a little to pricke the hande, then poure all the whole Masse or substance into a strainer, and putting the same in a presse made for the onelye purpose, wring it harde about, yet it maketh no great matter, if that same be not so earnestly wringed or pressed out, that none of the Honny remaine yet with the Waxe, séeing that the Honny and Waxe haue effects in some causes alike. Now this Honny whiche is thus runne forth, is named the Sodden Honny, whyche oughte in like manner to be poured into earthen pots, and to stande open for certaine dayes, skimming it dayly with a spoone, vntill it be throughe colde. The nobler or worthier Honny is that which runneth oute in a manner of the owne accorde, before the second pressing out of the combs. And mixe not of this seconde Honny with the firste, but kéepe them diligentelye aparte, leaste by mixing the firste to the seconde, you make the beste (being the firste) the worser. After all this thus handled, the same whiche yet remaineth in the strainer, wash diligently with Conduit or faire Spring water, that you may so haue the Mulse or hony water, of which being sodden and diligently skimmed (as of this hereafter shall be further taught) is the Mulse made, that serueth to manye good vses.

¶ Which Honny is accompted best. Cap.xxv.

Certaine Countries doe excell in the perfecte goodnesse of Honny, like as the famous *Attica* of Gréece, which for the excellencie of the Honny is hadde in great reputation throughout the world. *Hybla* also & *Hymetus* being hilles of the same Countrie, which the deceiuers applie to Honny, that the same maye both be named *Hymetus* and *Hybleus* Honny. *Creta*, *Cyprus* and *Affrica*, as in goodnesse they are notable or worthy, so the abundant or maruellous plentie of the Honny is there commended. Also the newnesse of Honny is likewise commended, as the auntientnesse of wines, but the Spring and Sommer Honny, especially if the vessell or hiue stande in a valley or bottome, and doeth excell in the waight of hande. But the honny gathered of bitter hearbes is counted vnprofitable, as the same Honny which the Bées gather in the country of *Pontus*, where the Bées onely gather their honny of the Wormewoode. The white in all Countries is better estéemed than the blacke, but the beste honny is that whiche is very cleare, of a golden colour, of a moste pleasaunt and swéete taste, cleauyng somewhat to the fingers in the handlyng, and but little stiffening or waxing hard together. And that the honny in the pouring forth, doth straightway breake here and there, and squirteth or sprinkleth (sodainely as it were) sundrie droppes abroad, which being on thys wise, *Plinie* teacheth to be the triall and sure note of a good and profitable honny.

¶ Of the venomous Honie, and of the wonderfull Honye of Creta. Cap.xxvj.

It so much forceth to vnderstande and know, what maner of foode the same is, with the which the Bées do liue, as the poysoned hony also, that may be gathered by them, whether it be euill or venomous. For the Honny of *Heraclea* in the Countrey of *Pontus*, hath bin for certaine yeares, very dangerous, especially throughe a certaine hearbe growing white, whiche also vexeth their cattell by eating thereof, named of the dwellers there, *Aegellothron*. But by these notes is that Honnye founde out and tried to be venomous, as firste, that the same is not thicke at all, the colour brighter or more glistering, and hath a strong sauour, mouing forthwith often snéesing, and is also waightier. Also such persons, as taste somewhat thereof, doe couet to lie or fall hastily on the earth, séeking for coldenesse, and be all on a sweate, so that in sodaine daungers, muste some spéedy helpes or remedies be ministred, like as the olde Mulse of the best hony, and herb Grace, or other like confections, be often ministred to suche persons. There is also another kind of venomous hony, in the border of the country of *Pontus*, that for the madnesse which it engendereth, is named of the people *Neonomenon*: the same hony is supposed to be gathered of the floure *Rhododendros*, whiche groweth plentie there in the wooddes. *Plinie* writeth of a maruellous honny to be in *Creta*, for that in *Carina* being a hill of that Countrey, he affirmeth a honny to be gathered, whiche the flies will not touch, and supposed also to be a singular Honny, for the composition of euery medicine.

¶ Of the miraculous worthiness of Honny. Cap.xxvij.

Most men in Italy prepare and make their medicines which they purpose to kéepe long, with honny, so that honny preserueth euery thing from putrifying, which you would haue in safety, and to continue for a season, through his clamminesse. And of this, auntient men did enbalme bodyes of the deade, which they would haue preserued, and to continue sound without corrupting many yeres, with hony only, and the same they also smeared within the tombes or sepulchres of the deade, for the longer kéeping of bodyes. The self same writeth the learned *Papinius* of the body of *Alexander*, which was likewise embaulmed with Hony. And not vnlike to this writeth *Plinie*, in the xxij. booke, and xxiiij. Chapter of his Histories, of sundrye dead bodyes also embaulmed with hony. Which in another place also of his Histories writeth by *Claudius Cæsar*, that brought a monster out of *Egipt* into his countrey, whiche was also embaulmed with Honny. *Ahanæus* also writeth, that bodies subiect to sickenneses, maye both be kept frée from sicknesses, and from corrupting a long time, through the often smearing and annoynting of Honny ouer all the bodie. As the like wryters report, that the Isle of *Corsica*, or *Corse* do, whiche liue a long time.

The *Macrobians* being a people in *Affricke*, named also *Mœrein*, doe liue a long time, as certaine authours write, bycause with the meate of Honny, whyche is plentie with them, they dayly be fed, and vse continually. Some affirme that *Democritus* which recreated by Honny, with the only breath and sauour of the Honnye made hote, liued (as they write) vnto a hundred nine yeares. *Aristoxenus* writeth, that the table of *Pythagoras* was dayly furnished with only breade and honny, and yet liued vnto the fourescore and ten yeres of the Philosopher *Heraclides*. The Honnye also is founde to auayle against surfettes, and of this accompted amongst the medicines putting away drunkennesse. And of this it is no maruel, that suche throughlye skilfull in Phisicke, when anye be ouerloyed or filled with Wine, do counsell firste to emptie their stomackes by vomityng, and after against the force of the fume euaporating of the remnaunt of the Wine yet remayning, they giue to them Honny spreade on breade, as it were by putting backe the euill, that is maye so remedie and putte away the grosse fume.

¶ How profitable the vse of Honny is in medicines. Cap.xxviiij.

Firste the white Honye is to be vsed in cooling Medicines, but the yealowe in heating medicines: also the nature and propertie of honny, is to clense and open, and to expel humors. Therefore it is profitably applyed in filthy vlcers, being boyled and annoynted vpon. It closeth also loose and gaping fleshe, through his wholenesse. Also with Liquid Alume & honny sodden together, are Ringwormes, and cornes or swelling of the féete healed, by annoynting therewith. Against the vncertaine soundings and noyse of the eares, and grieuous pains of them, the hony grounded with that salte digged out of

the earth, and dropped warme into the eares: the selfe same killeth both nits and lyce, by only annointing the heade therewith. Also the hony purgeth the eyes dimme of sight, healeth the swellings, and other defaultes and griefes of the iawes, the swellings and kernels vnder the iawes, neare to the throate, after the preparing to vse, the same be gargelled in the throate, and the mouth washed therewith. The honie eaten causeth vryne, helpeth the cough (being cleane skimmed before) and the byte of a Snake or Adder. The hony also helpeth those which haue drunke vnwares the iuyce of blacke Poppie, so that againste the same euill and daunger they drinke rosed honny warme. Also the same drunke helpeth the malice and daunger of Mushromes eaten, and the byte of a madde dogge, or otherwise melting in the mouth, after the forme of an *Eclegma*. Yet all the sortes of rawe Honny be windie and swell the bodie, mouing a rumbling or noyse in the belly, procuring the cough, easily conuerted into euil humors, stopping the liuer and the milt through the clamminesse, and hurtfull to chollericke bodies, if so be the honny before (as *Dioscorides* writeth) be not throughly skimmed and censed as the same ought to be. The honny also boyled both better nourishe than the rawe, yet lesse mouing the belly to solublenesse, and to the stoole. And the honny of it selfe, or mixed with others, helpeth the sore in the lungs, and all other diseases of the lungs. The honny is rightly ministered to such as haue the impostume in the lungs and the pluresie. And the hony in which dead Bées are, is applyed to the venemous honny. The hony drunke with wine helpeth the corruptions which are engendered of the meate fishes. But to colde and moyste bodies the honny is more profitable, therefore verie fitte for olde persons, as *Galen* affirmeth. And to persons being twentie yeares of age, and of an vntemperate hotenesse, or others hote of qualitie, the honny to them is hurtefull, bycause it is soone conuerted into choller in them. *Democritus* was on a time asked, by what meanes men might both continue in perfite health, and liue vnto very old yeares, to which he thus answered: if so be men annoint their bodies outwarde with Oyle, and apply their bodies inwarde with honny. Further honny profiteth weake persons, being applyed as the Mulse water, of which shal after be taught in the next chapter. To persons cold of nature, the honie may aptly be ministred in hote broth, but to hote persons ministred in warme brothe, the honie is not rightly giuen. The honny mixed with *Camphora*, & lying to settle threé dayes before, with the which annointing the face, doth spéedily clense the spots in the face: the self same doth the honie, mixed with the gall of an Oxe. The pure white honie clenseth the breast, softneth Impostumes, being as well without, as within the bodie. The hony also mundifyeth, openeth the stoppings of the Liuer and Mylte, helpeth dropsie bodies, and strengthneth weake members. The Aromaticke honny much auayleth in sundrie diseases, being thus prepared, as the pure redde Rose leaues finely clipped, and after boyled in pure white honnie, being often and diligentely skymmed. For such a Honnye doeth comferte and mundifye, dissolueth in the clensing the clammy swellings, digesteth the fleumaticke and grosse humors, and drunke also with colde water, it bindeth the bellie, but ministred with warm water it looseth the bellie.

¶ Of the drinke of Honny which they cal the Mulse water, or sweete water of the Romaines. Cap.xxix.

By the aunswere of *Pollio* the Romaine vnto *Augustus* Emperour, we may euidently learn, that the Mulse made of hony, is healthfull drinke in strengthning the bodie. For *Augustus* on a time demaunded of him by what meanes a man might liue to great yeares, and all that season frée from sickenneses, to whome he thus aunswered, that applying the Mulse water within, and annoynting Oyle without the bodye, doeth worke the like. The Mulse truly is a drinke made of water and hony mixed together, which the Gréeks properly name *Melicrate*, & some *Hydromel*, as the drinke made with wine vnlayde, or without water, and hony, they aptly name *Oenomel*. Now the Mulse water drunke, doeth ease the passage of winde or breath, softneth the belly, and the long time of oldenesse changeth it into the kinde of Wine, moste agréeeable and profyting the Stomacke: but the same contrary to the Synowes, yet it recouereth the appetite lost, and is a defence against the dangerous drinke of Henbane, if it be ministred with Asses milke. Thys drinke truly (*Aegineta* wryting therof) is thus made: let eight times so muche water be mixed vnto your Honnye prepared, whyche boyle or séeth so long, vntill no more fume aryseth to be skymmed off, then taking it from the fyre, preserue it to youre vse. But the same *Paule Aegineta* affyrmeth, that the Mulse profyteth nothing in manner the collericke, bycause the same in them is lightly conuerted into choller.

¶ Of the drinke Oenomel, which is made of pure wyne and Hony. Cap.xxx.

The *Oenomel*, which is a swéete wine made with Honny, *Aegineta* teacheth the same, not only for the preseruation of helth, but also to expel the torment of sicknesses, through this most wholesome drinke, as that whiche giueth, not onely strength of body and courage, but the long race of yeares. Also it expelleth an olde griefe of the Reines, being often drunke with Parcely séedes. But the beste *Oenomel* is that which is made of olde and tarte wine, and the beste purified hony, for the same doth lesse swell. The same also harmeth drunke after meales, but before taken, doeth procure an appetite. *Dioscorides* teacheth that maner of making the *Oenomel* in this order: first he willeth to take one gallon and a quarte of Wine, and mixing it with halfe a gallon, and a pinte of the beste hony, to prepare the same orderly. But some prepare or make the drinke spéedilier to vse after this manner, as the hony they boyle with Wine, and after poure fourth the same into other vesselles.

¶ Of the singular water of Honny gotten by order of distillation. Cap.xxxj.

The Hony of Bées méete to distillation, ought especially to be white of coloure, which before the distilling muste bee mixed with pure and white and well washed sande, but not drie in any case, after

that, putte the same either into a common Rose Limbecke of Tinne, setting a hearie siue close vpon it, that it may touch the Hony in the distilling, or else into a body of Glasse, sette into a potte of fine sifted ashes or sande, making at the firste a softe fire vnder it, vntill the first water bée come, whiche is white, and after the yelow water appeareth, then put vnder another receiuer, setting aside the white, and so long distill vntill the redde beginneth to shewe: at the appearaunce of whiche, put vnder another receiuer, letting that remaine vntill no more will come. Which red water being the last, serueth for sundrie vses, as to die womens haire yellow, by often wetting the haire with a Sponge, and drying the same in the hote Sunne. Also it causeth fayre and long haire, and stayeth the sheading of haire: besides (this thirde water) doeth clense the foule corruption and matter being in filthye woundes, and olde vlcers, if they be washed twice a daye with the same, causing also newe flesh to grow in those places, if you dayly washe them with the sayd water, or otherwise dip linnen clouts in it, laying them aptly on the sores. The selfe-same healeth places grieuously burned, without appearaunce of anye scarre afterwarde, by often applying lynnen cloutes dropped in it. And the seconde water being of a golden coloure dipped into the eyes, doeth not onely helpe swollen and bleared eyes, but the pinne and webbe in them, by the dayly and often dropping of the same into the eyes. But as touching the white and firste water, there is no worthy matter mentioned in thys place by any of the old Practisers.

¶ Another manner of distilling the Honie, more at large taught. Cap.xxxij.

Take a pinte, or as much as you wil, of the pure rosed hony, which put it into a bodie of glasse close couered & luted about, setting the same after into hote horse dung with a square stone on the head, & couering it ouer with the horse dung for 14. dayes, after which time, take the body forth, setting it into a fornace of fine sifted ashes, well a finger bredth or more about the hony, presupposing on your part, that little péeces of flint stones be put into the hony, & then distilled with a soft fire into a receiuer well luted at the mouth, for doubt of the ayre breathing forth. When the same beginneth to distil, then draw forth part of the fire (vnlesse you can otherwise gouerne your fire by the help of the fornace) whiche comming forthe white, let so long distill, vntill there appeare yealow droppes like to gold. Vpon the sight of this, set vnder another receiuer, kéeping diligently this firste water by it selfe, and increasing the fire, let that long distil, vntill certain white smoakes appeare, running into the receiuer: that spéedily take away, putting to another receiuer, which let so long distill, vntil no more will droppe forth, and this laste, is of a rubie colour in rednesse, so that if a woman often wetteth the heares of hyr head with this thirde water, setting then in the hote Sunne, both to drie and wette them againe, wearing in the meane whiles a large strawne hatte with an open crowne, to spreade the heares vpon, for the spéedier drying of them, whiche so ordering, doeth not onely cause the heares to grow long and very fayre, but dyeth them in time so yealowe as gold. Also to diuerse other vses, doth this red water serue, as afore is taught in the other Chapter. The white water (which commeth firste) by washing the face orderlye with it, doeth cause it to become cleare and fayre, and keepeth the skinne from loking olde, for a long time, as the same hath ben experienced often by the worthy dames of *Rome*, *Naples*, and *Venice*. And the yealow lyke golde being the second water, doth especially serue to this vse, that if any person happeneth to be infected with the plague or Pestilence, then to take two ounces of this yealow water, of *Aloes* Epaticke, of redde Myrre, and of the east saffron, of each ten graines, and a leafe of the best gold, all which grinde into fine poudre, mixing the same with this water: after that giue it vnto the sicke to drinke, whiche no doubt wil both helpe this & many other diseases.

¶ The manner of distilling a water of Hony named the Quintessence. Cap.xxxiij.

To make this singular and precious water, you must take two poundes of the purest white honie, being both cleare and pleasaunt in taste, whiche put into a body of glasse, being so bigge, that foure of the fiue partes of it maye remayne emptie, the same lute stronglye aboute, letting the heade after on it, and a receiuer aptelye to the nose of the Still.

When you haue thus done, then make a gentle fyre at the firste vnder it, but after increase the fire or heate more and more, vntill certaine white smoakes appeare in the head of the glasse bodye, which do you workemanlye coole and turne into water, by the wettyng of lynnen clothes in colde water, and layed on the heade and nose, towarde the receiuer, for that turneth into a water so red as bloud: and being all come, putte it into another glasse, stopping the mouth close, whiche let stande so long, vntil the water become verye cleare, and in coloure to the Rubie.

Now being on this wise, distill the same againe in *Balneo Mariæ*, and so often repeate this, vntill you haue distilled it sixe or seauen times ouer, that the coloure be chaunged, and in the ende, to the coloure of golde. Whiche then is moste pleasaunt of sauoure, and so swéete, that nothing maye be compared like to it, in flagrantnesse of smell. The Quintessence doeth dissolue golde, prepareth it apte to be drunke, and any Iewell put into the water, it doth also dissolue the same. Also this is named the Blessed Water, in that giuing to any two or thrée drams to drinke, being at the point of death, doth so sodainely recouer the person againe, as doeth the Quintessence of wine. And washing any grieuous wounde or stripe with the water, doeth in shorte time heale the same. Also this pretious water doth maruellously help the cough, the Rheume, the disease of the Splen, and many other diseases, whiche woulde scarcely be beléued. The water also ministred daily vnto a person sicke of the Palsey, for the space of .xlvj. daies, he was by the mightie helpe of God, & this miraculous water, throughly healed of the disease. Also this Quintessence doth helpe the falling sicknesse, and preserueth the bodye from putrifying, so that by al those we maye learne, that thys is rather a diuine water from Heauen (and sente from God) to serue vnto all ages.

¶ The manner of drawing and making Waxe of the
Honny combes. Cap.xxxiiij.

The Honny being drawn from the combes, although some Bées hang on them deade, yet putte all together into a fayre panne or cauldron, into whiche poure so muche water or more, as the quantitie of the combes be. This set ouer a softe fire, vntill the same what it be, is throughly heated and molten in the panne, and in the melting continually sturre the same aboute, with a bigge splatter or some staffe, leaste the Waxe cleaue to the panne sides, through the flame or heate of fire, and appeare burned: after poure the whole substaunce into a course hairen bagge, pressing it forth into a troughe or other like vessell, made for the only purpose, on which poure twoo or thrée kettles full of hote water, that no dregs hang after on the Waxe, and by that means shall you haue the Waxe both pure and cleane. But if you wil haue it caste into faire round cakes, and to be cleaner and purer, then melte the Waxe againe, and being molten, poure it into a cleane vessell, which washed likewise with warme water (as aboue was taught) set after in the Sunne, by which meanes, the cake will continue verye long faire of couloure.

¶ What Waxe is beste allowed and commended.
Cap.xxxv.

Waxe being the foode of lighte, and seruing vnto innumerable vses of men, of all the kindes, the same is beste allowed and commended, whiche is bothe newe made, meanelye redde of couloure, somewhat fattie, smelling swéete, hauyng some sauoure in it of the Honny, and cleare. Of the Waxe also in sundrie Counties, that in the countrie of *Pontus* is well commended, and the same in the Isle of *Creta*: nexte to these is the Waxe in the Isle of *Corsica*, which is made of the Boxe trée, and supposed to haue some good effectes in it for Medicine.

¶ Of the great commoditie and benefite of Waxe in
Medicines. Cap.xxxvj.

Waxe hath a meane among heating things, both in the cooling, drying, and moistning, as writeth *Galē* in the seauenth booke of Simples, and .22. Chapter, whiche properly helpeth the roughnesse of the breaste, when it is ioyned or mixed with the oyle of Violets, for that bothe mollifyeth or softneth the sinewes, ripeneth and resolueth vlcers. The quantitie of a pease in waxe swallowed downe of Nurses, or such women as giue sucke, both dissolue the milke courded in the pappes. And tenne little péeces of pure newe waxe, vnto the biggenesse of a hemséede, drunke downe at one time, doeth cause the milke not to courde in the womans stomacke and breastes. If the priuie place or thereabout, of either man or woman, happeneth to swell, then by applying an ointment made of white waxe, it shortly assuageth and healeth the same. If anye also happeneth to be diseased with the bloody flixe, by stuffing a yong Pigeon with newe waxe, after roasting the same, and eating the fleshe thereof, doeth in shorte time after staye the same. Also, if a Quince made hollowe and filled with pure newe waxe, be after rosted vnder hote embers, vntill the same be tender, and eaten fasting without drinking after it, doth in like sorte staye and helpe the perillous flixe, and scouring of bloude. The waxe besides serueth to all maner of plaisters, ointments, suppositories, and such like.

¶ Of that whych is a stay of the combes, and made for
a defence of Bees from colde. Cap.xxxvij.

The same made of Bées at the entrie of the mouth of hiues, oughte to be yelowe of couloure, and swéete smelling, like to *Storax*, and drawne into a length, like to *Mastike*. Yet that is rather chosen, bycause in heating and drawing it is principallest. For of itselpe, this draweth forth thornes or splents of wood run déepe into the flesh by applying it plaisterwise on the grief, it helpeth an olde coughe by making a smoake thereof, and holding the mouth ouer it, and applyed in the forme of an ointment on ringwormes, doeth spéedily heale them. Nowe this matter (as aboue was taught) is the stay of the hony combes, by whiche Bées stoppe and kéepe forth al manner of colde and other annoyances which might endamage them, the same also being of so strong a sauor, that some vse it in the stéede of *Galbanum*. *M. Varro* nameth it a refuge of Bées, withoute their cottages, bicause Bées make the same at the entry of the hiue.

¶ Howe to make Waxe white. Cap.xxxviij.

Waxe is made white in this manner, firste that kinde of waxe (fit for this purpose) ought to be whiter and purer, and broken into little péeces, putte after into a newe earthen panne, pouring vppon it sufficient salt or sea water, and a lyttle Nitre brused, which séeth altogither. When the same bath boiled twice or thrice vp, remoue the panne from the fire: the waxe being throughly colde, take forth of the panne, and scraping off the filth, if any suche hang on, putte againe into newe salte water, séething it againe. And when the waxe hath so often boyled (as aboue was taughte) then take off the panne from the fire, and taking the bottome of a newe earthen panne, melt it with colde water, whiche dippe by little and little into the waxe, drowning it a little, and that the water be aboute the waxe, whereby the waxe maye become verye thinne, and be the sooner cooled it selfe. And taking by and by oute the moule or bottome, drawe firste the rounde cake off, and wetting againe the bottome in colde water, dip it into the waxe, and the same so long doe, vntill you haue drawne off all that waxe into cakes of like sorte, whiche after stitche through with thréede, hanging the cakes on a rope one from another, and that in the daye time often wetting them in the Sunne, but in the nighte time, in the

Moone light: and so long doe this, vntill the waxe be white. And if anye desireth to haue waxe whiter than this, then let him do the like, as abouesaide, but boyle the waxe oftner. Some in stéede of the salte seawater, take strong Brine water, in whiche they boyle the waxe in the same manner twice or thrice, as aboue was taughte. And *Paulus Euerdus* in his booke of Confections, teacheth the making of waxe white two manner of wayes.

¶ Howe you may make redde Waxe. Cap.xxxix.

That you maye colour and make Waxe redde, take to one pounce of waxe, thrée ounces of verye cleare Turpentine, if it be in sommer, but if it be in winter, then take foure ounces. Now these disolue and melt together ouer a soft fire, and taking it from the fire, let it coole a little, after which put in your Vermillian finely ground on a Marble stone, and of swéete Salet Oyle, of eache one ounce, mixing these well, stirre al together, diligently. But some in stéede of Vermilion, doe take the reede leade, which is little commended, except there be thrée times so muche of the redde leade, as of the Vermilion putte in. And in the like sorte may you make the gréene Waxe, if instéede of the Vermillian, you take so much of the gréene Coporas finely ground, as you did of the Vermilian.

¶ Howe to drawe a profitable Oyle out of Waxe, for sundrie vses. Cap.xl.

The Oyle of Waxe, is myraculous and diuine in workyng, bycause it serueth in a manner vnto all griefes. *Reymond Lully* greatly commendeth this Oyle, approuing it rather as a celestiall and diuine remedie, and that this in woundes, doeth worke moste miraculously, which for his maruellous commoditie, not so well to be allowed of the common Chirurgions, bycause this pretious Oyle healeth a wounde, be the same neuer so wide and bigge, being before wide stitched vppe, in the space of tenne or twelue dayes at the moste. But those whiche are small, this Oyle healeth in thrée dayes, by annoynting onely on the cuttes or woundes, and laying after linnen cloutes, wette in the saide Oyle, vpon the woundes. For inward diseases the saide Oyle worketh myraculouslye (if that you minister or gyue a dramme at a time in white Wine to drinke) and stayeth also the sheading of haire, either on the head or beard, by annoynting the places with this Oyle. Besides these, it is miraculous in the procuring of vrine, being mightily stopped, and helpeth also stitches and paine in the loynes, by drinking the like quantitie of the Oyle aboue taughte in white wine.

Now the making and drawing of this oyle, is on this wise: firste take a body of glasse, named a Retort, which strongly lute aboute with clay and flocks, diligently tempered together with salte water: after the body is thus fenced and thoroughe drie, putte in a pounce or more of pure newe waxe, so that the saide waxe filleth not aboue halfe youre body, and to euerye pounce of Waxe, poure in foure ounces, of the pouder of redde bricke, finely brused, whiche after set into an earthen potte, filling it rounde aboute with fine sifted ashes or sande. After this, set the potte with the bodye in it, on a fornace, making a softe fire at the firste vnder it, and after encreasing a little more your fire, distil them so long, vntill all youre Oyle be come, whiche after a while wyll congeale in the receiuer: but it maketh no greate matter, although the oyle so doe, for it is neuerthelesse in his perfection. Bycause that if you shoulde distill it so often ouer, vntil it will congeale or stiffen no more in the receiuer, then shall you make it ouer hotte, and so quicke in the mouth, that it is not possible by anye meanes to drinke it downe. But being once distilled, you maye either giue it in Wine to drinke, or annoint with the Oyle on any place of the bodye where you will, whiche will always doe good, and hurte in no manner.

And in consideration of these aboue taught, you maye evidently learne and perceiue, that this myraculous Oyle oughte to be hadde in greate veneration of the common sorte.

¶ Another waye of drawing the Oyle of Waxe moste noble, and doth maruelously help the cold Goute, the Sciaticke, the swelling of the legs, and al other griefes proceeding of a colde cause. Cap.xlj.

Take of pure newe waxe so muche as you please, which put into a panne ouer the fire to melte, and being molten, haue by you in a readinesse another panne well glased, and cleane within, filled with verie good and perfecte wine, into whiche poure youre molten waxe, letting it soake and drinke in well, and washe often in the saide wine. After this take the waxe forth, melting it againe ouer the fire, and molten, washe the same againe in the beste wine, so that euerie time melting the waxe, poure it into freshe new wine, washing and soaking it in the same diligently, after wringing it very wet with the hands. And vsed on this wise, both melt and washe againe in the abouesaide manner, and this also do for eighte times together. Then set the same forth, being a cleare season and ayre, all the nighte throughe, after which put the waxe into a Retorte with a little of *Mumia*, and oyle of *Ypericon* or Saint Iohns wort, and a little olde Oyle: and although without these it maye doe good, yet mixed with these it worketh farre better, than vsed alone.

Nowe to retourne to the former matter this crooked bodye or Retorte set in fine sifted ashes, and a gentle fire made vnder it, vntill all the oyle do runne forth, and in this comming forth of the oyle, shall appeare all the foure Elements, as Ayre, Water, Earth and Fyre, whiche will orderly appeare in the receiuer, right maruellous to sée. And the Oyle being thus fullye drawne, worketh miraculouslye in all diseases which procéed of a colde cause, like as we haue aboue taught.

¶ The conclusion to the Reader.

Thus (gentle Reader) I haue (I truste) fullye satisfied thy desire in as manye things as are needefull to be knowen. And I committe this my little Booke to thy gentle iudgement: if thou mayste receiue any profite or commoditie thereby, I shal be gladde of it, and if not, yet fauourably let it passe from thee to others, whose knowledge and experience is lesse than thine herein, that they may gather suche things as to them are strange, though to thee wel known before. And thus brieflye I committe thee to God.

(:)



¶ Certaine Husbandly Coniectures
of Dearth and Plentie for euer.

The first Chapter.



And first consider and marke, that howe the weather is a daye before the day presente, and the daye after the Sunnes entraunce into the signe Aries, and suche like shall the weather be (for the moste parte) in these thrée moneths, as in September, October, and Nouember.

And looke howe the weather shal be at the Sunnes entrance into the signe of Leo, as at the day of the entrance the daye before, and the daye after, and such commonlye shall be in the moneths of December, Ianuarie, and Februarie, for if the winde shall then blowe out of the North, or Easte, and those daies drie, then shall followe a verye colde season in those thrée moneths: but if the winde blowe out of the South or Weast, and that it raineth in those thrée dayes, then yse to followe in those thrée moneths. And if the weather in these thrée daies shal be neither wholly drie, nor wholly moiste, then shall folowe an vnstedfaste Winter.

And like as the weather shall be at the Sunnes entraunce into the signe Libra, as at the daye of the entraunce, the daye before, and the daye after, suche for the more parte shall be the Spring, as in the moneth of Marche, Aprill, and May.

And looke howe the weather shal be at the Sunnes entrance into the signe Aquarius, at the daye of the entraunce, the daye before, and the daye after, (suche for the more parte) shall the weather be in the moneths of Iune, Iuly, and August.

And manye auntient men affyrme, that like as the weather shall be whiles the Sunne is running by the signe Libra, and vnto the .20. degré of Scorpio, which time is from the daye named (the Exaltation of the crosse) vnto the day of al Saints, such for the more parte shall the yeare following be, as in diuiding that foresaide time into twelue moneths, and that foure daies doe aunswere to eche moneth, of the whiche foure dayes, that eache one of the foure, doeth declare the condition of the quarter following, and beginning also to reckon November as the first moneth of the yeare.

And the generall signes of the dearth and plentie after the minds of the auncient husband men be these, as the ouermuch coldenesse drying, the ouermuch moysture softning, the ouermuche heate greatly burning, and the ouermuch drinesse putrifying and working into dust.

For when any of these qualities shall excéede in the proper time, but especially in that time, which to the corne and fruites do not agréee, then shall dearth and scarcitie both of fruites and corne ensue.

As for example, when the moneth of March shal be ouer moyst and wet, which rather ought to be drie, and that the moneth of April shal be drie, which then ought to be moyst, doth after pronounce the penurie of the fruites of the earth.

And if that part also of sommer shal be weat, in which the corne doth then fall vnto ripenesse, that rather ought to be drie, doth after signifie the scarcitie both of corne and other fruites of the earth.

And the like may be saide of the other constitutions, which when the Elementall qualities shal be in such a condition as do best agréee, then doe they promise both fruitfulnessse and plentifulnesse.

And if in the Spring be signes of colde and drought, and that in the ende of the spring neare the full moone be frostes, then shall follow very small yéelde of the fruites of the earth, and little wine that yere following.

And if the spring be drie, then fewe shall the fruites of the trées be, yet good, and the scarcitie of corne shal be that yeare.

And if the Spring shall be colde, the fruites of the Earthe shall be late ripe.

And if the Spring and Sommer shall be ouer wette, or mistie, or colde, with cloudie weather for manye daies together, whiles all the trées haue borne their blossoms, and the fieldes their floures, and beginne to shedde their floure, then shall follow the scarcitie of fruites of the earth in that yeare, or else a verie greate rot of them, and many sicknesses in that yeare.

And if the sommer be drier than customably, then shal follow the scarcitie of corne, yet the Sommer fruites shall that yeare be sound, the fishes then die, and most sharpe sicknesses shall raine that yeare.

And if the Sommer shal be hotter than customably, then shal followe many sicknesses or diseases, yet great plentie of the Sommer fruites that yeare.

And if the Sommer shal be colder than customably, then shall follow a healthfull yere, but the fruites of the earth shal late ripe that yeare.

And here further note of the spring, that if in the same season of the spring, there shal be a more plentie of all floures and fruits toward than customably, doth after signifie a scarcitie of corne that yere, vnlesse the heate of sommer doth otherwise reforme the same.

And the wise and auncient husbandmen haue obserued, that when the winter shal send downe store of raine on the earth, so that the same excéede not or bée too much, and that the March following be drie, and the Aprill wette by often shoures, and that the same part also of Sommer bée drie in which the corne falleth to ripenesse, then doth the same promise a plentifull yeare.

And when that part of the Haruest shal be faire and drie, in which the wheat is sowen, and the parte

of sommer in which corne falleth too ripenesse shal be faire and drie, the spring also meanelly warme, doth then not only promise fruitefulnessse, but a plentifull yeare of corne.

And nowe the Haruest moyster than customably doth putrifie the Grapes, and causeth a small yéelde of wines that yeare, with the scarcitie of other fruites.

And if in the latter part of Haruest it be moyster, then in the yere following shal ensue the scarcitie of corne.

And if the Haruest bée drier in the first part, then in the yeare following shal Rie, and that smal graine named Mill, and suchlyke, be deare.

And if the haruest be hoter than customably, then shall followe a diseased yeare and that dangerus.

And if the Haruest be colder than customably, then shall follow the losse of the Haruest fruites both in the store and tast of them.

And the Winter colde and drie, is of all husbandmen commended, but extrémee colde, doeth then flea the trées, especially those which ioy in a warme aire, as the Pomegranade trée, the Oliue trée, the Lemmon trée, the Figge trée, the Peach trée, and such like.

And if the Winter excéede in the extremitie of coldnesse, then doth it signifie harme both vnto the Vine and the Oliue trée, the Cherie trée, and the yellow Quince trée.

And if the Winter be hote and moyst, then the same doth pronounce an vnhealthfull yeare, and daunger to séedes and fruites of the earth.

And the excesse qualitie, and distemperature of any of the foure quarters, is euill and daungerous to the fruites of the earth.

And the plentie of snowe falling in the due season of the yeare, doth batten the earth, (and if the others do helpe) then doth it signifie the plentie of corne and other fruites of the earth.

And if any washeth the handes with snowe, it doth then make them stedie, in that the snowe is ingendered of a vapour somewhat drie and earthly.

And the snowe nourisheth shéepe & other beasts in that the snow is ingendered of the moyst aire, in which life consisteth.

And the snowe increaseth the corne and other growing things on earth, in that by his coldnesse it so doth shut the poures of the earth, that the heate with the whiche the séedes of the earth be cherished, cannot then breath forth.

And the snow heateth and cherisheth the earth, by the thicke couering of it, and defendeth the gréene wheat and other séedes sowed, from the sharpe and vehement colde then of the ayre.

And the snowe may be kept all the yeare under the earth, couered with strawe, and profitable it is to mixe with the wine in hote sommer, and necessarie also to coole the ayre about sick persons.

And the vnprofitable falling of the deawe, mistes, or fogges (especially when all crescent things doe bud forth, and shewe theyr floure) as in the Moneth of Aprill and May, as well on the trées, corne and grasse, which beastes then feding on be greatly harmed, through the deaw fallen, and all other thinges also much harmed by the same, as hath bene often obserued by the ancient and wise husbandmen.

And the ouermuch falling of raine, frostes or haile, especially in the spring time, and in the winter time, whilst the corne is yet as grasse, the excesse of raine also doth then threaten the scarcitie of vittales to ensue that yeare.

And the great plentie of beanes, after the opinion of the common husbandmen, through the much raine fallen, doth fore shewe the scarcitie of corne, and especially of wheate that yeare.

And a like iudgement may be giuen of the Oke and Holly trée, which if they beare plentifully, then a fruitfull yeare followeth, and contrariwise bearing but few, then a deare yeare of corne to ensue.

And the great plentie of Grashoppers, wormes and Catterpillers appearing in their proper time more than customably, doe not only declare harme to vines and séedes sowed, but to all fruites that yeare.

And the great store of windes, not only cause little fruites, but scarcitie of corne to ensue that yeare.

And a stilnesse in a manner throughout the yeare, doth declare a likelyhode of the plague to ensue shortly after.

And the auncient *Hipocrates* writeth, that when in the Sommer the North winde long continueth, and in the Haruest, the South winde with store then of raine, it doeth after threaten in the Winter the headache, hoarsenesse of voice, the coughe, consumptions or impostumes to ensue.

And if after a drie Sommer (as write the auntient Phisitions) the North winde doeth long continue in the Harueste, then the bodies of women, and suche diseased with a moiste sicknesse, doe then in that season the rather recouer health, in that the drinesse of the seasons and windes is contrarie to the excesse, and to the rottennesse of the humors, by whiche the sicknesses were caused.

And if the Winter shall be hote and moiste, and the Spring colde and drie, then doth the same threaten sicknesse to men in the Sommer, and that women with childe shall haue vntimely birthes of a light occasion.

And *Hypocrates* writeth, that when in the Winter be longer Northerly windes, and in the Spring longer Southerlye windes, and that raynie and wette in the Sommer following, then doeth followe Agues, and the Diseases of the eies.

And when after a colde Winter, and that South windes and raynie in the Spring, and that the Sommer be drie then in the Haruest following doe agues ensue, paines also of the bowels thorough the greate scouring of the bodie, and Sickneses, with the whiche olde men, diseased persons, and children be then more pained.

And when the Southwest winde doth long blowe aboute the end of Haruest, then those persons diseased with a long sicknesse, do shortly after die.

And a further knowlege of dearth and plentie of victualles, and of sicknesse may be had on this wise.

Firste in the end of Haruest, cutte open two or thrée Oke apples, looking whether there be in them either Flyes, Worms, or Spiders.

For if in the Oke apple be founde Wormes, or Magots, then they signifie (after the opinion of auncient husbandmen) to the dearth and scarcitie in that yeare.

And if the Oke apple cut open be founde like to flies, it doth after threaten battel to ensue in that yeare.

And if in the Oke apple be founde like to Spiders, then doe they foreshewe the plague or pestilence to ensue in that yeare.

And to conclude, the onely prooffe of the former taught, shal moue the Reader better to credite these.

¶ *An euerlasting Prognostication of the state and condition of euerye yeare, by the only Kalends of Ianuarie: written by that antient learned Leopoldus Austriacus, and others, for the commoditie of the wise Husbandmen. Cap.ij.*



And nowe, when the first day of Ianuary shal happen on the Sunday, then the Winter shall be temperate and good, yet windie, the Spring wet, the sommer drie, and the Haruest hurtfull through windes. So that victualles shall be reasonable good cheape, plentie of Wines, the good health & encrease of shéepe and other cattell, and the indifferent plentie of hony, and the like plentie also of Peason, Beanes, Vetches, and the herbes and frutes of the Gardens. Also yong men shal die that yeare, and a discorde to be feared betwéene Kings, or else some manifest perils to happen to Kings and greate Prelates in auctoritie, and that diuers robberies shall be attempted that yeare. And if controuersies happen betwéen Princes, then a conclusion of peace to be looked for in that yeare.

And if the firste day of Ianuarie shall happen on the Monday, then shall the Winter be warme, the Spring very colde, with Snow and Frostes that season, the Sommer boisterous through winds, and haile oftentimes, and lande floudes shall be somewhere, and the Haruest very drie. So that sicknesses shall ensue, through which many of the simple sorte shal then die, and diuers also shall die, through the sodaine plague then happening. Also the likelihoode of greate alteration to ensue, & that auntient women to mourne, Kings to die, and a greate slaughter to be feared by the sword. Also small store of wines, the death of Béés, and little hony that yeare.

And if the firste beginning of the moneth of Ianuarie shal be on Tuisday, then that Winter shal be long, and much snow in that season, and the likelihoode of land floudes, through the muche raine then falling, the Spring windie, the Sommer verye wette, and the Haruest abounding in grosse and rotten humors (so that a moste gréeuous plague is to be feared, and especially of women, and the likelihoode of many shipwrackes, and very greate cares and troubles to happen vnto Princes, with the scarcitie of frutes of the trées: and corne shall be deare, with the sodaine death of cattel to be feared that yeare. Also wood shal that yeare be deare, and the likelihoode of fearefull fyres, and that the plague to be grieuous that yeare. And yet shal there be store of Peason, Beanes, and Vetches, & plentie of hearbes and floures. Also there shall be plentie of Hony, Oyle, and wines that yeare.

And when the firste of Ianuarie beginneth on the Wednesday, then shall the Winter be warme and calme, the Spring wette, and disposed to sicknesses, the Sommer hote, and the Haruest vnprofitable, so that long sicknesses are to be feared, & the Quarten Ague with them. Also yong men shall then be sick, and in ieopardie of death, and women the like, & in sundrie places shall happen a famine, with a greate brute of straunge newes. And there is also to be feared the grieuous passions of the hearte, the ydlennesse of minde, or rather distraught, and the diseases of the matrice in women. And yet the plentie of Oyle and Wines, but the scarcitie of corne to be doubted that yeare.

And if the beginning of Ianuarie be on Thursedaye, then shall the Winter be calme, & temperate, the Spring windie, the Sommer vnseasonable, and the Haruest drie, so that corne and victualles shall then be deare, yet store of Oile and Wines that yeare. And there is a likelihoode of lighte sickneses to happen vnto the common people, but more dangerous sicknesses vnto the richer sorte. And the blearednesse of eies also is to be feared, and that yong children shall then die, battels procured, and the sedition of souldiours, and an earthquake to be doubted that yeare. Also great talke of newes shal be in Kings and Princes houses, and greate perills also be doubted to happen vnto Princes in that yeare.

And if the firste daye of Ianuarie happen on Fridaye, then shall the Winter be verie cold and drie, the Spring boisterous and wette, the Sommer temperate, the Haruest more wette than drie. So that the blearednesse, and other diseases with the filthinesse of matter running in the eies is to be feared, and the pinne or web is likewise to be doubted to happen in that yeare. And yong children shall ther die, and a likelihoode that young women shall be allured vnto a wanton loue, through the flatterie and great perswasions of men. Also a suspicion of battels to ensue in that yeare, and the plague and

robberies then to happen. Also the plentie of fruites is then promised, although much haile fall that yeare.

And if the beginning of Ianuarie happen on Saterdaye, then the Winter shall be windie and vnstable, the Spring windie, and vnconstant of weather, the sommer vnstable with manye tempestes, and the Haruest drie: So that victualls shall be deare, small store of corne, and little fruite that yeare. Also shéepe shall not well prosper that yeare, and a likelihoode then of the death of swine, and that woode shall be deare.

Also there shall be manye tertian agues, and diuers other diseases rayning among men, so that olde men shall then die, and a likelihoode of the death of many men, by the plague. Also many fires shall be hearde of, little store of Wines, Oyle, and Hony, yet plentie of hay that yeare.

And if Neweyeaes night (being the first night of Ianuarie) shall be calme and cleare, as withoute winde and raine, then doeth the same promise a prosperous yeare following.

And if in the same night the winde happen to blowe oute of the East, then doth the same signifie the death of cattell to ensue that yeare.

And if the same night the winde happen to blowe out of the West, then a likelihood of the death of Kinges or Princes to ensue that yeare.

And if in the same night the wind happen to blow out of the South, then doth the same signifie the death of manye persons to ensue that yeare.

And if in the same night the wind happen to blow out of the North, then doth the same signifie the small yéelde of all fruites of the earth that yeare.

¶ Howe to foreknowe the state of the yeare, by the
only rising of the dogge starre, out of the husbandrie
of Diophanes. Cap.ij.

And about the knowledge of this, there is to be considered and noted, in what signe the Moone shall then be, at the first appearance of the dogge starre aboue the Earth in our Realme of England, which generally to be reckened is about the seauenth day of Iuly.

And nowe if the Moone runne then in the signe Aries, at the first appearance of the Dog starre, it doth after declare the death of Cattell and much raine. So that small yéelde of corne yet plentie of Oyle shal be that yeare.

And if the Moone runne then in the signe Taurus, at the first appearance of the dog starre, then doth it signifie much raine, fogges and mistes that shal harme much that yeare.

And if the Moone runne then in the signe Gemini, at the first appearance of the dogge starre, it doth after promise the plentie of corne and wine and all other fruites of the earth, a yet diseased yeare, and to be doubted that a King shal then die, and that rebellion also shall be moued that yeare.

And if the Moone run then in the signe Cancer at the first appearance of the dog starre, aboue the earth, it doth after threaten drought, with the great scarcitie of corne to ensue in that yere:

And if the Moone runne then in the signe Leo at the firste sight of the dogge starre, it after promiseth the plentie both of wines and Oyle, and the good cheape of corne and other victualls that yeare. And yet to bée feared the commotions of the common people, and slaughter of the same to ensue, with an erthquake, and land floudes to happen in that yeare.

And if the Moone runne then in the signe Virgo, at the first appearance of the dogge star, it after signifieth the plentie of showers, and the greate store of fruites of the earth, and the cheapnesse also of cattell. And yet to be feared, that women shal be deliuered before their time in that yeare.

And if the Moone runne then in the signe Libra, at the first appearance of the dogge starre, it after declareth the stirring vp of a king, and a commotion of the common people. And yet the plentie of fruites of the trées, although there be a likelihood of the scarcitie of corne and oyle in that yeare.

And if the Moone runne then the signe Scorpio, at the first appearance of the dogge starre, it after declareth the commotion of priests, the destruction of Bées, and an infectiue aire to ensue that yeare.

And if the Moone runne then in the signe Sagitarius, at the first sight of the dogge starre aboue the earth, it after signifieth a raynie yeare, yet fruitefull, and the plentie of corne, and ioy among men. And yet is to be feared the death of cattell, & the multitude of foules in that yeare.

And if the Moone runne then in the signe Capricornus at the first appearance of the dogge star aboue the earth, it after declareth the commotion of souldiours, and greate store of raine, and yet the plentie of corne, wines and Oyle, and al other thinges good cheape in that yeare.

And if the Moone run then in the signe Aquarius, at the first appearance of the dog star aboue the earth, it after signifieth of a most likelihood, the death of a king or Prince, the scarcitie of corne, and the plentie of such flyes with the long hinder legges, that burne corne by the touching of it. And yet little raine, with the plague to ensue in that yeare.

And if the Moone runne then in the signe Pisces, at the first appearaunce of the dogge starre aboue the earth, it after declareth much raine, and the death of byrdes. And yet doth it promise a sufficient store, & laudable plentifulnesse, both of Wines, Oyle, and corne, but manye persons shall be diseased in that yeare.

¶ Other profitable instructions, right necessarie for

And first if the horne of the Ramme (nere his eare) be boxed, the same doeth tame his fiercenesse. And if his right genitour be trussed vp before he goeth to couer the Ewe, then doeth he beget an Ewe lambe. And if the left be thus strait trussed vp, and the righte hanging downe, then doeth he begette a hée lambe.

And if in the time of the South wind blowing, the Ram doth then couer the Ewe, he doth after beget a shée lambe.

And if when the North wind bloweth the Ram doth then couer the Ewe, doth after beget a hée lambe. And of what colour also the vaines shal be vnder the tongue of the Ewe, suche shal the colour of the skinne of the lambe be, for if she hath black vaines vnder the tong, then the Lambe shall be blacke of skin, and if white vaines vnder the tong, then shall she haue a white lambe: and if of diuerse colours, then the lambe shal be of diuerse colours on the skin. And that antient Isaac writeth, that Rams in their yong yeares be of lesser moysture and clammynesse, than be the sucking lambs, and this is, through their age and qualitie then ruling.

And therefore the fleshe of yong weathers be better, and ingender better bloud than the sucking lambes.

And this is héere spoken of such Rammes as be gelded, in that their moysture and hotnesse is then temperate.

And the wethers ouer old are to be refused in eating, in that they be then cold and drie without moysture, and they smallye nourish and hardly digest.

Also béefe and other fleshe of beastes being olde, be euill to eate, through the coldenesse and drynesse, and through the lacke of the moysture and hotnesse. And when the olde Rams in their time to couer the Ewe, be sooner moued thereto, than the yong Rammes, it doeth then signifie a good and profitable season to ensue in that yeare, and a good season and prosperous also for shéepe. But if in the proper time to couer the Ewe, the yong Rammes be sooner prouoked thereto than the olde Rams, then doeth followe the greate rotte or murreyne of shéepe in that yeare.

Also Ewes by drinking of water conceiue the sooner wyth Lambe and of this the shéepeheardes giue them salte to eate, wherby the more drinking of water, they may so conceiue with yong, and they are also by that meanes preserued the healthfuller. And in the Haruest also some sheapheardes giue them to eate Gourdes seasoned with salt to encrease their milke, for by that meanes both the milke more plentifully issue forth of their teates, and the Ewes do sooner conceiue. Also in Sommer is the colde Northerly water good for them, and in the Haruest the warme Southerly water good for them.

Also to let shéepe féede in the ende of the day, is greatlye commended: and if they also stirre but little abrode, the same is thought very profitable, in that the mucche iourneying, and labouring of them hither and thither, doth so cause them to become leane. Also the skilful shéepeheardes knowe, whiche shéepe will well endure the sharp winter, and which not, in that vpon some of the shéepe's backes (as they affirme) Ise maye be founde, and vpon othersome none at al. So that by this may be learned, that such shéepe which be weake, a man can hardely plucke off the Ise from their backes. And further learne, that those shéepe whiche haue long tayles, maye hardlier abide the sharpe colde winter, than those hauing broade tayles: and the shéepe also curled of haire (do in like sorte) hardlier endure the bitter winter.

And besides these, the number greatly harmeth shéepe, especially if anye Ewe being with yong happeneth to be alone at that instant, for that she then with lambe, doeth of the fearefull noyse of the thunder, deliuer hir yong one before the time. And for a speciall remedie to saue that vntimely casting of Lambes at such times, the skilfull shéepeheardes haue found out, that the only driuing of many Ewes togither, is a sure safegard to them to auoyde this occasion. Besides, if you will remoue the rot of shéepe, that they die no more, then take the belly of a Ram, and séeth the same in wine and water togither, which after mixe with water, and giue the same generallye to all the shéepe to drinke, for by that meanes shall they againe be recouered of their disease. And here learne, that the fleshe of shéepe, and other foure footed beastes, which commonly féede in moyste ground, is euill to féede vpon, for the harde digestion of the same. Also learne, that the good shéepe are knowen by their age, as being neyther to olde, nor yet as Lambes: and by the forme also they are knowen, if so be you finde them large of body.

And they besides haue much and soft wool, and both thicke & long heare, especially on the nape, and about the necke, and the like haire on the belly. And both the health & sicknesse of shéepe may be knowen, if so be any openeth their eyes, and findeth the vaines within to be redde and small, which vndoubtedly declareth them to be sound and good: but if those vaines that appeare white, or redde, and bigge, then those shéepe are diseased and weake.

And if the shéepe go lustily and boldely by the waye, it is a sure token that they be sound, but sadly and hanging down the heade, then be they diseased. These hitherto of the yearely coniectures, and other rules, only méete for husbandmen to vnderstand and know.

Transcriber's note:

Scribal abbreviations have been expanded.

Variations in spelling, accenting, and hyphenation have been retained.

All instances of 'VV' standing in for 'W' have been changed to 'W.'

Table of Contents entries have been regularised to the format 'cap.xij.'

cap.first., comma inserted after 'Aristotle,' "Palladius, Aristotle, Theophrastus"

cap.first., 'aud' changed to 'and,' "diuided with plights and rings."

cap.vij., 'diligeuce' changed to 'diligence,' "care and diligence of the Bees."

cap.viiij., full stop inserted after 'sting,' "or lacketh a sting."

cap.viiij., second 'the' struck, "whiche the king carrieth"

cap.viiij., comma changed to full stop, "owe vnto him. Yet they punish"

cap.viiij., comma inserted, "lesser of body, yet howsoeuer"

cap.viiij., catchwords 'be placed' inserted, "be placed certaine rulers,"

cap.ix., second 'in' struck, "become gentle in a short time."

cap.ix., 'iu' changed to 'in,' "in the steade of"

cap.ix., 'hoth' changed to 'both,' "to be both euill and"

cap.ix., 'dest' changed to 'best,' "doth he best commende"

cap.x., comma inserted after 'ditches,' "puddels, ditches, dung-heapes,"

cap.x., 'chéeritrée' changed to 'Chéeri trée,' "Chéeri trée they greatly hate"

cap.x., 'hat' changed to 'that,' "for that tasting of"

cap.x., 'flonres' changed to 'floures,' "tasting of the floures"

cap.xj., comma inserted after 'swallows,' "to swallows, to sparowes, and"

cap.xij., 'spetiall' changed to 'speciall,' "This is a speciall argument"

cap.xv., full stop inserted after 'agayne,' "or recouered agayne."

cap.xvj., full stop inserted after 'Bees,' "for the Honny Bees."

cap.xvj., 'dwo' changed to 'two,' "two very small and narrowe holes"

cap.xvj., full stop inserted after 'otherwise,' "darke, than otherwise."

cap.xvij., hyphen changed to full stop, "and face. And one that"

cap.xvij., comma changed to full stop, "greatlye abhorre. Besides, to be"

cap.xvij., full stop inserted before 'x.,' "the .viiij. or .x. day of"

cap.xvij., 'profftable' changed to 'profitable,' "is very profitable, and"

cap.xvij., 'beinyng' changed to 'beginyng,' "And from the beginyng"

cap.xx., 'controueesie' changed to 'controuersie,' "in this controuersie"

cap.xxj., 'be' changed to 'bée,' "set forth another bée"

cap.xxj., 'a sunder' changed to 'asunder,' "cutte it asunder."

cap.xxj., 'a sunder' changed to 'asunder,' "be like cut asunder,"

cap.xxij., 'Beees' changed to 'Bees,' "That the Bees sting"

cap.xxij., 'Cap.xxi' changed to 'Cap.xxij.'

cap.xxij., 'placed' changed to 'places,' "on the stinged places."

cap.xxij., 'fouth' changed to 'fourth,' "in his fourth rule"

cap.xxxij., comma inserted after 'water,' "of this yealow water, of Aloes"

cap.xl., 'ef' changed to 'of,' "Oyle out of Waxe"

conclusion, '(I trust)fullye' changed to '(I truste) fullye,' "I haue (I truste) fullye satisfied"

conclusion, 'recciue' changed to 'receiue,' "thou mayste receiue any"

Coniectures cap.j., 'fruietes' changed to 'fruites,' "of fruites and corne"

Coniectures cap.j., 'yeelde' changed to 'yéelde,' "small yéelde of the fruites"

Coniectures cap.j., 'trees' changed to 'trées,' "fruites of the trées be"

Coniectures cap.j., 'than' changed to 'then,' "then in the yere"

Coniectures cap.j., 'tree' changed to 'trée,' "the Lemmon trée"

Coniectures cap.j., 'threa-' changed to 'threaten,' "it doeth after threaten in the Winter"

Coniectures cap.ij., 'tearefull' changed to 'fearefull,' "likelihoode of fearefull fyres"

Updated editions will replace the previous one—the old editions will be renamed.

Creating the works from print editions not protected by U.S. copyright law means that no one owns a United States copyright in these works, so the Foundation (and you!) can copy and distribute it in the United States without permission and without paying copyright royalties. Special rules, set forth in the General Terms of Use part of this license, apply to copying and distributing Project Gutenberg™ electronic works to protect the PROJECT GUTENBERG™ concept and trademark. Project Gutenberg is a registered trademark, and may not be used if you charge for an eBook, except by following the terms of the trademark license, including paying royalties for use of the Project Gutenberg trademark. If you do not charge anything for copies of this eBook, complying with the trademark license is very easy. You may use this eBook for nearly any purpose such as creation of derivative works, reports, performances and research. Project Gutenberg eBooks may be modified and printed and given away—you may do practically ANYTHING in the United States with eBooks not protected by U.S. copyright law. Redistribution is subject to the trademark license, especially commercial redistribution.

START: FULL LICENSE
THE FULL PROJECT GUTENBERG LICENSE
PLEASE READ THIS BEFORE YOU DISTRIBUTE OR USE THIS WORK

To protect the Project Gutenberg™ mission of promoting the free distribution of electronic works, by using or distributing this work (or any other work associated in any way with the phrase “Project Gutenberg”), you agree to comply with all the terms of the Full Project Gutenberg™ License available with this file or online at www.gutenberg.org/license.

**Section 1. General Terms of Use and Redistributing Project Gutenberg™
electronic works**

1.A. By reading or using any part of this Project Gutenberg™ electronic work, you indicate that you have read, understand, agree to and accept all the terms of this license and intellectual property (trademark/copyright) agreement. If you do not agree to abide by all the terms of this agreement, you must cease using and return or destroy all copies of Project Gutenberg™ electronic works in your possession. If you paid a fee for obtaining a copy of or access to a Project Gutenberg™ electronic work and you do not agree to be bound by the terms of this agreement, you may obtain a refund from the person or entity to whom you paid the fee as set forth in paragraph 1.E.8.

1.B. “Project Gutenberg” is a registered trademark. It may only be used on or associated in any way with an electronic work by people who agree to be bound by the terms of this agreement. There are a few things that you can do with most Project Gutenberg™ electronic works even without complying with the full terms of this agreement. See paragraph 1.C below. There are a lot of things you can do with Project Gutenberg™ electronic works if you follow the terms of this agreement and help preserve free future access to Project Gutenberg™ electronic works. See paragraph 1.E below.

1.C. The Project Gutenberg Literary Archive Foundation (“the Foundation” or PGLAF), owns a compilation copyright in the collection of Project Gutenberg™ electronic works. Nearly all the individual works in the collection are in the public domain in the United States. If an individual work is unprotected by copyright law in the United States and you are located in the United States, we do not claim a right to prevent you from copying, distributing, performing, displaying or creating derivative works based on the work as long as all references to Project Gutenberg are removed. Of course, we hope that you will support the Project Gutenberg™ mission of promoting free access to electronic works by freely sharing Project Gutenberg™ works in compliance with the terms of this agreement for keeping the Project Gutenberg™ name associated with the work. You can easily comply with the terms of this agreement by keeping this work in the same format with its attached full Project Gutenberg™ License when you share it without charge with others.

1.D. The copyright laws of the place where you are located also govern what you can do with this work. Copyright laws in most countries are in a constant state of change. If you are outside the United States, check the laws of your country in addition to the terms of this agreement before downloading, copying, displaying, performing, distributing or creating derivative works based on this work or any other Project Gutenberg™ work. The Foundation makes no representations concerning the copyright status of any work in any country other than the United States.

1.E. Unless you have removed all references to Project Gutenberg:

1.E.1. The following sentence, with active links to, or other immediate access to, the full Project Gutenberg™ License must appear prominently whenever any copy of a Project Gutenberg™ work (any work on which the phrase “Project Gutenberg” appears, or with which the phrase “Project Gutenberg” is associated) is accessed, displayed, performed, viewed, copied or distributed:

This eBook is for the use of anyone anywhere in the United States and most other parts of the world at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this eBook or online at www.gutenberg.org. If you are not located in the United States, you will have to check the laws of the country where you are located before using this eBook.

1.E.2. If an individual Project Gutenberg™ electronic work is derived from texts not protected by U.S. copyright law (does not contain a notice indicating that it is posted with permission of the copyright holder), the work can be copied and distributed to anyone in the United States without paying any fees or charges. If you are redistributing or providing access to a work with the phrase "Project Gutenberg" associated with or appearing on the work, you must comply either with the requirements of paragraphs 1.E.1 through 1.E.7 or obtain permission for the use of the work and the Project Gutenberg™ trademark as set forth in paragraphs 1.E.8 or 1.E.9.

1.E.3. If an individual Project Gutenberg™ electronic work is posted with the permission of the copyright holder, your use and distribution must comply with both paragraphs 1.E.1 through 1.E.7 and any additional terms imposed by the copyright holder. Additional terms will be linked to the Project Gutenberg™ License for all works posted with the permission of the copyright holder found at the beginning of this work.

1.E.4. Do not unlink or detach or remove the full Project Gutenberg™ License terms from this work, or any files containing a part of this work or any other work associated with Project Gutenberg™.

1.E.5. Do not copy, display, perform, distribute or redistribute this electronic work, or any part of this electronic work, without prominently displaying the sentence set forth in paragraph 1.E.1 with active links or immediate access to the full terms of the Project Gutenberg™ License.

1.E.6. You may convert to and distribute this work in any binary, compressed, marked up, nonproprietary or proprietary form, including any word processing or hypertext form. However, if you provide access to or distribute copies of a Project Gutenberg™ work in a format other than "Plain Vanilla ASCII" or other format used in the official version posted on the official Project Gutenberg™ website (www.gutenberg.org), you must, at no additional cost, fee or expense to the user, provide a copy, a means of exporting a copy, or a means of obtaining a copy upon request, of the work in its original "Plain Vanilla ASCII" or other form. Any alternate format must include the full Project Gutenberg™ License as specified in paragraph 1.E.1.

1.E.7. Do not charge a fee for access to, viewing, displaying, performing, copying or distributing any Project Gutenberg™ works unless you comply with paragraph 1.E.8 or 1.E.9.

1.E.8. You may charge a reasonable fee for copies of or providing access to or distributing Project Gutenberg™ electronic works provided that:

- You pay a royalty fee of 20% of the gross profits you derive from the use of Project Gutenberg™ works calculated using the method you already use to calculate your applicable taxes. The fee is owed to the owner of the Project Gutenberg™ trademark, but he has agreed to donate royalties under this paragraph to the Project Gutenberg Literary Archive Foundation. Royalty payments must be paid within 60 days following each date on which you prepare (or are legally required to prepare) your periodic tax returns. Royalty payments should be clearly marked as such and sent to the Project Gutenberg Literary Archive Foundation at the address specified in Section 4, "Information about donations to the Project Gutenberg Literary Archive Foundation."
- You provide a full refund of any money paid by a user who notifies you in writing (or by e-mail) within 30 days of receipt that s/he does not agree to the terms of the full Project Gutenberg™ License. You must require such a user to return or destroy all copies of the works possessed in a physical medium and discontinue all use of and all access to other copies of Project Gutenberg™ works.
- You provide, in accordance with paragraph 1.F.3, a full refund of any money paid for a work or a replacement copy, if a defect in the electronic work is discovered and reported to you within 90 days of receipt of the work.
- You comply with all other terms of this agreement for free distribution of Project Gutenberg™ works.

1.E.9. If you wish to charge a fee or distribute a Project Gutenberg™ electronic work or group of works on different terms than are set forth in this agreement, you must obtain permission in writing from the Project Gutenberg Literary Archive Foundation, the manager of the Project Gutenberg™ trademark. Contact the Foundation as set forth in Section 3 below.

1.F.

1.F.1. Project Gutenberg volunteers and employees expend considerable effort to identify, do copyright research on, transcribe and proofread works not protected by U.S. copyright law in creating the Project Gutenberg™ collection. Despite these efforts, Project Gutenberg™ electronic works, and the medium on which they may be stored, may contain "Defects," such as, but not

limited to, incomplete, inaccurate or corrupt data, transcription errors, a copyright or other intellectual property infringement, a defective or damaged disk or other medium, a computer virus, or computer codes that damage or cannot be read by your equipment.

1.F.2. LIMITED WARRANTY, DISCLAIMER OF DAMAGES - Except for the "Right of Replacement or Refund" described in paragraph 1.F.3, the Project Gutenberg Literary Archive Foundation, the owner of the Project Gutenberg™ trademark, and any other party distributing a Project Gutenberg™ electronic work under this agreement, disclaim all liability to you for damages, costs and expenses, including legal fees. YOU AGREE THAT YOU HAVE NO REMEDIES FOR NEGLIGENCE, STRICT LIABILITY, BREACH OF WARRANTY OR BREACH OF CONTRACT EXCEPT THOSE PROVIDED IN PARAGRAPH 1.F.3. YOU AGREE THAT THE FOUNDATION, THE TRADEMARK OWNER, AND ANY DISTRIBUTOR UNDER THIS AGREEMENT WILL NOT BE LIABLE TO YOU FOR ACTUAL, DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE OR INCIDENTAL DAMAGES EVEN IF YOU GIVE NOTICE OF THE POSSIBILITY OF SUCH DAMAGE.

1.F.3. LIMITED RIGHT OF REPLACEMENT OR REFUND - If you discover a defect in this electronic work within 90 days of receiving it, you can receive a refund of the money (if any) you paid for it by sending a written explanation to the person you received the work from. If you received the work on a physical medium, you must return the medium with your written explanation. The person or entity that provided you with the defective work may elect to provide a replacement copy in lieu of a refund. If you received the work electronically, the person or entity providing it to you may choose to give you a second opportunity to receive the work electronically in lieu of a refund. If the second copy is also defective, you may demand a refund in writing without further opportunities to fix the problem.

1.F.4. Except for the limited right of replacement or refund set forth in paragraph 1.F.3, this work is provided to you 'AS-IS', WITH NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.

1.F.5. Some states do not allow disclaimers of certain implied warranties or the exclusion or limitation of certain types of damages. If any disclaimer or limitation set forth in this agreement violates the law of the state applicable to this agreement, the agreement shall be interpreted to make the maximum disclaimer or limitation permitted by the applicable state law. The invalidity or unenforceability of any provision of this agreement shall not void the remaining provisions.

1.F.6. INDEMNITY - You agree to indemnify and hold the Foundation, the trademark owner, any agent or employee of the Foundation, anyone providing copies of Project Gutenberg™ electronic works in accordance with this agreement, and any volunteers associated with the production, promotion and distribution of Project Gutenberg™ electronic works, harmless from all liability, costs and expenses, including legal fees, that arise directly or indirectly from any of the following which you do or cause to occur: (a) distribution of this or any Project Gutenberg™ work, (b) alteration, modification, or additions or deletions to any Project Gutenberg™ work, and (c) any Defect you cause.

Section 2. Information about the Mission of Project Gutenberg™

Project Gutenberg™ is synonymous with the free distribution of electronic works in formats readable by the widest variety of computers including obsolete, old, middle-aged and new computers. It exists because of the efforts of hundreds of volunteers and donations from people in all walks of life.

Volunteers and financial support to provide volunteers with the assistance they need are critical to reaching Project Gutenberg™'s goals and ensuring that the Project Gutenberg™ collection will remain freely available for generations to come. In 2001, the Project Gutenberg Literary Archive Foundation was created to provide a secure and permanent future for Project Gutenberg™ and future generations. To learn more about the Project Gutenberg Literary Archive Foundation and how your efforts and donations can help, see Sections 3 and 4 and the Foundation information page at www.gutenberg.org.

Section 3. Information about the Project Gutenberg Literary Archive Foundation

The Project Gutenberg Literary Archive Foundation is a non-profit 501(c)(3) educational corporation organized under the laws of the state of Mississippi and granted tax exempt status by the Internal Revenue Service. The Foundation's EIN or federal tax identification number is 64-6221541. Contributions to the Project Gutenberg Literary Archive Foundation are tax deductible to the full extent permitted by U.S. federal laws and your state's laws.

The Foundation's business office is located at 809 North 1500 West, Salt Lake City, UT 84116, (801) 596-1887. Email contact links and up to date contact information can be found at the Foundation's website and official page at www.gutenberg.org/contact

Section 4. Information about Donations to the Project Gutenberg Literary Archive Foundation

Project Gutenberg™ depends upon and cannot survive without widespread public support and donations to carry out its mission of increasing the number of public domain and licensed works that can be freely distributed in machine-readable form accessible by the widest array of equipment including outdated equipment. Many small donations (\$1 to \$5,000) are particularly important to maintaining tax exempt status with the IRS.

The Foundation is committed to complying with the laws regulating charities and charitable donations in all 50 states of the United States. Compliance requirements are not uniform and it takes a considerable effort, much paperwork and many fees to meet and keep up with these requirements. We do not solicit donations in locations where we have not received written confirmation of compliance. To SEND DONATIONS or determine the status of compliance for any particular state visit www.gutenberg.org/donate.

While we cannot and do not solicit contributions from states where we have not met the solicitation requirements, we know of no prohibition against accepting unsolicited donations from donors in such states who approach us with offers to donate.

International donations are gratefully accepted, but we cannot make any statements concerning tax treatment of donations received from outside the United States. U.S. laws alone swamp our small staff.

Please check the Project Gutenberg web pages for current donation methods and addresses. Donations are accepted in a number of other ways including checks, online payments and credit card donations. To donate, please visit: www.gutenberg.org/donate

Section 5. General Information About Project Gutenberg™ electronic works

Professor Michael S. Hart was the originator of the Project Gutenberg™ concept of a library of electronic works that could be freely shared with anyone. For forty years, he produced and distributed Project Gutenberg™ eBooks with only a loose network of volunteer support.

Project Gutenberg™ eBooks are often created from several printed editions, all of which are confirmed as not protected by copyright in the U.S. unless a copyright notice is included. Thus, we do not necessarily keep eBooks in compliance with any particular paper edition.

Most people start at our website which has the main PG search facility: www.gutenberg.org.

This website includes information about Project Gutenberg™, including how to make donations to the Project Gutenberg Literary Archive Foundation, how to help produce our new eBooks, and how to subscribe to our email newsletter to hear about new eBooks.