

A Critical Edition of
Charles Butler's
The Feminine Monarchie:
Or
T H E H I S T O R I E
O F B E E S



by

Dana T. Stahlman

About the Book

The Feminine Monarchie, or Historie of Bees is without doubt one of the most fascinating books to read. It's composition and cross-references make it a scholarly addition to beekeeping literature as well as breaking new ground with the investigation of bee behavior and science.

Butler was well aware that many beekeepers of his day would question and doubt his arguments. Thus the reader will find a long strange tale as Butler calls it (Chapter One -- Item 50.) To the modern reader this most likely makes little sense but Butler is using a writer's tool called satire to describe a tale of "a simple woman having some stalls of Bees." Is it possible that the simple woman actually believed that her hive contained a scene so strange -- A chapel with an alter including windows and a steeple with bells? How skillfully Butler counters the story by pointing out the errors in the poor woman's story. In the process, Butler reveals his knowledge of the church as well as of the bees. It might be well to note that Butler informs the reader that some incredulous people would accept the story but he points out that the combs in the top of the Hive -- are not past half an inch one from another and how could the bees place a chapel with alter, windows, steeple and bells in so narrow space.

With the arguments and story behind him in the first chapter, Butler builds a rather complete text on keeping bees in skeps and wicker hives. From him we have a detailed account of building hives, managing them, and profiting from them. Butler is not 100% correct in what he has to say about bees, but remember this is a time when the middle ages of Europe was ending and the reformation with its characteristic new ideas was just beginning. What I find most interesting is that it would take almost 200 years before Huber would prove beyond a doubt the accuracy of some of Butler's statements.

Many books have been written about beekeeping. After nearly 400 years, this book still retains its place as one of the most important bee books ever written.

This is not a facsimile reproduction or an exact copy of ***The Feminine Monarchie***. It is rather a typed manuscript of the original document using Abadi MT Condense print to closely resemble the print in the 1623 edition of the book and contains some minor changes in spelling. There are several portions of pages in the book reproduced in this document. You will get an idea of the complexity of reading and copying this text into something readable. This is published as a limited edition by Dana Stahlman, Blacklick, Ohio in 2004

Introduction

I. Life and Works

Charles Butler was born about 1559¹ and died in 1647². He was educated at Oxford. He became the vicar of St. Laurence's Church at Wootton a post he held for 48 years. In addition to being a clergymen, he wrote books on "logic, music, English grammar, and the marriage of cousins" according to H. Malcolm Fraser in his *History of Beekeeping in Britain*.³

I have not been able to find much information about the life of Charles Butler. He refers to a son in the sixth chapter of *The feminine Monarchie* as assisting him but nothing else about a wife or family. John Day, the author of "*The Parliament of Bees*" dedicates the 1641 edition to a Mr. George Butler, Professor of the Arts Liberal, and True Patron to Neglected Poesy. It is thought that this Butler was related to Charles Butler but no real proof can be found for it.

He certainly is well known for his important contributions to beekeeping. A search of the web produced a number of hits for the *Feminine Monarchie* for which he is credited with revolutionizing scientific thinking about the sex of the honey bee queen and drone. However, very little exist about his life except that he was author of a number of books including, "*English Grammar* (1633), *Principles of Musik in Singing and Setting* (1636) and *The feminine Monarchie* (1609) and revised during his life time. The famous 1634 edition reflected his interest in orthography -- the spelling of a word to match the word sound.

Charles Butler was interested in agriculture. It is certain that he had first hand knowledge of keeping bees from his writings and was well educated in the ancients and quotes them often..

Charles Butler's church was a parish in the lower division of Basingstoke hundred, county Hants, 3 miles W. of the ancient town of Basingstoke, and 52 miles from London. There is evidence that Romans occupied the area and in 871, the Danes defeated king Etheldred in the area and the area suffered much political turmoil through the years. Old Basing-house was a famous fortress in the time

¹ I found one reference to his birth at: <http://www.centre.edu/web/library/sc/special/music/butler.html> for around 1559.

² Many sources list his date of death as 1647.

³ History of Beekeeping in Britain, H. Malcolm Fraser, Bee Research Association Limited, London, 1958.

of the civil wars and it was taken by Cromwell and burnt to the ground.

The area and time in which Charles Butler lived are interesting. Butler would have been very familiar with Basingstoke which was located just three miles away. The documented history of Basingstoke begins with the Domesday Book, which lists the area as a royal manor. In the third volume of "*History of all the countries in the Known World*"⁴ by T. Smollett, M.D. published in 1769 are described the boundaries, extent, and contents of Hampshire an area that included Basingstoke and Wootton. According to Smollett, "**Basingstoke has a market⁵ much frequented, for corn of all sorts; and a great quantity of malt is made in it.**" He adds, "**The air of this county is very pure and pleasant, especially upon the downs, on which vast stocks of sheep are kept and bred. The soil is very fertile, producing plenty of all sorts of grain. Much honey is produced in the county, and a great deal of mead and metheglin made. Here is also plenty of game, and on the downs is most delightful hunting.**"

Thus, as vicar of the Laurence-Wootton parish church just three miles from Basingstoke, Charles Butler was located in an area with vast agricultural interest. It is a certainty that honey was a valuable product for the area as well as the production of mead and metheglin. These items as well as skeps would have been sold at the market -- a major event during those times.

I will let Butler's book speak for itself when it comes to beekeeping matters. However, I would like to point out some of the difficulties I had in retyping the text of this book. First, the spelling of words in Old English requires one to use phonetic sounding to make sense of many of the words, which are quite tricky to read. I have tried to keep the wording identical to the original text even including the Old English spelling of words and have included the footnotes in the margin as in the original document. Second, I am not fluent in Latin. I have typed the best I can using the American English keyboard of my computer of the quoted material in the text of "*The Feminine Monarchie*:" which is in Latin. I would expect an expert in

⁴ The Present State of All Nations containing A geographical, Natural, Commercial, and Political History of all the Countries in the Known World, Vol. III by T. Smollett, M.D. published London Printed for R. Baldwin, NO. 47, Paternoster-row; W. Johnston, No. 16, Ludgate-Street; S. Crowder, No. 12; and Robinson and Roberts, No. 25, Paternoster-row. MDCCLXIX

⁵ The first grant of a fair to Basingstoke was made by Henry VI in 1449, when an annual fair was to be held around the Chapel of the Holy Ghost from the Wednesday in Whitsun week to the following Friday. http://www.hants.gov.uk/localpages/north_east/basingstoke/attract.html

Latin to find errors in what I have tried to transcribe.
Third, Many of the words in Butler's era are no longer used.
I have tried to build an index of words in **Appendix I** at the end of this book which will help you understand what or how Butler used some terms.

Beekeeping as Practiced in Butler's time and before:

The development of beekeeping from ancient times to present has been well documented by Eva Crane.⁶ &⁷ According to her, baskets were developed quite early ie: 5000 B.C. Bees kept in wicker skeps must have been quite common in Northern Europe and she indicates that their last recorded use in Britain was in the 1880's. The coiled straw skep as so often observed in photographs was not developed until straw became readily available and the find of a coiled straw skep in an excavation in England in 1980 was dated to the twelfth century.⁸ The use of the coiled straw skep of Butler's day continued in use well into the beginning of the 20th century.

Generally speaking skeps were harvested in the fall of the year by killing the bees by various methods. By the early 1700's a number of authors began to rebel against this cruel practice but that was after Butler's time. H. Malcolm Fraser⁹ says, "no English work on skep beekeeping has yet appeared which supersedes it (*Feminine Monarchie*).

Putting Butler's Time into Perspective:

- ◆ In 1586, Luis Méndez de Torres first described the queen bee as a female that laid eggs.
- ◆ In 1608 Dutch scientist Johann Lippershey invents the telescope and Samuel de Champlain founds a French settlement at Quebec
- ◆ In 1609, Charles Butler writes *Feminine Monarchie* and identified the drones as male bees and the queen--a female -- as the Monarch of the hive.
- ◆ Also in 1609, Henry Hudson explores Delaware Bay and Hudson River

⁶ The Archaeology of Beekeeping Eva Crane, Cornell University Press, Ithaca, New York. 1983

⁷ The World History of Beekeeping and Honey Hunting, Eva Crane, Gerald Duckworth & Co. Ltd. 1999.

⁸ The Archaeology of Beekeeping Eva Crane, Cornell University Press, Ithaca, New York. 1983 page 102

⁹ History of Beekeeping in Britain, H. Malcolm Fraser, Bee Research Association Limited, London 1958 p.32

*Mirari Arte conditas mirà domos,
Opesq; regales in his reconditas?
SOLERTIA ET LABORE sunt omnia.*

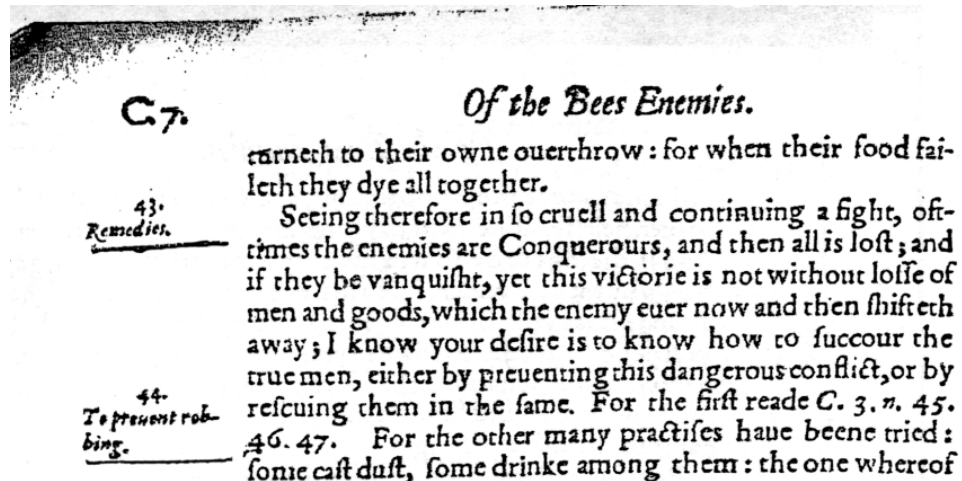
C. B.



A map of Hampshire, England, with the county boundary in black. The town of Basingstoke is marked with a red dot in the north-eastern part of the county. A red rectangular box with the text "Basingstoke" in white is placed over the dot.

A Word or Two About the English Language of the 1600's

The modern reader of the English language has difficulty reading Old English as it was spelled and written in the 1600's through the late 1700's.



Above is an actual reproduction of part of a page from "*The Feminine Monarchie: Or The History of Bees.*"

In Modern English: About robbing by other bees

turn to their own overthrow: for when their food fails they dye (die) all together.

Seeing therefore in so cruel and continuing a fight, oftentimes the enemies are Conquerors, and then all is lost; and if they be vanquish, yet this victory is not without loss of men and goods, which the enemy ever now and then shift away; I know your desire is to know how to succour (secure) the truemen (the real inhabitants of the hive), either by preventing this dangerous conflict, or by rescuing them in the same. For the first read C. 3. N. 45. 46. 47. For the other many practices have been tried: some cast dust, some drink among them; the one whereof.....

The very first thing a modern reader must do is figure out which letters are "s" and which are "f". They look very much alike but the s has no bar or cross. The second problem is determining the difference between u and v. Then there is the problem with the language as it was spoken. Note the endings of words: (eth) as in turneth and the use of truemen for the inhabitants of the hive. The vocabulary and spelling rules of modern American English are far different from the Old English as used in Britain during Butler's time. In fact, Butler was one of the individuals working to improve upon the language as it was then written.

Thus, you will find this typed version true to the spelling or as close to the spelling in the original copy but the confusion over words spelled with s, f, v, and u has been cleared up for the reader of this version. The Appendix will list many words used by Butler that are not familiar to the modern day reader.

I would hope that you not let the language of Butler and of his time discourage you as you read this outstanding book on bees. I have tried to reduce your (labor) in American English or (labour) in English of the UK so you can concentrate entirely on the quaint manner of Butler's telling you how to manage bees. This is a classic beekeeping book; unfortunately, many beekeepers have not had the opportunity to read it.

Dana Stahlman

Blacklick, Ohio
January 25, 2004

THE
Feminine Monarchie:
OR
T H E H I S T O R I E
OF BEES.

S H E W I N G
Their Admirable Nature, and Properties,
Their Generation, and Colonies,
Their Government, Loyaltie, Art, Industrie,
Enemies, Warres, Magnanimitie, &c.

TOGETHER
With the right ordering of them from time to
time: And the sweet profit arising thereof.

Written out of Experience
By
Charles Butler, Magd.

Plautt in Trucul: A ct:2.Sc.6.
Pluris est oculatus restis unus, quam auriti decem.

LONDON,
Printed by IOHN HAVILAND *for Roger lackfon,*
and are to be fold at his shop in Fleetstreet, over
againft the Conduir. 1 6 2 3

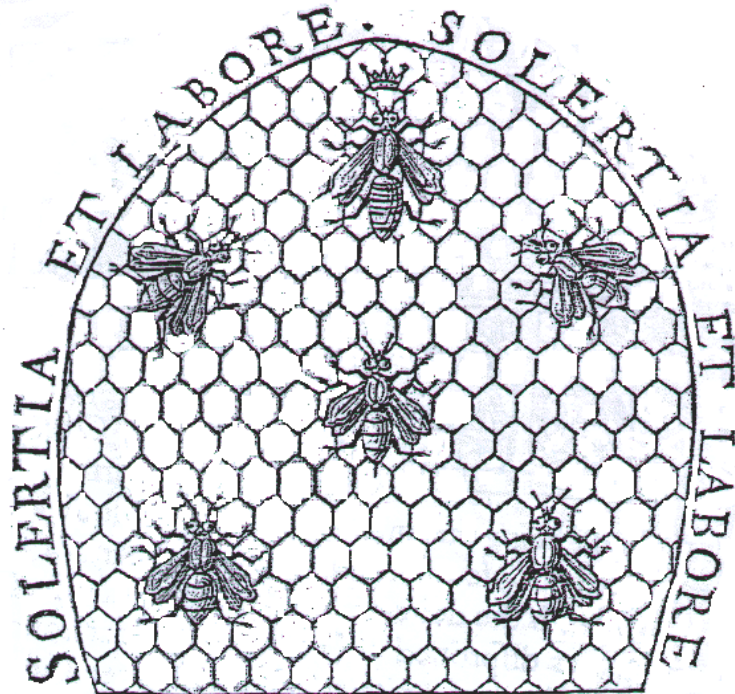


Quatuor apum
ordines.

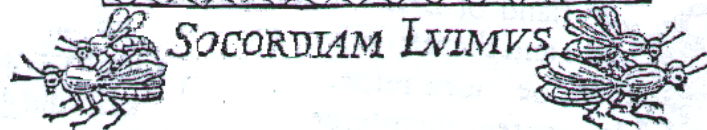
Princeps.

Duces.

Plebs.



Tr. 1700. f. 10.



*Miraris Arte conditas mirâ domos,
Opesq₃ regales in his reconditas?
SOLERTIA ET LABORE fiunt omnia.*

C. B.





THE PREFACE TO THE READER.



THE great Naturalist, to expresse the excellency of the nature of Bees, saith thus, *Inter omnia insecta principatus Apibus, & jure pracipua admiratio; solis ex cogenere hominum causagenitis.* Of all *insecta* the Bees are chiefe, and worthily to be most admired; being the only things of that kinde which are bred for the behoofe of men. The later part of which saying, although the delicate Silk-worme have in some hoter. Climates disproved (for in the colder countries, such as is our Iland of *Britaine*, I doubt mee shee will never quit cost; and therefore is here to be entertained only of them, that doe more respect their pleasure, than their profit; and doe content themselves with the beholding of their quaint worke, not expecting any further recompence for their expence and paines ;) yet must she needs confesse the former, and whereforever she meet the ingenious and laborious Bee, yeeld the precedence to her, as to hir Better. For the fruit of the Silk-worme serveth only to couer the body; but the fruit of the Bees to nourish and cure it; that is to be applied outwardly, this to be inwardly received; that for comlinesse and conveniency, this for health and necessity. But, to omit comparison, the worke and fruit of the little Bee is so great and wonderfull, so comely for order and

beauty,

Plin. Nat. hist. l. II,
ca.5.

The Preface to the Reader

beauty, so excellent for Art and wisdom, & so full of pleasure and profit; that the contemplation thereof my well besee me an ingenious nature. And therefore (not without cause) are the Bees called the Muses Birds: *apes cum causa Musarum esse dicuntur volacres*.

Var. l.3 n.15.

Nat. Hist.
l. l. c. 9.

The love of which did so ravish *Aristomachus* and *Philiseus*, that, as *Plinie* reporteth, they were pleased to spend most of their time in this pleasing businesse. *Ne quis* (saith he) *miretur amore earum captos Aristomachum Solensem duodecessexaginta annis nihil aliud egisse; Philiscum vero Thasium in desertis apes colentem Agrium cognominatum: qui ambo scripsere de his*. *Aristotle* thought his *Historia animalium* unperfect, unlesse he had inserted a Tract of the Nature of Bees: of which he discourseth more at large, than he doth of any other living creature. *Plinie* likewise, in his *Naturalis historia*, is very copious in this argument. Besides whom, divers others have written thereof: as *Columella*, *Varro*, *Palladius*, *Averroes*. Yea the learned & grave Fathers of the Church, *S. Ambrose*, and *Isidore* have thought it a subject fit for their penne. Unto which I may adde infinite others of later times, both in Latine and English.

But the many yeeres experiments & observations, which those great Bee-masters *Aristom*, and *Philiseus* has least in writing to posterity; Time, ah injurious Time, hath buried, in oblivion. And for the rest that are extant, they seeme unto me to rely more upon the relations of others, than any certaine knowledge of their owne. Notwithstanding there are scattered in them specially in *Aristotle* & *Plinie*, among many false and frivolous conceits, some true and profitable notes: which being found agreeable to experience, I have here and there in this Treatise, as the matter requireth, for ornament and authoritie inserted. But the later Writers, imitating the ancient where they thought good, chusing some of their directions, and refusing o-

thers,

The Preface to the Reader.

thers, doe, for the most part, unluckily light upon the worse: so that, being compared, they are no way match able unto them; whom by the advantage of time they might have surpassed. Among which *Georgius Pictorius* a learned Physician deserveth best, as having taken most paines in perusing the ancient Authors, and gathering their matter into his method. Whom on T.H. of *London* translating word for word into English, as well as he could, concealing the Authors name, adventured to publish in his owne name. These and the like when a Scholar hath thoroughly read, hee thinketh himselfe thoroughly instructed in these mysteries: but when he commeth abroad to put his reading in practise, every silly woman is ready to deride his learned ignorance.

Wherefore considering how great the ventue and efficacie of the fruit of Bees is, both for the preserving, and restoring of mans health, I thought it not amisse to spend some by-time for my recreation, in searching out their nature and properties, their helpes and hinderances, that I might know how to doe good unto them, which are so good for us, and what is the due and right ordering of these delightfull, profitable, and necessary creatures. And having to my contentment, though to my cost, in some sort obtained my desire, I was incited, even by the rule of charitie, to communicate that to my neighbours and country-men, which I have since found so beneficiall to my selfe: so that the Reader may now freely reape the fruit of that, which the Author hath deerely sowed unto him.

The Philosopher intreating of the breeding of Bees, professeth himselfe uncertaine of their sex: and therefore, willing in this uncertaintie to grace so worthy a creature with the worthier title, he every where calleth their governour *Daciveus, Rex*. As many as followed him, searching no farther than he did, were content to say as he said. So that I am in-

V.c.10.p.3.

forced

De generat. an.1.3.c.10.

The Preface to the Reader.

V.c.4.n.11

forced (unlesse I will chuse rather to offend in *rebus*, than in *vocibus*) by their leave and thine (learned Reader) to straine the ordinaire signification of the word *Rex*, and in such places, to translate it *Queene*, for the males heere beare no sway at all, this being an *Amazonian or feminine* kingdome. *v.*

V.c.4.n.11.

In distinguishing the times of the yeere, I use the Astronomically months, as most naturall and fitting to my purpose. *v.* Where note that by the name of each moneth, is commonly understood the first day of the same moneth, (namely, wheresoever this preposition *At*, is set before it) except onely where it followeth, *In*, or *After*, or otherwise the sense doth plainly shew that it is spoken of the whole Moneth.

When you have once, for your satisfaction, perused this Booke, you need not afterward seeke farre for anything therein, whereof you doubt: The *Index* of the Chapters or Contents of the Booke; and of the Marginall notes, or Contents of the Chapters will readily direct you. For example, if you would know the Spleeting of Hives, or the manner of Hiving Bees; looking into the *Index* of the Chapters, you shall perceive the one to appertaine to the Third, and the other to the Fifth; and running over the Contents of either Chapter, you shall finde the first to be the Tenth note, and the other the 53. Then turning to these Marginall Notes in the said Chapters, you have in the Text over against them your desire.

Note also, that whereas you have in the Margin, with these Marginall Notes, certaine References unto other places of the Booke, for further explanation of those places against which they stand; *v.* signifieth *vide*, or *See*, *c* with his number the Chapter, and *n.* with his number the Marginall Note. But if *n.* follow *v.* without *c*; then doth it note some Note of the same Chapter.

I am

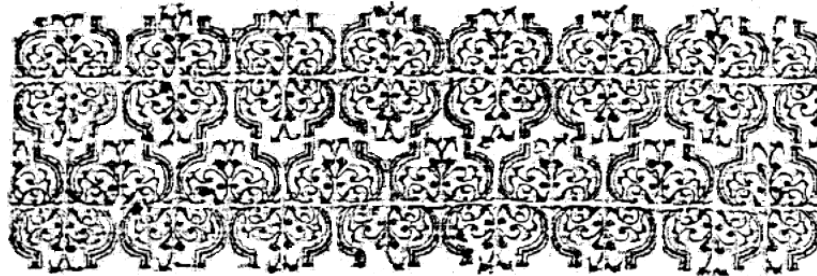
The Preface to the Reader.

I am out of doubt that this Booke of Bees will in his Infancie lie hidden in obscuritie, as the Booke of *Tropes* and *Figures* did for a while goe unregarded, without friends or acquaintance: but as that did by little and little insinuate it selfe into the love and liking of many Schooles, yea of the Universitie it selfe, where it hath beene both privately and publikely read; (a favour, which this Mother doth seldome afford to hir owne Children, lest haply she should seeme too fond overthem:) so this will in time travell into the most remote parts of this great kingdome of Great *Britaine*, and be entertained of all sorts both learned and unlearned: although the *Muses Birds* are fittest for the *Muses*, and the knowledge of their long-hidden secrets was chiefly published for the *Muses* friends. *Quibus me, quicquid fum, & studia mea dico. Wotton.* May 30, 1623.

CHAR: BUTLER

A

Ad



Ad Authorem.



*Va natura Apibus, quamembra, foientia, sensus,
Virtutes, atas, ingenium, pietus,
Quaftatio, & Sedes, soboles, examina, tecta,
His hac condendi promptus ubia modus;*

*Qua princeps, populus, regimen, respublica, mores,
Qma fint arma, bostes, pralia, castra, duces,
Quam clericampos gressis, sylvasg, peragrant,
Qua cellas fingunt arte, labore replent,
Quam prosint hominum genericoelestia dona.
Vtquemagis profint quo moderanda modo;
Perte miranda baclevium spectacularcrum
Mystica tot seclis clausa reclusa patent.*

*Aut a consilys Apibus, Butlere, fuisti,
Aut a consilus est Apis ipsatus.*

When I had view'd this Common-wealth of Bees,
Observ'd their *lives*, their *Art*, and their Degrees:
As: how, beside their painefull *Vulgar* ones,
They have their *Prince*, their *Captaines*, and their Drones:
How they *Agree*; how temp'ratly they *Feed*;
How curiously they *Build*; how chaftly *Breed*;
How seriously their *Businesse* they intend;
How stoutly they their *Common* good defend;

How

How timely their *Provisions* are provided;
 How orderly their *Labors* are divided;
 What *Vertures* patterns, and what grounds of *Art*,
 What *Pleasures*, and what *Profits* they impart:
 When these, with all those other things I minde
 Which in this *Booke*, concerning Bees, I finde:
 Me thinkes, there is not halfe that worth in *Mee*,
 Which I have apprehended in a *Bee*,
 And that the *Pismere*, and these *Hony-flies*,
 Instruct us better to Philosophize,
 Than all those tedious *Volumes*, which, as yet,
 Are least unto us by meere *Humane-wit*.
 For, whereas those but only *Rules* doe give;
 These by *Examples* teach us how to live.
 Great *God Almighty*! In they pretty *Bee*,
 Mine Eie (as written in small letters) sees
 An *Abstract* of the *Wisdome*, *Power*, and *Love*,
 Which is imprinted on the *Heav'ns* above
 In larger *Volumes*, for their cies to see,
 That in such *little prints* behold not Thee.
 And in this *Workmanship* (oh Lord) of thine,
 I praise thy *Wisdome* and thy *Power* Divine.
 A *Praise* deserves this *Author*: who hath chose
 So well his *Times* of *Leisure* to dispose;
 And in that *Recreation* to delight,
 Which honour *God*, and *us* advantage might.
 For, since our humane weakenesse doth require,
 That in our serioust *Labours* we retire;
 (Because unlesse the String be sometimes slacke
 The strongest Bow will have the feeblest backe)
 What *Recreation* better can befit
 Our grave *Devines*; than (when the *Holywrit*
 Is laid aside) in *Gods* great booke of *Creatures*
 To reade his *Wisdome*, and their usefull *Natures*?
 Thus doth our *Author*. And, not only thus;
 But, like his *Bees*, make hony too for us.
 And is contented that, to helpe us thrive,
 We should partake the profit of his *Hive*.

r which (*my share*) I thanke him: and for those
The *Muses-Birds*; whose nature here he showes.
And mauger such as will his *Paines* contemne,
The *Muses* thus, by me, doe honour them.

GEORGE WITHER.



Ad Carolum Butler.

*Antemele chartis prompsisti, ut Rhetor, apinum,
At nunc mellitae promis, ut Histor, apes.
Incipis ex apibus, sed & in mel definis ipsum:
Shrviter inceptum suavius exit opus.*

WARNERUS SOUTH.





The Chapters, or the Contents of *this* Booke.

- M**Y Booke of Bees I divide into ten Chapters.
1. The First, of the nature and properties of Bees, and of their Queen.
 2. The second, of the Bee-garden, and Seats for the Hives.
 3. The third, of the Hives, and the Dressing of them.
 4. The fourth, of the Breeding of Bees, and of the Drone.
 5. The fift, of their Swarming, and the Hiving of them.
 6. The sixt, of their Worke.
 7. The seventh, of their Enemies,
 8. The eighth, of Feeding them.
 9. The ninth, of Removing them.
 10. The tenth, of the Fruit and Profit of them.

The notes or the Contents of The first Chapter, concerning the Nature and properties of Bees.

- | | |
|--|--------------------------------------|
| B ees yeeld great profit with small cost. | 19 Hir feet. |
| 2 Every country fit for Bees | 20 Hir two weapons: |
| 4 Bees have a Common-wealth: | 21 Hir fangs commonly used |
| 5 Their working, watching, fighting | against insecta. |
| Dwelling, diet, wealth, and youngures | 22 Hir speere sometime. |
| Are all in common | 23 Stinging present death to Bees |
| 6 Bees always loyall to their Sovereigne | 24 The speares commonly used |
| 7 Bees endure no government, but a | against other creatures. |
| Monarchie. | 25 Haire and feathers cause the |
| 8 A memorable experiment | Bees to sting. |
| 9 The description of the Queene-Bee | 26 Wooll and woollen do nottend |
| 10 Bees have also inferiour Governours or | them. |
| 11 Which are knowe by peculiar markes | 27 Fusiian, leather, and Velvet |
| 12 Two sorts of Bees | naught among bees. |
| 13 The parts of a Bee | 28 The Bees in their anger aimeat |
| 14 Hir hornes. | the head. |
| 15 Hir eyes | 29 When any is strong, the |
| 16 Hir fanges | company must begone. |
| 17 Hir tongue, with the parts of it they sting. | 30 The Bees have the worst, when |
| 18 Hir four wings | 31 They lose their sting and entrals |
| | and consequently their ives. |
| | 32 The speare, of it selfe, peiercth |
| | deepe when bee the is gone |

- 33 How to prevent the pain & swelling
- 34 Nothing but Time can cure their stinging.
- 35 What things the Bee-master must avoid.
- 36 The six properties of a Bee-master
- 37 Safer to walke then to stand among Bees.
- 38 The fittest time to stirre about Bees.
- 39 In the heat of the day they art most angry
- 40 How to be armed when the Bees are angry.
- 41 Bees dangerous to cattell.
- 42 The Bees Senses.
43. Their fight dimme.
- 44 Their smelling very quicke.
- 45 Hearing and feeling
- 46 Tasting.
- 47 Their Vertues.
- 48 Fortitude.
- 49 Prudence and knowledge.
- 50 A strange tale concerning the knowledge and devotion of Bees.
- 51 Temperance.
- 52 Justice.
- 53 Chastity.
- 54 Cleanlinesse.
- 55 The age of Bees.
- 56 The difference between the young Bees and Old.
- 57 The office of the young Bees.
- 58 And of the old.
- 59 Bees want estsoons to play.
- 60 They are soone kild with cold.
- 61 How to revive them.
- 62 The Bees excellencies
- 63 Bees a chiefe exemplar of the divine power and wisdom.

The Contents of the second Chapter,
concerning the beegarden, with seats
for the hive.

- 1 Of five things require in a Bee garden,

the first is, that it be neigh at hand.
- 2 That it be safely fenced from cattell and winds.

- 3 The north & east fences should be high.
- 4 The South and West fence must be also good,
but not so high as to hide the sunne from the Hives.
- 5 In rough winds the Bees need a skreene
- 6 That it be sweet.
- 7 Neither very cold in winter, nor hot in Summer.
- 8 A grassie ground is best, but kept motte and dry.
- 9 Beset with trees and bushes
- 10 Two sorts of Seats
- 11 The benches no so good as single stooles
- 12 Swarmes may be set on Benches.
- 13 Woodden Stools better than they of stone
- 14 The size of stooles.
- 15 Which way the stooles should be set.
- 16 How neere to each other.
- 17 How neere to the fences.
- 18 *annus climaeticus*
- 19 The Bee Register
- 20 The stooles height.
- 21 How to be footed.

The Contents of the third Chapter,

Concerning the Hives, and the Dressing of them,
both before and after Hiving.

- 1 Two sorts of Hives
- 2 Strawne Hives with their inconeniencies and remedies.
- 3 Wicker hives with their inconeniencies and remedies.
- 4 Strawne Hives best.
- 5 The fashion of Hives.
- 6 The size of hives.
- 7 When Hives are to be made & provided.
- 8 How Hives are to be dressed before they receive the swarmes.
- 9 The pruning of Hives.
- 10 The spraying or spleeting of them.
- 11 The making of the Cop, and of the Spleets.
- 12 The seasoning of them.
- 13 The seasoning of an old Hive.
- 14 How Hives are to be ordered when the Bees are in them.

- 15 The Hives alwaies will hackled.
- 16 How to make a Hackle.
- 17 The Cap of two sorts.
- 18 The wreathed Cap.
- 19 The platted Cap.
- 20 The bignesse of the Hackle.
- 21 The length of it.
- 22 The Belt or garth.
- 23 The Hackle now and then to be taken off.
- 24 The Hives alwaies close cloomed.
- 25 Then seldome to be moved.
- 26 How a Hive lifted up is to be set downe againe.
- 27 The Hive-doore.
- 28 The Gate or Summer-doore.
- 29 Of the doore posts and the use of them.
- 30 The Winter-doore, or Wicket.
- 31 The use of it.
- 32 The Barre.
- 33 The use of it.
- 34 The Settle.
- 35 How to order the Bee-hives throughout the yeare.
- 36 The Moneths and Quarters of the Melissaeae year.
- 37 SUMMER.
- 38 In GEMINI set the Doores wide open.
- 39 CANCER.
- 40 To make the Bees swarme.
- 41 To keep them from swarming.
- 42 LEO
- 43 How and when to kill the Drones.
- 44 HARVEST
- 45 VIRGO
- 46 To keepe the weaker hives from robbing.
- 47 Set up the Winter-doores.
- 48 And keepe them shut till they offer goe abroad.
- 49 The reared stalls now to be set downe againe.
- 50 In Virgo try whether the Bees will live.
- 51 Now take the Combes.
- 52 LIBRA
- 53 Try them againe in libra also.
- 54 Now set up the Wickets to the best & keepe the rest stout till the till the Bees offer to goe abroad.
- 55 SCORPIO
- 56 Continue the shutting and opening of the Wickets this till the Bees offer to goe abroad. this moneth also.

Must move this to proper place from fhtableofcontents3

- 57 How to dresse the Hives for winter
- 58 WINTER

- 59 SAGIT, CAPRIO, AQVAR.
Three full moneths.
- 60 How the Bees spend their time in them.
- 61 The first sharpe weather in Capr. Shut the Bees
in.
- 62 And in pleasant weather let them loose, If it may be, for a fortnight.
- 63 The SPRING.
- 64 PISCES.
- 65 The first faire day in, Pisces, set the Bees at
Liberty.
- 66 Now dresse their Troughs.
- 67 Cleanse the Stools.
- 68 And deed or drive light stalls.
- 69 ARIES.
- 70 The second chiefe robbing time.
- 71 In TAVRVS, remove the Barres
- 72 In GEMINI, the Winter-doores.

The Contents of the fourth Chapter, Concerning the Breeding of Bees, and concerning the Drone.

- 1 The Drone no labourer.
- 2 Divers opinions of the Drones originall.
- 3 The Drone is the Male-Bee.
- 4 Divers reasons proving the Drone to be the
Male.
The first reason is, that they are suffered in
breeding-time onely.
- 5 The second reason is, that the Drones being
taken away in breeding-time, the Bees breed no
more.
- 6 The third reason is, that they are bred by the
Bees.
- 7 The fourth reason is, that the Wasps and Dorres,
which are their males.
- 8 The breeding of Wasps by Drones.

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- 9 The breeding of Drones by Drones.
- 10 The fifth reason is the apparent signes of their Sex.
- 11 Aristotles objections answered.
- 12 When the Bees begin to breed.
- 13 The chiefe time of breeding.
- 14 The first breed are females.
- 15 The manner of their breeding.
- 16 The Bee seed is first turned into a worme.
- 17 The Worme being dead groweth to the shape of a Bee, and then liveth againe.
- 18 The breeding of the Lady-Bees.
- 19 When the Drones are bred.
- 20 When they come broad.
- 21 Two uses of the Drones.
- 22 Where they lie.
- 23 The male Bees are subjects to the females.
- 24 When the Bees leave breeding, and beat away their Drones.
- 25 The Bees compared to the Amazons.
- 26 They rid not their Drones all at once.
- 27 When forward stalls begin.
- 28 When the backward.
- 29 When full stocks that have not swarmed.
- 30 When those that are over swarmed.
- 31 Sometime the Bees cast out even the white cephens.
- 32 Timly ridding of Drones a good sign.
- 33 Sometimes they rid their Drones in the Spring.
- 34 And afterward breed new againe.
- 35 Sometime it is good to helpe the Bees in this worke.

The Contents of the fifth Chapter, concerning the Swarming of Bees, and the Hiving of them.

- 1 The parts of a swarme.
- 2 When you may see the Queen-Bee.
- 3 The swarme no younger then the flocke.
- 4 Many Drones in a swarm a good signe.
- 5 A kinde Spring for swarmes.
- 6 Swarming weather.

7. The swarming houres.
- 8 The two swarming moneths.

- 9 Rathe swarmes
- 10 Late swarmes.
- 11 Black-berie swarmes are seldom to
be kept.
- 12 A prime swarm & an after swarme.
- 13 A stall may case foure times.
- 14 Divers causes of breaking the prime
swarme.
- 15 One prime swarm worth two after
swarms.
- 16 The vulgar Bees appoint the rising
of the fore swarmes, and that upon
foure grounds.
- 17 Five signes of the first swarming.
- 18 The signes for present swarming.
- 19 To lie forth continually in a signe
they will not swarme
- 20 The causes of their lying forth.
- 21 The remedy and means to make
them swarme.
- 22 What is to be done to these that by
no means will swarme.
- 23 How to replenish an over-Swarme.
- 24 How to double a stall.
- 25 How to drive all the Bees into the
new hive, and so to take the old.
- 26 The signes of after-swarms.
- 27 The rising of the after-swarms is
appointed by the Rulers.
- 28 The Bees Musicke.
- 29 The Princes part.
- 30 The Queenes part.
- 31 The other ladies parts.
- 32 In the Bees song are the grounds of
musicke.
- 33 Before swarming the voices come
downe to the stoole.
- 34 The manner of their swarms.
- 35 The prime swarm being broken,
the next may call and swarme
within the eighth day.
- 36 All the swarms of one hive come
within a fortnight.
- 37 What use there is of tinging the
swarm.
- 38 What to doe if the swarm bee
way-ward.

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- 39 Some swarmes provide them houses
beforehand.
- 40 And then they flie away directly to
the place.
- 41 Vacun alveria stent Tmper paratain
Apiarie.
- 42 The hiving of Bees.
- 43 When they are to be hived.
- 44 The token of their flying away after
they bee settled.
- 45 How to sit the Hives to the
swames.
- 46 Better to under-hive a stall then to
over hive him.
- 47 Three things requisite to hiving.
- 48 The Mantle.
- 49 The single Rest.
- 50 The double rest.
- 51 The brush.
- 52 What the Hiver Must doe.
- 53 The manner of Hiving.
- 54 Four meanes of hiving a swarme.
- 55 How to hive a Swarm that lighteth
upon a bough.
- 56 Either high.
- 57 Or low.
- 58 How if it light upon a high tree.
- 59 How if upon the body of a tree.
- 60 How if it light upon the top of
anything.
- 61 How if it light in the middle of a
dead hedge.
- 62 How if it light on some hollow
side of a shub or tree.
- 63 How if it flie into a hollow tree.
- 64 How if it light upon another Hive.
- 65 The swarme is alwaies to be kept
together, lest the Bees kill one an
other.
- 66 The swarme to be set neere the
lighting place.
- 67 What to doe if a swarm part.
- 68 Uniting of swarms is profitable.
- 69 The manner of uniting.
- 70 Another way.
- 71 Two speciall inconveniences to bee
avoided in this worke.
- 72 1. Superfluous multitude.
- 73 2. Civill Warre.
- 74 To prevent the first.
- 75 To prevent the second.
- 76 When most danger is.
- 77 A storie of a deadly feud.
- 78 The causes of a swarmes going
home againe.
- 79 How to stay them.
- 80 How to keepe them from other
hives.

- 81 Set not a swarm neere an others
hiving place.
- 82 What to do when the swarm is new
hived.
- 83 How to remove it in the evening.
84. How to set it on his seat.
- 85 How to use it in the morning.
- 86 Foule weather the first day doth
much discourages swarme.
- 87 Foule weather continuing doth make
it droupe and die.
- 88 A swarme may live six daies without
Honie.
- 89 How to prevent the drouping and
death of a swarme.
- 90 How to cure a drouping swarme.

The Contents of the sixt Chapter, Concerning the Bees worke.

- 1 Bees most industrious creatures.
- 2 In three moneths they cannot worke.
- 3 All the yeare after they lose no time.
- 4 Three fruits of Bees Labour.
- 5 The first and ground of all is Wax.
- 6 How wax is gathered and wrought.
7. How you may see the working of the combs.
- 8 How much wax they bring at once
- 9 The admirable Architecture of their
combs and cells.
- 10 The Drone combe.
- 11 The Queenes cells are built single in
divers places.
- 12 In fashion round.
- 13 The common error anemt these cells.
- 14 The combes doe often change their hue.
- 15 Wax is gathered only in foure months.
- 16 Honey is the second fruit is gathered
in 9 moneths.
- 17 Two sorts of Hony.
- 18 How Ambrosia or grosse honie is
gathered.
- 19 The Ambrosia, is the Schadons food, as
water their drinke.
- 20 Being kept, it is some corrupted.
- 21 And then becommeth most unsavory
stopping.
- 22 Much stopping maketh the Bees
forsake their hives.
- 23 This Ambrosia is commonly taken for
wax.
- 24 Which errour is disprooved by sense.
- 25 And reason.
- 26 And by authority.

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- .
- 27 How the pure Nectar is gathered.
 - 28 Two sorts of Nectar.
 - 29 Live-hony of two sorts.
 - 30 The finest ordinary is a kinde of Virgin-hony
 - 31 All hony courser or finer, according to the soile.
 - 32 The full cells they close with wax.
 - 33 Nectar and Ambrosia made of many samples,
whereof each moneth yeeldet variety.
 - 34 Dandelion continueth longest.
 - 35 What Pisces yeeldeth.
 - 36 What Aries.
 - 37 Taurus
 - 38 Gemini
 - 39 Cancer.
 - 40 Of Honie-dewes.
 - 41 The Bees worke most earnestly in a Hony-dew.
 - 42 What the Honie-dew is.
 - 43 When the Honie-dewes are most frequent.
 - 44 The time when they fall.
 - 45 What Leo yeeldeth.
 - 46 Virgo.
 - 47 Libra.
 - 48 Scorpio.
 - 49 The Bees gather but of one kind of flower in one
voyage.
 - 50 They gather honie out of poison.
 - 51 What store of Honie a stall may have.
 - 52 Bees have necessary use of water.
 - 53 Chiefly for their breed.
 - 54 The making of the watring-place.
 - 55 How to finde wild Bees.
 - 56 Bee-troughs in Gardens profitable.
 - 57 The forme and size of a Bee-trough.
 - 58 The trough cover, and the use of it.
 - 59 The seasoning and ordering of the Bee-trough.
 - 60 Bee-troughs of stone.
 - 61 Sometime they water in the streets.
 - 62 And after a showre, all about the garden.

The Contents of the seventh Chapter,
Concerning the Bees enemies.

1. The Bees enemies are many.
- 2 1. The Mouse.
- 3 Remedies against the Mouse.
- 4 2. The Wood-pecker.
- 5 3. The Titmouse.
- 6 The subtill practice of the Titmouse.

7. 4. The Swallow.
- 8 Remedie against the Titmouse and Swallow.
- 9 5. The Hornet.
- 10 The Hornets sting is dangerous.
- 11 6. The waspe.
12. When she feedeth upon Bees.
- 13 When she stealeth honie.
- 14 When they weare away.
- 15 In what yeere the Wasps are few.
- 16 In what yeere the abound.
- 17 Remedies against the Wasps.
- 18 7. The Moth.
- 19 8. The Snake
- 20 What harme the Moth doth.
- 21 9. The Emet.
- 22 10. The Spider.
- 23 11. The Toad.
- 24 12. The Frog.
- 25 13. The Bee the greatest enemy.
- 26 Robbing or fighting of Bees in winter and summer but little.
- 27 In the spring more earnest.
- 28 The most spoile is made in Harvest.
- 29 What stalls are most subject to robbing.
- 30 What Bees are the robbers.
- 31 How they begin the fray.
- 32 Theeves of divers Hives agree together in robbing.
- 33 The description of the Bees battell.
- 34 In the battell is heard a sound like a drum and a Fluit.
- 35 The assault of the enemy.
- 36 The defence of the besieged.
- 37 Neither side willing to yeeld.
- 38 The exercise of the defendants when the enemy retireth.
- 39 The Wasp like Vultures.
- 40 The battell ended they bury their dead.
- 41 The second assault of the enemy.
- 42 When the true Bees yeeld, they goe with the Conquerours.
- 43 Remedies.
- 44 To prevent robbing.
- 45 And to stay it, if you finde it in time.
- 46 When it is too late, and what is then to be done.
- 47 Robbing hurtfull also to the Theeves.
- 48 In what yeers robbing is most rife.
- 49 Bees kil poore swarms that wander in the spring.

Table 7

- 50 To prevent the death of poore swarmes.
- 51 Many killed in swarming.
52. The Weather
- 53 In Summer heat hurteth the Bees.
- 54 In Winter the Sun-shine in frost and snow
- 55 The Remedy.
- 56 Also the Easterne Winds and great frosts.
- 57 And the cold continued maketh them sicke.
- 58 The raine rotteth the Hives.
- 59 The Remedy.
- 60 The greatest losse by weather is in the spring:
for then infinite multitudes are beaten downe,
laden and weary, with stormes and wind.
- 61 At the rising of a Cloud they post home.
- 62 Yet will they goe a field in them midst of a
warne showre.
- 63 How to restore Bees to life.
- 64 The wind causeth many to be drowned.
- 65 The Remedie.
- 66 The last and worst enemy of all.

The Contents of the eighth Chapter, Concerning the Feeding of Bees.

- 1 In seven moneths the Bees spend of the flocke.
- 2 Three sorts of swarmes diversly provided.
- 3 The first sort.
- 4 The second.
- 5 The third onely are to be fed.
- 6 Stockes out of provfe never to be fed.
- 7 Try your swarmes in Virgo.
- 8 What quantity of Honie is requisite.
- 9 Try againe in Pisces or Aries.
- 10 The Bees food.
- 11 Private feeding.
- 12 Carelesse feeding is starving.
- 13 Publike feeding.
- 14 The first time of feeding
- 15 The second time of feeding
- 16 The third time of feeding

The Contents of the ninth Chapter, Concerning the Removing of Bees.

- 1 Five things to be avoided in removing Bees.
- 2 Remove alwaies in faire weather.
- 3 Not in Winter.
- 4 Nor in Summer

- 5 The Autumn & Spring are fit times for removing.
- 6 Libra the best moneth in all the yeere.
- 7 When to remove a swarme.
- 8 The time of the day, and manner of removing.
- 9 The usuall manner of removing.
- 10 Which is fit for poore stalls.
- 11 How a good stall is to be carried.
- 12 How a bad.
- 13 What to doe when they are brought home.
- 14 And what when they are seated.

The Contents of the tenth Chapter,

Part. I. Concerning the taking the combs

- 1 The first kinde of Vindemiation.
- 2 The best time for killing Bees.
- 3 What stalls are to be taken.
- 4 The manner of killing Bees.
- 5 Sundry meanes to kill Bees.
- 6 The Bees being dead, house the Hive.
- 7 The second kinde of Vindemiation.
- 8 The time and manner of Driving Bees.
- 9 The Driving of Bees unprofitable.
- 10 The Home taken is little and naught.
- 11 And the Bees driven, few and poore.
- 12 Another kinde of driving.
- 13 At two times.
- 14 Driving in Virgo.
- 15 The manner of driving in Virgo.
- 16 How to helpe those driven Bees that want.
- 17 Driving in Pisces.
- 18 How to revive those that are chilled in driving.
- 19 A third kind of Vindemiation.
- 20 Exsection used at two times.
- 21 What part to be exected is uncertaine.
- 22 Exsection, ancient, but not profitable.
- 23 Neither first.
- 24 Nor second.
- 25 Specially for our Country.

Part 2. Concerning the trying of Honie and Wax, and the making of Methe.

- 1 The Combes to be divided into three parts.
- 2 Necessary Instruments being first provided.
- 3 The dressing of the first part for Honie in two shoots.

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- 4 The first shoot for fine ordinary Honie.
- 5 Or for Virgin-Honie, which is most fine.
- 6 Two sorts of Virgin-honie.
- 7 Corre Honie got out by water or fire.
- 8 The second shoot for course Honie.
- 9 The dressing of the first part in one shoot.
- 10 The vulgar Honie grosly handled.
- 11 The working of Honie, and how to helpe it.
- 12 Divers Countries yeeld divers kinds of Honie.
- 13 How to know good Honie.
- 14 Good Honie with standing waxeth hard and white.
- 15 The best of the Honie is in the bottome.
- 16 The dressing of the second part for Meth.
- 17 How to make the Meth-liquor in two shoots.
- 18 Two sorts of Hydromel, Mede and Metheglen.
- 19 When the liquor is strong enough for Mede.
- 20 What proportion of water to Honie.
- 21 How and how long the Must must be boiled.
- 22 The receit of Spices.
- 23 How the Must is to be used when it is boiled.
- 24 The making of Methaeglen.
- 25 The Queens Methaeglen.
- 26 The dressing of the third part for wax.
- 27 First boile it with water.
- 28 The straine it by pressing.
- 29 Next make the Wax into Balls.
- 30 Last of all melt it and cast it in a mould.
- 31 And keepe th cake from cracking.
- 32 How to know good Wax.

Part 3. Concerning the vertues of Honie,
Meth, and Wax.

- 1 The properties and vertues of Honie.
- 2 Against both outward and inward griefes.
- 3 For whom Honies is best.
- 4 English Home

- 5 To much honie unholosome.
- 6 The differnt operation of raw and boiled Honie.
- 7 Two waies to clarifie hony.

- 8 The quintessence of Hony.
- 9 The vertues of it.
- 10 The making of it.
- 11 The vertue of Honie in Confections.
- 12 Marmalade made of honie.
- 13 Marchpane.
14. Preserves.
- 15 Conserves.
- 16 Syrups.
- 17 Honie to be preferred before Sugar.
- 18 Hony good in outward Medicines.
- 19 A salve for an old sore.
- 20 An other.
- 21 The properties and vertues of Mede
and Methaeglen.
- 22 Meth much used of the ancient Britaines.
- 23 Whence Meth and Methaeglen have
their name.
- 24 The properties and vertues of naturall Wax.
- 25 Artificiall Wax.
- 26 To make white Wax.
- 27 To make red Wax.
- 28 To make greene Wax.
- 29 Oile of Wax.
- 30 The vertues of it.
- 31 The making of oile of Wax.
- 32 The vertue of Wax in compound
medicines.
- 33 A Cerecloth.
- 34 A Cerecloth to refresh the Sinewes and
Mussles.
- 35 A Cerecloth to comfort the stomacke.
- 37 A Cerecloth for the Wormes.
- 38 An other.

The



THE FEMININE MONARCHIE,

OR,
The Historie Of BEES.

CHAP. I.

*Of the Nature and properties of Bees, and of
Their Queene.*



Mong all the Creatures which our boundtifull God hath made for the use and service of man, in respect of great profit with smal cost, of their ubiquitie or being in all Countries, and of their continuall labour and comly order, the Bees are most to be admired.

For first with the provision of a Hive and some little care and attendance, which need be no hindrance to other businesse, but rather a delightfull recreation amid the same; them bring in store of sweet delicates, most wholesome both for meat and medicine, *Fructus apum ab omnibus desideratur & quaritur: nec pro personarum, diversitate discernitur, sed indiscreta suigratiaregibus pariter ac mediocribus equali suavita te dulcescit: nec solum voluptati, sed etium saluticst* And an other faith, *Mille ad usus vita laborem tolerant & opera conficiunt*: as they well know, who know the rare vertues of Honie and Waxe: a taste whereof I will give you in the last chapter.

B

Secondly,

1
Bees yeeld great
profit with small
cost

Ambrosius
Hexamer. L - 5.
Cap. 21.

Plin. Nat. hist.
I.II.C.5.

C. I.

Of the Nature and properties of Bees,

2.
Every country fit
for Bees

Secondly, whereas *non omnis fert omnia telus*, some Countrey yeeldeth one fruit, some an other; some beareth one graine, some an other; some breedeth on kinde of Cattle, some an other; there is no ground (of what nature foever it be, whether it be hot or cold, wet or dry, hill or dale, woodland or champian, meddow, pasture, or arable: in a word, whether it be battle or barren) which yeeldeth not matter for the Bee to worke upon.

3.
Bees abhorre
Idlenesse.

Plin. Nat. hist.
I.II.c.5.

And thirdly, in their labour and order at home and abroad they are so admirable, that they may be patterne unto men, both of the one and of the other. For unlesse they be let by weather, weaknesse, or want of matter to worke on, their labour never ceaseth. In admiration where of, one faith, *Quos efficacia industriag tanta comparemus nervos? Quas vires? Quos ratione medius fidius viros?* And for their order, is such, that they may well bee said to have a Commonwealth, since all that they doe is in common, without any private respect. *Nihil norunt nisi commune:* They worke for all, they watch for all, they fight for all. In their private quarrels, when they are from the Hive or common treasury, howsoever you use them, they will not resist, if by any meanes they can get away. *Cum ruri sint, nec sibi invicem, nec ullis alijs nocent; at vere apud suos alvesopugnant acerrime.* Their common care both of their wealth and young ones. *Sola in emnigenere animaxtium communem omnibus sobolem habent, unam omnes incolunt mansionem, xnius patria clauduntur limine, in commune omnibus labor, communis cibus, communis ope ratio, communis usus, & fructusest.* And all this under the govenment of one Monarch, of whom above all things they have a principall care and respect, loving, reverencing and obeying her v: in all things.

4.
Bees have a
Common-wealth

Nat. hist. I.II.c.5
5.
Their working,
watching, fighting,
dwelling, dyet,
wealth, and young
ones are all in
common.
Arist. Hist. Anim.
Lib. 9. Cap.40.
Ambr. Hex. Lib. 5.
Cap. 21 & Basil.
Hexam. Homil. 5.

6.
Bees alwaies loyall
to their Sovereigne.
V. Praefat.
Virg. Georg.
V.c.u.n.27 & 42.

*Preterea regemnon sic Egyptus & ingens
Lydia, nec populi Parthorum aut Medus Hydaspes
Observant: rege incolumi mens ombibus unaest:
Amisso rupere fidem; construatag mella
Diripuer ipsa v: & erates solvere favorum:
Ille operum custos, illpsm admirantur: & omnes*

Circumstant

and of their Queen

*Circumstant freusitu denso, stipantg frequentes,
Et sape attoiunt humeris, & corporabello*

Objectant, pulchramg, petunt per vulner a mortem.

If she goe forth so solace her selfe, (as sometime she will) many of them attend her, guarding hir person before and behinde; they which come forth before her, ever now and then returning, and looking backe, and making withall an extraordinarie noise, as if they spake the language of the Knight Marshal's men, and so away they flye together, and anone in like manner they attend her backe againe. This I may say, because I have seene it: although the Philosopher be of an other minde: *Reges, faith he, numquam foris vi sointur, nisi cum migratur.*

Hist. An. l. 9. Cap.40.

If by hir voyce she bid them goe, they swarme: if being abroad she dislike the weather, or lighting place, they quickly returne home againe: while she cheereth them to battaile they fight, v: while she is well, they are cheerefull about their worke; if she droope and dye, they will never after enjoy their home, but either languish there till they be dead too, or yeelding to the Robbers, v: fly away with them v: *Roge mortuo moeret plebsignava, non cribos convehit, non procedit, tristi tantum marmure glomeratur circa corpus ejus.*

Vid. C.7.n. 35

*V.c.7.n.35
V.c.7.n. 42
Nat. hist. li. II. c. 17.*

7.

Bees endure no government, but a Monarchie

V.c.5.n.46 & 47

8.

A memorable experiment

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But if they have many Princes, as when two flye away with one swarme, or when two swarmes are hived together; they will not be quiet till one of them be cassiered: which sometime they bring downe that evening to the manele, v. where you may finde her covered with a little heape of Bees: otherwise the next day they carie her forth either dead or deadly wounded. Concerning which matter, I will here relate one memorable experiment. Two swarmes being put together, the Bees on both sides, as their manner is, made a murmuring noise, as being discontented with the suddain congresse of Strangers: but knowing wel that the more the merrier, the safer, the warmer, yea, and the better provided; they were quickly made friends. And having agreed which Queene should reigne, and which should die, three or foure Bees brought one of them downe betweene them, pulling and haling her as if they were leading her to execution: which I by chance perceiving, got hold of her by the wings, and with much adoe

tooke.

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C. I.

Of the Nature and properties of Bees,

tooke her from them. After a while (to see what would come of it) I put her into the Hive againe: no sooner was she among them, but the tumult began afresh, greater than before, and presently they fell together by the eares, fiecely fighting and killing one another, for the space of more then an houre together: and by no means would cease, untill the poore condemned Queene was brought forth slaine and laid before the doore. Which done, the strife presently ended, and the Bees agreed well together.

Sometime when one swarme is put to another, though they do not fight, yet will they not agree of their choice in two or three daies, keeping their Queenes close on both sides. But then all this while they never bear quiet day nor night, nor once offer to work, untill one of them being deposed, they be united in the other. *Vide plura super hac re c.5.n.74.75.76.*

Likewise if the old Queene bring forth many Princes (as she may have six or seven, yea sometime halfe a score or more, which superfluitie nature affordeth for more suretie, in case some miscarrie) then, lest the multitude of Rulers should distract the unstable Commons into factions, within two daies after the last swarme, yea sometime (when unkinde weather keepeth him in over long) even before he come forth, you shall finde the superfluous Princes dead before the Hive: I have taken eight of them up together brought out of one hive, when two were alreadie gone forth with their swarms. For the Bees abhorre as well Polyarchie, as Anarchie, God having shewed in them unto men, an expresse patterne of A PERFECT MONARCHIE, THE MOST NATURAL AND ABSOLUTE FORME OF GOVERNMENT.

Horm. II. a.

9.
The description of
the Queene Bee.

Οὐκ ἔχουσιν πολυκοιρανίη, ἥς κυρίαρχος ἔσται.

The Queene is a faire and stately Bee, differing from the vulgar both in shape and colour: hir backe is all over of a brighter browne: hir belly even from the top of hir fangs, to the tip of hir traine, is of a sad yellow, somewhat deeper then the richest gold. Shee is longer then a hony-Bee, by one third part, that is, almost an inch long: shee is also bigger then a hony-Bee, but not so bigge as a Drone, although somewhat longer: hir head proportionable, but

that

. C. I.

And of their Queene

that it is more round then the little Bees, by reason hir fangs be shorter: hir tongue not halfe so long as theirs: for whereas they gather with the one Nectar, with the other Ambrosia; v. shee hath no need to use either, being to be maintained, as other Princes, by the labour of hir subjects: hir wings of the same size with a small Bee, and therefore in respect of hir long body, they seeme very short, resembling rather a cloake then a gowne; for they reach but to the middle of hir traine or neither part: hir legges proportionable, and of the colour of hir belly, but her two hind-leggs more yellow: hir nether part so long, and halfe so long as hir upperpart, more picked then a small Bee, having in it four joynts or partitions, and in each joynt a golden barre, in stead of those ee whitish rings which other Bees have at their three partitions. The speere she hath is but little, nor half so long as the other Bees: which, like a Kings sword, is borne rather for shew and authority, then for any other use. For it belongeth to hir subjects as well to fight for her, as to provide for her. *Plinte* writeth thus doubtingly of it: *Non constar inter aubores Rexnullumne solus habeat aculeum, majestate tantum armatus, andederit cum guidem natura, sed is sum ejus illi tantum negaverit: illuid constat imperatorem aculeo non uti.* But *Aristotle* doth truly approve the later opinion, as certaine: *Reges aculeos habent, sed non ut untur. Quociron carcre eos aculeis non nulli existimant.* *Plinie* describeth them thus, *Omnibus forma semperegria, & duploquam cateris major, penua breviores, crura recta, ingressus celsior, in frante macula quodam diademate candicans: Multum etiam nitore a vulgo differunt.* If you desire to see this stately Prince, read *cap. 5.n. 34.* The breeding of her you may see *c.4.n.18.*

Besides their Sovereigne, the Bees have also subordiante Governours and Leaders, not unsrly resembling Captaines and Coronels of Souldiors: For difference from the rest they beare for their crest a tuft or tollell, in some coloured yellow, in some murrey, in manner of a plume; where of some turned downward like an Ostrich-feather, others stand upright like a Hearn top. And of both sorts some are greater

V.c.6.n.17.

Nat. hist.
L.11. cap 17.

Hist.an.1 5.
Cap.21

Nat. hist I II.
c. 16.

10.
Bees have
also
inferiour
Governors or
Captains.

11.
Which are
known by
peculiar
markes.

And

Nat. hist.
Li -II. c.17.

C. I.

Of the Nature and properties of Bees,

Plin. Nat.
hist.
li.II.c.5.

Vir.
Geor.4.

12.
Two sorts
of Bees
Hist.
I.5.c.22.

Hist.I.9.c. 40

Nat. hist. li. II. c
18..

and some lesse, as if there were degrees of those dignities among them. In all other respects they are like to the vulgar. These I thinke are they that *Plinie* meaneth, where he saith, *Circaregem satellites quidam, lictore sque assidue custodes autoritatis*. In lesse then a quarter of an houre you may see three or foure of them come forth of a good stall; but chieflyin *Gemini*, before their continuall labour have worne these ornaments. So that he might well say, *Rempubicam habent, consilia, ac duces*. All which hee that seriously considereth, must with admiration acknowledge that singular wisdom, order, and government in them, which in no other creature, man onely excepted, (if yet to be excepted) is to be found: whence some have inferred a farther matter,

*His equidem signus atque hec exempla sequenti,
Esse apihus partem divikamentis, & haustus
Aethereos dixere--*

Aristotle maketh two sorts of Bees, the one (which is best) short, divers coloured, and round; the other long, like unto waspes. *Optimum genus apum que breves, varia, & in rotuaditatem compactiles; secundaquae longa & vespis similes*. And in another place he putteth a difference betweene wilde and tame; saying, *Differunt inter se apes parentibus nata urbanis, & quae rustico montanoque victu educatis prodirsntt:sunt enim hae sylvestres horridiores aspectu, & iracundiores, & minores, sed opere & labore praestantiores*. Whom *Plinie* followeth almost verbatim: saying, *apes sunt etiam rustica sylvestresq, horrida aspectu, multo iracundiores; sed opere aelabore prastantiores. Urbanarum duo genera: optima breves, varie, & inrotunditatem compactiles; deteriores longa, & qubus similitudo vesparum etiamnum deterrima exys pilosae*. But these differences my experience hath not found: neither doe I see how they can be; seeing the swarmes of tame Bees doe often flie into trees, and so become

wilde; and the swarmes of wilde Bees are not
seldome found, and put into hives. Indeed the
wilde are more angry then the tame: but that is
because they are lesse used to the company of men.
Moreover, there is some difference in the bignesse of
Bees: For they that are loaded seeme greater and longer
then those

that

C. I.

And of their Queene.

that are leere: also the Nymphs, v: when they come first
abroad, are not growne to their full bignesse which
afterward they have, and the old ones doe wither, and
become little againe. V: Likewise in these three ages their
colours also do varie: for in their middle age they are
browne, whereas before they are more pale, v. and at the last
they turne whitish againe. V. But these are differences of
Bees in the same stall, and not of one stall from another,
since these divers sorts are in every stall.

The severall parts of a Bee have their severall uses. Hir
horns growing in the middle of hir forehead, with tow
joynts, one close to the head, the other towards the middle,
so that she can put them forth at full length when shee will,
and draw them in againe close to hir head; are the proper
organum of the sense of feeling; by which, with the least
touch, the Bee so dainely senteth any tangible object: and
therefore they serve to give warning in the darke, and when
she is busie, of any obvious thing quicke or dead that might
offend her.

Hir two cheekes being transparent, like Lanthorne, doe
serve, though immoveable, in stead of Eyes: through with
the species of things visible are concued to the comom
Sense.

For gathering hir provision, shee hath two instruments, hir
fangs and hir tongue: hir fangs in fashion of a paire of
pincers hang not, as the jawes of other things, one over an
other, but side-way one against the other, as is most
convenient for her uses.

Hir tongue is of that length, that hir mouth cannot hold it:
but being doubled between hir fangs under hir chinne, it
reacheth to the neck. It is divided into three parts: whereof
the two outmost serve as a case to cover the third, which

V.e.4.U.20.

V. n. 56.

V.c.4.n.17
V.n. 56

13.
The parts of a Bee

14.
Hir hornes

15.
Hir eyes.

16.
Hir fangs.

17.
Hir tongue, with
the parts of it.

18.
Hir foure wings.

being the chiefe, the Bee in hir worke putteth forth beyond the other, and draweth in againe as shee will. And this third part is likewise parted into three, so that there are five in all.

To set these intruments on worke, Nature hath furnished her with 4 - wings, which swifter then the East-winde, carry her into all the foure coasts of the world, and thence

with

19

Hir feete.

20.

Hir two weapons

21.

Hir fangs commonly used against insecta.

C. I.

Of the Nature and properties of Bees,

22.

Hir speere sometime.

with hir precious lading beare here backe againe, untill hir incessant labour hath worne them out. *V.n.56*

V.n.31

V.c.7.n.36

V.c.7.n.49

Nat.hist.li.21. c.13.

23.

Stinging present death to Bees.

Hir rough and dew-clawed feet apt to take hold at the first touch are in number sixe, that shee may stand fast upon foure, while she useth the other two to wipe hir eyes, hir wings, hir tongue, or any other part, and to convey the gathering of hir fangs to hir thighs. *V. c. 6. N. 18.*

For hir defence she is doubly weaponed. Hir fangs shee useth when she is not much angry, against all *insecta*, as other Bees, Drones, Wasps, &c. therewith pinching and holding them commonly by the legs or wings, and sometime by the hornes: but this is rather a chiding, then a fighting, and a warning, rather then a punishment; though withall sometime she bend her speere against them, as if shee would kill and slay.

Hir speere she is very loth to use, if by any other meanes she can shift hir enemy, as knowing how dangerous it is to hir selfe: for if she chance therewith to strike any hard part, as the brest or shoulder, shee is enforced to leave hir speere behine her, and so she killeth and is killed *v.* with the same stroke. Yet when the Bees are very angry; as namely when they are assaulted with a multitude of robbers at once, *v.* or when in the spring a hungry stall forsaking his owne home presseth into their hive, *v.* they fall so dainly upon them with their poysoned speeres (*Apibus natura cuspides dedit, & quidem ventenatas*) but then they make short worke. For by that time they have put up their weapons, some die presently: other losing the use of their wings tumble on the ground like mad things, untill in a while they lose their lives too: others when they are wounded, runne away in great haste (as having their errand) either drawing on the ground one or moe of their legs, or doubling their nether part toward the ground, or turning the same awry to the one side or the other: but as many as are stricken, within an houre after will not bee able to wag out of the place, and within two or three at the most, they will be quite dead.

I have looked on, while thus they quickly cut off a whole stall, and among the rest, making then do difference, they spared not

the

C. I.

And of their Queene.

the Queen her selfe. After this manner doe they deale with the Drone at the time of the yeere when they will not otherwise be beaten away. *v.c.4.n.24.*

But their speares or stings they use chiefly against things of other sort, as men, beasts, and fowles: which have outwardly some offensive excrement, as haire or feathers, the touch whereof provoketh them to sting: although such stinging be alwaies mortal to themselves (as anone is shewed. *V*) For the skinne having received the sting, holdeth it so fast, that when they would be gone, they leave both it and part of their entrals which are fastened to it. *Aculeum apibus natura dedit ventri consortum.* If they light upon Poultry, although their desire bee to the quicke, if they can quickly come at it; yet will they put forth their speares as soone as they touch the feather: and if they chance to hit the hard part thereof, the sting sticketh fast, as in the skinne; and therefore Goose-wings are naught to be used in the hiving of Bees.

Likewise, if they light upon the haire of your head or beard, (save onely when they come home laden, or the weather is cold) they will sting, if they can reach the skinne; although Wooll and Wollen doe not offend them: and if being otherwise angered, they strike their speares in Woollen, they can easily pull them out againe. But the nap of new Fustian displeaseth them, because it seemeth hairy: and the stuffe is so soft, that it holdeth the sting. Wherefore such apparell is not fit among Bees: as also Leather in Gloves or otherwise, for as soone as they touch it they will strike, if they be any whit mooved, and their speares they cannot recover againe. Velvet in facing of hats or else where, doth anger them as much as any thing, making them strike as soone as they touch it: but it hath not power to hold their speare.

When they are angry, their aime is most commonly at the head, and chiefly about the eies, as knowing that there they may do most harme, for that part swelleth most and longest; and yet I never heard that any ever stung

24.

The speares com-monly
used a-
Ganst other crea-
ures.

25.

Haire and fea-
thers causethe
Bees to sting.
V.n.31
Nat. hist. l.II.
c.18

26.

Wooll and wool
Len doe not of-
fend them.

27.

Fustian, Leather,
And Velvet
Naught among
Bees.

28.

The Bees in their anger
aime at the head.

the verie eye, as if they were forbidden to touch that tender part. But the bare hand

C

29.

When any is stung,
the company must
be gone.

30.

The Bees have the
worst when they
sting.

31.

The lose their sting
and entrals, and
consequently their
lives.

Vig. Geog. Hist. An.
l.g.c.40

32.

The speere of it
selfe pierceth
deeper when the
Bee is gone.

33.

How to prevent
the paine and
swelling

34.

Nothing but time
can cure their
stinging.

C. I.

Of the Nature and properties of Bees,

hand that is not very hairie, they will seldome or never sting, unlesse they be much offended.

When you are stung, or any in the company, yea though a Bee have stiken but your clother, specially in hot weather, you were best be packing as fast as you can: for the other Bees smelling the rancke favour of the poyson cast out with the sting, will come about you as thicke as haile: so that fitly and timely did he expresse the multitude and fiercenesse of his enemye, that said, *They came about me like Bees*. Then is there no way to appease them but fight: the more your resist, the fiercer they are.

They are like unto incorrigible shrewes: there is no dealing with them but by patience: though when they sting they are sure to have the worst. For the wound endangereth neither life nor limb: two nights sleep will take away the swelling, and two minutes the paine, (unlesse it be in very rheumaricke or humorous bodies: of which sort I have knowne some so swollen and disfigured with that little stroke, that you could scarce know them by their favour in five or sixe daies after.) But on the other side, whereas the Waspe, Hornet, and Dorre, doe sting often without any hurt to themselves; the Bees never sting but once, and then she leaueth hir speere and entrals, more or lesse behinde her, *Ammamg in vulnere pinat.* (*Intereunt qua percuss rint, quoniam sine interstiri eruptione aculeus eximi non potest.*) For within foure and twentie houres alfter, or, if much of hir entrals come forth with the sting, within halfe that time, she dieth. But the speere reteining life when the Bee is gone, if it be not presently pulled out, will worke it selfe into the flesh up to the hard end, and so cause the paine and swelling to be both greater and longer. Therefore when you are stung, instantly wipe off the Bee, sting and all and wash the place

with your spittle: so shall you prevent both paine and swelling, which otherwise nothing but time can cure: for the poison is so subtile, that it quickly pierceth the flesh, and the wound so little, that no antidote can follow after: and yet I have heard commended for a remedie, the juyce of Houseleeke, of Rue, of Mallowes, of a Marigold

leafe,

C. I.

and of their Queene.

leafe, of Holyhock and Vineger, of Salt and Vineger, and diuer other things.

Id malva peculiare est, ut imposita ictibus vesperum & apum dolores leuet. Fern. Meth. L.6. cap 4. *Stercus vaccinum vesparum utus sanat, & indite aceto tumores digerit.* Fern. Meth. I.5.cap. 27. Rue drunken with Wine, or rather with Hydromel, or the leaves stamped with Honie and Salt, and laid to the wound, is good against stinging of Bees, Waspes, Hornet, and Scorpions: *Dodocus, L.2. c.83.*

Verum hoc mihi pre cateris probatur remedium. Vt. Primum se quis : ctum senserit, aculeum adhuc epidermidi inhaerentem cum ipsa ape instanter abstergat (nam si paulisper finatur, dum veram cutersi penetraverit; vehementior inde, diutunior, & sanatu difficilior evadet tum dolor tum tumor) dein, quam mox reddi potest, propria vulnus urina malva folia saepinscule proluant, dum subsequens hoc comparetur emplastrum. R. Cardui Beneajcti virentis contriti M.I. Ovi albumenquasi in oleum coagitatum: misce, fiat emplastrum; quod lins retrimentis impositum, vulnere linteo alligetur: ubi aruerit, recens repone: sed vulni nequaquam fricetur.

But if thou wilt have the favour of they Bees that they sting thee not, thou must avoid such things as offend them: thou must not be (1) unchaste or (2) uncleanely: for impuritie and sluttishnesse (themselves being most chaste and neat,) they utterly abhorre: thou must not come among them (3) smelling of sweat,

35.

What things the Bee-master must avoid.

* Which not onely increase-
seth their anger, (specially in
hot weather, v.n. 38) but
inciteth others to take their
parts: and if by striving and
striking you chance to kill
one, the Bees presently
perceiving it by the strong
smell of the humour (for
the smelleth then as if she
had stung v.n. 29. Will be so
eager upon revenge, that by

36.
The six properties
of a Bee- master
37.
Safer to walke,
then to stand
among Bees.

or having a stinking breath, caused either through eating of Leekes,
Onions, Garleeke, and the like; or by any other meanes: the noisom
else whereof is corrected with a cup of Beere: and therefore it is
not good to come among them before you have drunke: thou must
not be given to (4) surfeting and drunkenesse: thou must not
come (5) puffing and blowing unto them, neither hastily stirre
among them, nor * violently defend they selfe when they seeme to
threaten thee; but softly moving they hand before they face,
gently put them by: and lastly,

thou

C 2

38.
The fittest time to
stirre about Bees.

39.
In the heat of
theday they are
Most angry.

40.
How to be armed
when the Bees are
angry.

C. I.

Of the Nature and properties of Bees,

thou must be (6) no Stranger unto them. In a word, thou must be
chaste, cleanly, sweet, sober, quiet, and familiar: so will they love thee,
and know thee from all other.

At any time, when nothing hath angered them, one may boldly walke
along by them: but if hee stand still before them within the space of a
pearch in the heat of the day, it is marvell but one or other spying him
from the Hive, will have a cast at him.

If you have any thing to doe about your hives, the fittest time is in
the morning, when the Bees are new gone abroad and in the evening
before they be come in: for then the weather being coole, and the
company few at home, they are not apt to be quarrelling, unlesse they be
much provoked. Likewise at other times of the day, when the weather is
cold, wet, or windie, they are patient enough.

But about noone in hot weather, and specially when they have tasted
of the Hony-dewes, they are soone angry, and very eager.

But when soever you have occasion to trouble their patience, or to
come among them being troubled, it is better to stand upon your guard,
then to trust to their gentlenesse. For the safeguard of your face (which
they have most mind unto) provide a purs-hood made of course boultering,
to be drawn and knit about your collar: which, for more safetie, is to be
lined against the eminent parts with Wollen cloth. First, cut a peece
about an inch and a halfe broad, and halfe a yard long, to reach round

by the temples and fore-head from one eare to the other: which being sowed in his place, joyne unto it two short peeces of the same bredth under the eyes, for the balls of the cheekes: and then set another peece about the bredth of a shilling against the top of the nose. Instead of this, you may use a Cypres Band or a Boulter, having a Handkerchiefe betweene your fore-head and it, to beare it out from the skinne, and your hat on your head to hold it fast. And if they be so earnest that you feare stinging your hands, put on a paire of wollen cuffes or gloves. When you have on this Helmet and Gantlets, as a man armed at all points, you may boldly deale with them, being out of

the

C. I.

And of their Queene

the danger of their poysoned speares. At other times when they are not angried, a little peece halfe a quarter broad to cover the eyes and parts about them, may serve: for then, though it be in the heat of the day, unlesse they may strike about the eyes, they can not to strike at all.

Unto Cattel which have not the reason by flight or otherwise to save themselves, they are more dangerous. A Horse in the heat of the day looking over a hedge, on the other side whereof was a stall of Bees, while hee stood nodding with his head, as his manner is, because of the Flies, the Bees fell upon him and killed him. Likewise, I heard of a Teeme that stretching against a hedge, overthrew a stall on the other side, and so two of the Horses were stung to death. I doubt not but through negligence many such mischances have happened else-where. For this thing hath beene long since observed by the great Philosopher. *Necant (saith he) vel maxia animalia ietu fvi aculei: jam equns occisus ab apibus est.*

And such are the sorts of Bees, with their integrall parts. Among which, though there do not appear those out ward *Organa* of senting which other *Animals* have, nor is seene in the head that inward principall* part, which is the fountaine and seat of all Senses, Phantasie, and Memorie: yet have they the Senses

41.

Bees dangerous to
cattell.

Arist. Hist. An. 1.
9.c.40.

42

The Bees Senses.

*Carebrum commune sentiendi
prncipium.* Fer. Ph. 1. 5. C.
14.

Nat. hist. I.II. c.4

themselves, both outward and inward: which their subtile and active spirits doe excite and quicken, for the works of their curious Art and singular Vertues. *Quamvis non sint membra quae, velut carina, fensus inuebant; esse tamen his auditum, alfactum, gustatum, eximia praeterea naturae dona, solertiam, animum, artem quis facile crediderit. Creat Deus minima corpore acuta sensu animantia: ut majori attentione stupeamus agilitatem muscae volantis, quam magnitudinem iumenti gradientis.*

Of all the five Senses their slight seemeth to be weakest: & weaker when they come home loaded, then when they are flying. If, when they come home loaded, they light beside the doore, they will goe up and downe seeking for it, as if they were in the darke: and unlesse by chance they hit upon

If

C 3

C. I.

Of the Nature and properties of Bees,

if, they must flye againe before they can finde it. As many as fall beside the stoole when it waxeth darke, ten to one they lye abroad all night: yea, if at such time being troubled by any thing they come forth from the stoole, though then they be fresh and lustie, they will leape up and downe, runne and flie to and fro, till they be wearie; but by no means can they finde the way in againe. And therefore it is that when they flie abroad, they take such paines at the doore in rubbing and wiping their glazen eies, that they may the better discern their way forth and backe.

But their smelling is excellent, whereby when they flie aloft in the aire, they will quickly perceive any thing under them that they like, as Honie, Rozin, or Tarre, though it be couered. As soone as the Honie-dew is fallen, they presently winde it, though the Oakes that receive it v. be a farre off: which the Poet, speaking of the excellencies of some creatures in this sense before others, doth thus expresse,

-----Ideoq, per

Lucret. l.4.

auras

Mellis apes, quamvis long, ducuntur odore.

V.t.l.n.30

45.

Hearing and seeing

44.
Their smelling
Very quicke.

V.c.6.n.41

And by this sense they finde out any strange Bee, which is not otherwise to be knowne from their own company, and that in the darke Hive: where, when they are disposed, they will by the same means cull ou the Drones, yea and pull out the Cephens v. that are shut up in the cells, not medling with any of their own Sex.

Their hearing and feeling are verie quicke. If you touch their Hive but lightly, or the stoole, or the ground neere it; they presently perceiving it, make a generall noise: although *Aristotle* doubt whether they heare, or not. *Quaquam incertum est an audiant.* But if they did not heare, to what purpose is that musicke made in the Hives, before the swarming? V.c.5.n.18 and in the battaile, vid:c.7.n.34 or his tinging of swarms to make them come downe v. inc. 5.n.37

And of their fift sense I make no question, they are used to things of so different tattes: although there may seeme the lesse use of it, because their smelling is so perfect.

And

C. I.

And of their Queene

And such are their outward senses. The inward qualittes of their minds are farre more excellent. Their curious art and workmanship to be admired rather then imitated of men. See cap.6.

Their singular vertues are no lesse admirable.

In valour and magnianimitie they surpasses all creatures: there is nothing so huge and mightie that they feare to set upon, and when they have once begunne, they are invincible: for nothing can make them yeeld but death: so great hearts doe they carrie in so little bodies v. In private wrongs and injuries done to their persons (for which cause men will soonest quarrell) they are very patient: but in defence of their Prince and Common-wealth they doe most readily enter the field. ----

-----*Et corpra bello*

Objectant, pulebram, petunt per vulner amorem. v.

47.

Their vertues.

48.

Fortitude.

V. c.7.n.37.

Virg. V.n.5.

49.

Prudence and knowledge.

V.c.1.n. 4.5.6.& 7.

Ambr. Hex. I.5.c.
6. 7.

50..
A strange tale
concerning the
knowledge and
devotion of Bees.

Whereby appeareth their singular fortitude, no lesse then their
prudence doth in the government of their Common-weale v. beside
which, their wisdom and knowledge in other matters is verie much:
as of their enemies, of their fellowes and friends, of the Drones,
when they have too many, and when they neede them not at all,
also of the times and seasons of the yeare. Their wit and dexteritie,
as well in gathering as in working their sweetes, in inimitable. v.
Moreover, as skilful Astronomers, they have fore-knowledge of the
weather. *Praedivinant enim ventos imbresq, & tunc se pleraeq,
continent tectis.* Item, *Presaginat apes & hyemen & imbres, v.* And
in stormy and windie weather, it is a wonder to see what cunning
those that are abroad doe use to shift the wind when they come
home loaden: how they flie a low by the ground, among the
brushes, in the lanes, and lee-sides of the hedges. *Intra terram
volant in adverso flatu v. prius hebetato.* But above all, one
excellent skill they have, which the most excellent semals, though
much they desire it, must yeeld themselves to want: for they know
certainly when they breed a male, and when a female: which thing
appeareth by this, that they lay their Cephens-seeds in a wide combe
by themselves, v. and the Nymph seedes in the rest which are of a
smaller size, v. so

that

A Gellius, I. II.c.5.

C. I.

Of the Nature and properties of Bees,

That what wanteth in the sight of their eyes, is fully supplied in the sight of
their minde. *Cum sit infirma robore apis, valida est vigore sapientiae &
amore virtutis.*

And yet I have read of a greater knowledge then all this: How there
were Bees so wise and skillfull, as not onely to describe a certaine little God
a mightie, though he came among them in likeness of a Wafer-cake; but
also to build him an artificially chappell. If I should relate the storie, all
men, I know, would not believe it: not with standing, because every man
may make some use of it, you shall have it.

A certaine simple woman hauling some stals of Bees which yeelded not
unto her hir desired profit, but did consume and die of the murraine; made
hir mone to an other Woman more simple then hir selfe: who gave her

counsell to get a consecrated Host, and put it among them. According to whose advice she went to the Priest to receive the Host: which when she had done, she kept it in her mouth, and being come home againe she tooke it out, and put it into of hir Hives. Whereupon the murraine ceased, and the Honie abounded. The Woman therefore lifting up the Hive at the due time to take out the Honie, saw ther (most strange to be seene) a Chappell built by the Bees, with an altar in it, the als adorned by marvellous skill of Architecture, with windowes conveniently set in their places: also a doore and a steeple with bells. And the Host being laid upon the altar, the Bees making a sweet noise, flew round about it.

But whether this doe more argue the supernaturall knowledge and skill of the Bees, or the miraculous power of the Host, or the spirituall crafternesse of him, whose comming is by the working of Satan with all power and signes and lying wonders, some scrupulous * Skeptick may make a question: and presuming to examine every particular circumstance over narrowly, will make objections against the truth of the Storie: which, by their leaves, in the behalfe of my Authour, I must not spare to answer. First, it may be they would object that the Host being held so long in the Womans mouth, could not choose in that space but melt and marre.

Indeed,

C. I.

And of their Queene

Indeed, if it did remaine, as it was, a Wafer-cake, this were likely enough: but being turned into flesh, the case is altered. If they shall say that because it was now Honie-harvest, at which time good stals, such as this was, are full of Wax and Honie, that therefore there could not be roome enough for a Chappell with a steeple and bells in it; I answer, that this is as weake and simple as the former. For seeing it is knowne that a Blacke-smith of London did make a Locke and a Key so little that a flye could draw it; why should not the little Smith of Nottingham, which doth the worke that no man can, frame a little Chappell in a little

roome? But then perhaps they will reply, if wee grant you this, yet how could the Bees flie about the altar in that little Chappell, seeing they are scarce able to flie in so narrow a close roome as the emptie hive? As for that, it may be a mistaking of a word: haply the woman said they did but crawl. If they shall aske how the woman could see the altar with the Host standing in the Chancell, and the Bells hanging in the steeple, seeing the waxen walls were not transparent; they may easily thinke that the Bees would give their dame leave to looke in at the windowes. And if they shall say that those bells being made of such metall would give but a weake sound, when they were rung to Martins; they must consider the Parishioner dwelt not farre off. And so I thinke these captious Criticks will hole themselves satisfied.

Unto this Storie my Author immediatly addeth an other, like unto it, and as likely: how certaine Theeves having stollen the Silver Box wherein the Wafer-Gods use to lye, and finding one of them there, being loth, belike, that hee should lye abroad all night, did not cast him away, but laid him under a Hive: whom the Bees acknowledging, advanced to an high roome in the Hive, and there in stead of his silver boxe, made him another of the whitest Waxe: and when they had so done, in worship of him, at set houres they sung most sweetly beyond all measure about it: yea the owner tooke them at it at midnight, with a light and all. Wherewith the Bishop being made acquainted, came thither with many others: and lifting up the Hive, he saw there

neere

D

C. I.

Of the Nature and properties of Bees,

neer the top a most fine boxe wherein the Host was laid, and the Quires of Bees singing about it, and keeping watch in the night, as Monkes doe in their Cloisters. The Bishop therefore taking the Host, carried it with the greatest honour into the Church: whither, many reforming, were cured of innumerable diseases.

I doubt not, but some incredulous people will quarrell this Storie as well as the former: making questions, since the combs in

the top of the Hive, are not past halfe an ince one from the other, how there could be roome for a boxe of that bredth that would containe the Host; and then being there, how it might be seene by the Bishop, seeing those spaces are alwaies filled with Bees, and the Storie saith, that they were then singing about it: and therefore perhaps they will suspect the whole Narration, supposing it rather to be an unadvised deuce of some idle Monke, which, if he had consulted with them that have skill among Bees, might have made his tale more probable. Alledging moreover, that therefore there is no mention made of any particular person, time, or place, lest the circumstances should disprove the matter it selfe. All which objections I could as easily answer as the former, if I thought it needfull; But now because some may be ready to mistrust my relation, as others are to object against the truth of the Stories; I will here in mine owne behalfe for their satisfaction, set them downe in my Authors owne words.

Cum mulur quadam simplicis ingexij nonnulla apum alvearia possidrct, neg illa redder ent expetitum C. v. etum, sed lue quadam tabescentes morerentur; de confilio alterius famina simplicioris, accessie ad sacerdotem perceptura Eucharistiam: quam sumpt am temen ore continuit, domumg, reversa extra itam collocavit in uno ex alverijs. Lues cossavit, mella afflubant. Itaq suo tempore mulier, apertus, ut mel educer et, alverijs, vidit (miranda res) exadificatum ab apibus sacellxm, constru etum altare, parieties miro Architectura artificio suis fenestrus apposite suis locis orantos, ostium turrin, cum suis intinabulis: Eucharistiam vero in alt ariropositam circumvolabani suavi susurro perstrepenes apes.

The

C. I.

And of their Queene

The other he reporteth thus: *Quidam fures, ut argenteum vasculum in quo condita erat Excharistia auferrent, & illmis secum rapuerunt: sacratissemum vero C. corpus sub alvears projecrunt. Post aliquot dies Dominus alveris vid et apes certis horis sapius, dimissts aperis ad cibos convehendos, totos esse tis quodam millifluo concentu enendo. Cursq forte de mediano ete exsurrexissit,*

conspizatur supra laveare illustrissimam lucem, suavisimeq prater omnem modum modulantes apes. Rei no vitate inusitata, & prorsus admirandi percussus, Deig manitu intimo agitatus rem desert ad Episcopum. Is piaerimis secum assumptis co sc conferens, aperto alveari videt Vasculum elegantissimum effectum e canasissima cera prope alvearis fastigium, in quo reposita erat Eucharistia, circa illud choros apum circumsoxantes, & excubias agentes. Acceptum igitur Episcopus sacramentum maximo cum honore in templum reportavit: quo multi accedentes ab innumeris suis morbis curati. Tho: Bozsius de signis Ecclesiae. Lib. 14.c.3.

In which Storie wee may note, besides the wonderfull knowledge and devotion of the Bees, an incredible power and vertue also. For this God which they kept and compassed, is said to have the gift of healing, which others, though of a good making, we know doe want. The conclusion, which my Author necessarily inferreth hereupon, is better then all the rest. *Ex his necesse est dicamus in Eucharistia versum C. corpus esse.* But if thou wilt grant me that hereby is proved the incredible knowledge and skill of the Bees, for my part I will urge thee no farther.

In the pleasures of their life, the Bees are so moderate, that perfect temperance seemeth to rest onely in them.

Also, in their owne Common-wealth, they are most just, not the least wrong or injurie is offered among them. But indeed I cannot much commend their Justice towards strangers: for all that they can catch is their owne: unlesse they may be excused in this respect, that the Bees of divers hives are at deadly feud, or rather as Kindomes, that are at defiance one with another. V.c.7.n.25.

Their Chastitie is to be admired. *Integritas corporis virginalis omnibus communis.*

Et

D 2

C. I.

Of the Nature and properties of Bees,

Et certe apes semina non coeundo concipiunt. Item, Omnipotens creator apibus prolem sine concubitu dedst.

Illum adeo placuisse apibus mirabere morem,

August, de
trinit. 1.3.
idem de bono
coniugali
Georg.

v.c.4.n.3. &c.

Genrat. An. J.
3.c.10.

Quod non concubitu indulgent, &c. They ingender not as other living creatures: onely they suffer their Drones v. among them for a season, by whole Masculine virtue they strangely conceive and breed for the preservation of their sweet kinde. Which strange kinde of breeding the Philosopher saith to be apparent unto sense and reason. *Cum in genere piscium talis quadam sit generatio nonnullorum, ut sine coitu generent: hoc idem in apibus etiam evenire videtur, quoad sensus ratio ge apparens admoneat.*

For cleanlinesse and neatnesse, they may be a Mirror to the finest Dames. *Mundissimum omnium hoc animal est.* For neither will they suffer any slutterie within, if they may goe abroad, *Amoliuntur omnia e medio, nullag inter opera spurcitia jacent:* neither can they endure an unfavorinesse without nigh unto them. *Odere faedos odores: Nulla harum assidet in loco inquinato, aut eo qui male oleat.* And for their persons (which are lovely browne) though they be not long about it, yet are they curious in trimming and smoothing them from top to toe, like unto sober Matrones, which love as well to goe neat as plaine: pied and garish colours belong to the Waspe, which is good for nothing but to spend and waste.

Anent the age of Bees there are divers opinions: some thinke that they may live foure or five years, yea some six or seven: *Neg enim plus septima ducitur astas.*

Aristotle speaketh of a longer time. *Vita apum anni six, non nulla citam 7. Possunt complete: quod si exammen 9. Ant dece annos duraverit, prospere actue esse existimatur.* Which opinions are grounded upon this, that they see a stall sometimes continue so long, before the Bees die altogether. But this continuance is onely by succession: and so might they live in *secula*, if the rottennesse of their combes, the hardnesse of their Honie, & the abundance of noisome stopping v: would suffer them to abide the Hives. *Nam genus immortale manet.*

But

C. I.

And of their Queene

But the truth is, a Bee is but * 2 yeares Bird, with some advantage.

* Which is a long life in comparison of the Silk-wormes, which live but foure moneths, or of the Wasps, which live but five: or of the Drones, which but six.

For the Bees of the former yeare, which untill *Gemini* in the next yeare doe looke so youthfully, that you can not discern them from their full growne Nymphes, which that spring they have bred; doe from thenceforth change with manifest difference: for the young Bees continue great, full, smooth, browne, well-winged; the old waxe little, withered, rough, whitish, ragged-winged: and with all so feeble, that when they come loaded home, if any thing stand in their way, yea many times, though there be nothing, they fall downe, and being loaded cannot rise againe: and then either a little cold or wet in the day, or the nights dew killeth them: you may daily finde, specially in *Cancer* and *Leo*, some dead, some halfe-dead before the Hives, and some alive and lustie, which yet can never rise againe. Some of them will hold out so long, till their wings are more then halfe worne: but by *Libra* you shall scarce see one of them leaft.

The young Bees, as best able, beare the greatest burdens: for they not onely worke abroad, but also watch and ward at home both early and late: when need is, they hazzard their lives in defence of the rest, they beat away the Drones, and fight with other Bees and Wasps, and assault with their speeres whatsoever else offendeth them, they carrie their dead forth to be buried, and performe all other offices. But the labour of the old ones is onely in gathering, which they will never give over, while their wings can beare them: and then when they case to worke, they will cease also to eat: such enemies are they to idlenesse. And therefore generally they die in their delightfull labour, either in the field or comming home: *Atque animas sub fasce dedere*. Sometimes as well in Summer as Winter v. the Bees take pleasure to play abroad before the Hive, specially those that are in good plight, flying in and out, and about, so thicke,

And

Of the Nature and properties of Bees,

Nat. hist. I.II. c.20

And so earnestly, as if they were swarming or fighting: when indeed it is onely to solace themselves: and this chiefly in warme weather, after they have beene long kept in. *Exercitationem interdum solennem habent: spatiataq in aperto & in altum datae, gyris volatu editis, tum domum redeunt.*

60.
They are soone
killed with cold.

The Bees is by nature very tender, soon chilled and killed with cold, which the Doore, the Waspe, yea the Moth, the Gnat, and other little flies can endure, and most of all then, when by reason of long restraint, their bellies are over full. The first that faileth in them, when the cold beginneth to prevaile, is their wings: so that they cannot rise to their Hives to help themselves by the heat of their fellowes. How to revover them year when they are quite dead, See Cap. 7.n.63.

61.
How to revive
them.

The Bee therefore excelling in many qualities, it is fitly said in the Proverbe,

62.
The Bees Excellencies.

		<i>Profitable</i>		
		<i>Laborious</i>		
		<i>Loiall</i>		
		<i>Swift</i>		
		<i>Nimble</i>		
As		<i>Quicke of sent</i>		as a Bee.
		<i>Bold</i>		
		<i>Cunning</i>		
		<i>Chaste</i>		
		<i>Neat</i>		
		<i>Browne</i>		
		<i>Chillie</i>		

63.
Bees a chiefe exemplar
of the divine power
and
Wisdome.

These wonderfull parts and properties of this little creature, what are they but so many evident proofes of the infinite power and wisdom of the Creator?

Du Bartas.
Fift day.

*For, if old times admire Clicrates
For luorie Emmets; and Mermecides
For framing of a rigged ship so small,
That with hir wings a Bee can hide it all;
Admire we thenth' All-Wise Omnipotence,
Which doth within so narrow space dispence*

So

And of their Queene

So stiffe a sting, so stout and valiant hart,
 So loud a voyce, so prudent Wit and Art.
 Their well rul'd State my soule so much admires,
 Tat, dust I loose the raines of my desires,
 I gladly could digresse from my designe,
 To sing a while their sacred discipline.



CHAP. II.

Of the Bee-Garden, and Seats for the Hives.



Or your Bee-garden, first choose some plot nigh your home, that the Bees may be in sight and hearing; because of swarming, fighting, or other suddaine hap, wherein they may neede your present helpe. While the stalls are few, your

Garden of Hearbs and Flowers will serve. *Hortis coronamentisg maxime alveria & apes conveniunt, res pre ipus guastus compendijg cum favit.* But when they are growne to a sufficient number, they require a square greene plot fitted for the purpose. v.n.8.

2. See it bee safe, and surely fenced, not onely from all Cattell, (which if they breake in, may quickly spoile both the Bees and themselves) and specially from Swine (which by rubbing against the Hives, and tearing the hackles in a wantonnesse, are most apt to overthrow the stalls;) but also from the violence of the winds; that when the Bees come laden and wearie home, they may settle quietly. V.n.5.

The North fence of your Garden should bee close and high, that the cold wind of that coast, (which blowing against the Bees comming home wearie, would throw downe

and

1.

Of five things requisite in a Bee-garden, the first is that it be nigh at hand.

Nat. hist. li:21. C.12.

2.

That it be safely fenced from cattell and winds.

3.

The North and East fences should Be high.

C. 2.

Of the Bee-Garden,

And kill man) may bee altogether kept from them. And therefore, if it may be, set your Bees on the South side of your house.

The East-fence also would bee good and high to keepe from the Bees as well the sunne, as the winde. For the sunne rising doth oftymes till them forth, when the ayre is colder then they can endure; and the East-wind being cold & sharp is very unkinde for Bees, specially in the Spring.

But in no wise let the place be shadowed from the South sunne: for that doth not onely dry the Hives and relieve the Bees in the Winter and Spring, but also causeth them to swarme in Summer, if it be not extreme hot and drie v.

Nor yet from the Sunne-setting: because in calme and pleasant weather the Bees will be in the field after the Sunne is downe, even as long as they can there see: and if when they returne, they finde it darke at home, many of them, their sight being but dim, v. fall short or wide: which flying and running to and fro till they be wearie, at length yeeld to the cold dew.

Otherwise let the fences be as good against the South and West-winds also, as may be: for although they be not so cold and bitter as the other; yet are they no lesse violent, and more frequent: so that they also doe much harme, specially in the Spring. And therefore if at that time of the yeare, in rough and boistrous winds, you finde that the Garden fences doe not sufficiently guard and defend them; then is it good to set up wixed or lined hurdles, or some other skreene betweene them and the weather. For though they can shift abroad in the strongest winds, as a ship that hath sea roome; yet are they easily overthrowne at the Hive, as a shippe is soone wrecked at the Haven.

A house or wall is fittest for the North fence: and a Quickset-hedge for any of the other three: it may serve also for the first, specially if it be thicke.

3. That the place be sweet, not annoyed with any stinking favour. I have knowne a stall in the Spring, being sufficiently provided of Honie, and having bred young, to forsake all, because of Poultry that roosted in a tree over them.

Odere

4.
The South and West
fence must be also
good, but not so high
as to hide the Sunne
from the Hives.
V.c.5.n.19.

V.c.l.n.43

5.
In rough winds the
Bees need a skreene.

6.
3. That it be sweet.

C. 2.

And Seats for the Hives.

Odere foedos odores, proculq; fugiunt: And yet the smell of urine doth not offend them: nay, they will bee very busie where it is shed. It is thought they use it for Physicke. *Rcme dditsm carita etvi concitat em est l: rina hominum vel boiset.*

4 That is be neither verie cold in Winter, nor very hot in Summer. *Locus a state non fervidus, hyeme tepidus, v:* A bare flower is naught in both seasons: because in Winter it is over cold, and by that meanes quickly chilleth the Bees that light upon it; and in Summer it causeth them to lie forth through excessive heat. v. A frassie ground therefore is best at all times: but let it be kept motte in Summer, and not wet in Winter: for long grasse and weeds about the Hive, doe but harbour the Bees enemies, v. and hinder both their passage in and out, and their rising againe when they fall short: and water if it stand, as it will bee offensive to your selfe, so it is dangerous to your Bees for chilling and drowning them. And as the parts about the hives are to be kept motte & bare; so are other places also, where the swarmes doe use to play and pitch, whether within or without the Garden, to bee freed likewise from long graise and weedes, much more from Beanes, Pease, Hempe, and such high things: for the young weake Nymphs falling in those shadie places, except the weather be warme and drie, are in danger to be chilled before they can rise againe. For which cause the swarmes doe usually refuse to stay and settle about such places: and then if windie or cloudie weather suffer them not to goe further, they must either goe home, or light upon some other Hives: where, without your present skill and diligence, they are like to be all lost.

5 That it be conveniently beset with trees and bushes fit to receive the swarmes, as Plum trees, Cherry trees, Apple trees, Filberds; Hazel, Thornes, &c. Which they will the more delight to light upon, if, convenient boughes hanging out alone from the bodies, the twigs below standing in their way be pruned, and the weeds and grasse underneath be cut away close to the ground. Although, if they be willing to stay, they will not refuse a dead hedge, a Lavender Border, or the like, or sometime the bare ground. For want of trees,

some

Nat. hist. li.II.c.18

Nat. hist. li.II.c.12.

7.

Neither very cold in Winter, nor over hot in Sumer.

Hist. I.9.c.40

V.in c.3.n.36

V. c.5.n.19.

8.

A grassie ground is best, but keps nitte And drie:

V.c.7.n.3.

9.

5. Beset with trees and bushes.

C. 2.

Of the Bee-Garden,

some have stucked up greene boughes, and the Bees have lighted upon them.

10.
Two sorts of seats.

The place being thus fitted, the seats are to be provided: which, whether they be stooles or benches, must be set a little shelving, that the raine may neither runne into the hive, nor stay at the doore.

11.
The benches not so
good as single
stooles.

To set many stals upon a bench (as many use to doe) is not good: for that in Summer it may cause to fight; as having easie accesse on foot to each other, and standing to neere, that they shall sometimes mistake the next Hive for their owne: and in Winter the bench will bee alwaies wet, which looseth the coome, rotheth the bottome of the Hive, and offendeth the Bees: and the Mouse v. at all times hath free passage from one to an other, without feare.

V.c.7.n.2

12.
Swarmes may be
set on benches.

The single stooles therefore are best. And yet it is not amisse to set most of your swarmes upon benches, about the old stalls: from whence remove them to the stooles, when the stalls are taken: and then set up the benches till an other yeare. Yet I preferre single stooles set two foot apart, though they bee laid flat on the ground: but it is better to reare them with foure legges, though little and short. If they be twelve or thirteene inches, three or foure inches may bee forced into the ground for their surer standing.

13.
Wooden stooles better
then they of stone.

14.
The size of stooles.

The best stooles are of wood: those of stone are too hot in hot weather, and (which is worse) too cold in cold.

For their size, they should not be above halfe an inch or an inch with the Hive: save onely before, where there needeth the space of three or foure inches, that the Bees may have roome enough to light upon: specially then, when the sight of a rainy cloud sendeth them thronging home. Which fore part from one side to the other, is to be cut shelving that it may the better avoid the raine. And therefore if the Hive be fifteene inches over, the stoole should not be above sixteene or seventeene inches one way, and nineteene or twentie at the most the other way.

15.
Which way the stooles
should be set.

These stooles would be set toward the South, or rather a point or two into the West: that the Hive may somewhat

breake

and Seats for the Hives.

breake the East winde from the doore, v. and that the doore may be lightened by sthe Sunne setting, when they returned late and loaded form field, v. and therefore it is to be wished that the Garden fences did stand accordingly.

They should stand in straight rankes or rowes from East to West, five foot one from another (measuring from doore to doore) and from North to South, six foot one before and other.

Likewise let them stand as farre from three of the fences, as they doe one from another. And so a plot of fiftie foot square , will receive seven rankes of nine stooles apeece, with the space of eight foot before them: which if it were bigger, were so much the better.

For want of roome or stooles, or wit, many doe set their stalls neerer together. But the greater distance is much better: not onely that you may have roome enough to goe round about every one, to see and mend what is amisse; but also that the Bees, when they come home in haste, specially when a swarme goeth backe againe, may be sure to flie into their own Hive. For if they stand neere together, at such time many will take the next Hive for their owne, and then they fall together by the eares; v. and the Nymphs, when they go first abroad, wil by that occasion the sooner mistake: which if they doe, they dye.

The manner of placing the stooles in your Garden, with the distance of the rankes, I have here expressed.

V.nat.3.

V. nat. 4.

16.

How neere to
each other.

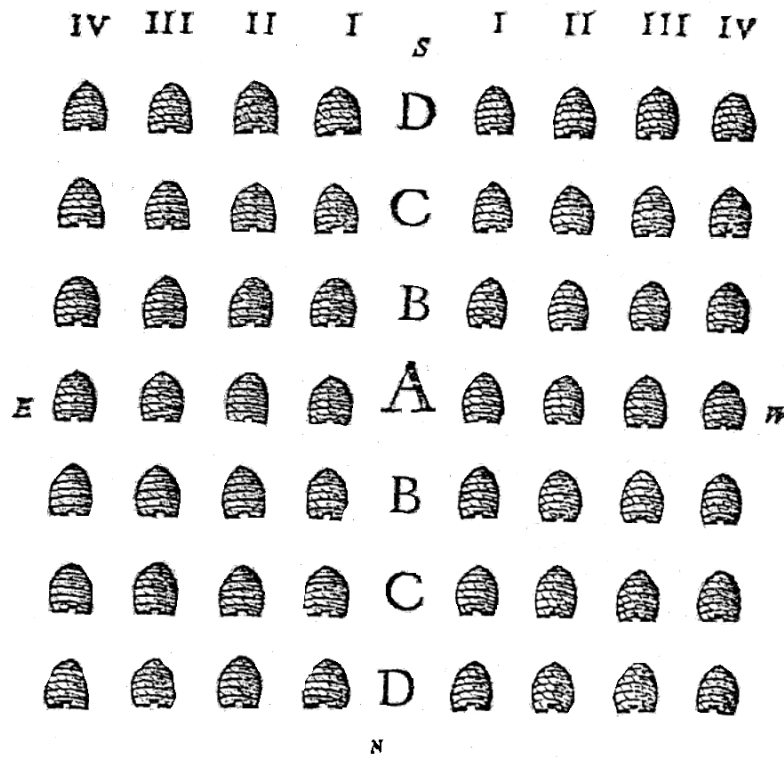
17.

How neere to
the fences.

V.c.5.n.79.

C. 2.

Of the Bee-Garden,



This Climactericall number of nine times seven, is a competent or rather complete store for any one Garden, though large and alone: which being well ordered, will yeeld the Bee-master the better part of a liberall maintenance: if any be so happy to attaine unto it. So that I see no evill at all in this Number: although the sixtie three yeare of mans age, being likewise called *Climactericall*, (because it ariseth of nine Septenaries, as so many Climacters or Ladder-rounds) be counted of some, and those no small fooles too, a parles and ominous time: more dangerous for death, than all the other

and Seats for the Hives.

other yeares of their life*. For which conceipt if you see no reason: thinke it is grounded upon good observations: for this is certaine, that a ladder of nine rounds hath beene fatall unto many.

* *Ptolomaeus oblique eos nosat, qui climactericus annos faciant ex numerum sola obser vativne, ut enneadicos & hebdomaticos Vnde mioltus molesta senilus superstitis super anno sexagesimo tertio, quoniam pejus anguitignd q; formidant: sed peacat in his vulgus errore veniali, qui Philosophiesse voluni, quis (x : usaucrit? Pic. Miran. Lib. 6.c.19.*

Answerable unto this climactericall quadro: it is meet you have a hand a *Register*, containing the severall ages and yearely increases of all your stalls. Whereby you may be directed every yeare, which are to be taken and which to bee kept for store: v. which is the chiefe point of a thriving Bee master. This Register may bee a *Synopsis* or Table drawne upon a sheet, or halfe sheet of Paper, divided into sixtie three squares, or as many as be needfull for the stalls in your Garden: having first the foure Coasts, E.S.W. and N. noted in the outsides: secondly, the middle row of squares from S to N. distinguished by Letters, the first square being marked above with D, the second with C, and the third with B, which are Southerne: The fourth (being the chiefe and middle most, unto which all the squares in the Table have reference) with A, the fist with B, the sixth with C, the seventh with D, which last three ore Northerne: and thirdly, the first row of squares next the Letters on both the E and W side, noted in the top or South part with one I, the second on both sides with I I, the third with I I I, and the fourth with I V.

The Table thus drawne, when you have set a swarme upon any stoole in the garden, marke in what letters ranke it is, what number from the Letter, and whether Eastward or Westward: and in the square answering thereto begin his Register, setting downe first the two last figures of the yeare of the Lord, then for a prime swarme, a double circle, for a castling halfe a double circle, then the day of the moneth in which he was swarmed, writing M for May, I for June, J for July. The next line begin with the next yeare: if he did

swarme,

19.
The Bees Register.

V.c.10.p.ln.3

Of the Bee-Garden,

swarme, set down a crossed circle, and the day of the moneth: if he swarmed againe, set downe in the same line a halfe circle, with a downe right stroke, and the day of the moneth: if he did not swarme, but were full to the doore, set downe a circle with a full point in it: if he did also lye out, set downe a circle with a blotted circle in it: if hee did neight lie out nor were full, set down a void circle.



And then doe likewise all the yeares that this stall endureth. When the Table waxeth full; after the vindemie make a new: taking out of the old the Register of thse that live. By this meanes, you may certainly know the age, and yearly increases of any stall in your Garden: and so guesse whether he be fitter to kill or to keepe. V.c.10.p.1.n.3.

20.
The stooles height.

V.c.5.n.19.

Also the stooles should not stand above two foot from ground, because of the wind: nor under one foot for the dampnesse of the ground in winter, which would mke the Hives moist and mustie; and for the heat of the ground in Summer, which in hot and dry weather would make the Bees lye out, and so hinder both their worke and swarming. v.

V.n.12.

The best heighth is between eighteene and twentie inches. Yet if you havemany, it is convenient that the more Northward rankes should stand higher, and the more Soutward lower, descending by degrees from two foot to one: as if there be two rowes of stooles, let the first stand two foot from ground, the next eighteene inches, & the benches or swame stooles one foot or lesse. v. If there be three rankes beside the benches, let the second be twentie inches, and the third sixteene, &c.

21.
How to be footed.

This unequall heighth of rankes may as conveniently be effected, though the stooles be all equall, by the usequall levelling of the ground: which in a great Bee fold is best.

The stone stooles must be footed as they may: th fashion of each place where they are used will direct you. But the planks or wooden stooles are either to have foure feet made of the heart of Oake, or of some other lasting Wood;

or

Of the Hives, and the Dressing of them

Or to be fastned to one foot with two woodden pins: which foot let be made of sound timber five or six inches over; and of that length, that it may be set between fifteene and eighteene inches in the ground.



CHAP. III

*Of the Hives, and the Dressing
Of them.*



In some countries they use strawne Hives bound with briar: in some wicker Hives made of Privet, Withy, or Hazel, dawbed usually with Cow-dloome tempered with gravelly dust, or sand, or ashes.

The strawne Hives when they are olde and loded, do usually sinke on the one side, (specially if they take wet) and so break the combes and let out the hony: for which cause, first see that they be hard wrought, and then spleet them strong with a Cop, v. fitted to the top of the Hive.

The Wicker Hives will still bear fault, and lie open, (if they be not often repaired) unto Waspes, Robbers, & Mise. Any of these, if shee finde but a little chap, will dig her way in: and the Mouse (unlesse the twigs be close wrought) though she finde none.

Both these Hives, if they be not well covered, are subject to wet: which maketh them musty, and, if it be much, rotteth the combes, and destroyeth the Bees. But the heat in Summer, the cold in Winter, and the raine at all times doth soonest pierce the Wicker Hives: for which cause it is good to double dawbe them.

All things considered, the strawne Hives are better, especially for small swarmes.

1.
Two sorts of Hives.

2.
Strawne Hives
with their
inconveniencies and
remedies
V.n.11.

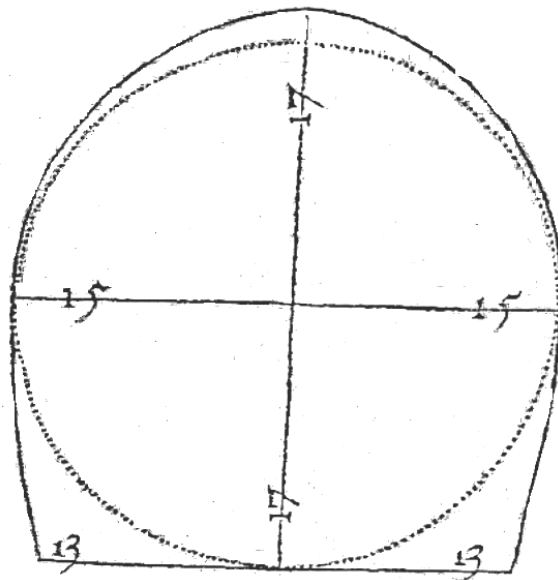
3.
Wicker-Hives
with their
inconveniencies and
remedies.

C. 3.

Of the Hives, and the Dressing of them,

5.
The fashion
of Hives.

The Bees do best defend themselves from cold, when they hang round together in manner of a Sphaere or Globe (which the Philolophers account the most perfect figure) and therefore the neerer the Hive commeth to the fashion thereof, the warmer and safer be the Bees. But of necessitie the bottome must be broad, for the upright and sure standing of the Hive, and for the better taking out of the combs: and the top must rise some two or three inches higher then the just forme of a Globe, to stay the hackle, and to shunne the raine: which yet, where the Hives are covered with panns, is not necessary. Otherwise let your Hives very neere to this round figure, then needs must as where it is within from the top to the skirts seventeene inches, in the middle or widest place through the center fiftene inches, and at the skirts thirteene, after this forme.



This forme with this dimention will containe three pecks: and the abating of one inch in each dimension, abaterth a gawne in the content.

The best that I have seene are wrought by *Thomas May* of *Sunning*, about one mile from *Redding*.

Hives

C. 3.

and the Dressing of them

Hives are to be made of any size between a bushell and halfe a bushell: that any swarme, of what quantity or time soever, may be fitly hived. v : Lesse then halfe a bushell will not containe a competent stall; and more then a bushell is found too bigge for any company to continue, and thrive together.

The midling size of three pecks, or within a pottle, under or over, as fitly contenting the naturall quantity of a good stall, is most profitable.

Have alwaies Hives enough of all sorts (but most of the midling size) in store, lest they be to seeke when you should use them.

The best time for making them, whether they be Strawne or Wicker, is in the three still moneths of Winter, *Sagitar. Capr. And Aquar.* v : for then the * straw, briers, and twigs are best in season: and then is it best to provide them, because then they are best cheape.

* The best straw is most yellow without blacke spots, which is strong and tough.

Your Hive being ready is thus to be dressed: first, take away all those staring strawes, twigs, and other offensive jagges that are fast in the Hive, making the in-side as smooth as may be: for these obstacles being many, if they cause not the Bees to forsake the Hive, yet will they much trouble and hinder them: you may heare them (specially in the night) scraping and gnawing three or foure daies after they be hived, yea sometime a weeke together, as though there were mise in the Hive: and in strawne Hives a long time after.

If you need but a few Hives you may prune them cleane with your knife: if you must use many, then, having wet the skirts with a cloth, singe or sweale the in-side: but first and last rub it well with a Rubber, which is a peece of rough grind-stone or sand stone, as great as your hand can hold.

2. The Hive being pruned, put Spleetes in it, three or foure, as the largenesse of the Hive shall require: the upper ends where of set together at the top of the Hive, and the nether ends fasten below in equall distance, about a handfull

above

6.

The size of Hives

V.c.5.11.43

7.

When Hives are to be made and provided.

V.n.54.

8.

How Hives are to be dressed before they receive the swarms.

9.

The pruning of Hives.

10.

The spraying or Spleeting of them.

C. 3.

Of the Hives,

above the skirt. In a wicker Hive let the upper ends rest against the middle of the staffe, & the nether ends against the parts of it between the Wickers; and in a strawne Hive, set the upper ends together in a Cop, and the nether ends against the briars or threads, between the third & fourth roule.

11.
The making
of the Cop,
and of the
Spleets.

The Coppe is a round peece of wood an inch or two thicke, whose lower *supersicies* is flat, with a hole in the middle halfe an inch deepe, for the spleets to rest in; and the upper is convex, turned or hewed fit to the concavities of the top of the Hive.

And for the Spleets, take a streight hazel or willow-sticke, quarter it if it be bigge enough, else slit it: then shave and smooth the clefts, and having brought them to a convenient strength & length, cut the lower ends forked, so stay against the Hives sides, and the upper ends somewhat picked, and of that bignesse that they may fitly joyne in the Cop or middle of the staffe, with their backs leaning hard and fast one against another.

a If the Hive contene about three peckes, it may well receive foure Spieets: otherwise three will suffice.

b Stiffe enough to keep up the Strawne Hives from sinking, specially when they are turned. V.c.5.n.22 & 23.

c. If you put fours Spleets in a Hive, then cut their backs, where they must leant one against another, to square angles, such as be foure in a circle: if but three, cut them to obtuse angles, such as are three in a circle: (you may readily try them, before you put them in, by Moulds made just to those formes) and so will they stand close and firme together. The first two of three, and the first three of foure are loose: it is the last that makes all fast.

And this is a handsome, easie, and sure way of spleeting: it is also good for drawing the Combes without breaking, and for keeping the Hive from sinking and from tearing at the top. Besides which there are divers sorts of spleeting, needlesse to be rehearsed: for every Countrey hath his fashion.

12.
The seasoning of ~~them~~.

3. Lastly, in swarming time season the Hives that you meane to use, rubbing them with sweet herbes such as the Bees love, as Tyme, Savourie, Majoram, Baulme, Fennell, Hysop, Mallowes, Beane-tops, &c. And when the swarme

is

C. 3.

and the Dressing of them

is settled, take the Hive that ; you think fit for it in bignesse, v. and with a branch of Hazeil, Oake, Willow, or any of the forseaid herbs, but chiefly with a sprig of that tree whereon the swarme lighted, wipe the Hive cleane; and then dripping it into Meth, or faire water mixed with a little hony, or with milke and salt, or, for a need, with salt onely, besprinkle the same.

But if the Hive have beene used before, after you have pared away the wax as cleane as may be, if you think the former dressing will not make it sweet enough; then let a hogge eat two or thre handfulls of mault, or pease, crother corne in the Hive: meane while doe you so turn the Hive that the fome or froth, which the hogge maketh in eating, may goe all about the Hive. And then wipe the Hive lightlie with a linnen cloth, and so will the Bees like this Hive better than a new. But besprinkle it also, when you doe use it, as is shewed before. And so serve a new Hive when the Bees are so forward, that they will not otherwise ahide.

And thus are the Hives to be prepared and Dressed, before they receive the Bees. Now will I shew you how they are afterward to be fitted and furnished.

I. First, let them be alwaies well covered, that they may be safe in Summer from heat, lest, the wax melting the Combes fall downe; v. in Winter from cold, lest it kill the Bees; v. and at all times from raine, lest it corrupt first the Hive, afterward the Combes, and at last the Bees also v.

In some places (where the stalls are not many) they use earthen covers: but these doe not defend the lower part, and in Summer are too hot.

The best cover for Hives is a thicke hackle: *Alveria stramento operiri utilissimum*. Which is thus to be made. Take foure or five handfulls of * Wheat or Rie leased out of the sheafe: which being bound up severally, beat out the corne; and then casting away their bands, draw out the eares of each handfull longer on the one side than on the other: and putting the long sides together (so to make the Head in forme of a Pyramis or Sugar loafe, for shooting the rain)

binde

V.c.5. n.43.

13.

The seasoning an old Hive.

14.

How Hives are to be ordered when the bees are in them.

15.

The Hives alwaies well hackled.

V.c.7n.53

V.c.7.n.54.

V.c.7.n.58.

Nat. hist. li.21.c.14

16.

How to make a hackle.

* In want of such straw, Wood-benet, or sedge, or Rushes may serve.

C. 3.

Of the Hives,

17.
The Cap of two
sorts.

binde them all in one under the eares, as hard as you can.

The Head is to be covered or bound fast with a Cap: of which there be two good fashions, the one wreathed, the other platted.

18.
The wreathed Cap.

The wreathed Cap is thus made; having bound the bundles all fast together with a thong, cord, or other strong string, lease out the sheafe almost a handfull of the strongest straw, and lay it in soake about 2 quarter of an houre. Being thus prepared, take out of that wet bundle a litche of 40 or 50 reedes or strawes; and laying halfe of them one way, and halfe the other, that the band may be of equall bignesse, take them up together; and then mingling one end of the litche with the middle reeds of the Head, and twisting them fast together in your hand, let the band harle or bouble in the very top of the Head: and so begin to binde the Head round, working downeward, and still twisting the band as you goe. When that litche is well nigh wrought up, take out of the wet bundle so many more reedes prepared as before: and when you have mingled one end thereof with the end of the first litche, holding them in you hand twist them fast together: and so continue your worke, alwaies binding as hard as you can, & bearing up every roule close to his fellow. When you are come down to the string, loose it, and binde the last or lowest roule in the place therof, making fast the end, by forcing it up between the Head and the Cap with a forked sticke and a mallet.

19.
The platted Cap.

The platted Cap is wrought contrary to the wreathed: for whereas that is begun in the crown, & wrouht downward toward the right hand, and is made fast in the necke; this is begun at the necke, and wrought upward toward the left hand, and is made fast in the crowne, after this mane.

First take a litch of strong reedes, and having wetted and wound it a little, put it about the necke of the hackle, and knitting the ends in a half knot, girt the hackle hard with it: (your assistant holding one end, while you pull the other) then to make this collar fast, wrap each end about it, forcing them betweene the collar and the head with the forke and mallet: Otherwise you may make a strong collar of a small

With.

and the Dressing of them

With. The collar thus fitted to the necke, set the hackle betweene your legs , as you sit or stand, with the knot outward: and then, to begin, take up a litche of the eares (about the bignesse of the top of your finger) next unto the fore-said left end of the collar, and laying this end betweene it and the head, turne the top of the end downward, and so leave it: then take the next litch, and laying the first betweene it and the head, turne the first downward, and so leave it: then likewise take a third litche, and laying the second betweene it and the head, turne the second downward, and so leave it: likewise the fourth, and so forth, working thus round, till you come to the crowne, and platting still the litches hard, and close to the head But when you come to the other end of the Collar, take that in for a litchie. If the litches be too short for the worke, plucke them up higher about the necke as you goe. When you have wrough up to the Crowne, knitting the foure last or top-litches in a true loves-knot, make all fast.

The hackle thus made of foure or five handfulls will containe in compasse about the necke, close under the Cap, betweene sixteene and twenty inches: sixteene will serve for the smaller Hives, and twenty for the greatest, although they be five foot about.

For the length of the hackles, each one is to be fitted to his Hive, so that the skirts thereof may reach to the stoole, or within halfe an inch of it round about; save onely before, where is must be pared somewhat shorter, the Bees passage be not hindered.

And then with a small pliant Garth or Belt of Bethwyn, Bramble, Brier, or the like, gird the hackle close to the Hive*, Lest the wind disorder it. If there be any crooke or bout in the Belt, set that before, that the hackle, bearing in that place farther out, may shoot the water from the doore: otherwise, for that purpose, set the Belt somewhat higher before, then behinde.

* In the Winter, place the Belt below the middle or biggest part of the Hive, to keepe it warme in extremitie of cold. In Summer above, that the nether part of the hackle hanging out from the Hive, the Hive may be the cooler: and then because the Belt will be apt to rise, it would be held downe.

20.

The bignesse of the
hackle.

21.

The length of it.

22.

The belt or garth.

C. 3.

Of the Hives,

downe to the place with two forked stickes, the fork resting upon the Belt, and the other end under the Cap.

23.
The hackle now and
then to be taken off

The Hackle thus fitted and placed, is now and then to be removed, not onely to meet with Mise, Moths, Spiders, Erewigs, &c. which harbour under it, and to see what breaches the Mouse and Tit-mouse have made: but also to ayre the moist Hive: and this is warme and windy day after much wet.

24.
The Hives alwaies close
cloomed.

Next keepe the Hives alwaies close for defence of the Bees against their enemies. The best cloome for that purpose is made of Nears dung: *circumlini alveos simo bubulo utilissimum*: but to harden it, temper it with Lime or Ashes; with sand and gravell, which are also good against the gnawing of Mise. With this cloome close up the skirts & backes of your Hives: that there be no way into them, but onely by the doores.

Nat. hist.
li..21.cap.14

25.
Then seldome to
be moved.
V.II.41.49. 53. & 67
&c.8. & 9.

And being thus safely shut, move them not without urgent occasion: v. for often lifting up the Hive, and letting in the open aire doth discourage the stall.

26.
How a Hive lifted up is
to be set downe againe.

But whensoever you are occasioned so to doe (the Beesbeing stirring) lest any be crushed betweene the skirts and the stoole in setting it downe againe, teelee up one side with a little tile shard: which, when the Bees are quiet, take away, and set the Hive close coomed againe.

27.
The Hive-doore.

The Bees entrance, as anon in this Chapter is shewed, must be sometime larger, sometime lesse, sometime nothing at all. And therefore every Bee-Hive must have his Gate or Summer doore, a Winter-doore or wicker, a Barre or shutting of the wicker.

28,
The Gate or Summer
Doore

The Gate or Summer doore must be made of that size, that the Bees in Summer, when their number is greatest, may have aire enough, with free egresse and regresse, not letting one another. The space of four square inches is sufficient for any stall.

This Summer doore is made thus: First cut away th lowest roule the space of five inches: and, with the Briar or Thred which bound that part, make fast both ends. Then fill up againe the two extreme halfe-inches of the space, with two Doore posts.

The

C. 3.

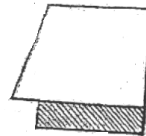
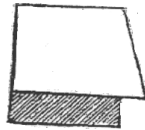
and the Dressing of them

The Doore-posts are two spleets halfe an inch broad, and five or six inches long, where of the lowest inch is twice so thicke as the other, with a shouldering on the inside. These Posts forced up through the middle of the roules in their place, to the shouldering, as they serve to size out the summer-doore to his due space of foure square inches; so are they fit to receive the Winter-doore, v.: when it shall be joyned unto them.

If the Hive be with the least, you may set up the Posts without cutting the roule.

In a Wicker-hive the Summer doore is made more easily.

Sometimes, namely when a Hive is reared, moueable posts are requisite: which may serve also at other times. A moueable Post is an inch-square peece of wood, with a shouldering above to rest against the Hive: and an other in the inside of the doore to fit the wicket: the forme is this.



The Winter-doore or Wicket is made of a peece of wood, and inch and a quarter thicke, almost an inch high, and five inches long. At each end whereof cut away halfe an inch all save before, where that halfe inch in length must be least a quarter thicke, with his full heighth to fit the doore-posts: then in the middle of the neather side, cut, through the thicknesse, a hollownesse or passage, almost halfe an inch high, and three inches long: and then there will remaine at each end of the howllownesse halfe an inch uncut, besides the two extreme halfe inches least a quarter thicke, and fitted to the Posts.

The fashion of which wicket you may see in this figure.

The

29.

Of the doore. Posts,
and the use of them.

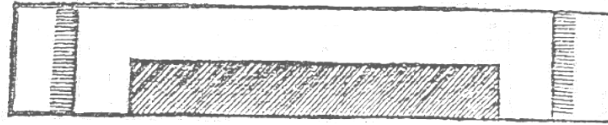
V.n.30

30.

The Winter- doore, or
Wicket.

C. 3.

Of the Hives,



31.
The use of it.

The use of the Winter-doore is to straighten the passage when there needeth not so much roome, that the Bees may the better keepe out the Robbers, that the Cold may have the lesse force, and that the Mice may not enter, which in winter are wont to make much spoile. V.c.7.n.3.

32.
The Barre.
V.c.7.n.6.

The Barre or shutting is to be made foure square of some heavy matter, as namely of Lead (that neither the rough wind nor craftie Titmouse v. may remove it) in * length, depth, and thicknesse fitting to the wicker: with some little hollownesse next the stoole, that may let in the aire and not let out the Bees.

* The length may be three inches and an halfe, the thicknesse three quarters, the depth halfe an inch: and the length of the hollownesse two inches and an halfe, the depth halfe a quarter of an inch.

33.
The use of it.

For want of Lead or other mettall, you may with a hammer and grind stone fit a Tile-shard: but let that be some what broad, that it may lie the safer on the stoole.

With this Barre you may shut or half shut the Wicket, as you shall see cause to defend the Bees in the more dangerous times from Frost, Snow, Titmise, and Robbers.

For small stalls, the Gate, Wicker, and Barre, may be all of a lesse size.

34.
The Settle.

It is also convenient for each hive to have his Settle before him: which may be a planke of the bredth of the stoole, and of that length that it may stand leaning from the ground to the fore part of the stoole: that thereon the Bees may settle when they come wearie or thronging home, and so ascend to the doore; and that there they may sunne and refresh themselves being chilly and wearie. Otherwise you may make a narrow planke or boord to serve, fitting the length of it to the bredth of the stooles, and then the one edge leaning to the fore part of the stoole, let the other bee

borne

and the Dressing of them

borne up with two forked stakes set fast in the ground, or by some othe props.

Bee hives being thus fitted with all necessities, are after-ward at divers times of the yeare to be diversly ordered.

The *Melissaeen* yeare is most fitly measured by the Astronomicall monethes (which begin with the Sunnes entrance into the severall signs of the Zodiack, and are therefore called by their names) because as the Sunne, entring into the twelve signes, and so beginning these twelve moneths, doth notoiously alter his course, making the daies longer or shorter, the aire warmer or colder, and the earth more fruitfull or barren, making also both the *Aequinotia* and *Solstitia*, in whcih the foure quarters of the yeare, Spring, Summer, Autumne and Winter take their beginnings; so the most notable alterations about Bees, in things either to be observed in them, or to be done for them, doe likewise fall out in the beginnings of these moneths.

But the foure Quarters the Bees begin one moneth sooner then the Astronomers. For their Spring or first quarter beginneth with *Pisces*,* when the Sunne beginneth by his quickning heat to revive the flowers, which all the dead of Winter lay buried in the ground; and the Bees having tasted thereof beginne to breed, v. and to increase their companies for the fruits of ensuing Summer, which from the former Summer hitherto have daily decreased: the other Spring moneths are *Aries* and *Taurus*, v.n.63 & c.

Their Summer likewise containeth *Gemini*, *Cancer*, and *Leo*, most rich and plentiful in flowers and dewes, v: where with the multiplied Bees doe now store their Cells against the penvriie of Winter. V.n.37.

Their Autumne or Harvest, hath *Virgo*, *Libra*, and *Scorpio*: in which the Bee-masters v: and the Master Bees v: doe reape the ripe fruits of many Bees labours. V:n.44.

And their Winter consisteth of the three still moneths: v. in which the Bees live altogether upon their Summer store, and get nothing. V.n.58.

Here note, that although Winter and Summer doe pro-

perly

35.

How to orde the Bee-hives throughout the yeare.

36.

The moneths and quarters of the *Melissaeen* yeare.

Febr:

V.c.4.11.12.

V.c.6.n.38 &c.

V.c.10.p.1.n.2.

V.c.7.n.25.& 23.

V.n.55.

C. 3.

Of the Hives,

Psal. 74.17
Prov. 20.4
Za, 14,8

petly betoken two of the 4. Quarters of the yeare; yet *
sometime they be taken, according to the common account, for
two halfe parts or moities thereof: the one containing the
warmer season, as from the end of *Aries* to the end of *Libra*,
the other the colder, as from the end of *Libra* to the end of
Aries.

* Namely, when they are mentioned together in a kind of opposition:
2sc.1.n.7. where you reade, neither very cold in Winter, nor very hot in
Summer. *Locus aestate non servidus, Iryeme tepidus, & c.* Which two
opposite parts the Poet doth fitly distinguish and describe by the two times
of fodering and of paituring Sheepe and Goats.

Georg. Lib.3.

----- *Victumg sores &*
ringealetus

*Pabula, nec tot a cclauacs saenilia Bruma:
At vero Zephyris quimlata rocantibus Aestas,
Insaltus utrumq gregem & Pascua mittes.*

Metam.lib.6.

But they are more certainly noticed by the comming of the
Fieldefare, and the Swallow: the one bringing cold Weinter, the other
warne Summer with her. Hir Sister *Philomela*, that shrowdes hir selfe
in the woods, is wont a little to prevent hir, observing more the time
of the yeare, then the disposition of the aire: For she is heard
commonly the last weeke in *Aries*, though it bee then cold and
winterly weather: whereas *Pogne* stayeth after that untill she finde it
warne abroad. If some foolish one or other chance to start out of
hir Doimitorie sooner, the Proverbe then is verified, One Swallow
makes not a Summer.

37.
Summer.

V.n.28

The Spring having replenished the Hives with plentie of
Bees, the Summer is readie with his plentie of Honie to
entertaine them. During which season the Hives must have
their largest entrance. v: left the thronged multitudes be
prstered for want of aire, or doe let one an other as they goe
and come earnest in their worke, or bee stayed in swarming
when they should passat at pleasure. Neither can the
opennesse of the Hives be hurtfull unto them, seeing now there
is no feare of enemies.

38.
In *GEMINI* set the
doores wide open.
V.n.28

At *Gemini* therefore set the doores v: wide open, without
Barre or Wicket: and so let them stand all this quarter.

39.
CANCER
40.
To make the Bees

Gemini being past, if the weather be usually coole, when
there commeth a calme warme day, take off the hackles from
those Hives that are likely to swarme. But if the weather be
extreme hot and dry, then is it good to keepe on the hackles
to coole the Hives, &c.v.c.5.n.21.

At mid-*Cancer* double the stalls that lie out.
V.c.5.n.22.23.

When

and the Dressing of them

When you would have no more swarms, as namely after the first blowing of Blackberries, v: which is commonly with in a seven night after Midsummer: set up those Hives that are full with three Tile-shards, or other things of like thicknesse, and cloom up the space between the Hive and the stoole: If yet they chance to swarme, as soone as they are hived, put them backe to the stocke, v.c.5.n.11.

Also reare the swarms that being under hived doe lie forth, with bolsters of that thicknesse that may be let in the Bees.

In *Leo* , or presently after the last swarme, kill the Drones, of those stalls you meane to take, with a Drone pot cloomed to the doore. V.c.4.n.35.

And if you see any other so pestered with multitudes, that they are loath to meddle with them; you shall doe well to helpe them some warme afternoone, and then will they take the worke out of your hand, and spend the lesse time about it.

To the plentifull Summer succeedeth wastfull Autumne.

At *Virgo* therefore, or a little before, (which is the most dangerous time for Bees, because of Waspses that then, if not sooner, learne the into the Hives, but chiefly of robbing Bees, which then begin to spoile) v. To the Gates of the weaker stalls, (whether they be small swarms, or stocks that have cast twice and late) set up the Winter-doores, and fasten them with good cloome, v: and see that the Hives bee closed in all places. (Those that have lien forth or otherwise be verie full, you may let alone and not straighten their entrance till the weather bee colder, for such are safe enough.) But first view your swarms whether they fit their Hives: those that have not now wrought downe within a handfull of the stoole, if you meane to keepe them (to the end they may lye warme the Winter following, and be ready at the doores to keepe out robbers) cut off so much of the skirts as will serve the turne (the bigger the Hive is, the more you may lessen him) and so set him downe, cut a Summer-doore v: in the skirt, and put to the Winter-doore. Without such help the cold will kill many, and weaken all, whereby they

become

41.

To keepe them from
swarming.
V.c.5.n.11

42.

L E O

43.

How and when to kill
the Drones.

44.

H A R V E S T

45.

V I R G O

46.

To keepe the weaker
hives from robbing.

V.c.7.n.28.

47.

Set up the Winter-
doores.

V.n.24

V.n.21.

C. 3.

and the Dressing of them

and all over the Hive) untill toward the end of this moneth, when they be gone up from the doore, and their number is somewhat diminished.

In the end of this moneth is the time to kill and drive Bees, v.c.10.part.1.n.2 .13. Some Bees faile after *Virgo*: and therefore it is good to make triall of them in *Libra* also by poyssing and knocking the Hives; for as they that then make * a little noise will die for lacke of company, so they that are light will die for lacke of meat. And alwaies have an eye to those that the Robbers doe eagerly haunt: which is a signe that they perceive in them some defect or other : and therefore will not be answered without their errand.

* A little short noise aboue in the Hive, specially when in the end some few single Bees endeavour by their earnest and continued sound to seeme many, bewraieth their pacity and decaying.

Such as by these meanes you finde unlikely to live, take or drive: those that you suspect, and yet are willing to keep: marke them, feed them in due time, and prove them againe in *Pices* and *Aries*.

At *Libra*, or before if you see cause, set up the Winter doores of the best, and then diligently in the evenings shut all those in with the Barre, that have leaste watching at the doore. For in the cold mornings, while the true Bees keepe in, because it is not fit time for them to gather in; the theeves, both Wasps & Bees will be abroad, seeking where they may breake in and steale. But still let the weaker have their wickers halfe-shut.

This shutting & opening of the Wickets must be continued throughout *Scorpio* also; unlesse abundance of cold raine do sooner chasten the Wasps. But for the poore stalls, it is best to keepe them halfe-shut all the day long, as in *Virgo* and *Libra*.

At *Scorpio* dresse your Hives for Winter. First lift up the stalls (except those that be full of Bees, which will not need your helpe) and sweepe the stooles cleane: then setting them down againe warily, v. that you hurt no Bees, cloome them close, and mend all brackes and faults about them: and where the hackles be worne, set new in their steads, that may keepe

the

51.

Now take the *Combes*.

52.

LIBRA

53.

Try them againe in *Libra* also.

54.

Now set up the wickets to the best, and keep the rest shut till the Bees offer to goe abroad.

55.

SCORPIO

56.

Continue the shutting and opening of the Wicket this moneth also

57.

How to dresse the Hives for Winter.
V.n.26.

C. 3.

Of the Hives,

the Hives dry and warme. And now remember also to shut the wickets of them all.

58.
WINTER

59.

SAGIT
CAPRIC.
AQVAR.

Three still
moneths

60.

How the Bees
spend their time
in them.

After Autumne, the Sunne drawing neere the Winter Tropicke, with a short and low course above our Horizon, there follow three still moneths, *Sagittarius*, *Capricornus*, and *Aquarius*: in which as the plants lie still in the earth waiting the Sunnes returne to revive them; so the Bees lie still in their Hives, passing this fruitlesse time in sleepe and slumber. Yet so, that if there happen a milde and warme houre, they presently perceiving it awake out of their swiuet, and hyethem out of doores with all alacrity: that they may take the fresh aire, recreate themselves, drinke, exercise, their wings, carry out their dead and other noysomenesse, and lighten their little bellies, which are oft times so stuffed, when the weather suffereth them not to goe abroad, that they can hold no more: so loth are they to defile their nest. And having thus refreshed themselves, at their returne, they take their repast, and then betake them againe to their rest. But many such daies, specially in time of scarcity, are dangerous, as causing them to spend much of their store, which in still frosts they would spare.

61.
The first sharpe
weather in Capr.
Shut the Bees in.

62.
And in pleasant
weather let them
loose, if it may
be, once a
fortnight.

V.n.59. & c.l.n.59

The first foule and cold weather in *Capricorne* shut the Wickets close, to save the Bees from the Tit-mouse, v. and from the cold, as well within the Hives as without. For as the frost and snow and cold winds, yea and the ordinary disposition of the aire doth chill many of them, whom the flattering sun-shine enticeth abroad; so the great frosts, striking through the doore, doe freeze the nether most in the Hive to death: so that by little and little many stalls in some winters have been thereby wholly destroyed: the which, by keeping them warme, might have beene preserved. But when you shut them in, be sure the Hives bealwaies close and sure: for the Bees when they awake will strive by all meanes to come forth, though they never finde the way in againe. Yet when there happeneth any pleasant day (namely when the sunne shineth, the winde is still, or bloweth mildly out of the South or West, and the earth is without frost & snow) it is very behovefull to give them leave to play, v. and to refresh

them-

and the Dressing of them

themselves: once in a fortnight or three weekes is to be wished, especially after *Capricorne* is past: but if you or the weather shut them in much longer, they wil be so faint and feeble through their long restraint, that without very pleasant weather at their comming abroad, a number of them will be chilled while they rest themselves but for a little in the open aire. And thefore as often as, for this purpose, the doore is a little opened; alter it not, untill the weather alter: and when *Aquarius* is halfe spent, if, for feare of a piercing night frost, you barre them up in the evening; let them goe againe in the morning, unlesse either snow or boysterous windes for bid you. In winter provide your Hives. V.n.7.

The still Moneths of Winter being past, the new yeere entreth with *Pisces*, the first moneth of the Spring: when the Plants begin to sprout, and the Bees to breed againe.

Now therefore, if not sooner, the weather being faire, halfe open the wickets of the better sort, and so let them stand day and night. For the night-cold, being now shorter and weaker, is not dangerous to such: and the day cold doth them more good then hurt, causing them to lie still and spare their store, untill it be fit time to goe abroad. But for the weaker swarmes (which are more subject to cold, and robbing that now beginneth afresh, v.) shut them close in the evenings, and open them not in the mornings untill it be warme: and then give them but roome for a Bee or two to passe, specially those that stand most warme in the Sunneshine, which maketh the robbers able to endure the siege, whom otherwise the aires chillesse would quickly discourage.

And now (the Bees beginning to breed, v.) is the time to dresse and fill their Troughs, which all the winter lay neglected.

At this time, in a morning before the Bees come much abroad, lift up your Hives: and quickly sweeping the dead Bees and other noysomenesse away, and scraping cleane the stooles, set them downe againe, v. and cloome them close as before. For albeit the Bees in time would rid them cleane themselves; yet shall it be good for them to have it done at

once,

63.

The *SPRING*

64.

P I S C E S.

65.

The first faire day in
Pisces, set the Bees at
libertie.

V.c.7.n.27.

66.

Now dresse their
Troughs.

V.c.4.n.12 &

c.6.n.53, 67.

67.

Clean the stooles.

V.n.26.

C. 3.

Of the Hives,

once, that they be neither hindered, nor annoyed therewith: and now and then the carrying out of a dead Bee at this time of the yeere doth cost a quicke Bee hir life: for being drawne with the weight of the corps to the cold ground; while she standeth panting a little, she is chilled, and so not able to rise any more.

This cleansing of the stooles, after a calme Aquarius, when the Bees have beene much abroad, is not so necessarie, and specially for the better stalls.

Those that by their lightnesse you perceive to lacke honey, you may now save by feeding, v.c.8.n.11 or driving them into others that have store. V.c.10.p.1.n.15.

Aries is almost as dangerous a moneth, for robbing, as *Virga* and therefore you must have a care in the evenings to shut the Wickets, & in the mornings not, before it be warm, to halfe open them againe: and where the drie winds and hot sunne have shrunke the cloome, be carefull to fill up the chinkes againe.

The poore stalls this moneth would be halfe-shut all the day, as in *Virgo* and *Libra*.

At Taurus, and sooner, if sooner you see * cause, removing the Barres from the better stalls, set the Wickers open: and for the weaker sort, let them all this moneth be shut in the evenings: and in the mornings, as soone as it is warme, be but halfe-opened.

* That is, when either they keepe watch at the dore in the evenings, or be so encreased that they cannot easily passe too and fro in their worke: for if the passage seems to streight onely in their playing fit, v.c.1.n.59. that maketh no matter.

At *Gemini* take away the Wickets from the better, & the Barres from the weaker stalls: and when this moneth is halfe past, make the all alike: leaving the doores as they were in *Gemini* before. V.n. 38.

CHAP.

68.

And feede or drive
light stalls.

69.

ARIES

70.

The second chiefe
robbing time.

71.

In *TAURUS*
Remove the bars.

72.

In *GEMINI*
The Winter doores.



CHAP. IIII

*Of the Breeding of Bees, and
of the Drone.*



he Drone, which is a grosse Hive Bee without sting, hath beene alwaies reputed a greedy lozell: (and therefore hee that is quicke at meat and slow at worke is fitted with this title) for howsoever he brave it with his round velvet cap, hise side gowne, his full panch, and his lowd voice; yet is he but an idle companion, living by the sweat of others brows. For he worketh not at all, either at home or abroad, and yet spendeth as much as two labourers: you shall never finde his maw without a good drop of the purest nectar. In the heat of the day he flieth abroad, aloft, and about, and that with no small noise, as though he would do some great act: but it is onely for his pleasure, and to get him a stomach, and then returnes he presently to his cheere. *Fuci cum exeunt, efferund sese fusim in sublimi, gyro, volitant: quod ubi satis jam fecerint, redennt domum, & eplis perfruxntur.* But for all this there is such necessary use of him, that he may not be spared, as without whom the Bee cannot bee.

The generall opinion anent the Drone is, that he is made of a honey-Bee, that hath lost hir sting: which is even as likelie, as that a dwarfe having his guts pulled out, should become a gyant. Others seeing the fondnesse of this opinion, have thought and taught that the Drone is a different species, and that as Bees breed Bees, so Drones breed Drones: which conceit (if the Author had observed, that at the time of their breeding and many moneths before, there is not a Drone left alive to breed them) hee would have liked as well as the

former

1.
The Drone no
labourer

Hist. An.
Li.9.c.40

3.
Divers opinions
of the Drones
originall.

H

C. 4.

Of the breeding of Bees,

3.
The Drone is the
Male Bee.

V.c.I.n.53
V.c.6.n.6 & 7

V.n.18

4.
Divers reasons
proving the
Drone to be the
Male.

The first reason
is, that they are
suffered in
breeding time
onely.

V.n.18 & 19
Nat. hist.
li.II.c.II.
V.c.5.n.4.

5.
The second
reason is, that the
Drones being
taken away in
breeding time,
the Bees breed
no more.

V.c. 6.n.18.

V.c.6.n.19
& 20

V.c.7.n.25

former. These opinions then, being one as likely as another, let them goe together. The truch is, they are of the same *species* with the honey-Bee, but of a different *sex*.

For albeit he be not seen to ingender with the honey-bee, v. either abroad, as other *insecta* doe, or within the Hive, (where yet you may by means behold what they do;) v. yet without doubt is he the Male Bee, by whose naturall heat and masculine vertue the hony-Bee, which breedeth both honey-Bees and Drones, v. secretly conceiveth.

The reasons that move me thus to think, are these. First, because although they be great wasters of the Bees store, yet untill they begin to leave breeding, and have conceived for the next yeere, (which some doe about Leo, most beofe Virgo) they suffer them: afterward they begin to beat them away. Which if some doe not, before Scorpio they die naturally: and from thenceforth all the Winter, untill the Bees breed new againe, v. there is not a Drone to be had *In rerum natura*. When they are quite gone, then doe the Bees lay no more seeds that yeere, but onely hatch and bred up those that are already in the celles.

Secondly, as the rather and the more the Drones are, the more and greater are the swarmes; (*Certe quo major fuerit fucorum multitudo, co major fiet examinum proventus; v.*) so where the Drones are few and late, there is small increase: and therefore if you kill the Drones of a Hive before the Bees have done swarming and breeding, (as some fondly have done before Mid soomer, to save their honey from these lazie lurchers) neither will the swarmes come forth that were formerly bred, nor the stocke thenceforth breed any more. After which time bringing in *Ambrosia*, v. as much as before, and having no young ones to spend part, they lay it up carelesly in their cells, where it corrupteth and turneth to stinking stopping, v. which will cause them so much to mislike their Hive, that the next *Virgo* they easily yeeld to the Robbers, v. And if by your industry they be then preserved; in *Pisces*, when breeding time is, finding their wombs barren, and therefore loathing even themselves and all, they yeeld their goods to them that will take it: and
after

and of the Drones.

after a while, when the strange Bees and they all alike, by conversing together in the same Hive, and sucking the same hony, away they goe with them to their Drones. But every faire day they will returne to fetch that they leaft behinde them: you, may see them flie so thicke to and fro that hive, as if it were full of Bees: but when night is come, they are all gone.

Thirdly, because *omne simile generat sibi simile*, Every living thing doth breed Male, or Female of his kinde, and experience doth teach us that the Bees doe yeerely breed, as well Drones as honi-bees; v. seeing the honi-bees are females, it followeth necessarily that the Drones are the Males of the same kinde. And therefore in the learned Languages the Drone hath his * Masculine appellation, as the Honi-bee her feminine.

* *Hic fucus, ὁ κηφῶδης* : At *hec apis, ἡ μέλισσα, מְלִיסָא*, cum ἡ *feminina*. *Melissa* the daughter of *Melissus* King of Crete, being one of *Jupiter's* nurces, is said to have bene by him transformed into the Honi-Bee; which retaineth still her gender, sex, and name. *Diogenes aut duas Melissi fuisse filias, Amaltheam & Melissam. qua Iovem puerum captivum lacte & melle nutriverunt. Laet. lib. 1. instit. c. 22. Nec sane rustico dignum est sciscitare, fuerint mulier pulcherrima specie Melissa, quam Iupiter in Apem convertit. Columella, lib. 10. c.*

6.
The third reason is, that they are bred by the Bees
V. * in annot. & n12, & c.

Deborah

Fourthly, we see the like in the likest insecta, the Waspe and the Dorre: for the manifesting wherof I will briefly shew you the breeding of them both.

The Waspes neaft is begun by one great Waspe, which you may therefore call the Mother-waspe: the wich in Cancer (or in hot and dry springs somewhat rather) with some hole, usually made in the ground by a Moale, Mouse, or other meanes, worketh a Comb of the utter drix of pales, or other timber, in forme of a round tent hanging by the top to the over-part of the hole. This combe containeth about six Cells, of the bignesse and fashion of the Bees cells, wherein she breedeth so many young ones: which, when they are fledged, doe breed as well as their dam: and so enlarge the combe to some eight inches over. Then, making more room beneath by moining and carrying out the earth, they hang an other combe under the first, by little pinns, and so an other,

7.
The fourth reason is, that the wasps and dorres have
drones, which are their males

8.
The breeding of wasps by
drones.

and

C. 4.

Of the breeding of Bees,

Hist.1.9.c.42

and an other, increasing still in the same place till Summer be done. For they goe not forth in swarmes as Bees doe. *Missio, ut apum, nulia vel cr abroam vel vesparum fieri solet: sed qui subinde orians ur no veliibidem manent, & alveum, terragesta, saciunt ampliozem.* When their breeding draweth toward an end, namely in *Virgo* and after, (besides the small or ordinary Wasps, which lie in all the upper combs) in the last or lowest combe, made for the noce with larger cells fit for larger bodies, they breed also two other sorts, Drones or Male wasps (which are somewhat bigger and longer than the small Wasps, and without stings as the Drone-bee) and Mother Wasps, which are like the small ones in all respects, save that they are twice so bigge. These when they fledge having conceived, as the Bees, by the Drones; in *Libra*, and sometime sooner, doe flie abroad (as their Drones also doe) gathering for themselves, and searching and prying into every cornerr as they goe, for their Winter lodging: and after a while, when the aire waxeth cold, leaving both Drones and small Wasps to the mercy of Winter (which with his first cold wet wether chilleth and killeth them as they flie abroad) doe forthwith betake themselves to some warme place, as the thatch of an house, a mortice in a post, an auger hole, or the like; but specially into hollow trees, (which is the cause, why in grounds adjoining to Woods their neasts will be most rife) where they abide till the next spring without any meat, as it were in a dead sleepe: out of the which neverthelesse a little warmth of the fire, or of you hand will awake tham at any time. At the blowing of *Palme*, if the wether be warme, they flie abroad for food; and in *Cancer* or *Gemini*, as I have said, they begin to nestle and breed. He that killeth one of them, killeth a whole neast of Wasps. *

* Whe the old Mother-Waspe hath done breeding, and hir wings are so worne, that she is not able to helpe her selfe, the little ones keepe her so long as they live together. Before the young Mother-Wasps are bred, you may easily finde her among the little ones: but when they are fledge, you cannot know her from one of them, but by hir ragged wings.

And

and of the Drones.

And that the Drone-wasps are the males, some were of opinion in the daies of *Aristotle*: for thus he writeth: *Si vespam ex pedibus ceperis bombilareq siveris, advolant qua aculeo carent: quod non faciunt qua aculeata sunt. Itaq argumento quidam hoc utuntur quod altera mares sunt, altera faemina*: which arguments seemeth not unprobable, seeing the Fowlers counterfeiting the call of the Hen Quailes catch onely the Cocks.

Hist.Li. 9.c.41

The Dorre likewise beginneth hir neast single, being more like the Bee then the Wasp is, in the she maketh Honie, and more unlike in the fashion of hir Combs: for she hat only a few round cels of the bignesse of grapes, lying flat on the ground one upon another without any order: the which are made after this manner. First either upon the ground in the grasse, or in some shallow hole within the ground, shee prepareth a little stuffe which is soft like Wax, but browne and more brittle, of the bignesse of hir head; and therein she layeth about six or seven seedes together, compassing them round with the same stuffe: which increaseth by little and little as the seedes doe: and when they begin to live, it groweth into so many severall Cells, as there are grubs, each having one to himselfe. When they be come to their bigness, the Cells, which before were browne and brittle, do now wax white and tough, that ;you can scarce teare them. And when the Dorres are ripe, they gnaw their way out at the top. Upon these they make more in like manner, and the void open Cells they fill with Honie, wherewith they feed both themselves and their young, when the weather suffereth them not to flie abroad. All this neast is covered with a little mosse like a Birds-neast. Until Leo they breed females onely as the Wasps doe: and then last of all, for propagation of their kind, they breed their Drones, being likewise, as the Drones of Bees and Wasps, without stings. And these, to put the matter out of doubt, within a moneth after when they are ripe, doe openly engender with their females, as the chaffers doe, but their mates they choose in the neast, and are carried away by them. After which time the females breed no more till the next Summer,

9.
The breeding of
Dorres by drones.

though

C. 4.

Of the breeding of Bees,

though you may see them gathering, and flying about some what longer then the Wasps. In Sagittarius they betake themselves to their Winter rest, where they lie single as the Mother-Waspe in a sleepe or swivet. But the Drone - dorres, as the Drone waspes, are destroyed by the weather: nor one afterward to be seene till next Leo, when the females breed new againe. But one thing in the Dorres and Wasps is more strange, then in the Bees. For whereas the Bees as soone as they have bred their first brood of females, doe presently breed Drones, v. (both which, when they are ripe multiply together) the young Dorres and Wasps in the beginning of Summer, doe not immediately take the Drones (for them there are none) but receive from their dams, to gither with their nature and being, that Masculine seed, whereby when they are ripe they breed all the Summer following, untill in the end they likewise conceive by their late bred Drones for the next yeare, both for themselves and the young that shall come of them.

By this time thou wilt say with me, that the Drone is the male Bee: where of if some curious Chirugion would make an Anotomie, he should easily discern *Duos amplos & candidos testes*, two lawfull witnesses of his Masculine Sex.

This truth began to appeare many yeares agoe, even in *Aristotles* time. *Aligui* *(saith he) *mares esse fucos, faeminas vero apes esse contendrnt*. Which opinion he reciteth in an other place. *Sunt qui fucos mares esse, apes faminas arbitrentur*. Where though he doe not approve it: yet hath he no other reason against it but this, *Arma ad pugnam viresq exercendas nulli foemina a natura tribu untur*. Nature hath armed no female for fight and force against the maile: but the Bees have power and weapon to chattice the Drones: v: and therefor the Drones cannot be their males.

The weaknesse of which reason I marvaile he did not see, seeing in all the kinde of * Hawkes the female doth command the male, as being both stronger and better armed. Where unto may bee added the example of the *Amazons* reigning in his time: who by force of armes subdued many Kingdomes of men, and held them in subjection: like unto which,

V.n.19

10.

The fist reason is the
apparent signes of their
Sex.

11.

Aristotles Objection
answered.

Hist 1.5.c.21
Generat. 1.3.c.10.

V.n.22

and of the Drone

which, it is marvaile but there were then some mankind Viragoes in Greece, as well as there be now in other Countries. Which thing, if nothing else, the experience of his Masters * Master might have taught him.

* The first instance is beyond exception: neither doe I see how the other can be answered, unlesse peradventure it be replied that such rule is against Nature.

+ Aristotle his Master was Plato, whose Master was Socrates, whose Master was Xantippe that thundring showing Queene of Shrewes, *Xantippe Socratis Philosophivxor morosa aomodum suisse fertur & iurgiosa: irarumq, & molestiarum muliebrium per diem per q neqim seatebat.* A. Gellius l.l.c.17. *Socrates, cum in eum Xantippe prius con vitia & maledreja ingessisset,posta rero& sordiais aquis persudisset, , Nonne (inquit) dicebam Xantippen tonantem quandogue piuituram?* Laertius Lib: 2. M vita Socratis.

But you must understand that the Philosopher speaketh thus, not domatice but dispistatue, onely by way of reasoning: for in the end of the same chapter heye eldeth himselfe to have no certaine knowledge thereof. *Non tamen fatis adhuc explorata qua evemant habemus.*

To returne therefore to our purpose, the Hony-Bees having, as those other *insecta*, conceived by the Drones: the best about Pisces when they first gather upon flowers, others in *Aries*, and the weaker later, begin in their breeding: which is continued all the Summer, even to the end of *Virga*. But the chiefe time is in *Aries*, *Taurus*, and *Gemini*: which moneths yeeld *Ambrosia* the *Schadons* food, in greatest plentie, varietie and vertue.

The Bees will be sure to serve themselves first, their first generation being alwaies females: which they breed after this manner.

Close under the Honie (which is at that time altogether in the upper parts of the Combs) in the middle of the bottomes of the void Cels, as the Wasps doe on the one side, they lay their seeds, about the bignesse of those which the Butter-flie leaves upon the Cabage-leaves: but of different colour, the Bees being white like Wasp-seeds, and the Buttler-flies yellow. And so they descend by degrees toward the neather part of the Combes, filling one Cell after an other. Although when the chiefe breeding is past,

they

12.
When the Bees begin
to Breed.

13.
The chiefe time of
breeding.

14.
The first breed are
females.

15.
The manner of their
breeding.

C. 4.

Of the breeding of Bees,

16.

The Bee-seed is first
turned into a Worme.

they doe not precisely observe this order, but lay up their Honie promiscuously among the young Bees, where they finde the Cells void. The Bee-seed at the first sticketh upon one end, untill it be a live Worme or Grub: as soone as it liveth it is loose, and lyeth in the bottome of the Cell round like a ring, one end touching the other, till so the bottome can no longer containe it: after that, it lieth along in the Cell till it be growen to the full bignesse of a Bee: and then doth the Worme die, and becommeth void of all motion and sense: and so is shut up in the Cell, the Bees covering the top close with wax.

17.

The Worme being dead
groweth to the shape
of a Bee and then
liveth againe.

The Grub being now dead, presently beginneth the alteration from a Worme to a Bee: which, is two-fold, in shape and in colour: the first alteration in shape, is the division in the middle; then the other division between the head and shoulders, whence it is called *insectum*. after that, the growth of the head, legges, wings, and other parts into their shape and fashion. The first that altereth in colour from white to brown is the upper part, and of the upper part the head, and of the head the eyes.

The uniforme shape and white colour of the Worme, being thus altered into the proportioned shape and brownish colour of a Bee, she beginneth to move againe, and to live hir second life: and then breaking the cover wherewith she was inclosed in the Cell, she commeth forth a flying Bird, *Faetu posito incubant, exculu sus inde vermiculus, dum parvus est, jacet in favo obliquus: postea sua ipse facultate se erigit, ciumq, capit. Faetus apum & fucorum candidus est: ex quo vermiculi sinunt, qui in apes fucosq transeunt.* And all this within the space of a moneth. Yea in swarming time, when the Hives have more heat, partly from the aire, and partly from the multitude of Bees; when also the *Schadans* never want their fill of *Nectar*, *Ambrosia*, and faire water continually brought in fresh and fresh unto them; I have knowne this effected in three weeks: although *Plinie* speakes of more then twice so long a time. *Faetus inira 45. Diem peragitur.*

Hist. An. 1.5.c.22

But the Lady-bees are bred in the severall Palaces of the

Queene,

18.

The breeding of the
Lady-Bees.

and of the Drone

Queene, v. after a peculiar and more excellent manner. For the golden matter whereof they are made, is not turned into a Worme at all, but immediately receiveth the shape of a Bee. *Primordium regum colore cernitur fulvo, corpulentia mellis crassior is, magnitudine ilico proxima sua futura soboli: nec primum ex eo vermiculus gignitur, sed statim apis.* Item, *Higinius negat ex vermiculo, ut caeteras apes, fieri ducem: sed in circuitu favorum paulo majora, quam sint plebey feminis, inveniri foramina repleta quasi sorde rubri coloris, ex qua protinus alatus rex figuratur.*

When the old Bees have ended their first broods of females, then last of all after the same manner in wider Cells made for the nonce, v. the breed the Male-bees or Drones: as was long since observed, *Sunt fuci sine aculeo velut imperfecta apes, nouissimè a fessis & jam emeritis inchoata, serotinus faetus.* And therefore some stalls doe not drone before Cancer, not many before Gemini, nor any before Taurus: although you may see the * Nymphes of good stalls abroad in Aries, of others in Taurus, and of all in Gemini. By chance some few Cephens may be bred betime with the femals: but they, as coming out of season, are not suffered to live.

* The young Bees are called Schadons: *Schadones sobolem dico.* Hist. l.5.c.22.

The brood of females, when they have the shape of Bees, are called Nymphs, and the young Drones Cephens: *Catera turba, cum formam capere cepit, Nymphæ vocantur, ut suci Cephenes.* Pl. li. ll.c.ll.

These Cephens or Drones, when they are fledged, doe not onely serve for generation; (as hath beene shewed) but also doe helpe the females much, by reason of their great heat, in hatching their broods. *In faetu adjuvant apes, multum ad calorem conserente turba.* And for these causes they are alwaies in breeding time mingled with them throughout the Hive. Although afterward (when they have beene much beaten, and can goe no where single, but one or other will be on their jacks) they gather all together in a cluster, for their safetie in one side of the Hive: so that it is true at some time which the Philosopher spake indefinitely, *Tenent alvei locum penitiorem.* And yet their hanging together will not serve

V.c.6.n.11 & 12

Hist. l.5.c.22

Colum. l. 9.c.11

19.
When the Drones are bred.

V.c.6.n.10
Nat. hist. li. ll.c.11

20.
When they come abroad.

21.
Two uses of the Drones.

Nat. hist. li. ll.c.11.

22.
Where they lye.

His. li.9.c.40.

C. 4.

Of the Breeding of Bees,

serve their turn: for the Bees, when they are disposed, will quickly make them part, and depart. When there is no use of them, there will be no roome for them.

23.
The male-Bees are
subject to the females.
Nat. hist. II. II. cap. II.

For the Drones are but vassals to the Honie-Bees: which as they doe excell them in vertue and goodnesse, so doe they also in power and authoritie, ruling and over-ruling them at their pleasures. *Sun quafi servitia verarum apum: quamobrem imperant ijs.* For albeit generally among all creatures the males, as more worthy, doe master the females; yet in these, the females have the preeminence: and, by the Grammarians leave, the Feminine gender is more worthy then the Masculine, *Hawc apes* then *hic fucus*, *hae Nympha* then *hic Cephēn*. But let no nimble tongued Sophisters gather a false conclusion from these true premisses, that they, by the example of these, may arrogat to themselves the like superioritie: for *Exparticulare no est syllogizare*, and he that made these to command their males, commanded them to be commanded. But if they would so faine have it so, let them first imitate their singular virtues, their diligent watchfullnesse in keeping, their temperance, chastitie, cleanlinesse, and discreet oeconomie, &c. And then, if they meete with such dull Lubbers as these Drones are: they may with lesse blame borrow a point of the Law, and enjoy their longing. Yet when they have it, let them use poore *Skimanington* as gently as they may, especially in publike, to hide his shame.

And this they may note by the way, that albeit the females in this kine have the Souveraigntie, yet have the males the lowder voice: as it is in other living things, Doves, Owsils, Thrushes, &c. the males being knowne by their sounding and shrill notes from the silent females. Yea the wives themselves will not suffer that Hen to live, which presumeth to crow as the Cock doth: nature teaching, that silence and soft noise becommeth that Sex.

The Bees breeding or laying of seeds beginneth to cease, in some by Leo, in some not before Virgo. After which time these **Amazonian* Dames, having conceived for the next yeare, begin to wax wearie of their mates, and to like their

24.
When the Bees leave
breeding, and beat
away their Drones.

roome

and of the Drone

roome better then their company. At first not quite forgetting their old familiaritie, they gently give them Tom Drums entertainment: they that will not take that for a warning, but presume to force in againe among them, are more shrewdly handled. You may sometime see a handfull or two before a Hive, which they and dilled within: but the greatest part flyeth away, and dieth abroad.

* Amazones bellicose erant Scythiæ mulieres, quæ cum viris exulantes in Cappadociæ ora juxta amnem Thermodontæ confederunt: ubi, viris plerisque per insidias accolarum trucidatis, reliquos qui domi remanebant, ut ipse solæ rerum potirentur, interficiunt: & armis sumptis cæcis cum contemptu hostium se strenue tuentur, & imperium longe lateq; in Europam & Asiæ partem tandem proferunt. Ne vero genus periret, finitimis tanquam maribus utuntur: quos officio functos abigunt: Atq; quot parium virgines rovent, & armis exercent; maculos vero duræ enecant: unde eas Æorpatæ ð Viricidas appellant Scythæ, ut tradit Herodotus l. 4. Prima harum regina Marthesia vel Marpesia dicebatur: quæ cluces quidem peperit filias, Antiopen, Orithyam, Menalippen, & Hypoliten: e quibus duæ majores natu matri successerunt, cæteræ imperium non sunt adeptæ. Amazonum itaq; regnum apud rempublicam aptissime refert: Marpesia apud reginam quæ plures solet producere fœtus: Antiope & Orithya primores filias, quæ primum & secundum examen educunt, ipsæque moderantur: Menalippe & Hypolite eas principes quæ aut nequam aut nequicquam dominantur. Nam post secundum examen aut in alveis morantes morte mulcantur, v. aut egressæ fere fame pereunt, v. c. 8. n. 4. Viriusq; etiam populi mores non minus conveniunt: nam & apes feminæ sunt bellicose, quæ non modo Europam & quandam Asiæ partem, ut illæ; sed universa orbis terrarum imperia possident: quæ sui sexus prolem summa iidem cura enutrientes, mares omnes tam viros quam filios cedere solent: ut & ipse vere Æorpatæ dici possint.

But because in the same Hive they doe not leave breeding all at once: therefore neither doe they kill their Drones all at once: but at the first taking away onely the superfluous, they suffer as many as they need, to remaine longer: some sometime a whole moneth after.

The forward stockes, that have cast their last swarme in *Gemini* or soone after, begin at *Leo*: yea of those in the beginning of *Gemini* some somewhat sooner, the backward, that cast not their last swarme much before *Leo*, may stay till the end of the same moneth: but usually about *Virgo*, or a weeke after, they make a cleane riddance of them.

Those

25.

The Bees compared to
the Amazons.

V.c.l.n.7.

26.

They rid not their
Drones all at once.

27.

When forward stalls
begin.

28.

When the backward

C. 4.

Of the breeding of Bees,

29.
When full stockes that
have not swarmed.

30.
When those that are
over swarmed.

V.n.4.

31.
Sometime the Bees cast
out even the white
Cephens.

32.
Timely ridding of
Drones a good signe.

33.
Sometime they rid their
Drones in the Spring.

34.
And afterward breed
new again.

35.
Sometime it is good to
helpe the Bees in this
worke.

Those stockes that being full have not swarmed at all, becuase they are rich and feare no want, use to suffer them so long and sometime longer, even to the end of this moneth. Those that have over-swarmed themselves, finding their pascitie and weaknesse, wax desperate and carelesse of their estate: and therefore sometime keepe their Drones till toward the end of Virgo, sometime kill them not at all: abut let them alone, untill they die by nature: which is not long after. For few of them can live till Libra, and they youngest not to the end of that moneth. v. Take heed to such stalls, for they are likely to die.

Some are so provident, that, to prevent this trouble and save their Honie, they draw the poore Cephens out of their Cells before they be ripe, or come to their second life. Such you may safely trust.

Those that soonest rid their Drones, are likely to be forwardest the next yeare.

Sometimes the Drones are beaten away in the Spring. For when forward stalls (which in their heat are bold to fly abroad when others dare not wagge) have lost many of their Nymphes in a tempestuous and stormie Spring; they will therefore destroy their Drones also. But having sormerly conceived by them, they then begin the world anew, as after an other Winter: and first breeding Nymphs, in the end they breed Cephens againe. Which if they can compasse before swarming time be past, they will swarme that yeare: otherwise they will be fat and full, and excellent good either to keepe or kill.

Because the stockes that have cast often, doe beare with their Drones so long, although here be wise so many as bee needfull for the Bees that are least: therefore (to have the Honie which those Wolmores would devoure) it is not amisse to prevent the Bees, and presently after the last swarme to diminish their number, with a Drone pot cloomed to the doore: specially of them you meane to take, or see much opprest with superfluous multitude, v.c.3.n.43.

CHAP.



CHAP. V.

*Of the Swarming of Bees, and the
Hiving of them.*

THE stocks having bred and filled their Hives doe send forth swarmes. A swarme doth consist of all such parts as the stock doth: namely of a Queene-bee, Honie bees as well old as young, and Drone bees.



If any man desire to see the Queene, he hath now opportunitie, when she goeth forth with hir swarme: v. and dead one hee may finde many before the stooles, when the stocks have cast their last swarmes, v. and also when many meet in one swarme. V.c.l.n.7. But then, being dead and

shrunke together by the force of the poison, they lose much of their stature and comlinesse.

Men thinke that the swarme consisteth onely of young Bees, and that the old Bees onely tarrie behinde: but indeed (though it may seeme strange) the swarme is n younger, then the stocke: for there are in both of both sorts. The young Bees remaine in the stock with the old for their defence, and for the greatest labour; v. and the old ones goe with the young in the swarme for their aid and guidance in their worke.

The Drones they take with them for propagation of their kinde v. And therefore those swarmes that have many Drones will surely prosper: and if they be rath will swarme againe, unlesse they be over hived: whereas those that have few or none, will increase little or nothing all the Summer after.

A warme, calme, and showring spring causeth many and

1.
The parts of a swarme.

2.
When you may see the
Queene-Bee.

V.n.34.
V.n.35

3.
The swarme no younger
then the stocke.

V.c.l.n.57

V.c.4.n.3

4.
Many Drones in a
swarme a good signe.

5.
A kinde Spring for
swarmes.

C. 5.

Of the Swarming of Bees,

V.c.7.n.60.
Hist. 1.4.c.22

V.c.4.n.13.
V.c.6.n.38. 39.
&c.

V.c.10.p.1 &
im.& iiij.in n.3.
V.c.8.n.5

6.
Swarming Weather.

V.n.20.

7.
The swarming houres.

rathe swarmes. Though sudden stormes doe hinder them. v.

Augent mella siocitates, sobolem imbres.

* Dry weather makes plenty of hony, and + moist of swarms. But note that the chiefe time for breeding swarmes is the Spring, v. and for honie-gathering the Summer: v. so that when a dry Summer followeth a moist Spring, the Bee-folds are rich. If the Summer be also moist, the increase of Bees will be greater: but, because of the scarcity of hony, this increase will proove a decrease: the more swarmes you have at the end of this Summer, the fewer stalls shall you have at the beginning of the next. For, except some faire rahter swarmes, and some good stockes, which cast betimes or not at all, they die all for hunger: when they have spent their owne pittance, and spoiled their fellowes. How to prevent this poverty, see note 11 & * in 20. And to prevent the losse & spoile that would come thereof, take the ligh stocks, together with the small and late swarmes, v. feed the midling sort, v. and be sure they be not over hived. v.n.45.

* The reason is, that in hot and drie weather the hony dewes are rassed, and the adventitious moisture is drained from the flowers, the pure naturall juice onely being leaft in them: of both with they gather all the day long without interruption.

+ The reason is, that the weather keeping them in, they can doe nothing but breed and hatch their schadons: and when they goe abroad, thy bring in grosse Bee meat, *Ambrosia* and water, where with to feed them; but can finde nothing fit to lay up in store. So that moist weather gives them two causes of swarming, plenty of Bees, and penury of hony: the one makes them able, the other willing: and then neither winde nor cloud, nor raine can stay them. Whereas in times of plenty it is otherwise. v.n.20

Likewise, in warme and calme weather the swarmes delight to arise, but specially in the heat-gleame, after that a showre or gloomie cloud hath sent them home together: in extreme hot and dry weather not so: v. in so much that stalls being full and ready to swarme with the first, are sometime so kept backe with cold dry windes in *Gemini*, and with extreme heat and drought in *Cancer*, that they have not swarmed at all that yeere.

The swarmes use to come forth between the houres of

nine

and the Hiving of them.

nine and three, and sometime an houre sooner or later: but chiefly between eleven and one. They choose rather the fore-noone, if the weather please them: otherwise they will stay for a faire houre in the after noone. This time of the day therefore, in the swarming months, your Bees must continually be attended.

The swarming moneths are two, *Gemini* and *cancer*: one moneth before the longest day, and an other after.

In some very backward yeres, such as was 1621, & 1622, there have bin swarmes a weeke in *Leo*, which did well, (the Bramble, that was wont to be a fortnight or three weekes rather, v. not blowing before that time:) Likewise in warme Countries in a kinde Spring, some have come somewhat before *Gemini*, but this also is rare.

Those that come before the Solstice, in the ascending of the Sunne, are rathe swarmes. Those that come after, in his descending, are late swarmes. But there are few that come in the first fortnight, and they very good: few also in the last fortnight, namely after S. Peters - tide, and they all as bad: unlesse the backwardnesse of the yeere, when it happeneth, doe mend them.

Note heere that in the Heath cuntry, swarmes are usually lateward, namely in the latter part of *Cancer* and the forepart of *Leo*: which some yeeres prove better than the rathe.

Those that swarme before the blowing of knap-weed, come in very good time: before the blowing of blackberies, v. they may live and doe well: but blackbery swarmes, sepcially castlings, are seldome to be kept, as being more likely to die then to live: and if they live, they seldome swarme the next yeere. And moreover they weaken the stocks from whence they came, which otherwise the next yeere would swarme betime: and then one such swame is worth three of those lateward ones. Wherefore put such backe againe into the stocke: which you may easily doe, so soone as they are hived, by knocking them downe upon a table close to the doore: their fellowes that are behinde will soone be in with them. And if they rise againe, serve them so ill they cease. But if you spie them rising before the Queene be come forth; shut them in a while, and that will stay them.

8.

The two swarming
moneths.

V.c.6.n.39

9.

Rathe swarmes

10.

Late swames

11.

Blacke-berie swarmes are
seldome to be kept.

V.c.6.n.39

C. 5.

Of the Swarming of Bees,

12.
A prime swarme and
an after swarme.

13.
A stall may cast
four times.

14.
Divers causes of
breaking the
prime swarme.

15.
One prime
swarme worth
two after
swarmes.

V.n. 67 & 68

16.
The vulgar Bees
appoint the rising
of the fore
swarmes & that
upon 4 grounds.

V.c.In.6 & 7

17.
Five signes of the first
swarming.

V.c.4.n.20.

A good stocke doth naturally and usually cast twice; a prime swarme, and an after swarme: sepecially if the prime swarme be so rathe, that the castling bay come before the bramble buds be open: yea and rathe prime swarmes not over hived, in a plentifull yeere may swarme once or twice: although some full stalls doe not cast once, some but once, and some having many princes (specially when the prime swarm is broken) doe cast three or foure times. For sometime it happeneth that, in the swarming, a blacke cloud rising stayeth part of them that are alreadie come forth, and lie about the hives doore: sometime when they are all up, either fearing a cloud, or disliking the lighting place, or being troubled in the hiving, part doth returne.

One prime swarme is worth two or three after swarmes, except it be broken: and then if the residue come forth in one entire swarme, that after swarme may bee the better of the twaine: but if it be divided into two or three, then will they all be but indifferent: such, except they be timely, or united, v. can hardly live till the next Summer.

The choice of the time when the first colonies, or prime swarmes shall go forth, the rulers referre unto the commons: who by reason of their continuall travell and businesse both withou and within, doe know when all things are readie and fit for them: First within they will be sure that they have a Prince ready to goe with them: for without a Governour they will not be, v. Then that their Hive be full, so that it may be divided at the least into two or three sufficient companies: one to remaine with *Marpesia* the old Queen, and other to go forth with *Antipoe* the Prince, and the third haplie, which, together with the unripe brood in the cells, may make an other swarme to serve *Orithya*. Without likewise they will see, first that the flowers be in state presentlie to furnish them with store of wax and hony: then that the do please them, as being warme and calme, & moist: unlesse, being continually unseasonable, they have no choice. V.t.in n.5.

When the Hives begin to be full, they will dronie, or yeeld forth fledge drones: v. which is a signe that the first

brood

and the Hiving of them.

brood of nymphes have bee a good while flying abroad, and are now able to endure both weather and labour.

Other signes of the Hives fulnesse and readinesse to swarm are the Hive doore. First, the Bees hovering in cold evenings and mornings. Secondly, the moistnesse or sweating upon the stoole. Thirdly, their hasty running up and down. Forthly, their first lying forth in foggy and sultrie mornings & evenings, & going in again when the aire is cleere.

When they will swarme, sometime they first gather together witout at the doore, not onely upon the Hive, but upon the stoole also: where when you see them begin to hang one upon another in swarming time, and not before, and to grow into a Cluster that covereth the stoole in any place; (specially if there be Drones among them) then be sure they will presently rise, if the weather hold. The first that come forth will increase that Cluster to some fourth part of the swarme: and then begin they to flie away, first out of the Hive, and after from the Cluster. But commonly some few of them doe first flie forth and play to & fro the Hive doore, so to till out more company unto them: and when by this meanes they have gotten out so many, that you may see them begin to dance v. above the Hive; then doe they hastilie issue forth and swarme.

But heere you must note, that as to fill the Doore, or to lie forth a little now and then in foggie or sultrie mornings and evenings, (which is because then they are most offended by heat within, and can best indure the aire abroad) and otherwise to go in againe, is a signe that the Hive is full, and therefore ready to swarme; so to lie forth continually (as in extreme hot and dry summers they use to doe) under the stock or behinde the hive, &c. (specially after Cancer is coming) is a signe and cause of not swarming. For the Bees, knowing by nature that the greatest companies doe prosper best, untill they finde themselves so pestred with heat and throng of multitudes, that the Hive can scarce hold any more, with have no minde to swarme: and when they have once taken to lie forth, the hive will alwaies seem empty, as though they wanted company.

One cause of their lying forth, is stormie and windie wea-

18.

The signes of *present*
swarming.

V.x.3.4.

19.

To lie forth continually
is a signe they will not
swarme.

20.

The causes of their
lying forth.

ther

C. 5.

Of the Swarming of Bees,

ther, not suffering them to swarme when they are ready: for when their number is growne so great through their continuall breeding, that the Hive cannot hold them, seeing they may not swarme, they must needs, for want of aire & roome within, lie without: which when they have once causth, they will hardlie leave: and the longer they lie out, the lother they are to swarme.

An other cause of their lying forth, is continuall hot and drie weather, specially ater the Solstice: which causing plentie of hony both in plants and dewes, their mindes are so set upon that their chiefe delight;
(*Tantus amor florum, & generandi gloria mellis*)

Virg.

that they have no leisure to swarme: although they might nost safelie come abroad in such weather, which would not suffer the weakest Nymph to fall.

And when by continuance of such honie-weather they are once sufficientlie provided, they will then be loth to leave the sweet fruits of their labours, and to change their full store-houses for that which make giddie House-wives. But if they have once begun a combe without where they lie, the matter is out of doubt. Whereas contrarily in wet and scanty Summers, no weather will stay them from swarming as soone as they are readie: although by that meanes (unlesse they be rathe, or the weather so dainelie mend) most as well of the stockes as swarmes are like to die for hunger: v. and therefore, as neere as you can, so * order the matter, that your swarmes may come betime. For rathe swarmes and their stocks, that have the summer before they, prove alwaies good.

V.n.5.

* By having faire and fat young stockes, in a good standing, not over hived, and well kept.

But for those stockes, which not swarming in *Gemini* happen afterward to lie forth, this may be a remedy.

First keep the Hive as coole as may be, by watering and shadowing both it, and the place where it standeth: and then enlarging the doore to give them aire (alwaies provided that there be no backe-doore in the shadie parts of the Hive) move the cluster gentlie with your Brush, and drive them in.

21.

The remedy and meanes to make them swarme.

If yet they lie forth and swarme not: (though they have had fit weather two or three daies) then the next calme and warme day, between 11. And 1. Of the clocke, or within an houre sooner or later, (when the Sunne shineth, and you see

no

and the Hiving of them.

no clouds comming to hide it) put in the better part, at the least, of them that lie out, with your Brush; and the rest gentle sweep away from the stoole, not suffering any to cluster againe. These rising in the calme heat of the Sunne, and flying about before the Hive, will make such a noyse, as if they were swarming: which their fellows hearing, will happlie come forth unto them, and so begin to swarme.

3

If this doe not serve, but that returning to the Hive they lie forth againe; then reare the Hive high enough to let them in, and cloome up the skirts all but the doore.

But if notwithstanding all this they doe not swarme; then assure your selfe that either they have no Prince bred to goe forth with them, or else they are fat and full of honie, which they are resolved not to leave.

And then if it be before Mid-Cancer, & the hony weather hold ; your best way is to duple the stall, by turning the skirt of the Hive upward, and setting a leere prepared Hive fast upon it: into which they will ascend, and worke and breed there as well as in the old. V. In the end of Virgo drive them all into the new Hive, (which then, if the weather have held good, will be full of wax and hony) and take the olde for your labour. But if Mid-Cancer and the hony dewes be past, (because they want time and meane to store the void Hive) let them stand: such a stall will be yerie good to be taken; or, being young, to be kept.v. But first replenish some over swarmer with his excesse or lying out (specially if you meane to take him) thus.

23.

What is to be done to these that by no means will swarme.

V.n.24

V.c.10.p.1.n.3.

When all hope of their swarming is past; in some evening (while it is yet light) holding a Hive under those that lie out, cut them off from the stoole with a * tight thread: and carrying them to an over-swarmer that you would mend, knock them down on a Table close before his Hive: into which, because they come without a Prince, they are quietly admitted, and quickly united under one common Commander.

23.

How to replenish an over-swarmer.

*Held straight between two hands

The manner of doubling a stall is this: Having first measured the Hive about in the largest place, provide a leere spleeted Hive of the same size an compasse: make ready also two square stickes 13. Or 14. Inches long ; and an inch thicke at one end, and halfe an inch at the other: these two

24.

How to double a stall.

sticks

C. 5.

Of the Swarming of Bees,

sticks lay parallel over the hive five or six inches apart , and each of them 2 like distance from the middle of the Hive, with both the thicke ends one way to size out the doore for this doubled stall: and so tie them with needle and thread to the skirts fast in their places. These stickes doe also serve to keepe the Hive from slipping, and to save the Bees, that otherwise might be prest to death between the two skirts. Then in a faire night, so soon as it is dark, reare the full Hive with three bolsters, two on the West side, and one on the East, some foure or five inches high, (or with a double rest) to let the Bees in: and cover both it and the stoole with a large Mantle. Then make a Brake behinde the stoole of four stakes, 2. Two foot, and 2. Foure foot long, pitched fast in distance equall, and fit to containe the full Hive: which you may be sure of by fitting it to the leere Hive, being of the same compasse. One of the short stakes set close to the middle of the backe of the stoole, and other Northward opposite to it: one of the long ones on the West part, and the other on the East. Then right in the middle, between the stakes, digge a hole in the ground halfe a foot deep: and of such compasse, that being halfe filled with a wisp of straw, it may fitly receive the top of the hive, and so the Hive may stand upright and fast in the Brake. Then pare away the inner edges of the tops of the short stakes, that the Hive in the setting downe may not stay against them: and taking up the West-stake, sticke it by you.

The Brake.

These things thus prepared, your selfe standing on the West side of the Brake, and your assistant on the same side of the stoole at your right hand, (both in your complete harnesse) v. let the assistant take hold of the Hive, &, yeelding the top toward his breast, reare the far side of the skirt from the East-bolster. When you see it fitting, embracing the hive as neere the skirt as you may, lift it up sheere from the other two bolsters, and set it downe warily in the middle of the Brake, with the top in the hole as upright as you can, and the doore to the backer part of the stoole, that it may stand South-ward as it did before. And presently let you assistant, being readie, place the leere prepared hive even upon it, with the thick ends of the stickes South-ward: and doe

V.c.I.n.40.

you

and the Hiving of them.

you put the long stake into his place againe. Then cloome the Hives together with rolles, flatted, that none of the coome fall in among the Bees, leaving open the space betweene the stick ends for the new doore of this double hive. Lastly put on the hackle, and gird both it and the long stakes to the leere-hive, about the middle with a Belt, and about the top with a With. And so let them stand till after the end of the Dog-daies, when Bees are taken.v. But in no case let the doing therof be deferred beyond the time prescribed, v. lest you have little or nothing for your labours.

V.c.10.p.l.n.l.
V.n.22.

At the Vindemie, in a faire calme morning before and Bees be abroad, shut up close all the stalls in your Garden: and those that stand next cover with sheetes and blankets, lest some of the younger sort mistake, and tarrie at their doores till they be chilled. And when the Sunne is an houre high, and the aire waxeth warme, having first parted the new Combs and the old with a long knife, take off the upper hive or *Receiver*, & set him upon the stoole in the old place: But besure, &c. as it followeth, c.10.p.l.n.15. If you see the Receiver be very fat, or feare the Queene be hurt, or not in the Receiver; you best and safest way is to take them both: for if they be over-fat or want a Ruler, undoubtedly they will not prosper.

25.
How to drive all the Bees into the new hive, and so to take the old.

The signes of after swarms are more certaine. For where as he rising of the prime swarme is appointed by the vulgar, whose chiefe rule is the fulnesse of the Hive; the Hive being now well emptied, for other swarms there needeth some other direction, which the Rulers themselves doe give by their voices: without which that stocke will swarme no more that yeare. And yet the choice of the houre, yea and of the day among foure or five is permitted unto them, as best knowing the disposition of the weather.

26.
The signes of after swarms.

When the prime swarme is gone (if the stocke shall cast any more) the eihth or ninth evening after, sometime the tenth or eleventh, the next Prince, when she perceiveth a competent number to be fledge and readie, beginneth to tune in hir treble voice a mournfull and begging note, as if she did pray hir Queen-Mother to let them goe. Unto which voice if the Queen vouchsafe to reply, tuning hir

27.
The rising of the after swarms is apponted by the Rulers.

28.
The Bees Musick

Base

And this the King: in measures mournfull proceeds,
That with his traine his fortune may take:
Begs the like browne,
Of his Queene-mother, making none,
O, whye I come,
Amonge the prime Prince come,
They send abroad their many Colours:
To seeke new Crowns, for new habitation,
That their owne limits cannot them suffice:
When to increase it this prudent Nation,
And O, this sayre, With o-ther Princes his In- famies are,
most sober and most chaste, Their gaine-got goods in pleasure storne to vvaile,

weaker sex (to great in field) No power of the mightiest Males can make to yeeld: They living aye,
one commands this people loyall, The great Marquis with plenty blest of issue roy- all: An- ti-o- pe

famous Amazons excels the rest, That on this earthly Sphere haue euer bin, VVhose little hearts in
Hexa- gonis no Beza- lell, for curious Art may passe, or misse, One Sou- raig- nand but

most sober and most chaste, Their gaine-got goods in pleasure storne to vvaile,
And Ori- thys sayre, VVith o-ther Princes his In- famies are,

CONTRALTONE:

A s of all States the Monarchie is best, so of all Monarchies that Fe- mi- nine. Of
They work in common for the common weale: Their labour's reficte to maintaine their State: Their

famous Amazons excels the rest, That on this earthly Sphere haue euer bin, VVhose little hearts in
Hexa- gonis no Beza- lell, for curious Art may passe, or misse, One Sou- raig- nand but

weaker sex (to great in field) No power of the mightiest Males can make to yeeld: They living aye,
one commands this people loyall, The great Marquis with plenty blest of issue roy- all: An- ti-o- pe

most sober and most chaste, Their gaine-got goods in pleasure storne to vvaile,
And Ori- thys sayre, VVith o-ther Princes his In- famies are,

To whose grace accents it his Princely Grace
Vouchsafe with Trine Aspects reply to make,
To sweetest Treble tuning sweeter Base;
His mournfull lute a joyfull end doth take:
And then, when fit time they epy,
Somethousands strong
This Armie royall gallantly
Do march along.
Harke; harke, methinkes I heare in Notes of choice,
This fairest Ladies sweetly mournfull voice,

And this the King: in measured mournfull measure,
That with his train his former grace may lacke:
Begs the like boon:
Of his Queene-mother, making more
Oubya doone
Amidst the prime Prince's grace,
They send abroad their numerous Colonies:
To seek new Cities, to new habitations,
That their own limits cannot them suffice;
When so increased is this prudent Nation,
With other Princes his kin-families are.

most sober and most chaste, Their paine-got goods in pleasure scorn to waste,
and Orl- thyja faire, With o- ther Princes his kin-families are.

weaker sex: (so great in field) No power of the mightiest Males can make to yield: They living yet,
one commands this people loyall, the great Marpes with plenty blest of issue roy- all: An- ti- c- pe

famous Amazons excels the rest, That on this earthie Sphere have ever bin, Whose lit- tle hearts in
Hex- gonis no be- x- le- cell, for curious Art may passe, or imitate, One Sou- veraign and bus

They work in common for the common weale: Their labours re- flecte to maintaine their State: Their
s of all States the Monarchie is best, so of all Monarchies that Fe- ml- nine, Of
A

ASSVS

L TENOR.

A S of all States the Monarchie is best, So of all Monarchies that Fe- ml- nine, Of
They work in common for the common weale: Their labours re- flecte to maintaine their State: Their

famous Amazons excels the rest, That on this earthie Sphere have ever bin, Whose lit- tle hearts in
Hex- gonis no be- x- le- cell, for curious Art may passe, or imitate, One Sou- veraign and bus

weaker sex: (so great in field) No power of the mightiest Males can make to yield: They living yet,
one commands this people loyall, the great Marpes with plenty blest of issue roy- all: An- ti- c- pe.

most sober and most chaste, Their paine-got goods in pleasure scorn to waste,
and Orl- thyja faire, With o- ther Princes his kin-families are.

To such of grace accents if his Princely Grace
Vouchsafe with Trine Aspects reply to make,
To sweetest Treble tuning sweeter Base;
His mournfull suit may full end doth take:
And then, when fit time they espy,
Some thousands strong
This Armeroyall gallantly
Doth march along.
Hark, hark, methinks I heare in Notes of choice,
This sweet Ladies sweetest mournfull voice.

L

The

Importunate Oriana now hath womne
 Her sterne Queene-Mothers grante to his desire:
 For Loy, her Sisters all as one
 With cheerfull notes fill up the Quire.
 These Ladies musically Comfort affures
 The Prince his much-desired Sould mate:

Of his deare Lige he leaues to be gone, But comfort none she yet obtaineth.
 But still his suite shee doth hold out, In hope at last to moue pittie.
 Vt all this while shee doth chaunt it alone, Most humbly begging in his Do-rik Graces,
 His Mothers silence makes her much to doubt, His Grace vnto her will this grace denie:

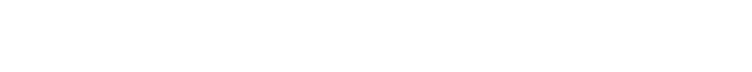
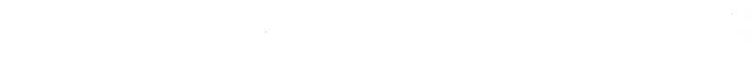
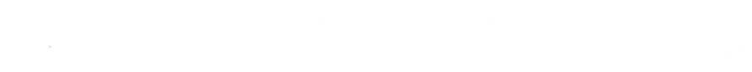
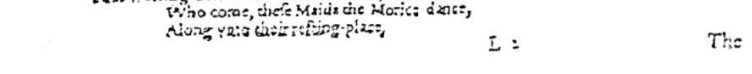
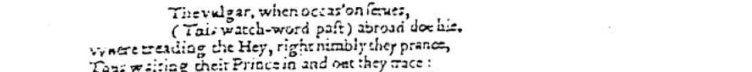
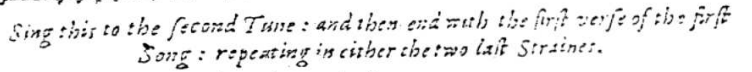
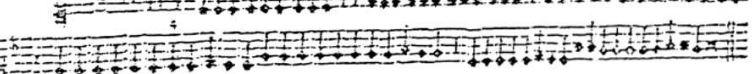
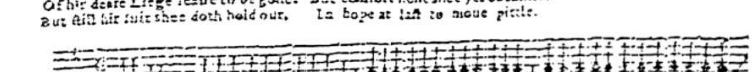
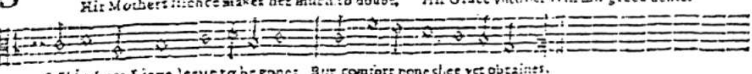
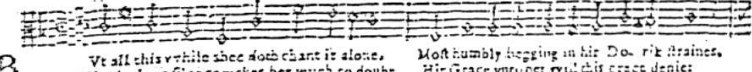
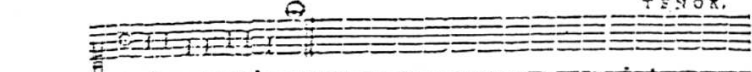
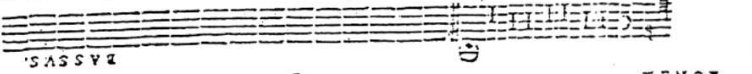
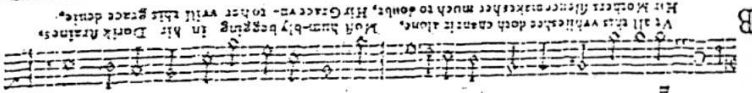
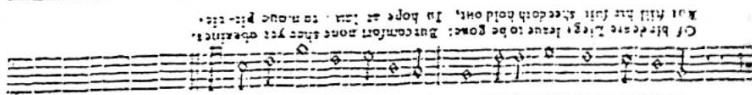
CONTRATENOR

Of his deare Lige he leaues to be gone: But comfort none she yet obtaineth.
 But still his suite shee doth hold out, In hope at last to moue pittie.
 Vt all this while shee doth chaunt it alone, Most humbly begging in his Do-rik Graces,
 His Mothers silence makes her much to doubt, His Grace vnto her will this grace denie:

The vulgar, when occas'on serues,
 (This watch-word past) abroad doe ke:
 Where, treading the Hey, right numbly they prance,
 Thus waiting their Princen and but they trace:
 Who come, the Maids the Morice dance
 Along vnto their resting-place.

Importunate Othello now hath wonne
 his home Queene. Mothers grant to his desire:
 For Ioy, his Sisters all as one
 Wish cheerefull tooke him vp the Queene.
 The Ladie Murtherall Cometh with
 The Prince her much-mildred daughter:

*Sing this to the second Tune: and then end with the first verse of the first
 Song: repeating in either the two last Straines.*



B Of his desire Lige leave to be gone: But comfort none she yet obtains.
 But still his suit she doth hold out. In hope at last to moue pittie.
 Vt all this while shee doth chaunt is alone. Most humbly begging in his Do. rth Straines.
 His Mothers Silence makes her much to doubt. His Grace vnder what this grace denies

*Sing this to the second Tune: and then end with the first verse of the first
 Song: repeating in either the two last Straines.*

The vulgar, when occa'sion serues,
 (This watch-word past) abroad doe lie.
 Vvhere treading the Hey, right nimble they prance,
 Tasse waiting their Prince in and out they trace:
 Vvho come, these Maids the Morrice dance,
 Along vnto their resting-place,

L :

The

C. 5.

Of the Swarming of Bees,

33. Before swarming
the voices come downe
to the stoole.

34.
The manner of their
swarming.

In the morning before the swarme come abroad, the Ladies come down neerer the stoole: and there they hold their melodie somewhat longer, singing sometime about twentie notes together, and⁴¹ with shorter pauses.

At the very swarming time they descend to the stoole where answering one another in more earnest manner, with thicker & shriller notes, the mainie begins to march along thronging one another for haste, and buzzing with their wings in great jolitie.

As soone as these gallant Nymphs are aloft, they doe most nimbly bestirre themselves, sporting and playing in and out as if they were dancin the Hey; in this manner waiting for the comming of their Prince: Now when some two third parts or three fourth parts of the swarme is passed, the Musicke ceaseth, and * then commeth forth this stately Dame *Orithya*: who walking a turne or two before the doore (of purpose, you would thinke, to be seene) she takes hir leave, leaving but a small traine to follow her, which high them after as fast as they can.

* Sometime when ill weather hath kept in the swarme over long, shee will come forth before them, as it were checking their slacknesse and timiditie: but then returning in, she commeth forth afterward in hir due place.

This decent order the great Lords of the earth seeme to have learned of this little Ladie: who in thir Country progresses, goings to Parliment, and other solemne processions, doe send the gretest and fairest part of their retinew before them, having behinde but a small troope of necessarie attendants, to guard their persons.

If the prime swarme be broken, the second will both call, and swarme the sooner; it my be the next day: and by that occasion haply a third also may arise, yea and sometime a fourth.

But all within a fortnight after the prime swarm.

35.
The prime swarme
being broken, the next
may call and swarme
with in the eighth day.

Except in some extraordinarie plentifull yeares both for Breed and Honie. Such as was 1616, wherein not onely many swarmes did swarme as old stockes; but also old stockes having betimes swarmed twice, about six weekes after began to swarme a fresh, as in an other yeare: as so had, in effect, two Summers in one.

36.
All the swarmes of one
hive come within a
fortnight.

After

and the Hiving of them.

After the second swarme, I have heard a young Ladie-bee call: but the Queene, not willing to part with any more of hir companie, did not answer: and the next day she with seven more were brought forth dead. v.

Sometime though the Queene give consent to a third or fourth, the Bees seeing the stock little enough to live, shew themselves loth to goe: and then also there is no way with her, but one.

Whe the swarme is up, and busie in their dance, v. it is a common use, for want of other Musicke, to play them a fit of mirth with a Pan, Kettle, Bason, Candlesticke; or other like Instrument, so to stay them, forsooth, from flying away. Indeed where other Bee-folds are not farre off, this use hath a good vie: for thereby the place and time of their rising is publicly notified, and so a just and open claime laid unto the Swarme, that otherwise some false neighbour might challenge for his: which undoubtedly was the originall cause of this custome. But the pretended reason is to me a meere fancie: although I know it to bee as ancient as common. For *Claudian* long agoe could say,

-----*Cybeleia quassans*
Hiblaus procul era senex revocare fagaces
Tinniu conatur apes. -----

And before him *Virgil*,

Hinc ubi jam emissum cave is ad sidera cael
Nare per astatem liquidam sawspexeris agmen, & c.
Tinnit sque cie, & matris quate cymbala circum
Ipsa consident medicat is sedibus, ipsa
Intima more suo sese in cunabula condent.

And before him *Aristotle*,

Gaudere etiam plausu, & sonicis apes
videnture. Quapropter tinnitu aris aut Fictilis
convocari cas in alvcum aiunt.

If you see them begin to flie aloft (which is a token they would be gone) cast dust among them to make them come downe. If they will not be stayed, but, hasting on still, goe beyond your bounds; the ancient Law of Christendome permitteth

V.c.1.n.7

37.

What use there is of tanging the swarme.

V.n.34.

De 6. Consolae ru
Honorij.

Georg.4.

38.

What to doe if the swarme be way-ward.

C. 5.

Of the Swarming of Bees,

permitteth you to pursue them whithersoever; for the recoverie of your owne.

Fugientes persequi possum in fundum alienum rel invite Domino at yetanie. Lege Thesaurus & ad exhibendum. Quia ius cuique acquisitum in alieno predio captarem. Apium, in fine de rerum divisione.

But sometime they flye so fast and so farre before they pitch, that though you follow them never so fast, you must be content to leave them, happily to the happy finder. For when you have lost the sight and hearing of them, you have lost al right and propertie in them.

Examen quod ex alveo tuo evelaverit, consue, intestigitus esse tuum, donec in conspectu tuo est, nec dissimile persequitur ejus est: alioquin occupantur ost. Lustinus, l.2. institutionum juris. Tit. De rerum divisione.

39.
Some swarms provide
them houses aforehand.

40.
And then they fly away
directly to the place.

Sometime they will be provided of a house before they swarme, which some Harbingers have found and viewed, and dressed against their coming: as either a hollow tree, or a void Hive: and then will they away presently, and by no meanes settle till they come thither. Unto which place they will flie, not, as at other times; uncertainly this way and that way; but as directly as they can guesse.

A poore Woman having taken a poore swarme to keepe for halfe, by New-yeares tide lost hir owne part and hir Partners: and being carelesse of the Hive whe the Bees were dead, she let it stand abroad till she had forgotten it: The next Summer coming into hir Garden, she found some Bees passing to and fro hir Hive, which were then busie in cleansing and dressing it: shee wisely fearing that the Bees come to carrie away the Wax that was least, bade hir Daughter take the Hive and carrie it in. The Wench folling hir play did happily forget hir mothers command: and by that meanes the Hive stood still, till the unexpected swarme came, that afterward stored hir garden. It is not amisse therefore to follow the counsell of *Columella*: *Oportet autem vacua domicilia collocata in apiarys habere. Nam sunt nonnulla examina que cum processerint, statim sedem sibi quarant in proximo, (Seu potius prius quesit am, lustratam, & paratam adcant.v.n.39.) candemq, occupent quam vacuum repercrint.*

41.
*Vacus alvearia stent
semper pavata in
Apiario.*

When

C. 5.

and the Hiving of them.

When your swarme hath made choice of a lighting place, you shall quickly see it knit together in forme (if nothing let) of a * Cone, pine-
aple, or cluster of grapes. As soone as it is setled, or at least as soone
after as may be, hive them. For the longer they hang, the lother they
are to be put from the place, the more them they lose from their worke,
and the more danger are they to be gone, either home againe, or quite
away. For when they are once setled, they presently send forth spies, to
search out an abiding place: who if they returne with good newes before
swarming time be past that day, they rise presently, and are gone:
otherwise they will stay till swarming time the next day. But whensoever
the spies have sped, they returne with all speed, and no sooner doe they
touch the Cone or Cluster, but they begin to shake their wings like as the
Bees doe that are chilled: which the next perceiving doe the lik: and so
doth this soft shivering passe as a watch-word from one to another, untill
it come to the inmost Bees: whereby is caused a great hollownesse in the
Cone. When you see them doe thus, then may you bid them farewell:
for presently they begin to unkniit, and to be gone. And then though you
Hive them never so well, they will not abide.

When you see your swarme, first choose out a fit hive, neighter too
big nor too little, but proportionable to the quantitie and time of the
swarme: so that the Bees may fill it that yeere, or at the least without a
handfull, which they may make up the next yeere in good time.

A swarme before Mid-gemini, put into a Hive that containeth twice so
much as the swarme is: a swarm at *Cancer*, into a Hive that containeth so
much, and halfe so much: and for a swarme at *Mid-Cancer*, a Hive, that
will hold it or little more, may suffice. The rest between these let be
fitted in like proportion unto these.

For example, a swarme of three gawns, or a + good Prime swarme
before Mind-Genini will aske a Hive of three pecks: such a one at *Cancer*,
a Hive of five gawnes. Like wise a double prime swarme comming
betime, is fitted with a bushell-Hive: and all pecke swarmes, and other
single

swarmes

42.

The hiving of Bees.

43.

When they are to be
hived.

* A cone is a round
Pyramin. *Figura
rotunda ex lato in acut
si definens:* and
therefore is a Pine-
aple, of his figure,
called *Conm*

44.

The token of their
flying away after they
be settled.

45.

How to fit the Hives to
the swarmes.

C. 5.

Of the Swarming of Bees,

swarmes afte *Mid-Cancer*, with the least*; or halfe-bushell hive. V. But little and late swarmes are rather to be united. v

V.c.3.n.6.
V.n.67. & 68.

* The aire being sultry hot, causeth the swarme to hang hollow; and so to seeme greater than he is.

+ The goodnesse or greatnesse of a swarme you may most certaineley know by the weight; it being a good wone that weigheth five pound, a reasonable good one that weigheth foure, and a very good one that weigheth six. Heere by also it will not be difficult, which seemeth impossible, to know what number of Bees is in a swarme; if you know first that 4480. Is a pound, because 280. Weigheth one ounce, as 35. One dragme. So that two good swarmes united weighting 10 or 11 pound, doe conteine between 40 and 50 M, the number of a Campe Royall: which company cannot wel be larger under one Leader, in the largest Hive. V.c.3.n.6. Of such number did Alexanders victorious Army consist. For Ddioid. Sic. L.17. recokoneh ;up some 48 M. with those 13500. Leaft behinde with *Antipater*. And instin.1.9. not mentioning this company, numbreh 36500. Which number is also great enough for a very faire swarm; as containing the quantity of two reasonable swarmes untied: there being also few single swarmes so good, as to amount to 30000.

The wight of any swarme is to be knowe when the Bees are newly hived, and the number in any weight when they are newly taken.

If this just proportion be not precisely kept, the Bees may doe well enough in a middle-sized hive: for being under-hived, they will cast somewhat the sooner, though peradventure the lesse swarme; and being but a little over hived, though they spend some time in supplying the former yeeres defects, they may yet swarme in good time, and the fairer swarme. And indeed all swarmes, whether bigger or lesse, by decreasing or increasing, coe naturally draw towards this quantity.

But if the disproportion be much, it must be ammended; whether you spy your error the same day, or afterward.

If the same day, you remedy is to knocke out the Bees upon the mantle between tow single Rests, and to set a fitter Hive over them : but this is not to be done before the swarming-houres be past, lest some of the Bees take a misse, and goe home againe. Otherwise you may set the Hive in a Brake, v. with his bottome upward, and the fitter Hive upon.

If afterward you see by the Bees lying out, that they are

under-

and the Hiving of them.

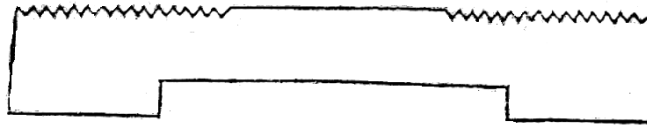
under-hived, your remedie is to reare the Hive with a skirt, or Bolsters, as much as will let them in. If at *Virgo* you see, by their not filling the Hive, that they are over-hived; your remedie is then to cut off the skirt unto the combes, or neere to them.

But generally it is safer and more for your profit, to under-hive a swarme, then to over-hive him.

Your Hive being fitted and dressed, v. you musht have also in a readinesse a Mantle, a Rest, and a Brush.

The Mantle may be a sheet, or halfe-sheet, or other linnen cloth, an ell square at the least.

A Rest is either single or double. The single Rest is a Prisme or three square *Columnne*, eightene inches long, and three inches deepe, having the upper edge full of nicks for the space of six inches at each end, and the middle space, of six inches, smooth. It will be safer for the Bees, and lighter for cariage, if the lenght of tenne inches in the middle of the bottome be cut away one inch high, abating the new edges; and the foure inches at each end be hollowed in the middle of the bottom from end to end, at the same height of one inch: and so this will be the forme of the side,



And this of the end. It is most fitlie mode of a quarter of a young tree.



Upon shelving or hanging ground, one single Rest may serve: but if the ground be somewhat levell, it is better to use two: because the Hive-skirt is set down upon them with lesse danger to the Bees, then upon the ground or other flat thing. And these two Rests are to be placed with the upper edges about nigh inches apart: so that the Hive standing upon them, may hang out over them some two or three inches.

In

M

46.

Better to under hive
a stall then to over-
hive him.

V.c.3.n.8

47.

Three things
requisite to hiving.

48.

The Mantle

49.

The single Rest

C. 5.

Of the Swarming of Bees,

In some case two single Rests are most convenient, v. but in most the double: v. which is also lighter for carriage, and more ready for use.

V.n.45 .56. 69.
V.n.57

50.
The double Rest.

The double Rest consisteth of two parts or side, an inch thicke, of the same length and depth with the single Rest, having such upper edges so nickt at both ends, and the lower edges smooth, with ten inches of the middle cut away halfe an inch high, and then made sharpe againe: which tow sides are to be fastened one to another, at the just distance of nine inches from edge to edge, with two Rounds or Braces tennanted into them three or foure inches from the ends. These sider are fitly made of inch-board, or of a cleaft Lug of Withie or other wood.

The Brush is a handfull of Rosemary, Hyssop, Fennell, or other herbes; of Hazell, Withie, Plum-tree, or other boughs; or rather of boughes with hearbs, bound taper-wise together.

51.
The Brush.

52.
What the Hiver must
doe.
V.c.l.n.27

All things necessary thus prepared, let the Hiver, which must weare no offensive apparell, v. first drinke of the best beere, and wet his hands and face therewith: and then let him goe about his businesse soberly and gently, taking good heed where hee sets his foot, and how hee handleth them: for if he tread upon a Bee, or by any other meanes crush one of them, they presently finding it, by the ranke smell of the poysonous humor, will be so angry; the he shall have worke enough to defend himselfe, unlesse hee have on his complete harnesse: v. being thus disquieted they will be the worse to hive. Moverover, the troubling of them doth oft times make them rise and goe home againe: sometime it breaketh the swarme, causing part to returne, whereby the rest are discouraged, being leaft unsufficient: yea sometime it disperfeth and spoyleth the whole swarme: it may be also the death of the Queene: and then they will not continue to the next Summer, howsoever provided. And experience hath taught me, that few swarmes much troubled in the hiving do prosper. And therefore in any case Hive them as quietlyl, and with as little businesse as you may.

V.c.l.n.40.

53.
The manner of Hiving.

The manner of hiving is so manifold, by reason of the

many

and the Hiving of them.

many & different circumstances of the lighting or pitching places, that it can hardly be taught by precepts; but it rather to be learned by use and experience, guided with reason and direction. Neverthlesse for the helpe of novices, I will set downe some speciall directions, which he that marketh, may redily hive a swarme in most lighting places: and a little practise will fit him for any.

First therefore note that a swarme is to be hived by 1. Shaking, or 2. Cutting the bough whereon it hangeth, or by 3. Wiping the Bees down, or 4. Driving them up into the Hive.

If your swarme light upon a bough; first spread the Mantle under it, and lay the Rest or Rests in the middle thereof, with the ends toward two corners of the Mantle.

Then if the swarme be so high, they you or some assistant may conveniently put the Hive under it; having first removed the twigs round about, that stand in your way, shake the Bees into the Hive: and when you have set the Hive right upon the Rests, take up the two orners of the Mantle at the ends of the Rests, and pinne them together upon the top of the Hive, to stay the Bees running out sodainely: and then returning to the bough, shake it againe, and turne it aside out of his place, or cover it with your body, or with some cloth: and then presently loose the corners of the Mantle and spread them againe. When they begin to cease running into the Hive, if you see them lie thicke upon the Mantle, shake them to the Hive-skirts: and the rest, as well upon the Hive as the Mantle, Drive in gently with your Brush. So shall you easily and quietly Hive them. Otherwise having first taken away the twigs that may let you, cut off the bough or boughs (for sometime they wil hang upon many): and if you doubt that some of them may fall in the cutting, let another second you with the ready Hive, holding it directly under them. The bough being cut, lay the *Cone* between two single Rests, and set the Hive over them. Or else put the *Cone* first in the Hive, and then set the Hive down upon the Rests.

But if they hang so neere the ground, that you cannot conveniently put the Hive under them; then placing the

54. Foure means of
Hiving a Swarme.

55.
How to Hive a Swarme
that lighteth upon a
bough.

56.
Either high.

Mantle

57.
Or low.

C. 5.

Of the Swarming of Bees,

Mantle and Rests right under, shake them downe: and setting the Hive over them upon the Rests, take up the two corners of the Mantle, and doe as before.

And in case some of the swarme be first fallen to the ground, whence they make no haste to rise againe,; then, placing a couble Rest without a Mantle as well as you may, not killing an Bees, either shake the rest downe to them, and so set the Hive over them all, or else set the Hive over that part, and the rest, having cut the bough, lay beside the Hive, and move them with your Brush.

58.
How if it light upon a
high tree.

If they pitch upon a high tree, it is not best to shake them into the Hive, but rather with a sharpe knife cut the bough if you can conveniently: and either put it into the Hive, and cover it with a Mantle, or bring it downe gentlie in you hand. But if you want a ladder or other meanes to bring it downe, then let it downe by a cord tied to some crooke of the bough.

59.
How if upon the body
of a tree.

If they pitch upon the body of a tree, or upon some great arme; then set one side of the Hive right over the Bees, and with the Brush drive them up by moving still the lower and wayward part. But if you have no meanes to fasten the Hive by tying it above, or propping it beneath with prongs or the like, or if they be unwilling thus to take the Hive; then parting them from the tree with a tight v. thred, wipe them downe into the hive, and set them upon the Mantle & Rest under the tree. If they be so high that you must clime for them, then cover them presently with a Mantle, and so carry them downe. But looke that many will rise againe: which let alone untill they be knit, and then sweepe them likewise into another leere Hive, and put them to their fellowes. If yet some of them will up againe, you must not cease to trouble them, by wiping them off gently with your Brush, by laying on Mug-wort, Margerom, Wormewood, * Archangell, or other Weeds, or Hearbs, or by covering the place with a cloth: and after a while they will al to their fellowes in the Hive.

V.n.23

* white Nettle.

But if they be so neere the ground, that you cannot conveniently put the Hive under them; then with a right thred sweep

and the Hiving of them.

sweep them downe upon the ground, having first layed the Rest either with or without the Mantle, and set the Hive over them.

And if they be of that distance from the ground, that you may set a stoole close under them; then make fast one side of the Mantle unto the tree close under the Bees, and the rest of the Mantle lay upon the stoole with the Rest: then having so dainly swept downe the Bees upon the Mantle, set the hive over them: and presently loosing that side of the Mantle from the tree, lay it over the Bees close to the Hive.

If they light on the top of a stub, pollard, dead hedge, or the like, set one side of the Hive over the, propping the other side with a prong or two, and drive them up as before.

If they light in the middle or bottome of a dead hedge, your best way is softly to unwerke the hedge till you come to them: otherwise ;you must violently knocke the hedge on the other side, so forcing the Bees into the Hive: and then setting them downe, trouble the place as before. Buit then be sure to be troubled your selfe: for it is hard so to get them from such a hold.

If they light on some hollow side of a stub or tree, which they will be loth to leave; beware in any case you wet them not: for that doth not onely drowne many, but also maketh the rest more eagerly keepe the place: because some through the wet cannot flie away, and their fellowes finding them there will still resort unto them. But when you have moved them by other meanes as much as you may, put some morter or cloome into the hollow place, moving it forward by little and little, so that y;ou burie none of the Bees, untill you have spread it over the place and then will they forsake that, and take some other part of the tree or stub, where you may more easily hive them.

When they flie into a hollow tree, so that by none of the foresaid meanes you can hive them, then must you remove them by some offensive smoake, and make them chuse a new lighting place: which is thus to be done. If the Bees lye above the hole where they went in (as they will doe if they may) then boare a hole above them: if beneath, beneath

them:

60.

How if it light upon the top of any thing.

61.

How if it lights in the middle of a dead hedge.

62.

How if it ligh on some hollow side of a stub, or tree.

63.

How if it flie into a hollow tree.

C. 5.

Of the Swarming of Bees,

them; but bee sure that the upper hole bee wide enough: rather then faile make two or three with a two inch auger, or, with a hatchet, one as great. Then fire a peece of Match, or for want of Match, take a little Hay, or other thing that will smoake moderatelyl, and not flame; and put it into the tree beneath them: and you shall see them fly forth above for life, and presently pitch in some place where you may hive them. But this is to be done the same or the next day at the farthest: for afterward they will abide the smother, and rather lose their lives thn leave their goods.

If a swarme by reason of the coldnesse of the aire, and roughnesse of the wind being not able to get away, do offer to light upon any other Hive; quickly cover the Hive close with a Mantle, lest the Bees entring be pittifully murdered.

But in all manner hivings this one rule is generall. The swarme must bee continually kept together: for if at that time part remaine from the company but the space of halfe an houre or lesse; afterward when they finde them, and would returne unto them, they are vsed as Strangers and Robbers: as fast as they come they are beaten and killed. And those that escaping thence goe backe to their old home, finde no better entertainment: and those few that excape thence, desperately runne into any other Hives, and so leape out of the Frying pan into the fire. And therefore when the swarme is hived, if you see part begin to gather together by themselves; remove them as speedily as you can, that they may goe to their fellowes in time.

And alwaies if you may chuse, set the swarme in the morning Sunne, and as neere the lighting place as may be: which if some inconvenience will not suffer you to doe, yet set it within the length of a Pearch, or at the least within sight and hearing: and then (left those which are least at the lighting place, by losing their company a while, lose their lives also) first trouble them by the meanes mentioned n.59. and then cause some of the Hived part to arise by shaking them off the bough, and by wiping them downe that are on the out-side of the Hive. Which, when they are up, will make such a noise, that their fellowes may easily finde them. And

if

64.

How if it light upon
another hive.

65.

The swarme is
alwaies to bee kept
together, lest the
Bees kill one
another.

66.

The swarme to be
set neere the
lighting- place.

and the Hiving of them.

if any yet hankering behinde chance to be set upon when they come to the Hive; be sprinkle the Mantle, the Hive, and the Bees with a little stong drinke, and you shall part the fray.

And if any man maruaile why they of the same swarme should so soone be strange one to an other, seeing that Bees of one Hive being pent a whole day in an other, are yet welcome to their fellowes at the last; I can give no other reason but this, that they knowing a swarme may part, and so each part become a severall company, they deeme these to be such by their long absence. And if you aske why they should finde so hard entertainment in their old home from whence they came, it is because they went away with a Leader of their owne, and so became a severall company. And therefore if she bide away, as many as come backe, (unlesse they come presently) are used as strangers: but if part have brought hir home againe, the rest doe safely returne afterward, either that evening, or the next morrow.

If the swarme part, as sometime it will, and settle in divers places so neere that they may see each other; let the greatest part alone, specially if it bee best to hive, and trouble the other in the setling with shaking, gentle rubbing with weeds, and spitting and blowing in the place, that they may goe to their fellowes. If they bee settled and hang upon a bough, cut the bough and bring them to them. If they bee settled in some other place, then put them in a hive without Spleets: and if they be within a pearch of the other part, move them both, one towards an other by little and little till they be close together. After they have stood so about halfe an houre, lift up the spleeted hive from his Mantle and Rest, and shake the Bees out of the unspleeted hive upon the same: you may first knocke the hive downe, and then presently clap it twice or thrice betweene your hands. This done, sprinkle both parts with good drinke, and then without any stay set the spleeted hive over them, and they will straight-way up into it. But lay the unspleeted hive along hard by, not where it stood, but on the other side: and those that remaine in it will follow their fellowes. But if the parts

67.

What to doe if a
swarme part.

be

C. 5.

Of the Swarming of Bees,

be farther a part then a Pearch; then put them together the same night, as if they were two swarms. V.n.69.

In like manner, when you have little swarms under the quantities of a Pecke, specially after *Cancer* is well entred; put two or three of * them together, whether they rise in same day, or in divers.

*After this time, the chiefe breeding being past, the swarms desire most to unite themselves, that thereby they may make their company sufficient: which by breeding they have not time to doe.

68.
Uniting of swarms is
profitable.

For being thus united they will labour cheerefully, gather store of wealth, and stoutly defend themselves against all enemies: whereas if they were kept asunder, they would surely perish the next robbing time, or winter; or living would do you little good. And therefore if two swarms rising at the same time do weld and knit together; (as lightly they will doe, if they be within hearing one of an other) never trouble your selfe to part them, nor be sorrie for the chance. For those two being all one, are better then three such that are alone. Indeed sometime it falleth out, that they fall out, and fight at the first: but that is because they are yet divers companies under divers Commanders. For so soone as the inferior being taken away, there remaineth one supreme Monarch over all; the strife presently ceaseth, and they are thence forth linked in perpetuall peace and unitie together. Wherefore they are little acquainted with the nature of these politike creatures, that fetch their similitudes from them, to crosse that Rich, Mightie, Renowned, thrice happy union, under one Prudent, Potent, Peacefull, thrice Noble Sovereigne.

69.
The manner of uniting.

The way to unite two swarms is this. In the evening some two or three houres after Sunne-set, or when it waxeth darke, having spread a Mantle on the ground, neere unto the stoole, where this united swame shall stand, and set a paire of Rests in the middle of it; knock downe the *Remover* upon the Rest, and then lifting up the Hive a little, and clapping it between your hands to get out the Bees that sticke in it, lay it downe on his side warily by the Bees, and set the

Receiver

and the Hiving of them.

Reciver upon the Rests over them: and they will begin presently to ascend. If those that remaine doe not runne out to their company, of their owne accord; clap the place where they gathered, and force them out: and lay downe the hive so, that the small remnant may follow their fellows: if you spy any clustering by themselves, or stragling from the Rests, guide them thither. And when they are all in, either that night or betimes in the morning, cloome the Hive unto his stoole.

Otherwise about ten a clocke, or as soone as it is darke, set the *Remover* in a Brake v: with his bottome upward, and the *Receiver* upon him, binding them about the skirts with a long Towell or two napkins sowed or pinned together, and so let them stand till the morning: and then set the *Receiver* upon his stoole. After this manner I united two swarmes with the death of any one Bee, saving onely her that must not be saved.

If yet there be not Bees enough in the Hive, you may in like manner put another swarme to them.

In the uniting of swarmes, two speciall inconveniences are to be avoided. The one that being united, they exceed not the naturall quantitie of a swarme: v. for if they doe though they agree and gather, and grow fat, yea and cast the next yeare a faire swarme; yet will they never come to their first quantitie againe, nor scarce swarme any more in that vast roome. The other that they fight not, and destroy one an other. Unto which two inconveniences the swarmes that unite themselves, if they be not aided, are obnoxious. To prevent the fruitlesse concourse of more than need is, which is the first inconvenience, when you see a sufficient faire swarme abroad, have an eye unto the rest of your stockes: if you espie an other about to rise, stay him by present shutting the doore with a Napkin, Apron, or other such cloth, untill the first swarme be settled: if then one rising draw neere unto him (as lightly he will doe if he can finde him) cover him quickly with a Mantle till that be settled: if being now hived, an other presse into him; then before many be entred, (that you may be sure not to have the Queene)

carrie

70.
Another way.
V.n.24.

71.
Two speciall
inconveniences to be
avoided in this worke.

72.
1. Superfluos
multitude.
v.c.3.n.6

73.
2. Civill warre

74.
To prevent the first.

C. 5.

Of the Swarming of Bees,

carrie away the hive with the swarme about two pearches off: and set a leere prepared Hive in his place for that other swarme.

If none of these things bee done, but that swarmes doe runne together in greater quantitie than a good Hive can conteine; then reare the Hive with bolsters high enough to let them all in: which, when they have once swarmed, the * next vindemie take away thus.

* If you doe it in Winter, see the Bees be not chilled.

In a faire afternoone, about foure a clocke, picke away all the cloome betweene the hive and the stoole: and in the morning, at the breake of the day, lay the Hive along with the edges of the Combes up and downe, upon a Mantle spread on the ground: and there pare off the Combes ends even with the skirts, and so set him againe on the Stoole upon moveable v: Doore-posts, and a thin bolster behinde: and presently clome up the Hive as close as may be.

Concerning the other inconvenience, know this, that though two strange swarmes, with their severall Queens, doe never meet in one Hive without discontent; (which they expresse by running to and fro without, and making a tumultuous noise within: from which they sometime fall to fighting and killing) yet commonly this strife is soone at an end. For the first Queene having gotten the right of the whole Roome by the possession of the Capitol or Superior parr, where she sitteth safe with hir Guard about her; the Inferior by a mommon consent, is straight-way dispatched: and so they become all fellowes and friends under one Soveraigne. And therefore when swarmes are united by you, be sure that the Bees in the *Receiver* be not throwne downe among the other, lest the Superior Queene come downe with them, and so you make more strife than needs.

But the danger is when two Princes with their equall Colonies happen to be equally advanced in the Hive: and therefore neither yeeldeth to other, but fight it out on both sides with equall hope of victorie. When this chanceth, which is very seldome, the Controversie is doubtfull; and the conflict like to be perillous, or rather pernicious, if it be

V.c.3.n.29

75.

To prevent the second.

76.

When most danger is.

not

and the Hiving of them.

not prevented. In this case you have no other way, but the next morning, if still they fight, to cast them all out of the Hive: and so with they either knit a part, or returne to their old stockes: from whence another time they may swarme more luckily. The six and twentieth of June, 1621, I had two faire swarmes up at once, which going together over filled a good Hive: where neither of them yeelding their Queen to the other, the fight continued full two daies and two nights, even from Thursday noone till Saturday in the afternoone: wherein such havock was made, that the better part of these brave Souldiers (a mounfull spectacle) lay some dead, some halfe-dead sprawling on the ground. At the last it was my hap to spie one of these Queenes at the Hive skirts in a Cluster: which taking up, now, quoth I to one that stood by me, heere is shee for whose sake all this slaughter was made: about an houre after my soone found the other dead on the ground. When they had thus merciesly murdered both the Queenes, and the better part of the swarmes; they that escaped rose all out of the Hive, and went into another swarme which stood behinde them: of which, because they brought no Ruler with them, they were quietly received.

Sometime a swarme being abroad, yea knit in the Cone, will not abide, but returne home againe: the cause where of is windie, wet, or cloudie weather, the not finding of a fit lighting-place, trouble in hiving, the hot standing of the Hive without defence, and the missing of their Prince. And this specially in a plentiful season, they being then as readie to returne upon little or no occasion, as loth to come abroad, even in the safest weather. V.n.20. I observed once, that the Prince being scarce ready, fell downe from the stoole unable to recover hir wings: whereupon the swarm returned. She being put into the Hive, the next day the swarme rose a gaine and settled, but the Prince hapned to fall beside the Cone. The swarme being knit, missing her, began to unknot, and be gone: which I perceiving presently hived them: but they being still discontented, ranne up and downe the Hive, with a murmuring noise both without and within. Anon

I had

77.

A storie of a deadly
feud.

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78.

The causes of a
swarmes going home
again.

C. 5.

Of the Swarming of Bees,

I had espied about a handfull of Bees hanging upon a Nettle on the ground: among which was the Prince. When I had cut off the Nettle, and set it by the Rest under the Hives-skirt; presently the knot unknitting, I saw the lost Prince with hir long traine stately walking into the Hive. As soone as shee was entred, these Male contents began to stand still and buzze, joyfully shaking their wings, as they wont to doe when they are pleased; and so quietly kept the Hive. To see the suddaine alteration among them presently upon hir approach, and how they could have notice of it all at once, as well they without, as those within, would even make a man to wonder; but that indeed all they doe is nothing else but wonders.

79.
How to stay them.

Swarmes that goe home, doe sometimes stay long before they rise againe: and when they rise (specially if they were hived) they are likely to fly away: although I have knowne a swarme to rise foure times in three daies, and at the last to be quietly hived. If therefore you perceive the swarme returning before many be entred the old stocke, shut the doore fast: if that will not serve the turne, carrie the old stocke away stoole and all, and set the swarme presently upon a stoole in his place.

80.
How to keepe them from other Hives.

And if any of them be going into other Hives, (as sometimes, where the Hives stand neere together or are many, some of them, specially the young Nymphs that have not beene abroad before, will doe; v.) cover them with Mantles: for as many as enter will die, or escape narrowly.

81.
Set not a swarme neere an others hiving-place.

If a swarme light neere the place where another was hived a day or two before; be sure to set it as farre as conveniently you may, for the place where the former lighted and stood: the space of a Pearch or somewhat lesse may suffice: otherwise many of the first swarme resorting thither, will to the new swarme, and so be killed.

82.
What to do when the swarme is new hived.

When your Bees are hived, those that hang on the outside, drive in gently with your Brush, and lay the corners of the Mantle that are farthest from the Rest, over the Hive, with boughes also to shadow it, if the weather be hot. But if you finde them unwilling to goe in (as in extreme hot-

weather

and the Hiving of them.

weather they will be, though they like the Hive well enough) then strive not with them: but laying the corners of the Mantle over the Hive, as before, with boughes to shade it, there suffer them till the heat be abated, and then drive them in: and if you thinke they cannot otherwise well endure that heat, cover the Hive againe with Mantle and Boughs. And so let it stand till it wax darke, and all the Bees be come home.

Then knitting the foure cornes of the Mantle together, at the top of the Hive, and binding the Mantle about close to the middle of the hive with a small line, carrie the swarme to his place. And after a while, taking away the Mantle, set it upon his seat with the doore toward the South, or rather South-west: v. and then leaving onely a breathing place, for feare of stifling them, cloome it up close, & put on a hackle v. and so let it stand till it be faire and warme the next day. For if the Hive be least open; in the morning betimes they will resort to their former standing and there abide, sometime flying about, sometime setling on the ground: where if the cold or wet take them many dye. When you see the weather fit them, then hanging the Mantle, or other white cloth upon the Hive, let them go. But they will the sooner leave the haunt of their hiving-place, & fal to their work; if you shew them their new standing by knocking them out together upon the stoole, when the weather is warme.

All swarmes, if the morrow be faire, will desire to be abroad betimes: and knowing their want, will betime themselves more lustily in their labour than other Bees. But if the foule weather keepe them in the first day, then are they much discouraged: so that the next day being indifferent, when other Bees worke hard, they will scarce looke out of the doore, not daring to commit their leere and thinne bodies to the cold aire. And if they be quite kept in the second day also; then will they not wagge (though they dye for it) untill the weather be very pleasant. They may live five or six daies in the Hive without Honie: but afterward they begin to string downe, hanging one at anothers heeles. *Pedibus connoxa ad limina pendent.* Which is a certaine signe

of

83.

How to remove it in the evening.

84.

How to set it on his seat. V.c.2.n.15.

V.c.3.n.15

& 20 & 56

85.

How to use it in the morning.

86.

Foule weather the first day doth much discourage a swarme.

87.

Foule weather continuing doth make it drotpe and die.

88.

A swarme may live six daies without Honie.

Virg.

C. 6.

Of the Bees Worke,

89.
How to prevent the
drouping and death
of a swarme.

V.c.9.n.2

90.
How to cure a
Drouping swarme

of death, if they be not presently relieved.

To prevent this evill, If the swarme light in your Garden within a Pearch of the Seat that is appinted for him, set it there at the first: and so will they lose no time in hankering about the hiving-place. And if it light farther off; (whether in your garden or other place where they may stand safe, specially the weather being unkinde or unconstant) leave them there till it mend. V: for those that are not removed, but keepe still their first standing, because they are not to seeke of their way home, they feare the foule weather as little as the best. And therefore need not to be shut in in the morning, as those that are removed: or to have any white over them for their direction.

The meanes to recover such a drouping swarme is this. The first Sunne-shinie day turne up the Hive to the Sunne, that his heat may revive them: and besprinkling the sides of the Hive, the Spleets, and the Bees also a little with Mede or Honie-water; hold them so in the heat of the Nunne till you see many of them fly abroad. Then set downe the Hive gently upon his Seat againe, and cover it not til it be through warme, and the Bees play cheerefully, as at other Hives.



CHAP. VI.

Of the Bees Worke.

I.
Bees most
industrious creatures



nto the industrious nature of Bees nothing is more odious than sloth and idleness: while there is matter to worke upon (unlesse they be let by unkinde wieather) their worke never ceaseth: yea the old Bees, which have spent their daies in continuall labour, will not at the last allow themselves any immunitie or rest in their Hives, as a recompence

for

C.6.

Of the Bees Worke.

for their paines past, but contine still their travaile unto death: v. In the tree still moneths indeed, *Sagittarius*, *Capricornus* and *Aquarius*, because then there is nothing to gather, the worke not: (ye when a faire day or houre commeth, as wearie of rest, they will abroad, imploying themselves in divers necessarie offices; v) but so long as any good flowers grow, even from *Pisces* or a little before, unto *Sagittarius* and , some yeares, somewhat after, (which is full nine moneths) the lose no time, (*Nullus dum per caelum lieuit, perit dies*) but follow their businesse tooth and naile. Which incessant labour while time permitteth, with the three singular effects thereof, the (1) working of Wax, the (2) making of Honie, and the (3) feeding of their young v: the Poet in few words hath elegantly expressed all together.

*Quod superest, ubi pulsam hyemen sol aureus egit
Sub terras, caelumq estiva luce reclusit;
Illa continuo saltus silvasa peragrant,
Purpureo sq metunt flores & flumina libant
Summa leves. Hinc nescio qua dulcedine laete
(3.) Progeniem nidosq fovent: hinc arte recentes
Excudunt (1.) ceras. & (2.) mella tenacia singunt.*

Their first worke is the ground of the other two, the Artificiall Cells serving both for Coffers to lay their sweet treasure in, and for neasts and nurseries to breed their young in. The mannter thereof they gather from flowers with their Fangs: which, being kept soft with the heat of their little bodies, of the Aire, and of their Hives, is wrought into Combs. This worke is so nimble and closely done, that it can hardly be perceived: in somuch that *Aristotle* plainly confesseth, *Nec vero quemadmodum operantur visum adbus est.* But *Plinie* will to goe a little beyond him, telleth us a tale of a Lanthorne-hive made at *Rome*, through which, forsooth, their doing in the the Hive were discried: and in another place of another like device, *Multi alvearia speculari lapide fet ere, ut operantes intus spectarent.* But unlesse the Bees also were transparent as well as the Hive, this cannot be: seeing they doe alwaies frequently compasse the Combs

V.c.1.n.58

2.

In three moneths they cannot worke.

V.c.3.n.60. 61.

3.

All the year after then lose no time.

Nat. hist. li. 11 cap.6

4.

Three fruits of Bees labour.

V.n.53

Virg.

5.

The first, and ground of all, is wax.

6.

How Wax is gathered and wrought.

His.1.9.c.40.

Nat. hist. li. 11. c.16

Nat. hist. li. 11.21. c. 14

round

C. 6.

Of the Bees Worke,

7.
How you may see the
working of the combes.

round about. A more likely way than that, were to have a moveable peece in one side of the Hive: which when you have taken away, you may see the Drones and the Hony-bees walking together to and fro, and with their doubled heat hatching their young: but their worke can you not see; though you remove the part the Bees till the bare combes appeare. But if your curiositie would so faine behold the manner of their curious and artificiall building, the onely way is this. In *Gemini* set up a last yeeres midling swarme two or three handfulls above the stoole and then when most of the Bees are abroad (but most fitly in the forenoone when they are most quiet) you may behinde the stoole behold them working on the edges of their combes: and having blowne their liquid and soft wax out of their mouthes (as the Wasps doe their drossie stuffe, which you may see them gather from pales with their fangs and so carry it away) to fasten and fashion it with their fangs and forefeet.

8.
How much wax they
bring at once.

How much wax they bring at once, doth appeare by the new swarmes: whose first weekes worke is spent chiefly in building combes: wherein they are so earnest, that it falleth out with them as it is in the Proverbe, *The more haste the worse speed*. For many of their burdens doe fall from them before they can fasten them to the Combes. You may then see great store of them upon the stoole by the skirts of the hive, like unto the white scales, which fall from young birds feathers. And therefore some have imagined, that they also are scales which the young Bees do likewise shed from their wings. But put you some of those parcells together with warme fingers, & you will quickly beresolved of that doubt.

9.
The admirable
Architecture of their
combes and cells.

The Bees combes are placed otherwise than the Wasps: for the Wasps hang their one under another, and the Bees theirs one beside another; beginning them in the top of the hive, at the distace that a Bee may reach from one to another.

Their cells or little holes are made six square, according to the number of their feet: and of that length and widenesse, that each of them may easily containe a Bee. Which are so artificiallie wrough and joyned together, that *S. Ambrose* in the consideration thereof saith, *Qua castra quadrata tantum*

possunt

Of the Bees Worke.

possunt habere artis & gratia, quantum habent crates favorum, is quibus minuta a as rotunda cellulae connexionem sui invicem fulciuntur? Quis enim architectus eas docuit hexagonia illa cellarum indiscreta laterum equalitate componere, ac tenues inter domorum sepa ceras suspendere, stipare mella, intexta floribus horrea nectare quodam distendere?

But heere in their Art is yet more exquisite, that whereas there are two courses of cells in the two sides of every comb; the cell-bottoms in these two sides are never opposite one to another: but each hexagonal bottom of one side answereth to three third parts of the hexagonal bases of three contiguous cells on the other side, meeting all in one angle right in the centre of the opposite bottom: as in this forme: which is so artificiall, as well for strength as beauty; that no shadow, though the thin bottom of his cell should faile, can breake through into a cell of the other side. Hee that sees this, sees he not a wonder?



Beside the ordinary combs, there is commonly one Drone-combe in a hive, when the Cephens are bred, made for the nonce with wider cells. *Sunt loculi ipsi fucorum ampliores, & singuntur seorsim quog per se favi fucorum.* Although in some hives part of the Drone-combes be made out with Nymph-cells. The Drone combe being no thicker than others, and yet the Drones longer than the small Bees; they increase the length of his cells by covering them, not with a flat cover, as they doe the rest, but with a deepe hollow one like an old wives thumb cap: which afterward, when the Drones are bred, they take away. And when those cells are void of Cephens, they fill them as they doe the other with hony: yea and after swarming time, if they want upper cells for their hony, they will not tarry till their Cephens come forth themselves, but liking better their roome than their company, they draw them out of their seminaries before they be ripe. V.c.4.n.31.

But the Queens cells are built single, every one by himselfe: and that in divers places of the Hive, some above, and some beneath: that, as other princes, she may for her delight remove at her pleasure. But, for the most part, in the out-sides

10.

The Drones combe.

Hist. I. 9.c.40.

of

O

11,

The Queenes cells are built single in divers places.

C. 6.

Of the Bees Worke,

12.
In fashion round.

V.c.4.n.18
Nat. hist. li. II. c.
11.

13.
The common error
anent these celles.

14.
The combes doe
often change thir
hue.

Virgin wax and
ordinary

15.
Wax is gathered
onely in foure
months.

16.
Hony the second
fruit is gathered in
9. Moneths.

v.c.3.n.59.
l.9.cap.40.

17.
Two sorts of hony.

of the combes: for although it be fit for Princes to be neere their chiefe Cities; yet doe they not love to be pestered in the midst of them In fashion they are round: which is the most perfect figure, as the six square is most fir for comely joyning many such buildings together. They are also larger than the rest: to shew that subjects houses should not match their Sovereignes in greatnesse. In these Palaces do they breed their young Princes. V. *Pliny* speaketh thus of them: *Regias imperatoribus extruunt emplas, magnisicas, separatas, tubercuo cminentes*. The common people, finding them alwaies in those stalls that die, take them for certaine signes of death, and call them pipes, or taps: and therefore when they see them in a stal that they take, they say, This was taken in good time, for it is piped: and therefore would have stood no longer. But seeing none are without, no not the youngest swarms; ordinary reason might teach them to forgoe that fond concept.

The Combes have successively sundry colours: white, yellow, browne, blacke. Their first colour white, by the end of Summer is turned to a light yellow. Those that are taken and tried this first yeere, are called Virgin-wax, but the whiter the purer: and the rest are ordinarie. The second Summer this light yellow is changed to a sad. The third this sad yellow into a browne: which afterward, as they wax old and corrupt, altereth againe into a blackish and durtie colour: but these being tried will returne to yellow.

The time when Bees gather wax, is onely between *Tarrus* and *Virga* (unlesse *Aries* be milde and warme:) for then they may begin in that month.

But Hony they gather all the yeere: save onely in those 3. Still moneths, when the weather keepeth in both Bees and flowers.v. And it is of two sorts: the one pure and liquid, which is called *Nectar*, the other grosse and solid, which we may be like reason tearme * *Ambrosia*. For both serve for the food of these divine creatures.

* Yea rather this is the *true Nectar & Ambrosia* wher with Jupiter was first nourished in the Ile of Crete, v.c.4.n.6. while the *Curetes* hid him from *Saturn*. Which gave occasion to the Poets of this fiction, that the Bees were his

nurses.

Of the Bees Worke.

Nurses. Dictaeo alt parere sub antro. Vir. Geor. 4. And afterward, when they would make him immortal; because of the long preserving vertue that honey hat, (v.c.10 par.3. n.1.) they fained it to be his immortall food. *Inpirer Ambrosia satur est & nectare vs vit.* Mart.I.II. Ep. 58.

The grosse hony is gathered by their fangs: from whence it is conveyed by the fore legs to the thighes of the hin legs. (*Qua flores comportant prieribus pedibus fae mina onerant propter sd natura scubra, pedes priores rostro: totag, onustra remeant sarcina pandata*) and that so nimbly, that unlesse you have a quicke eie, you can scarce perceive it.

This worke may best be seene in the spring, when they gather upon the blackthorne: for then by reason of the cold they are not so quicke.

When they have brought these burdens home; they unload them into the dry cells for the young to feed on, which are not yet able to flie abroad. And in the beginning and ending of the yeere, looke what they save when the weather is faire, they lay up for themselves against a rainy day. Which, while it is good, they will feed on, to save their Nectar as much as may bee. But this kinde of hony is like unto frest fish: it must not long be kept. For if being laid up in the cells, by reasson of plenty that comes in fresh and fresh, it lye unspent; after a while it corrupteth, and of sweet becomeeth the sowrest and the most unsavory of all things both to taste and smell: which then they commonly call Stopping or Coome. Where there is any store of this stuffe, it doth so offend the Bees, that oft times it maketh them to forsake all. Most of them will that yeere goe forth in swarmes: and those few that are leaft will never prosper.

Anent this leg-stuffe or grosse hony there is a generall error. For, without all scruple or doubt, men doe count it and call it wax: (as did some also in time of old, whose opinion *Aristotle* doth thus deliver: *ceram apes perreptando flores capiunt priorum acumine pedum: mox priores in medios abstergunt, & medios in blasaposteriorum.*) But against (as I shall shew you) both sense and reason.

If you put it to your tongue, it hath the taste of hony: which wax hath not. If you feele it betweene your warme

fingers,

18.

How Ambrosia or grosse hony
is gathered.
Nat. hist. li.II.c.10

19.

Ambrosia, in the Schadons
food, as water their drinke.

20.

Being kept it is soone
corrupted.

21.

And then becommeth most
unsavory stopping.

22.

Much stopping maketh the
Bees forsake their hives.

23.

This Ambrosia is commonly
taken for wax.
His. 1.9.40

24.

Which error is disproved by
sense.

C. 6.

Of the Bees Worke,

fingers, it muttereth apart: where wax sticketh fast together. If you put it to the fire, it melteth not, as wax doth. And whereas wax is all of one colour, i. White at the first, v. even as those little fallings of the new swarms: (which is wax indeed) this leg-honie is of divers colours, white, blacke, yellow, greene, red, tawn, orange, murrey, and of sundry midling colours. Therefore sense doth say it is no wax.

V.n.14

25.
And reason.

The reasons are two. The first is, because when they gather abundance of this stuffe, they have never the more wax. The other because when they make most wax, they gather none of this.

For prooffe of the first, All the Bees between *Virgo* and *Taurus* doe gather abundance of it: and yet are not their combs in this time any whit enlarged. Also one of those old stalls that are full of combs, doth carry more of this matter all the summer long than many swarms: and yet have they no more wax at the end of the yeere than at the beginning.

For prooffe of the other, The new swarms within one weeke, if the weather serve them, will have halfe filled their hives with combs: and yet in all this space shall you scarce see one carry any of this. If you would know the reason why the stocks gather so much, and the new swarms so little; it is because the stocks have *schdons* which they feed with it, and the new swarms have none. And if any foolish Bee doe carry in *Ambrosia*, it is put in a dry cell where it turneth to Stopping, v. as I have seene within a fortnight after the hiving.

V.n.21.

26.
And by Authoritie
Nat. his. l. !!. c.7

And this, though now it seem new, yet was it knowne many ages agoe. *Plinie* writeth of it thus: *Praeter hac (I. Praeter ceram & nectar) convehitur erithace, quam aliqui sandaracham, alij cer inthum vocant. Hic erit apum dum oper antur cibus: qui saepe invenitur in favorum inanitatibus sepositus; & ipse amari saporis.* Speaking in the last words of that which is corrupted v. And before him *Aristotle* himselfe thus: *Mel apibus tum astate tum hyeme cibo est: sed recondunt alterum quoq cibary genus, cui durities cerae proxima, quod sandaracham nonnulli appellant.*

The

V.n. 21.
Hist. L.9.c.40.

Of the Bees Worke.

The Nectar or liquid honey the Bees gather with their tongues, whence they let it down into their bottles, which are within them like unto bladders: each of them will hold a drop at once. You may see their little bellies strut withall. Men thinke, because they see nothing on their legs, that they come in leere: when they are better and more heavily laden than the other. These bottles, as soone as they come home, they empty into their combes. *Mel ore evomunt in cellas*. This *Nectar*, being cleere as Crystall at the first and liquid as water, when it is two or three yeeres old, becomeeth white and hard. *Concrescit autem mel concoctum jam tempore: initio exim, ut aqua, dilstum est, & primis drebus fine crassitudine cernitur*. While it continueth liquid, and will runne of it selfe, it is called live-hony; when it is turned white and hard (even like unto sugar) it is called corn hony, or stone hony.

And the live-hony is of two sorts: that which is gathered by a swarme, cleere and crystalline at the first, v. layd up on virgin-wax, v. and taken the same yeere, is the right virgin honie: the other, which is yellow and thicker, gathered by an old stall, and therefore kept in corrupter cells with drosse and courser hony, is called ordinary.

The first shoot whereof (specially in a plentifull yeere of *Nectar-dewes*) running sheere of it selfe, is a kinde of virgin-hony, v. and little inferiour to the right.

Nectar, whether it be ordinary or virgin-hony, is either finer or courser, according as the soile is where it is gathered: v. For the best countries, which yeeld the best wheat and the best wooll, yeeld also the best hony. And therefore the wood-lands of Hampshire have better honie than the heath, and the champion or field country, better than the woodlands. The reason is, because where the flowers are most fragrant and vercuous, as well of the fields, as gardens, in the purest and sweetest aire; there the honi-dewes, which are extracted from them, are most fine and pure, v.n.40.

When the cells are full, they close them up with little filmes of wax, which they will not breake untill winter and hunger drive them to it. And thus doe they all the summer,

desending,

27.

How the pure Nectar is
gathered.

Hist. An. li.5.c. 22

Hist. An. l. 5. C.22.

28.

Two sorts of Nectar.
Live-hony and Stone-hony.

29.

Live-hony of two sorts.
Virgin-Hony.

V.c.10.p.2.n.13.

V.n.14.30.

30.

The finest ordinary is a kinde
of Virgin-hony.

V.c.10.p.2.n.6.31

31.

All hony, courser or finer,
according to the soile.
V.c.10.p.2.n.12.

32.

The full cells they close with
wax.

Of the Bees Worke,

descending lower and lower from one cell to another, untill *Virgo*: after which time they lay up on more in store. For honie then waxeth scarce abroad: and thence forth they can gather no more wax to shut it in. As for that which they purchase by fight and foraging, it doth them little good. For the most part of it they presentlie spend: and if they have any, they halfe fill a few cels with it: which being uncovered, either themselves or some otherr theeves qucklie devoure: according to the Proverbe, *Evill gotten goods are soone spent*.

This Nectar and Ambrosia, together with those sweet and wholesome vessells that doe containe them, are gathered from infinite varietie of herbs, flowers, and trees, which God in his provident bountry hat ordained to succeed one another. So that from *Pisces* to *Saggitt*. There never want some plants or other, containing these sweets: which the Bees fearly draw from them, without any hurt to the fruits: *Eructibus nullis nocetur*.

The Dent-delion, or after the French pronounciation Dandelion, may well be call *apiastrum* or *mellisophyllon*. For the Bees gather upon it almost all the yeere. The Dazy and Yelowcrea are next for continuance, but nothing so much regarded.

The Winter Giliflowre and the Hazell are the first. For they spring in *Pisces*, and sometime before. After them the Dazy and the hearb Bearefoot, the Violet, &c.

In *Aries* besides those before named, the Box, the Withypalme, both greene yeelding *Nectar*, & yelow yeeling *Ambrosia*, Daffadill, Lide-lilie, blackthorne, &c.

In *Taurus* Slow-tree, Plum-tree, Goosebery not blowne, and blowne, Cherry, Peare, Cockbell, which is a Wood-flowre. About the middle of this month the chiefest plants begin to flourish in great abundance: as Apple, Crab, Barbery, Beech, Crowpickes, Charlocke, Rosemary, &c. But specially the plentifull Vetch and Maple. They gather on the flowre of the Maple a whole month together, and somewhat on the flowre of the Vetch when his time is, v. but the greatest store of honie is drawne out of the black Spot of the

little

33.
Nectar & Ambrosia
made of many simples,
where of each moneth
yeeldeth variety.

Nat. hist.. lib. II.c.8.

34.
Dandelion continueth
longest.

35.
What *Pisces* yeeldeth

36.
What *Aries*.

37.
Taurus

Of the Bees Worke.

little picked leafe of the Vetch, which groweth on each side the two or three upper most joynts. They ply continually: I never saw Vetches, how farre soever from Hives, that for three moneths together (if the weather served) were not full of Bees.

In *Gemini*, the first moneth of fruitfull Summer, besides those prime Plants, Vetch and Maple, (which now are in their prime) and the rest forenamed; Beanes also, which their flowers have also blacke spotted leaves like Vetches, on which sometime they gather, Arch-angell, Barberie, Fumitorie, Ribwort a kinde of Plantanie, Holme or Hollie, Hawthorne, Elder, red Honie-suckle, Red-weede, white Honie-suckle, which they like much better than the red, &c.

In *Cancer*, with the fore-named, the blossome of the Vetch, as well as the Leafe, Bennet, Malowes, the soveraigne Tyme, with yeeldeth onely *Nectar*: and therefore he was deceived that *sid Crura Thymo plena* Tyme, for the time it lasteth, yeeldeth most and best Honie: and therefore in old time was accounted chiefe, (*Thymus apissinus ad mellisioium. Pustus gratissimus apibus Thymum est.*

Dum Thymo pascentur apes, dum rore cicadae.)

Himettus in *Greece*, and *Hybla* in *Sicily* were so famous for Bees and Honie, because there grew such store of Tyme: *Propter hoc Siculum mel sert palmam, quod ibi Thymum bonum & frequens est.* The Knap-weed flourisheth about the middle of this moneth, and the Blackberie about a weeke after: both which, as sweet and plentifull, the Bees much haunt.

But the greatest plentie of the purest *Nectar* commeth from above: which Almighty God doth miraculously destill out of the Aire, (*aerei mellis caelestia dona*) and hath ordained the Oake, among all the trees of the Wood, to receive and keepe the same upon his smooth and solide leaves, (*Et quercus sudabunt roscida mella*) untill either the Bees tongue, or the heat of the Sunne have drawne it away. When there is a Honie-dew, you may perceive by the Bees: for, as if they smelled it v: by the sweetnesse of the Aire, they presently issue out of their Hives, in great haste following one another:

38
Gemini.

39.
Cancer.

Pl. nat.hist. l. ll.c.21

Hist. l.9.c.40
Vir. Geor.4.

Var.l.3.c.16

40.
Of Honie-dewes.

Virg. Georg.

Virg. Pollio.

41.

The Bees worke most earnestly in a Honie-dew.

V.c.l.n.44

Of the Bees Worke,

other: and refusing their old haunts, search and seake after the Oake: which for that time shall have more of their custome, than all the Plants of the Earth. Sometime the Maple and Hazell, take part with the Oake: but little and seldome. While the Honie-dew lasteth, they are exceeding earnest, plying their businesse like men in Harvest: you may see them so thicke at the Hive-doore passing to and fro, that oftentimes they throw downe one an other for haste.

42.
What the Honie-dew is.
Nat. hist. I.II.c.I.

Galen de aliment. li.3.

V. in 43.

Nat. hist. Lib.II c.12
V.c.10.p.3.n.20

43.
When the Honie-dewes
are most frequent.

What this *mel Roseidum* shoud be, Plinie seemeth much to doubt where he saith, *Sive illud sit caeli sudor, sive quadam syderum saliva, sive purgantis se aeris succus*. But, if conjectures might be admitted, I would rather judge it to be the verie quintessence of all the sweetnesse of the earth (which at that time is most plentiful) drawne up, as other dewes, in vapors into the third Region of the Aire, by the exceeding and continuall heat of the Sunne; and there concrete and condensated by th nightly cold into this most sweet and Sovereigne *Nectar*: and then doth it descend unto the earth in a dew or small drizling raine: that he might well say, *Constat materiam, ex qua mel gignitur, rori esse congenerem*. Which opinion is the more probable for these reasons. First because that when the yeare is backward in his fruits, the Honie-dewes are also backward: comming onely at such time as the flowers have the most solid and best juyce. Before, when the juyce is weake and waterish, and afterward, when it is dryed and wasted, they are not. v: Secondly, because that in more hot & southerly climats, where the fruits are more forward, the Hony-dewes also are more timely: as in *Italy* before *Gemini*. *Non omnino*, saith *Plinie*, *prius vegiliarum exortu*: v. whereas with us they fall not usually before *Cancer*. And thirdly, because the Countries that have store of the best and sweetest flowers, have ever the best Honie. V.n.29.

The hotter and drier the Summer is, the greater and more frequent are the Honie-dewes: cold and wet weather is unkinde for them: much raine at any time, as comming from a higher Region, washeth away that which is alreadie elevated: (so that there can be no more untill an other fit of hot

and

Of the Bees Worke.

and dry weather) and in the end it dissolveth them quite.

The time in which these Honie-dewes fall, is usually betweene the first and last daies of this moneth: although the continuance of hot and dry weather may cause them come forewhat rather, or last somewhat longer, even untill mid-Leo or * after. They may happen at any time of the day: but for the most part in the morning before it be light: *Sub lucanis temporibus. Itaque tum prima aurora solia arborum melle roscida inveniuntur.* And then shall you have the Bees up in the morning as soone as they can see, making such a shrill noise where they goe, that, as merrie Gossips when thy neer, a man may heare them farther than see them.

*In the yeare 1613, almost two moneths after the usually time, namely in the later part of *Virgo*, there fell divers Honie-dewes: which came to passe by reason that continuall wet kept them backe in their due time, and *Virgo* followed exceeding hot, fit weather for them. But because the state of the flowers was then weake, the state of those Honie-dewes also was so weake, that the Bees were little the better for them. The stalls, that were taken, proved light: and most of the swarmes and stocks, that were kept for store, died for want before the end of Winter. Except onely in the Heath Countries, where the Heath flower being then in his prime, those late Honie-dewes made fat stalls.

In *Leo* Vetches, Malowes, Tyme, Knap-weede, Blackeberie, white Honie-suckle, Redweed, Thistle, Melone, &c.

Now also doe they gather on the Lavender, if their hastie Dames doe not gather it from them before it be readie.

In *Virgo* Knap-weed, Black-berie, Redweed, Dandelion, Malowes, Borage, &c. and the ample Heath, which yeeldeth Honie like unto their Wooll. V.n.31. and c.10.p.2.n.12.

In *Libra* Dandelion, Heath, Ivie, &c.

In *Scorpio* Dandelion, Ivey, Arch-angell, &c.

And in this great varietie this is strange, that were they beginne they will make an end: and not meddle with any flowre of other sort, untill they have their load. *Mos apibus ne florum plura genera petant uno codemq profectu, sed singulis singula.* Insomuch that those which beginne with the flower of the Vetch will not one touch the rich spotted leafe of the same, before they have beene at home. Although when they come to a flower that yeeldeth both *Nectar* and

Ambrosia,

P

44.

The time when
they fall.

Nat. Hist. li.11.c.12

45.

What *Leo* yeeldeth.

46.

Virgo.

47.

Libra.

48.

Scorpio.

49.

The Bees gather but of one
kinds of flower in one
voyage.

Hist. An. 1.9.c.40.

C. 6.

Of the Bees Worke,

50.

They gather Honie out
of poison

* Mathers or May-weed,
Cotulasaida.

51.

What store of Honie a
stall my have.

Nat.hist. li.ii.c.24

Delegatione Moscovitatu,
& Munstrus de
Moscovia.

Ambrosia, they will use sometime the Tongue, and sometime the Fangs, and gather them both.

But this may seeme more strange and wonderfull, that out of the most stinking and poisonfull weeds, as Redweed, * Margs, Henbane, and the like, they gather most sweet and wholesome Honie: and yet regard not some of the best and sweetest Hearbs and Flowers, as the Rose, the Prim-rose, Clove-Giliflowers; Wheat, Barley, Pease, &c.

What store of Wax and Honie a stall may gather, is uncertaine: some having more, some lesse, according to the number of the Bees, the greatesse of the Hive, and the plentifulness of the yeares. With us it is counted a good stall that yeeldeth two or three gawnes of Pulse: although in a tree there have beene found more than seven or eight. But in other Northerne Countries we reade of farre greater quantities. *Plinie* affirmeth, that there was seene in Germany a Honie-comb eight foot long. And *Paulus Iovius*, that in Moscovia there are found in the Woods and Wildernesse great Lakes of Honie, which the Bees have forsaken, in the hollow trunks of marvelous huge trees. In so much that Honie and Wax are the most certaine commodities of that Countrey. Where, by that occasion, he setteth downe this Storie, reported by Demetrius a Moscovite Ambassadour sent to Rome. A neighbour of mine (saith he) searching in the woods for Honie, slipt downe into a great hollow tree, and there sunke into a Lake of Honie up to the breast: where when he had stucke fast two daies, calling and crying out in vaine for helpe, because no bodie in the meane while came nigh that solitarie place; at leangth when he was out of all hope of life, he was strangely delivered by the meanes of a great Beare: which comming thither about the same businesse that he did, and smelling the Honie stirred with his striving, clambered up to the top of the tree, and thence began to let himselfe downe backward into it. The man bethinking himselfe, and knowing that the worst was but death, while in that place he was sure of, beclipt the Beare fast with both his hands, about the loines, and with all made an out-cry as lowd as he could. The Beare bing thus sud-
dainly

Of the Bees Worke.

dainely affrighted, what with the handling, and what with the noise, made up againe with all speed possible: the man held, and the Beare pulled, untill with maine force he had drawn *Dun out of the mire*: and then, being let goe, away he trots, more afeard then hurt, leaving the smeared Swaine in a joyfull feare.

The Bees earnest and hot Labour, and the drought of the Aire, together with their cholerike Complexion, which their hue bewrayeth, doth cause them much to desire cold Water. Somethinke it serveth onely to feed their Schadons: (*Aquam tum portant, cum prolem nutriunt*) v.: and that not without reason, seeing that Ambrosia their daily food is hot and dry: and indeed when the Drones are done away, the breeding is ended, the Bees are nothing so frequent at the watring-places. But Columella thinketh the use thereof to be more generall, *Sine quaneg favi neg mella neo pulli denig figurari queut*. Unto whom the Poet, in the place first cited in this Chapter, seemeth to assent: making water and flowers the common matter of their three workes.

The Watring-place should ^a not be farre from your Garden, ^b in the next side of a Pond or Brooke, ^c made shelving, not very steepe, in manner of a Foord, and ^d defended from Beast, Geese, Duckes, and such like: and especially young Ducklings, v. p.3.in n.59

^a For they will never goe farre for water, if any be to be had neere hand. Sub *menilissa urbis aquantur*. And therefore when you see Bees watring in woods or other places, not neere any Hives: bee sure those are wilde Bees, which are not farre from their neast. Watch them therefore which way they flie: for they will thence directly to it. Which if it be not within view, take a Reede or Kex, or some like hollow thing open at one end, with a chinke cut in the other to let in light: and taking up a Bee by the wings put her into the Cane, and shut her in with your thumb: while she goeth downe to the light, put in an other, and so as many as you thinke good. And then where you last see the Bees flying homeward from the water, goe to that place, and there let out one of the Bees in the box: which, when she hath cast a Ring to know where she is, will fly as directly home as the other: likewise where you see her last, let out another: and so the rest, untill they have brought you to the stall.

^b Lest.

52.
Bees have necessarie use of water.

53.
Chiefly for their breed.
Hist.an.1.9.c.40
V.c.7.n.24

De re rust. 1.9.c.5.

54.
The making of the Watring place.

Virg. Geor.

55.
How to finde wilde Bees.

C. 6.

Of the Bees Worke,

b Lest the Bees, flying over the water unto it, bee throwne downe by tempestuous winds, and so drowned: for which cause it is good to lay lugs out thwait the water, and other states; that reuolving them they may dry themselves againe, and to escape.

Virg. Geor.

*In medium, seu stabit iners seu prosuet humor,
Trvis exsas saliees & grandia cenuce saxa
Pantibus ui crebris nossint consistere, & alas
Pandere ad astirum solem, si forte morantes
Sparsit it, ant praeceptis Neptuno iramersent Eurem.*

c That they may safely settle upon it, and that it may alwaies be kept moist by the neerenesse of the water. For they choose rather to draw their drinke out of moist earth, than from the water it selfe, though it be never so cleare: peraduenture that the earth having received his earthinesse, which before was insensibly mixt with the water, their triple searching tongue might the better trie out the pure element of water.

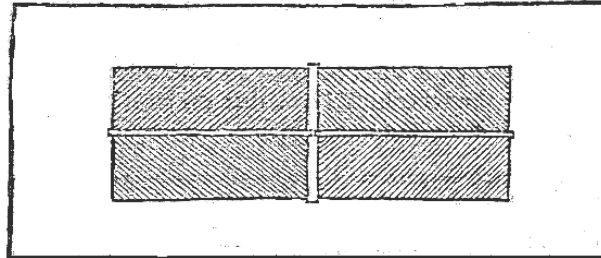
d Which otherwise will be the death of many: for they are so earnest in their businesse, that though you offer to tread upon them they will not move.

But because in the cold windie weather of the Spring, (at which tim of the yeare the Bees have most use of water, v. these watering places of Ponds and Brookes are dangerous; (where you may then see many throwne downe and drowned, and others, that scape drowning, to be so chilled, when they have filled themselves with cold water; that they are not able to endure the wind, but faile and fall by the way) therefore it is behoveful to have Troughes in your gardens, made for the nonce: whence the Bees may both sooner and safer fetch their water.

For the forme and size of a Trough, let his hollownesse be two foot in length, seven or eight inches in breadth, an foure in depth; the bottome foure inches thicke; the ends six or seven, and the sides halfe so much. Moreover, let the hollownesse be divided into foure equall parts, by one partition of inch board, in the middle from side to side; and by two partition of halfe inch board, from each end unto the middle partition: after this fashion.

56.
Bee-troughes in Garden
profitable.
V.n.53.

57.
The form and size of a
Bee trough.

Of the Bees Worke.

And to keepe the Bees from danger of drowning, unto which they are very obnoxious, (for if they but touch the water with their wings, they cannot rise from it) let each Quarter of the Trough have his cover, in thicknesse about halfe an inch, in breadth and length fitting to his Quarter: but so, that without let it may rise and fall with the water.

The matter of this cover must be corke, which must as well have open spaces for the water to take aire: as places for the Bees to light on: lest it being covered too close, doe corrupt and become unfavourie. It is best to divide each cover into two equall parts: and in the edges on both sides to cut little nickes. And so, this may be the forme of it.



Other fashions both of their Troughes, and of their Covers, may be devised: but these have seemed to me in all respects most fitting.

A new Trough thus framed and fitted, is to be seasoned before it be used, by often scalding it, and changing the foule water; untill, having stood a day or two, it remaineth cleare, and without a glistening slime: after ward the older and more earthie it is, the better they like it.

The Trough being seasoned, set in some convenient place, about a perch from the Bees; having a moveable plancke,

or

58.

The trough-cover and the use
of it.

59.

The seasoning and ordering
of the Bee-trough.

C. 6.

Of the Bees Worke,

Or the like, to defend it from cold rough winds in the spring, and from the Sunne when it is hot. At which time keepe the Trough full, lest the water be soone over-heated: and in cold weather let the water be shallow, that the Bees may drinke safely below, out of the chilling wind.

P 1. Bespread the ends of the Trough with cow-cloome, to keep them from chapping.

P 2. In frostie nights cover all the Trough, to keepe the water from freezing.

P 3. Keepe all Poultrye, and specially Ducklings, and Hens with chicken, out of your Garden: for, drinking at the Troughes, they will trouble, and tread upon the Bees. And the brood-hens will kill them, so feare of stinging their chicken: and so will Ducklings also at the first, taking them for flies; which when they have tasted, the will afterwards let alone.

You may also make good Troughes of Free-stone, with wooden partitions let into the stone: but they are more apt to chill the Bees in cold weather, untill they be mossie.

Sometime they will lie sucking at the neere plasches, puddles, and mire in the streets: where many are trod under foot of men and beast. See therefore that such places be kept cleane and drie.

After a showre they water for the most part in your Garden upon the bare earth, the grasse, and wheresoever they finde it wet from above. In the chiefe breeding months Aries, Taurus and Gemini, v. when the cold raine or wind hath kept them in some part of the day, they will lie so thick upon the ground, if you have any store; that you can scarce tread beside them. At such time threfore let no heedlesse stranger come among them.

60.
Bee troughes of stone.

61.
Sometime they water in
the streets.
62.
And after a showre, all
about the garden.
V.c.4.n.13.

CHAP.



CHAP. VII.

Of the Bees Enemies.

He good Bee, as other good things, hath many Enemies, from which shee needeth your helpe to defend her: namely, 1. The Mouse, 2. The Woodpecker, 3. The Tit-mouse, 4. The Swallow, 5. The Hornet, 6. The Wasp, 7. The Moth, 8. The Snaile, 9. The Emet, 10. The Spider, 11. the Toad, 12. the Frog, 13. The Bee, and 14. The

Weather.

The Mouse, whether he be of the field or of the house, is a dangerous Enemy. For if he get into a Hive, he teareth downe the Combes, makes havocke of the Honie, and so starves the Bees. Some enter by the doore, or by some open place in the skirts of the Hive: some gnaw a hole thorow in the top of the Hive, where they know the Honie lieth: some keepe their old homes, and come to the Hive onely for their baits: some make their nests between the Hackle and the Hive, that they may the sooner and the safer come to the Honie at their pleasure.

For remedie, first you must looke that you Hives, whether they be of straw or wicker, be close and fast wrought. For it the straw be loose and soft, they will more easily gnaw their way thorow: and if the wicker be thinne, when they have torne downe the cloome, they will creepe in between the twigs. Next see that the Hives be daubed close round about the skirts, that there be no entring but by the Doore: which in Taurus, when the Bees come downe to watch, and thence-forth all the Summer, they will keepe well enough both day and night: but all the Winter, at which time the Mice make most spoile, it must be made so narrow, that they cannot get in. v. Also it behoveth you to remove all things about you Hives, that may hide and harbour them, v. for they will feare

1.
The Bees Enemies are
many.

2.
The Mouse.

3.
Remedies against the
Mouse.

1

2

to

V.c.3.n.31

3

V.c.2.n.8.

Of the Bees Enemies.

4	to come and goe in sight, let the Cat ,meet with them by the way.
V.c. 5.n.23.	Moreover, it is good now and then, in drie and warme daies, to take off the hackles, as well for this as for other causes. V. Those that neastle upon the top of the Hive, when the hackle is taken off, will sit still amazed so long, that you may be sure to crush them against the Hive with your hand. Lastly, you shall doe well to set baited * traps in their way, that so they may come short.
5	
A Samsexs post.	* There is none better than a Simsons Post: which is a flat Cover or Roofe supported by a triangular Pillar or Prop, whose three sides doe so hold one by another, through the weight of the Roofe, that the loosing of one is the loosing of all: and so the Prop failing the Roofe falleth.
The Roofe.	The Roofe may bee a Plankes or Boards end, or the like, twelve inches long and ten broad: which of it selfe, or with some advantage weighteth four or five pound.
The parts of the Prop.	The three sides or parts of the Prop (namely, the Post, the Sweeke, and the Brace) are three sticks, all almost halfe an inch broad, and halfe a quarter of an inch thicke.
The post	The Post is moreover three inches and a halfe long, and sharpned at one end.
The Brace.	The brace likewise three inches and a halfe long, and sharpe at one end; with a nicke on the broad side halfe an inch within the other end.
The Sweeke.	And the Sweeke eight inches long, with a nicke on the upper broad side a little within the one end; and another on the left edge, two inches and the thickness of the Post within the broad nicke.
The framing of the Post.	The parts of the Prop being thus formed apart, are to be framed together in a triangle, after this manner. First, take the Brace in your left hand and beare up the fore-sice or the Roofe with the blunt end, the nicke being inward: then set up the Post somewhat leaning toward you, with his sharpe end in the nicke of the Brace: then hooke the edge-nicke of the Swweeke to the Post: and make all fast with the sharpe edge of the Brace fixed in the broad nicke of the Sweeke.
The baiting of the Sweeke.	But first bait the Sweeke with a thinne peece of good Cheese, or Bacon, or Suet, ryed with a thread upon the enner end. And bee sure that the Prop doe stand so sickle that it may easily be loosed: and that the Roofe when it falleth, lie flat and even with the Floore, lest the poore Mouse lose yur labour.
	<i>Sed instar eminium erit hoc unum. Rx. Farina 1. Auenacea no va arida dulc is Drachmas IV. Tere: 2. Arsenica alba 3. Semidrachman, inpuluerem quam que as 4. Minimum per so pertere: 5. Sacchair puri semi-drachman cum arsenica contere: saccha ratam arsenicam farina permissceto. 6. Compositum bune pulucrem latorculis superimpositum juxt a mxrium cava & in locis</i>

Of the Bees Enemies.

ab ijsdem frequentat is (eateris amot is esculentis) dispone. Sed nocte prima simplicem expone farinam: cui vorate farinam saccharatam substituas secunda: tertia triplex hic pulvis succedat: qui jam audaces satis & nihil suspicantes, duarum vel trium spatio nocturno, & mures & sorices pariter, edes tuas infestantes una omnes perdet. Si vero adversus luxuriantes serices certius velis remedium; cumpertrita arsenica drachma una contere saschari drachmam vnam: saccharatam arsenicam bynes dulcis molise unci uni permisceto, & tribue quatuorve Locis frequentatis dispone. Aut etiam ibidem passas arsenica mera pertrita int us modice aspersas. Sed diligenter cura, ne Canes, Gallinae, aliave innocua animalia istud degustent: quod facies, sino Etu tantum expositum interdiu recordas.

1. Vel triticea. 2. Vera.

3. Vt arsenica sit ransum decimsa compositionis portio: mam ss predominatar; mures, & magis jorices, virus odurantes recusans eseam, quam rite compositam suide vorant: sed medicum sufficit.

4. Nemandenies durities offendat.

5. Et quod dulcadine oblectas, & quod, vt ersenica bene trita, inter dentes stridet: hoc enim secunda noctis this rorantes, tertid arsenicam, quam stridore & colore resert, minus metuent.

6. Quantitus nucis a vellana singulus sufficit laterculia.

7. Nam si alia suppetant cibaria, sucatae escum devitant: nec vib fraut semel suboluerit, villis postead decipulis facile decipientur.

The Wood pecker or Yippingale, if hee finde any hoale in the Hive against the Honie, doth with his long round tongue draw it out: but he doth more harme to Wood Bees then Garden-Bees.

Of Titmise, there are three sorts. The great Titmouse (which of hir colly head and breast some call a Colemouse) is a very harefull Bird. For although sometime hee seeme content with dead Bees, yet is hee a great devouter of the quicke also. In winter hee taketh them at the Hive as they come forth: when the cold makes them keepe in, he will stand at the doore, and there never leave knocking till one come to see who is there: and then suddenly catching her, away he flies with her: and when he hath eaten her, he comes againe for more: eight or nine will scarce serve his turn at once. If the doore be shut that none can come forth, hee labours to remove the Barre: if that be too heavie, he falls to

moining

4.
2. The Wood-
pecker

5.
3. The Titmouse.

6.
The subtile practice
of the Titmouse.

Of the Bees Enemies.

moining about the doore for a new way: and when these devices cannot get them out: some have the skill to breake the wals of the daubed Hives above, over against the place where they lie: and there they are sure to have their purpose. But in the spring, when the Bees come to the palme, hee standeth there watching for them; and while they are busie at their worke hee devoureth many. The little Russet one in the Winter feedeth only on dead Bees; but in the Spring he will take part with the great one. The little greene Titmouse I cannot accuse: except it be only for eating a few dead Bees, and that but seldome in some hungrie time.

The Swallow taketh them as they flie, *Populatur bi undo.* & alibi, *Ea demum sola avium non nisi in volatu pascitur.* But I am perswaded shee doth much lesse harme than the Titmouse, although she have a worse name. The long-winged Hauke makes the fairer flight; but the short-winged is the Kitchen-hauke. These birds therefore are not to be suffered.

-----*Absint meropesg, aliag volucres,*

Et manibus Progne peitus signata cruentis.

Let boyes destroy their neasts in Summer, and catch the Titmouse in Winter, with * Traps baited with dead Bees, Oats, or Tallow. *Aristotle* joyneth the Waspe, the little Titmouse, the Swallow, and the great Titmouse together. *Inserunt injuriam apibus maxime vespa, & avicula quas paros vocant, at que etiam bir undo, & merops qus apiester est. Quamobrem apiary vesparum latibula, & bir undinum acmeropum nidos propinguos alveis tollunt*

* As Cage traps, Pit-falls, and Samsons-Post (v* in n.3) But then set a Lath before the Prop, leaning from the Floore to the Roofe, lest the busie Bird throw it downe for nothing.

The Hornet also devoureth Bees : being so much too strong for them, that they can make no resistance. Which the Poet meant where he said,

Aut asper crabro imparibus se immiscuit armis.

Hir manner is to fly about before the hive, till she have spied hir prey settled at the doore: and then suddenly she taketh it in hir feet, and flieth away with it as a Kite with a Chicke.

In

2

3

7.

4. The Swallow,
Nat. hist. li.II. c. 18

Nat. hist. li. 10. Cap.24

Virg.

8.

Remedie against the
Titmouse and Swallow.
Hist. l. 9. C.40

9.

5. The Hornet.

Virg.

Of the Bees Enemies.

In destroying the Hornets you must bee warie: for one stinging doth oft times cause a Fever, and lesse than thirtie, as some say, will kill a man. *I Etus crabronum haud tenure re fine sebrist.*
Auctores sunt ter novcni punctis inter sici nominem.

The Wasp doth much more hurt than the Hornet. For the Hornet now and then killeth a Bee: but the 'Wasp wasteth the Honie, whereby many whole Stalls doe perish. For, beside the harme that she doth hir selfe, she doth oft times see the Robber v. on worke: who, when the Wasp hath begun, will be readie to take part with her, and then all goes to wracke. A Wasp is by nature harder and stronger than a Bee, specially in *Libra* in so much that oft time she breaketh from two or three of them, though they have all hold of her at once: and perhaps killeth one of them out of hand. At *Cancer*, or, the Spring being hot and drie, in the later part of the former moneth, the Wasp beginneth to be bred: v. within a moneth after shee first appeareth: and in a shile she beginneth to feed upon dead and weake Bees: which shee quickly cutting off in the middle with hir Fangs, first carrieth away the neather-part: and anon fetcheth the other, when she hath bitten off the wings (for easier carriage) not farre from the place where she tooke it up.

Within a moneth after hir comming abroad, shee waxeth bold, and adventureth into the Hives for honie: but, by reason of the strangenesse of hir voice and habit, shee is descried before shee come neere. And at the first (while the weather is warme, and the Bees both early and late keepe watch and ward at the Hives doore) comming single against many, she is commonly repulsed, and sent backe againe with a flea in hir eare: and if by chance shee slip in, shee doth not alwaies escape. Sometime shee is killed in the Hive, and brought forth dead: sometime without the doore, when she hath got hir prey. But afterwards, the weather waxing cold, and specially in mornings and evenings, and the Bees therefore retiring from the doore higher into the Hive; the Wasps make great spoile, specially among them that are weake. And this they continue untill *Scorpio*: after which time they begin to weare. Neverthlesse while they live, that is untill

Sagittarius

10.

The Hornets sting is
dangrous.
Nat. hist. li. II.
C.21.

11.

6. The Wasp.

V. n. 25.

V.c. 4. 5. 6.

12.

When she feedeth
upon Bees.

13.

When she stealeth
Honie.

14.

When they weare
away.

C. 7.

Of the Bees Enemies

15.
In what yeere the
Waspes are few.
V.c.4.n.8.

Sagittarius (if abundance of cold and wet rid them not a little rather) they will be filching: and one Waspe will carrie out as much as two Bees bring in.

The Winter wet and cold, killeth many of the Mother-Waspes v. as they lie in their sleepe. The Spring wet and cold hindereth their breeding: for being by that meanes kept in when their time is come to flie abroad and ford; they pine and faint, so that either they breed not at all, or verie late. And when a warme fit in the beginning of *Aries* having let them abroad, cold and stormie weather commeth suddenly upon them; they are shut up againe, and so starve for the most part with hunger and cold: that you Bees shall not be much troubled with them in such a yeere. Yea continuance of wet, though without cold, is such an enemy to the Waspes; that in the yeere 1613, though, the former Summer being exceeding dry, the Waspes were multiplied, and the Winter being milde, the Mother-Waspes were many at first; yet the Rainie Spring and Summer, did so spill their nest, that there were no small Waspes seene till *Libra*, and then verie few.

But the Winter bing milde, and the Spring and Summer continuing warme and dry, they live and breed in everie place: that, without continuall and diligent attendance, you shall be sure of great losse among your Bees, though the former yeere there were but few: For on nest yeeldeth breeders enough, if they should all live, to store a whole countrey.

16.
In what yeere they
abound.

For these causes, Ann. 1611, there were every where such multitudes, that the like I thinke was not knowne before in our memorie: insomuch that within two or three Furlongs of my Garden, were killed that Summer about fiftie great nest: (and yet, by the resort to our Bees, wee knew we had not all) besides 22. Mother-Waspes killed in the Spring at our Bee-trough, which would have made so many nests. And 1620, for the same causes the number was as great or greater: and yet the exceeding wet Summer following I saw not one small Waspe.

Wherefore, if you love your Bees, suffer not a Waspes nest about you.

The ready way to rid them, is, If they be in a Tree above

the

17.
Remedies against the
Waspes.

Of the Bees Enemies

the hoale, to smother them with brimstone or Bunt, as you kill Bees. If in the Thatch of an house, (when you have made way to the Combes) to scald them. If in the ground (as most commonly they are) you may likewise scald them, and so take the Combes out whole, and give the Grubs to you Chicken: although the Boyes make better sport in burning them. But if you be in haste, and care onely to dispatch them quickly and quietly, thus doe. First, stop their way close; they they within breake not out upon you (for those that are abroad coming home wearie and loaded are more gentle.) Then presently with a * Waspes-spade search for the Nest: which, if it be shallow, is quickly found. When you have found it (which you shall know by the easie entrance of the Spade) then dig downe round about it: and having thus rounded the Nest, stamp the earth down upon the Combes, and so have you done. If you finde not the Nest because it lyeth + deepe; then dig up the ground a foot about the hoale; and having found their way, stop it fast with earth, and tread in that you digged out, and let them alone. If this be done in the day when many are abroad; the evening or morning following you may kill them with your foot: but in the evening you may take them all together.

* Which is a thin Iron one, whose Padle is not above foure inches broad next the Socket, and thence taperd unto three inches at the steeled point, and eight or nine inches long. If it bee broader it is not so apt to enter, and so to finde and round the Nest: and a thicker one is apt to let out the fresh Waspses, that will trouble your worke: but you may make a shift with any ordinarie Spade or Padle-shaffe.

+ In Corne-ground the Nest is begunne under a Furrow, and therefore is alwaies shallow: in old laine it is begunne in a Want-hole, and therefore it is sometime shallow, and sometime deepe.

And so destroy those that resort to your Hives, set by them Sider, Vertjuice, sowre Drinke, or Grounds, in a short necked Violl open, or other Glasse covered with a Paper that hath a hoale in the middle: and so you shall catch many. Also you may take of sweet Apples, or Peares, or beasts Liver, or other flesh, or any thing that they love, foure or five flies or more, and lay them in so many severall places among you Bees:

upon

C. 7.

Of the Bees Enemies

upon which you shall have sometime as many as will cover the Bait, which you may kill at once, as Butchers kill Flies.

Hist. 1.9.c.40.

Aristotle teacheth you an other way: *Impugnantur* (saith he) *Apes a vespis: quamobrem Apiary cas venantur constituta olla, & carne in ea posita. Vbi enmmulia ad carnem accesserent, apposito opercul super ignem allam ponunt.* You may also use other meanes to kill them your selfe. How to helpe and defend your Bees against them, see c.3.n.46, 47, 54, 55.

18.
7. The Moth.

Nat. hist. 1. II. C.19.

The flying Moth lyeth between the hackle and the Hive, and breedeth little Wormes, or crawling Moths, some in the skirts of the Hive, some within upon the Stoole, wrapt in the drosse or scouring of the Combes, and some without upon the Hive, specially in the cracks of the dawbed Hives. *Plinie* speaketh thus of them: *Papilio etiam ignavus luminibus accensis advolitans pestifer, nec uno modo: nana & ipse cras depaseit, & relinquit excrementa quibus teredines gignuntur.*

19.
8. The Snaille.

The offend the Bees also with their mealinesse, as the Snailles doe with their sliminesse. Wherefore rid you Hives of these guests. The Moths are easily crusht before or upon the Hive: and the Snailles, though you kill them not, will not long abide, if there be no harbour of long Grasse, Weeds, or other things about the Hives. But as for the Moth, if you suffer her, your selfe shall have more cause than your Bees to bee offended. For albeit in the cold Spring shee breed about the Hives, hatching hir young by the heat of the Bees; yet when the heat of the aire will suffice for that purpose, shee chooseth rather to lay her blores in woollen, their naturall nest and nourishment: especially if it bee nappie, that there she may safely hide them. In which place, till they be growne to their bignesse, they lie fretting and eating the Cloth: and then after a while they creepe out of their skins flying Moths. The Maides that funne their clothes to rid the Fleas, let them take heed how they doe it neere the Bee-fold, lest they bring in worse enemies than they carried out. If the Woollen bee oylie or greasie they like it the better: and for that cause good Huswives Yarne lyeth not long unwoven.

20.
What harme the Moth
doth.

If Emets bee neere your Bees, they will much trouble them, biting them and hanging upon them: although the

21.
9. The Emet.

Bees,

C. 7.

Of the Bees Enemies

Bees, if they be lustie, will kill many of them that come to the Hive. But if it be a poore Stall, they will in time possesse the Hive, and eat up the Honie. The best remedie against them is to scald them.

The Spider, as the Moth, doth use to harbour between the hackle and the Hive: where commonly she hath a Bee or twaine in store to feed on, and unfit messe for such a mouth: Sometime she hangeth hir Nets under the Stoole; which easily intange a wearie Bee, when shee commeth laden home, and missing of the lighting place falleth into the: yea, and sometime where the Bees are few, chiefly in the winter, they will bee bold to enter the Hive, and there weave their fatall Webbes. *In foribus laxos suspendit aranea cases. Aranei quoq vel maxime hostiles: cum pravaluere ut intexant, enecant alveos.*

The Toad is by nature so noisome to the Bees, that while he is about the Hive, though he lie but under the Stoole, the Bees will not prosper. He is said also to devoure them at the Hive, as the Frog at the Watering —place. *Ranae Apes, nbi ad aquam accsserint, rapiunt: quamobrem eas Apiary per paludes & stagna, unde Apes aquantur venari solent. Rubeta ctiam Apes interimit: subiens enim adit us alvei asslat, & observans rapit evolantes. Nullo hac afsics malo ab Apibus potest: sed abna: ;qua maxima carum est operatio, tum cum sobolem faciunt. V. Nec ha tantum quastagna riuosq obsident, verum & rubeta veniunt ultro, adrepentesq foribus per eas suffiant: ad hoc provolant, confesting abripiuntur.*

But not any one of these, nor all these together, doe halfe so much harme to the Bees, as the Bees. *Apes api, as homo homini, Lupus.* They make the greatest spoile both of Bees and honie. For as they of the same Hive live in inviolable peace one with another; so have they no entercourse, no friendship or societie with others, but are rather at perpetuall defiance, and deadly feud with them. In fight they are fierce, and in victorie mercillesse: within the space of a day or twaine, yea, of an after-noone sometime, if the Hive bee

22.

10. The Spider.

Virg.

Nat. Hist. I. II. C. 19.

23.

11. The Toad

12. The Frog

Hist. an. I. 9. c.40.

Ibidem.

V.c. 6.n. 53.

25.

13. The Bee the Bees
greatest enemy.

open

C. 7.

Of the Bees Enemies

open that they may have easie passage to and fro, they will have rid him cleane. And therefore all Bees, of all their enemies, doe most dread strange Bees; knowing well in what danger they are to bee robbed by them both of goods and life.

26.
Robbing or
fighting of Bees in
winter and
summer but little.

27.
In the spring more
e a r n e s t.
V. n. 28 & 31.
V.n. 43.
V.c.3.n. 65

This robbing is practised all the yeere. In winter, as oft as the weather is faire and warme, some will bee prowling abroad. And some are so thievishly disposed, that all the summer long, when abundance of honie is every where to bee had for a little labour, they will yet be filching though they die for it. In the Spring they are more earnest; finding now fit time to fetch after that which they leaft behinde at Harvest, v. and to repaire their decayed store, both of Honie and Bees. v. And therefore now have an eie unto them: and defend the weaker swarmes from their voilent irruptions. V. Those Stalls that have lost their Queene, or too many of their companie, or are offended with the corruptnesse of their Combes, or doe dislike their standing for coldnesse, moistnesse, mustinesse, bleetnesse, or unfavorinesse; as taking no pleasure in their lives, doe now easily suffer themselves to be robbed. Adn if none will come to rob them; then on some faire day they will away together, sometime leaving both Honie and young ones behinde them.

28.
The most spoile is
made in Harvest.

29.
What Stalls are
most subject to
robbing.

30.
What Bees are the
Robbers.

But in *Virgo* is the most dangerous time of all. Then shall all the Stalls in your Garden bee tryed of what mettle they are made. And *Libra* would not bee much better, but that the most spoile is done before. Little and poore swarmes are now subject to robbing. Likewise those Bees that are offended with the blacknesse and rottennesse of their Combes, caused through age, or wet, or with abundance of nosome stopping; will most of them goe forth in the swarmes, leaving a very few, sometime not past a handfull, in the stocke: which yet in robbing time will keepe the doore, as though the Hive were full: but the Robbers finding their weaknesse, will surely spoile them, if they bee not prevented. How to know such weake Bees, and what to doe to them, see further. C.3.n.46.

The Robbers are thought to bee poore swarmes and

stocks

C. 7.

Of the Bees Enemies

stocks, which have not sufficiently provided themselves for winter. Of which opinion was *Plinie* where he said: *Quod si defeceris alicujus alvei cibus, impetum in proxim as faciunt rapine propsito*. But indeed such are fitter to be robbed, as before is said, than to be robbers. There is no theefe to the rich theefe: who, although he have enough, and more than enough; yet by hooke or by crooke hee will have more, though the poore starve for it.

At the beginning of Wheat-harvest, the state of flowers decaying, which is alwaies about Virgo, the maine robbing beginneth. Then doe they send forth some of their stoutest yonkers to spie and give the onset: which, going about from Hive to Hive so farre as their walke extendeth, doe prove all. Where they have once sped, at their returne they bring more of their companie; untill in the end that whole Stall be made acquainted with it. Sometime it happeneth, that though there bee an hundred Stalls within a walke; yet the robberie is done altogether by one: sometime by two or three, all the rest being quiet. And this one thing is strange, that whereas no Bees will abide strangers in their Hives with them; yet thieves will suffer one another, and agree all in stealing, though they be of divers Hives.

When the thieves, having first made an entrie, begin to come thicke, and the true Bees perceive themselves to bee assaulted by many; they suddenly make an out-crie: and issuing out of their hold by troopes, presently prepare themselves to battell. Some keepe the gates: some as Scout-watches fly about: some runne in againe to see what is done there: some beginne to grapple with the Enemie: and that with such a noise and dinne, as if the Drum did sound an all arme. Besides which base found, you shall eftsoones, in the heat of the bettell, heare a more shrill and sharpe note, as it were of a Flute.

----- & vox

Auditur fractos sonitus imitata tubarum.

Which I am out of doubt is tuned by their generall Commander, encouraging them to fight for their Prince, their lives, and their goods. Then shall you see the enemies be-

Nat. Hist. I. II. c. 17

31.

How they begin the fray.

32.

Theeves of divers Hives agree together in robbing.

33.

The description of the Bees battell.

34.

In the battell is heard a sound like a Drum and a Flute.

stir Virg.

35.

The assault of the enemie.

C. 7.

Of the Bees Enemies

36.
The defence of the
besieged.

stir themselves most venterously: some violently through the thickest thrusting in at the gates, others scaling the walls, and tearing them downe. If they once make a breach; without present succour, you shall quickly have an end of that fight. On the other side, the defendants will behave themselves as bravely, not giving any rest to the enemy: part encountering with them that are without, part with them that have broken in: whom in a while they draw out by the heeles, some dead, and some alive. Likewise without you may see some slaine forthright with the thrust of the Speare: some so deadly wounded, that they are not able to goe three foot from the place: and some more lightly strooken presently to lose the use of their wings, and for a while to leape up and downe, forward and backward, like mad things.

How long they live after they are hurt, see c. i.n.23.

So loth are these couragious warriours to yeeld on either side, untill there bee no remedie.

37.
Neither side willing to
yeeld.
Virg.

*Ingentes animos angusto in pectore versant,
Vsg adeo abnixi non cedere, dum grauis aut hos,
Aut hos versa fuga victor dare tergacoegit.*

In their fight they are so furious sometime, and so thicke about the Garden; that, unlesse you have on your complete harnessse, v. you may not dare to come nigh them.

V.c.l.n. 40.

This also I have noted, that when the robbers are so few, that small resistance will serve; yet being called forth they will not bee idle: for you shall see some of them running up and downe about the Hive, to seeke and search if any more come: others, like trained Souldiers, practising to fight: her one wrestling with another in single combat: there two, or three, or foure setting against one; as their usuall manner is to deale with the theeves. If you would know whether this fight bee in jest or earnest, with fellowes or with foes, the manner, and the end thereof will shew you.

38.
The exercise of the
defendants when the
enemy retireth.

For if they bee fellowes, their fight is not so fierce, and they will part quietly as friends: whereas if they be foes, though they escape, it shall be with much adoe. For if the true men cannot kill the theeves; yet will they hold them by the legs or by the wings so long as they can, in hope to have helpe, though

they

C. 7.

Of the Bees Enemies

they be drawne after. Moreover the young Souldiers, which have scarce beene abroad before, you shall see the elder sort goe round about them, smoothing and trimming them in every place, as if they did addresse, and hearten them to fight.

During the time of this battaile, as afterward, the Wasps like Vultures prey upon the dead cakasses, carrying them away peece-meale. V.n.12.

The battaile being ended by repulse of the enemy, those corpses, which the Wasps have feaft, they honestly burie as farre from the Hives as they can beare them.

----- *Tim corpora luce carentum*

Exportant tectis, & tristia funera ducunt.

And then they draw together at the Citie gates: and there they buzze one to another, as if in their language they did talke of the fight, and commend one an other for their fortitude.

The Robbers, prevailing not that day, will up the next day so soone as it is light, an houre before the Bees use to come abroad: and then doe they make a fresh assault. The armes: and so beginnes the second skirmish, which, without the taking of the Citie or the overthrow of the assailants, (which seldome hapneth) continueth, untill very darknesse part them.

When the true Bees, finding theselves overmatcht with multitude, see there is no remedie, and that no resistance will serve; at length they yeeld, and suffer the Conquerours quietly to spoile their goods. And after a while, when, by being together in the same Hive, and sucking the same Honie, all smell alike; they will joyne with their enemies, and help carrie away their owne goods, and so become friends and live together. At night they lodge with them: but in the day-time they returne with their new fellows to fetch that is leaft behinde. By this meanes some venterous stalls are suddainly much increased both in Bees and Honie: although when a Swarme not over-stored conquereth a poore stall, and so getteth, by the victorie, more eaters than meat; it
turneth

39.
The Waspe like Vultures.

40.
The battaile ended they
bury their dead.

Virg. Geor.

41.
The second assault of the
enemy.

42.
When the true Bees
yeeld, they goe with the
Conquerors.

C. 7.

Of the Bees Enemies

turneth to their owne overthrow: for when their food faileth they dye all together.

43.
Remedies.

Seeing therefore in so cruell and continuing a fight, oft times the enemies are Conquerours, and then all is lost; and if they be vanquisht, yet this victorie is not without losse of men and goods, which the enemy ever now and then shifteth away; I know your desire is to know how to succour the truemen, either by preventing this dangerous conflict, or by rescuing them in the same. For the first reade C. 3.n.45. 46. 47. For the other many practises have beene tried; some cast duft, some drinke among them: the where of doth no good, the other harme. For drinke maketh them to smell all alike, so that the true men cannot know the Theeves from their fellowes: and therefore some use to doe so, when two swarmes are put together, that they may seeme to be of one companie. If these usuall helps be no helps, what help is there then? If you perceive their fighting in time before any great harme be done, then this must you doe. First stop them up close, that none can passe either in or out, leaving onely a breathing place. Then shall you have a double conflict; one within, an other without. The theeves that are within, having no way to escape with their preyes, first or last will be slaine all. They that are without, after a little wrestling, seeing nothing to be had but blowes, will not long abide this bootlesse danger. When you perceive the siege to be raised, and there is little or no fighting without; (which will be about an houre after) then may you let out your Bees, making the doore halfe an inch high, and scarce halfe an inch wide. Those few that were within will they bring forth to buriall; some then, some on the morrow. In the evening, when the Bees are all in, shut them up as before. The next day betimes, before the Bees would be abroad, must you looke for some of them againe. When they are come, beat them away with a bough, but kill them not: for so may you doe your neighbour a shrewd turne, and your selfe too.

44.
To prevent robbing.

45.
And to stay it, if you finde it in time.

But let not the Bees out before noone: and then make the doore so narrow, that but one Bee may passe at once. So

will

C. 7.

Of the Bees Enemies

will they keepe the Robbers out, and follow their businesse neverthelesse. The next day you may let them out rathe: and if the doore be so narrow that it hinder their passage, you may make it wider. If this doe not suffice, but still the strange Bees will strive to get in: assure your selfe that stall will yeeld. And therefore if you bee loth to take it now, because of the Schadons that may corrupt the honie, v. then must you looke unto him carefully, lest by little and little it come to little or nothing.

W.c.10.p.1.n.2

But if the Bees have yeelded before you are aware of it, so that the theeves rob quietly without resistance; or have broken the Honie-cels; (which you may perceive by the crumblets of Wax upon the stoole) then, having shut the Hive close assoone as you can, the next evening or morning take that is leaft: otherwise in the end you shall lose all. For the Bees there about smelling the Honie when the Combes are broken, will have it or die for it.

46.

When it is too late, and what is then to be done.

This fierce and cruell robbing being alwaies in Harvest, when people are busie in the fields; many Hives areleaft Honie-lesse, and they never the wiser. Wherefore it is good to leave some body at home, as well to watch these, as the two legged Robbers.

Neither is this robbing hurtfull onely to those that are robbed, but to the Robbers also. For many of them are daily cut off in the assault: (you may see them lye sprawling at everie Hive-doore) whereby their whole stall sometime is so weakned; that, while they seeke to prey upon others, they become a prey themselves.

47.

Robbing hurfull also to the Theeves.

After a moist Spring, when Swarmes are most plentifull, v. is robbing most rife: otherwise there is lesse danger.

Besides those Bees that are thus spoiled in robbing, many also are killed by other stalls when they come to them for succour. For in the Spring those Swarmes that were lateward, or have beene halfe-robbed; when they have spent all their store, the next warme day after, away they flye: some to a tree where they hang till they be dead: some adventure into other Hives: where if they have large entrance, that they my throng in suddainely; sometime they escape with

48.

In what yeares robbin is most rife.
V.c.5.n.5.

49.

Bees kill poore swarmes that wander in the spring.

the

C. 7.

Of the Bees Enemies

50.
To prevent this death of
poore swarmes.

V.c. 10.p. 1. n. 12.

V.c. 10.p.1.n.25.

51.
Many killed in swarming.

52.
14. The weather.

53.
In Summer heat hurteth
the Bees.

54.
In Winter the sun-shine
in Frost and snow.

55.
The remedie.

56.
Also the Eastern winds
and great frosts.
V. c. 3. n. 61.

the death of some few, and being mingled together continue with them as one stall: but for the most part they die ever each one. V.c. 1.n.22.

To prevent this losse, (1) when you perceive them to wax light and weake; drive them into a stall that hath provisions enough, v. (2) If it be your hap to see them entring a stall that is well stored, lift up the Hive and let them in together, and so perhaps they may scape: and (3) if you finde any hanging abroad, you may put them into what stall you lift; by rearing the stall before a handfull from the stoole, and laying the Bees upon the Table, v. close to the doore.

Lastly, the Bees doe much destroy one an other in swarming-time. V. c. 5.n. 64, 65, 66, 68, 75, 76, 77, 80, & 81.

Next unto Bees, the greatest Enemy that the Bees have is unkinde Weather: whereby at all times of the yeare both they and their fruits are much empai red.

In Summer extreme heat melteth the Combes (specially of Swarmes) and so sheddeth the Honie; if the Hives be not shaded, and well hackled. It also causeth the Bees to lye out, and so hindereth their swarming. v.c. 5.n.20.

At Winter, the Sunne shining in frostie or snowie weather, is dangerous to the Bees. For the shine tilleth them abroad, and the Frost chilleth them: many as they flye, that they cannot returne: and many that returne, while they rest on the ground before the Hive. But the Snow amazeth them, and dazeling their eyes causeth them presently to fall, and with his vehement cold to rise no more: and most of all then, when, to shun the wind, they light in the shade. And therefore if, the Snow lying, the mildnesse of the weather draw them abroad; it is good to strew the Snow with straw, not onely in your Garden, but also without the fences, specially in the Lee-sides, if conveniently you may: and so shall you save a number; which else you might see lying about, like slaine men in a foughten field.

Also the freezing Easterne winds, and all great Frosts kill many in the Hives that be open, or uncovered: and therefore at such times it is good to shut them up close, v. and to

see

C. 7.

Of the Bees Enemies

see them well hackled, v.c.3.n.15.

And if the cold continuing keepe them long in, it maketh them so sicke, heavy, and chilly; that many dye assoone as they come abroad into the aire, unlesse it be very pleasant. V.c.3.n.62.

Also the raine doth oft-times soake into the Hives, and so corrupteth the Combes, and killeth the Bees: specially where the company is small, not having heat enough to drie them againe. Wherefore provide that alwaies your hackles be good. And for remedie (if any such chance happen) pull of the hackles in warme daies, that the Sunne may dry the Hives againe.

But the greatest losse is in the Spring. For the Bees, specially the young frie (being laded and wearie with their labour) some at their worke, some on the way home, some at the Hive-doore are beaten downe; not onely through suddaine stormes, but also through cold rough winds: and then, unless the Sunne shine or the wind lye, they never come home againe: insomuch that sometime you may see the Lanes v: strewed with them.

And therefore, when being a field they see a stormie or rainie Cloud arising, presently they hie them home for life: tumbling to the Hive as thicke as Haile, thronging, and throwing downe one another before the doore for haste. Where, if the cold raine catch them before they can recover the Hive, they are in no better case than those that the storme beat downe by the way: although, when they are fresh and light, they will flye abroad in the midst of a warme shower, not caring for it.

They which are thus taken abroad, must take their chance: but if you defend your Bee-garden as you ought, v. you shall prevent the fall of many at home. And those that you finde chilled with cold (though they be quite dead, without sense, motion, and breath, yea and have lien so all the day) you may, if you be disposed, revive with the warmth of your hand; so that it will seeme a miracle unto you. For presently (their spirit returning) you shall see them begin to pant and breath againe: and anone they will flye away as lustie as the

best.

57.

And the cold continued
maketh them sicke.

58.

The raine rotteth the
Hives.

59.

The remedy.

60.

The greatest losse by
weather is in the
spring: for then infinite
multitudes are beaten
downe, laded and
weary, with stormes
and wind.

V.c.1.n.49.

61.

At the rising of a Cloud
they post home.

62.

Yet will they goe a
field in the midst of a
warme shower.

V.c.2.n.2, 3, 4, &
5.

63.

How to restore Bees to
life.

C. 7.

Of the Bees Enemies

64.
The wind causeth many
to be drowned.

65.
The remedie.
Nat. hist. l.11.c.19.

66.
The last and worst
Enemie of all.

V. c. 1.n.59. & c.3.n.60.

best. But if you spie any store of such dead or halfe-dead Bees, then your way is to put them in a Glasse, and covering it, to turne it round against the fire, till you see them ready to flye.

Also where Palme-withies, or other trees whereon they gather, doe hang over the water; the rough winds throw downe and drowne a number of the, while they bee at worke. Many also, where there are no such trees, when they come but to drinke.

For remedie of the first, cut downe the trees: and for the other, see. c6.n.56.

*Tot bostibus, tot casibus, tam psunificans
Animal expositum est.*

There remaineth yet another Enemie worse than all these. Fore these all doe wrong the Bees but by little and little; some in their goods, some in their persons: and there is remedie shewed, if industrie be not wanting, against them all. But this, when he commeth, playeth sweep-stake with them; carrying away both Honie, and Wax, and Bees, and Hive, and all at once: and there is no sufficient remedie found, either in the Bee-master, or in the Bees themselves against him: neither shall I, with all my skill, be ever able to devise any; unlesse the wisest of the Land, when they meet together, will joyne with me in the invention. For first the Bees are least destitute of their Keepers helpe, seeing at the times of greatest danger, he cannot alwaies be *sub Dio* with them, nor they conveniently *sub Lare* with him: although some have, for their safetie, put his in practise, housing them and shutting them up close all the Winter: but not without much inconvenience. For by this meanes they are debarred of their necessarie recreation v: in a warme houre, when it happeneth: and if by chance they breake forth, they lose their way againe, and their lives withall. And as they want herein their Keepers helpe, so have they no meanes to save themselves, no not so much as the silly sheepe, which happily may runne away. For their resistance, which against some Enemies doth often prevaile, against the violence of this flie *Tenbrio* availeth nothing at all: who stealing upon

them

C. 7.

Of the Bees Enemies

them while they be at rest, & suddainly surprizing them, carrieth the poore Captives (alasse) they wote not whiter. Although I have read a Storie of a Stall, that being stolne did sharpley punish the Malefactor, making him to submit himselfe unto their Master, and to aske him forgiveness.

Indeed I will not be bound for the truth of it, for it is no childe of mine: but if any man desire to take it as it is, he shall have it as good cheape as I. *Cum noctu latra apes S. Medardi subripisset, apes ipsae in sancti viri ultionem, relictis vasis suis, in malefactorem illum cir cumquag diffugient em acerrima eatenus instimulatione persecute sunt, quousq ad Sanctum, vellet nollet, regredereetur, & ejus provolutus vestigys suppliciter pro commissocrimine veniam precaretur. Cui mox ut Sanctus manum extendit benedictionis; apes, tanquam obedientes, ab ejus insecutione cessaverunt, & antiquo Domini sut domino evidenter sese reddiderunt.* Laur. Surius in vita S. Medardi. Tom.3. When a Theefe by night has stollen S. Medards Bees, the Bees in their Masters quarrell, leaving their Hive, set upon the Malefactor, and eagerly pursuing him which way foever he ranne, would not cease stinging of him, untill they had made him, whether he would or no, to go backe againe to thir Masters house, and there falling prostrate at his feet, submisly to crie him mercie for the crime committed. Which being done, so soone as th Saint extended unto him the hand of benediction; the Bees, like obedient Servants, did forthwith stay from persecuting him, and evidently yeelded themselves to the ancient possession and custodie of their Master.

It were to be wished that *Pares culpa* might be *Pares pena*, that all like offenders might have like punishment. But such our Bees are not of S. Medards kinde, thus to rescue themselves from this mischievous Enemy; it is meet their merit procure them a protection: and as they provide for the health and safetie of men, v: so men should provide for the safetie and secure being of them, That such as delight in things for their Country so profitable, might not by idle and theevish Varlets, unprofitable member of the Common-wealth, be discouraged in their honest courses. Where-

fore

C. 7.

Of the Bees Enemies

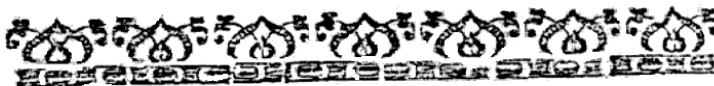
fore I humbly and heartily entreat all those, whether they be high or low, which shall reape either profit or pleasure by these my paines, that they would endovour, as much as in them lyeth, by themselves and by their friend, that against this odious rapine it may be enacted, as a Law of the *Medes* and *Persians* which altereth not; that they which feloniously breake open these true labourers houses, shall, like other House-breakers, bee deemed and judged as guiltie of Burglairie, and so have no benefit or favour by the Muses, that thus violate the *Muses* sacred Favorites. And heere, now my hand is in (though it may seeme a hard digression) let me begge the like boone for those other necessarie creatures, which, for their like certaine and generall profit, the Proverbe hath joyned with them in speciall commendation to the world.

*Who so keepe well Sheepe and Bees,
Sleep or wake, their thrift comes in.*

They serve for mans use both without and within, not only to feed the belly, but also to cloath the back: for which necessarie uses, they deserve especially to be beloved and defended of all. And yet I thinke that in any thing, nay in all things else, there is not so much wrong and spoile done to the Countrey, as in them alone: Sheep Stealing, through foolish pittie, is now growne so common and so continuall. Whereby, besides the infinite losses which true Subjects daily suffer in that kinde, the Commonwealth sustaineth an other great damage in Corne: the Husbandmen oft-times fearing and forbearing to fold their Land, lest their losse should be greater than their gaine. Surely, in my opinion, the very Boot-halers, or High-way-Robbers are more worthy favour than such. For they are men of more generous spirits, both apt for service themselves, and to breed bold Souldiers for their Prince and Country, who, by good admonition, better imployments, or conscience of the finne, are oft-times reclaimed: whereas theses Night-Ravens, for the most part, are base cowardly Knaves, neither fit for service, nor labour: a meere burthen to the Common-wealth:

Of the Feeding of Bees.

Wealth: and as incorrigible as sheep-biting Curres, which being once flesh't, doe seldome desist; untill the bones or somewhat else doe happily choake them.



C H A P. VIII

Of the Feeding of Bees.

Three moneths of the twelve are rich and plentiful (in which the Bees gather abundantly, and store themselves for all the yeere) *Gemini, Cancer, Leo*: but *Cancer* is better than both the other. In *Virgo* and *Libra* they live of their daily labour from hand to mouth: little increasing or diminishing their store; unlesse they fall into the hands of Robbers, and then, without rescue, they lose all. But in the other seven, either wholly or partly they feed upon that store which the three rich moneths did afford them. For *Scorpio* hath but the poore gleanings of decaying plants: the three still moneths nothing at all. *Pisces* beginneth to put forth fresh plants, which in *Aries* and *Taurus* are well increased: but this breeding time the mouths are multiplied more than the meat, which * unkinde weather oftentimes suffereth them not to fetch in. So that all this while, they, more or lesse, spend upon the stocke: yea the weaker stalls somewhat longer, being not so well able to indure the sharpe aire: and therefore, for want of some store to feed on between whiles at home, I have knowne some die after Mid-*Gemini*.

For which seven spending moneths, some swarmes are sufficiently provided: which you may reckon as Jewels, the *verie Spes gregis*: whose increase the next yeere is certaine, if they be not over-hived. Some are not provided for halfe the time: and these, as desperately poore, are not worth the

feeding

1.
In seven moneths the
Bees spend of the
stocke.

* Rainie, cold, and
windie.

2.
Three sorts of swarmes
diversly provided.

C. 8.

Of the Feeding of Bees .

feeding. Others are provided for six, or five, or foure moneths: which, by the helpe of feeding, may live and doe well.

Of the first sort are timely prime swarmes unbroken: also faire Castlings not over hived, before *Cancer*; yea and in kinde or backward Summers before *Mid-Cancer*: when they black-bery blossomes are not yet come, v. nor the hony-dewes gone: For such have sufficient both company and time, to make sufficient provision.

Of the second sort are the over-little and late swarmes, who paucirie and povertie makes them unlustie to travell for more, and unable to keepe what is gotten or given them. Such are sure to be put before winter be past, by cold and hunger, our of hunger and cold. And therefore if you have omitted to save such by Union; v. yet omit not to save that little which they have, and your vaine labour and cost in seeding them. V.c.10.p. v.n.3. in III.

Or the third sort are the midling and indifferent swarmes, which by their earnest labour have gotten well, and gathered good store of wealth together: but yet, for some want of number or time, the summer leaveth them in some want of provision.

As for Stockes that have stood two yeeres, and yet have not sufficient stocke for these seven moneths; (whether they be such as have not gotten it, or having gotten it have lost it againe) they are out of prooffe: and therefore fit to be taken, not fed. V.c.10.p.n.3. in III.

But because unkinde summers may make good swarmes but poore, as contrarily a plentiful summer may much mend the worst; after *Mid-Virgo*, when Bees are to be taken, v. it behoveth you to trie all your swarmes, by knocking and poisoning them: for the noise will tell you the greatnesse of the company, and the weight, their wealth. They that are used to poise them by hand, will resolve you readily in this point by aime: which till you know to doe, the Scales may direct you. For having taken the just weight of the Hive and all together, if, therefore-knowne weight of the leere spleeted Hive being deducted, there remaine not fifteene pound in all, to

wit,

3.

The first sort.

V.c.5.n.11.

4.

The secoond.

V.c.5.n.68.

5.

The third onely are to
be fed.

6.

Stockes out of prooffe
never to be fed.

7.

Trie your swarmes in
Virgo.

V.c.10.p.1.n.2.

8.

What quantitie of Hony is
requisite.

C. 8.

Of the Feeding of Bees.

wit, for five pound v. in Bees, the double weight in honie and wax; that swarme is desperately poore, v. and fitter to be taken than fed *. If the swarme with his store doe weigh betweene fifteene and twentie, due feeding v. may save him. If betweene twentie and five and twentie, hee is able to shift for himselfe, and live without helpe. If between five and twentie and thirtie, esteeme him as right good, plentifully provided even for a hard winter, and fitted to be forward the next spring +. And above that the greater the store is, the better increase it promiseth. Unlesse, in some extraordinarie yeere, the Hive be cloyed with too much: v. for too much, as well to Bees as men, doth oftentimes more harme than good.

V.+ in.5.5.n.45
V.n. 2.

V.n.14 & c.

V.c.10.p.1.n3, in VII. & VIII.

* Yet they that have but a small Bee-fold, and are content to be often troubled (specially at the second feeding time) may try those that lacke a pound or two of this weight.

+ And yet such though never so good, will perish neverthesse, if they chance to lose their Queene: v. which sometime happeneth to those that are much troubled in the hiving. V.c.5.n.52.

Moreover, because a long winter and a rough spring following, with some other accidents, may waste them that were good, as, on the other side, a short winter and a milde spring may helpe those that were scantily provided; it shall not be amisse to try againe in *Pisces* or *Aries*, those that you suspect; and so feed them if you see cause. V.n.15 & 16.

V.c.1.n.6.
9.
Trie againe in *Pisces* or
Aries.

The naturall food of Bees is Honie: for want, or for sparing whereof, many other things have beene devised. *Aristotle* mentioneth Figs, and all such sweet things. *Apiary ficus ac reliqua id genus dulcia in cibum apponunt*. And *Plinie*, speaking more particularly, commendeth raysing, and Figs, and treased Wooll, wet in sweet Wine made of Raisings, or new Wine boiled, or Hony-water. *Si cibus dcesse censeatur apibus, nvas passas fiasco, ficosg tusas adfores ea rum posuisse conveniet, item lanas tractas madentes passo dut defruto, aut aguamulsa*. And some of our Country-men have practised to give them Bay-sals, Bean-flower, Ground-mault, roasted Wardens, and Apples, and sweet Wort. All

10.
The Bees food.

Hist. !.9.c.40.

Nat. hist. li, 21. C.14.

which

C. 8.

Of the Feeding of Bees .

which things, though they will spend; yet cannot they preserved by them without Honie.

V.n.11

Touching the counsell of Plinie, this is to be noted, that if you place their food ad fores before at the doore, it will draw strange Bees unto them whereby the lives of the one, and the goods of the other will be indangered: if you place it abroad from your Hive, then will it be common: and within upon the stoole, which is best, then must you remove it in time, or keepe it close: v. otherwise it will be no better for them, than if it were set ad fores. And as for the devise of teased Wooll, is is a fitter meanes to chatch Bees, than to feed them. For it the liquor be above the Wooll, it will lime the wings of many; if not, many will be intangled in the small haire, as Birds in a grin Cover it therefore with a linnen cloth, so that the Bees may not creep betweene.

11.
Private feeding.

The manner of feeding Bees in their Hives is diverse. Some give them Honie in a spoone: but that way many of them be-smear their wings: and if their fellowes lick them not cleane presently, before the cold chill them, they die. Others, to avoid this inconvenience, give it them in a warm Toste: but this way sasteth the hony, and doth not altogether avoid the former inconvenience. Others have other devices. But indeed the only good way to feed Bees is with a combe of a Hive, & lay it upon some Prop or stay, that the Bees may worke, as well under as upon. This Prop may be a wooden grate seven or eight inches square, made of two sides halfe an inch deepe, and three ribs fastened into them with Dove-tailes, or with small nailes. For a need two severall square stickes may serve: but then you cannot so quickly either set it in, or take it out. Then in a faire calme evening (when the heat of the day, and the Bees worke is past) place this upon the stoole: so that the Feeding - combe be reared as neere the Hive-combes as may be, not touching them, lest the Bees fasten this and them together. Then see that the Hive, set downe in his place, be close cuerie where: and at the doore but roome enough for a Bee or two to passe. Then will these Bees to worke afresh, not ceasing day nor night untill they have rid the Combe cleane: which within eight and fortie houres will be effected. If they need anymore, the next evening doe

likewise.

Of the Feeding of Bees.

likewise. But alwaies when it waxeth darke, and the Bees are all in; barre up the doore: and let them not out till the next evening, when other Bees are quiet. Or if you doe it in the morning, be sure also to take out the Combe, whether he be rid or no. And still leave the Hive close, with a narrow passage.

If your poore Bees should not be thus defended from strangers, the feeding of them would prove a starving of them. For the Borderers smelling the bootie will be sure to have part of it, if they can come at it: and when that is done they will set upon the other, and so spoile all: as often it falleth out through this carelesnesse. Which causeth some to condemne all feeding of Bees, as painfull and fruitlesse: saying, If you feed them not, they can but die: and so will they doe when you have bestowed your labour and cost. But this is disproved by experience: for those, which being fit to be fed v. are thus fed, do seldome miscarrie. That summer they provide sufficiently for winter, and the next they are as likely to swarme and be fat as an other.

You may also feed your poore swarmes together, (if you have no neighbour-Bees to beguile them) by setting any refuse-honie or leavings abroad in your Garden, having first barred up those that need it not. This feeding-Hony, as that which is stolne, when they have first taken their refection, they convey into their void Cells: which, because they cannot now shut them up, as before *Virga*, for want of wax; v. they doe but hafe-fill. And therefore they first spend of this late gotten hony, reserving that, which was more safely laid up, unto the last.

It is good to feed Bees before they need: (that they may save their store, which they have shut up in their Cells, untill the spring) namely, in the later part of Virgo, when the Combes are taken, v. or in Libra. For those that have spent their owne store, and have little or nothing leaft in the end of Winter, as so discouraged and so feeble with fasting; that knowing their thin bodies can beare out no cold, they wil not come abroad, but when they are fed: unlesse the weather be exceeding warme and calme: and the more they keepe in the

weaker

12.
Carelesse feeding is
starving.

V.n.5.

13.
Publike feeding.

V.c.6.n.15.

14.
The first time of feeding.
v.c.10.p.l.n.2.

C. 8.

Of the Feeding of Bees.

weaker still they are, and lesse apt to breed. But those whose rathe feeding hath caused them to spare their store till the Spring, will be as cheerefull as the best: in any reasonable weather they will abroad, and fetch in that fruitfull *Ambrosia*, which causeth them presently to increase and multiply. V.c.4.n.12.

At this first time therefore first finish the publike feeding: and then begin the private, specially of those that are under eightene pound: to which if you give now the better part of their * due allowance: you may supply the defects of them, as also of the rest, at the second feeding-time, when there need will better appeare.

* Their due allowance, first and last to be given them, is so much at least, as the swarme with his store lacketh of twentie pound. V.n.8.

15.
The second time of
feeding.

In *Pisces* or *Aries*, as soone as the weather is warme (not before, lest the cold chill them in their worke) if you feare they will lacke (which you may perceive by their lightnesse & unwillingnesse to come abroad) supply their want againe, and againe, if need be. But in this second feeding, for lack of a Hony-combe, take drie Combe, reserved for the purpose, and pure theron so much Honie as it may receive. If you thinke it be not liquid enough; then either warme it first over the fire, or else spread it all over the Combe with your finger, that it may sinke into the Cells: (for which purpose Live-hony is best) then use this honied combe as the Hony-combe. V.n.11.

16.
The third time of
feeding.

If either these fed Bees, or any other, chance afterward to lacke (namely in *Taurus* or somewhat before or after) then feed them daily untill mid-Gemini, giveing them, everie evening or morning betimes, a spoonefull of Honie; and taking away the Combe againe before other Bees be at worke. But this is to be done without intermission: for the Bees will duly looke for it, and languish, if once or twice they lacke it.

If you use to knocke the Hive, when you put in the Honie, they will come downe together, like sheepe to a call, when they are to be foderred.

By this meanes I have saved swarmes that forsooke the Hives for hunger, hiving them againe in their owne Hives which proved good the same yeere.

CHAP.



C H A P. IX

Of the removing of Bees.

IN removing of Bees be carefull to avoid these five evils: 1. Hindering of their swarming: 2. And of they Hony-gathering: 3. Breaking of their Combes: 4. Robbing 5. And losse of Bees.

Remove alwaies in a faire day and, as neere as you can guesse, in settled weather. For when they are moved to another place, if it be within their circuit or walke; they will flie to their old standing as soone as they are let goe, and hanker about it three or foure daies, and sometime longer: where if the cold wet chatch them, many lose their lives. And if you remove them out of their knowledge, the, as amazed in an uncouth place, they flie about for a while viewing the countrie, and searching for their old home: when they are wearie, they rest wheresoever: and if foule weather come upon them, they are in like danger.

For the time of the yeere, remove not in the three still moneths, or in a fortnight afore or after, for losing the Bees. For if foule weather fall not, the very still cold will kill man, while they are straying abroad: and of those the returne, being not yet acquainted with the Hive doore, some will fall short, some upon the Hive: where, while they rest panting, the cold chilleth them. *Taurus*, *Gemini*, and especially *Cancer*, are naught, for hindering the swarming, as well as their hony-gathering: and *Cancer* for danger also of breaking their soft Combes.

In *Leo* though the swarming time be past, and robbing time not yet come; yet there remaineth some honie-gathe-

ring,

1.
Five things to be avoided
in removing Bees.

2.
Remove alwaies in faire
weather.

3.
Not in Winter

4.
Not in Summer.

C. 9.

Of the Removing of Bees .

ring, and the Combes being then most weightie and most weake, and danger of breaking them is greatest.

V.c.7.n.31

To remove in *Virgo* (when the Bees doe ever use to be trying of masteries) v. is dangerous for robbing. For the *Indigena* or old inhabitants of the Garden (as they goe about prying for booties) finding new neighbours come among them, will be sure to visit them: and while the chiefe of their strength is stragling abroad; seeking for their old dwelling; they will bring the rest such cheere to their house-warming, as shall haply make the house too hot for them. And then they must be faine to goe along with them, and helpe to carrie their owne goods after them. V.c.7.n.42.

5.
The Autumne and Spring
are fit times for
removing.

The fittest time is either in *Libra*, and the fore-part of *Scorpio*, that they may thoroughly know their new standing before the weather be too cold; or in *Aries*, and the later part of *Pisces*, that they may be acquainted with it before much gathering of Honie.

Nevertheless, if you have Bees in other mens keeping, move them unseasonably with some losse, than to hazard all by their ignorance and negligence.

But if you may choose, remove in *Libra* onely: which is simply the best.

6.
Libra, the best moneth
in all the yeere.

And for the removing of a Swarme into an other Garden, (whether it be neere or far off) the only time is the evening or night next after the hiving: that he may be at his new standing, readie to worke, in the morning; and so lose no time nor breake his first Combe in the carriage.

7.
When to remove a
swarme.

In the evening, when you mean to remove, an houre before sun-set prop up the Hive from the Stoole, with three Bolsters two or three inches thicke, that the Bees may ascend from the stoole. About halfe an houre after, having prepared an other stoole of the same height, and covered it with your Mantle, so, that the middle of the mantle be over the middle of the stoole; move the stall with his stoole, if you may, a little aside; and set this covered stoole in his place: or if it cannot well be moved, then set the covered stoole close

8.
The time of the day, and
manner of removing.

to

Of the Removing of Bees.

to the old stoole, either beside it, or before it. This done, lift up the stall from his old stoole and set it upon the new: and then wiping the Bees from the old stoole (if any remaine) with your Brush; either take the stoole away, or cover it with a cloth. And then if your new stoole be onely a planke without legs, borne up by some other meanes; it is good to set it upon the old. Within a while when the Bees are all in, knit the mantle at the foure corners over the top of the Hive, so as the knots may not slip: and presently binde it to the Hive about the middle slackly with a small line, and wrest it fast with a little stick. And so is the stall readie to be removed.

They use commonly to make no more adoe, but after sun-set when the Bees are at rest, to lift up the stall, and set it upon a manele spread on the ground, and so to binde it up, leaving the Bees upon the stoole (which in a good stall are not a few) behinde them. Which way, for such stalls as have all their Bees up in the Hive, may serve well enough.

The best way to carrie your * Stall is upon a Cowl-staffe betweene two.

* If you have many to remove; two lustie fellows may beare two or three of them at once: but let them be all fast bound together.

If it be light, one may carrie it in his hand. But, howsoever, be sure it hang perpendicularly for feare of breaking the Combes; specially if you chance to remove before Libra, when the wax is soft, and the lower parts of the Combes are heaue with Schadons, as well as the upper with Honie.

When you have brought the Stall home, you may let it stand bound as it is, all night in the house. The morrow, when the weather serveth, set him on his seat: but if it be foule all the next day, keepe him still bound untill it be faire. And then having loosed the line, and taken away the Mantle, cloome him up presently: leaving, for three or foure faire daies, a verie narrow entrance, for feare of robbing. For their new neighbours, even now also (though not so eagerly as in *Virgo*) will prove them: and they will not so stoutly resist, untill they be acquainted in the place.

CHAP.

9.
The usuall manner of
removing.

10.
Which is fit for poore
stalles.

11.
How a good stall is to
be carried.

12.
How a bad.

13.
What to do when they
are brought home.

14.
And what when they are
seated.



C H A P. X.

Of the fruit and profit of Bees .

Wherein is shewed first the *Vindemiation* or taking of Combes: secondly, the trying of the Wax and Honie, with the making of *Meth* or *Hydromel* and thirdly, the singular vertues of them, for the use and comfort of man.

The first part of this Chapter sheweth the taking of the Combes.

I.

The first kind of
Vindemiation.

2.

The best time for killing
Bees.

Col. 1.9.c.15.2.

3.

What stalls are to be
taken.

V.c.4.n.31 & 32.

I.



He most usuall, and generally most usefull manner of taking the Combes, is by killing the Bees. Fir which the naturall and seasonable time is the latter part of *Virgo*, from the end of the *Dog-daies* unto *Libra* because till then the Combes are full of Schadons, which deceive the Honi-men: making the Hive heavier and the Honie worse: (for the young Bees as well as the Coome corrupt the same, *Pulli & rubra sordes sunt mali saporis, & succo(no mella corrumpunt)* and after that time, the weather waxeth colder, not so fit for the running and working of the Honie: and the Honie is likely to decrease, either by their owne spending or by the spoiling of Robbers. Except in the heath-countries, where their gathering lasteth longer: for there they defer their taking untill Mid-Libra.

At this time therefore consider with your selfe what Stalls you will kill. Swarmes that may live, yeerlings and two yeerlings are in prooffe, keepe for store. Likewise those that rid their Drones betimes, and specially those that draw out their young Cephens. v. Those of three or foure yeeres, which, by reason of their not swarming this last summer, are

full

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C. 10.

Of the fruit and profit of Bees .

full of Bees, lightly are fat, and therefore worth the taking: but they are also good for store, unlesse the frequent Honi-dewes have made them over fat. But those of that age which have cast twice (except they were very forward and had beat away their Drones betimes) are not likely to * continue: and therefore are to be taken.

If you would have any such to stand an other yeere, and not to bee weakened by his late castling; put it backe into the stocke againe. V.c.5.n.11.

Likewise all poore swarmes unworthy to be fed, v. and all light stocks whose stocks are decayed: v. For they will surely die. Neither is it safe to trust any after they have stood five yeeres: unless it be some speciall kinde of Bees, which cast often, and yet beating away their Drones betimes, doe still keepe themselves in heart. For such I have kept nine or ten yeeres: and I have heard of some of a greater age. Moreover, all stalls of three yeeres old and upward, that have mist swarming two yeeres together: and especially those, that having lyen forth the summer before, did not cast this last summer: for such doe seldom after prosper. It is therefore better to take them now while they are good, than in a vaine hope of increase, to keepe them till they perish. Likewise if you have any that are very fat and full of Honie, (as some yeeres some will be, even downe to the Stoole) those are ripe and ready to yeeld their fruit. One such is worth three or foure. Take them thereofre in their season: For wanting roome to breed in (their Cells being full of Honie) they will decay by little and little, and consume to nothing. And therefore, as in a wet hungry yeere you must keepe the best; so in a drie yeere, rich and plentifull in Honie-dewes, the worst are like to prove best for store.

But generally take the best, and the worst. In *medio virtiu.* And ever suspect those that rid not their Drones in time, v.

Also those which the Robbers doe eagerly assault, v. and if their Combes bee once broken, v. delay not their taking.

Having made choice of your Stall to be taken, some two or three houres before * Sun-set dig a hole in the ground, as neere the Stoole as my bee, about eight or nine inches

deepe,

II.

V.c.3.n.4. III.
V.c.8.n.6. IV.
V

VI.

VII.

VIII.

IX.
V.c.4.n.30. X
V.c.3.n.50 XI.

C.10.
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Of the fruit and profit of Bees .

deepe, and almost as wide as the Hive-skirts: laying the small earth round about the brims. Then having a little sticke slit in one end, & shript at the other, take a + Brimstone-match 5 Or 6 Inches long, and about the bignesse of your little finger, and making it fast in the slit, sticke the sticke in the middle or side of the hoale; so that the top of the Match may stand even with the brim of the pit: and then set another by him drest after the same manner, if that bee not sufficient. When you have fired these Matches at the upper ends, set over the Hive: and presently shut it so close at the Skirts, that none of the smoake may come forth. So shall you have the Bees dead and down in lesse than a quarter of an houre.

* That you may have the evening and morning to finish your worke; while the store-Bees be at rest: which otherwise will trouble you in handling the Honie, if by any meanes they may come at you. But if the weather be cold enough to keepe them in, or the house bee close enough to keep them out; you may take what time of the day you please.

+ Matches are made of linnen rages and Brimstone, after the manner that maids make Sluts. First, melt pounce Brimstone: then take a linnen rag a foot long, and holding both the ends in one hand, dip the rest in the melted Brimstone, turning it up and downe with a sticke: then taking one of the ends in the other hand, winde it a little; for hardwinding makes it burne the worse. This cut in the middle maketh twaine.

Next unto Brimstone is the smoke of Bunt or great Pucfists, Tuchwood, or Mushrooms, used in like manner: but they are neither so quicke, nor so sweet. And for a need, some smother them with danke Straw, or Hay: but then the Honie will smell of the smoake. And therefore some drowne them in a Tub of water: but that hurteth the Honie, and doth the Hive no good: and, besides that, many of the Bees being not quite dead, will sting them that handle the Honie.

The Bees being dead, carrie the Hive into the house, &c. *See part 2.* If any Bees escape, they will die that night: but if you feare they will doe any harm, you may kill them presently upon the Stoole.

Another way to take the Combes is by Driving the Bees. The manner of it is this. At Mid-summer, or within two or three daies after, in a faire morning an houre before Sun-

rising,

5.
Sundry meanes so kill
Bees.

6.
The Bees being dead,
house the Hive.

7.
The second kinde of
Vinemiation

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C. 10.

Of the fruit and profit of Bees .

rifing, lift the Stall from the Stoole, and set it upright and fast on the ground in a Brake v. with the bottome upward: and quickly cover it with an emptie Hive, having first laid two spleets upon the full Hives bottome, that the emptie Hive may stand the safer. Then wrapping a Mantle v. round about the Chincke or meeting of both the Hives, and binding it fast with a small cord above and beneath, that a Bee may not get forth, clap the full Hive or *Remover* round about a good many times, pawsing now and then a little betweene, that the Bees may ascend into the void Hive. And when you thinke that most of them are driven up (which will bee about halfe an houre after) set the upper Hive or *Receiver* upon the old stoole: B U T bee sure &c. *as it followeth note 15.*

Provided alwaies, before you goe about this businesse, that all the Stalls in your Garden be first shut up, lest they trouble you and your poore Bees.

This kinde of taking is much applauded at the first, because men thinke thereby to save both Bees and Honie: but it falleth out with them as it is in the Proverbe, All covet, all lose. For the Honie is neither so good, as being not yet in season, and to bee corrupted with the Schadons, v. which can hardly be cleane taken from it: neither so much by almost the one halfe, sith there remaine yet six or seven weekes of Honie-gathering.

And the Bees, as men forcibly driven from their goods and children, are so discouraged, that they seldom thrive after it: specially those that have swarmed; seeing their companie is least but small, and the after-brood is destroyed, which should have supplied the roomes of them that are gone. And as for those that have not cast, they might after that time yeeld a swarme, which would be better than the whole stall being driven: and if they did not swarme at all, they would be so much the better, either to take for Honie, or keepe for store. V.c.5.22.

This Driving of Bees into leere Hives being nothing so profitable as it seemeth, I doe rather commend unto you the Driving of one stall into an other: whereby the fruit of one

is

8.
The time and manner of
Driving Bees.
V.c.5.n.24
V.c.5.n.48.

9.
This driving of Bees
unprofitable.

10.
Honie taken is little and
naught.
V.n.2.

11.
And the Bees driven, few
and poore.

12.
Another kinde of driving

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Of the fruit and profit of Bees .

is taken, and the lives of both are saved together.

And thus some are to be driven in the latter part of *Virgo*, when they have done breeding; v. and some in *Aquarius* or *Pisces*, before they begin to breed againe.

In *Virgo* such stalls onely are to be driven, as are fit to bee killed: v. and that into yeerlings or two-yeerlings, which that yeare have cast twice, and therefore have few Bees leaft in them; but yet have Honie enough. The manner of it is this. Having first placed these two stalls, the *Remover* that is driven and the *Receiver*, as neere as my be one to another, and so let them stand together six or seven daies, till they be well acquainted with their standings; when you see the weather faire and constant, late in an evening, about ten a clocke, set the *Remover* fast on the ground in a Brake, v. with this bottome upward, and the Receiver upon: and binde them close together, as in the former driving. And then, by often clapping the *Remover* betweene your hands about the space of a quarter of an houre (now and then pawsing betweene) having driven most of the Bees into the *Receiver*, and so minglied them al together; let them so stand til the morning. In the morning about Sun-rising, if the weather bee faire; (otherwise you must stay * longer) doe the like: having first shut and covered the other stalls. v.c.5.n.25.

* If the weather fit not the next day, you may safely stay till it doe fit; so that no Bees get forth in the meanespace.

This done, set the *Receiver* upon the *Removers* stoole: BUT, be sure to bolster him up with three Tile-shards, that the driven Bees may easily get into the Hive on every side. And then knocke the *Remover* down upon a Table two or three foot square, set close to the forepart of the stoole: and by clapping of the Hive, presently get as many of the Bees forth as you can. And forthwith carry the *Remover* about a Pearch from the stoole: and there laying him downe, so that the Combes may lie edgelong, after a little while clap hime twidce or thrice, which will make many of the Bees to fly forth. Then remove him to another place about the former distance, and there doe likewise: and so to an other, and an other, untill few or no Bees will come forth by this meanes.

And

13,
At two times.
V.n.2.

14.
I. Driving in
Virgo.
V.n.3.

15.
The manner of
driving in Virgo.

V.c.5.n.24.

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Of the fruit and profit of Bees .

And ever when you be come to a new place, and there have got out some Bees; leave there the *Remover*, and goe directly to the *Receiver*, and a little beyond: for the Bees will follow you, and thereby the sooner recover the Hive.

After this, having removed the *Receiver* againe, and laid him with the Combes edglong as before; stay till you see the Bees ascended to the highest part of the Combes in the Skirt of the Hive: and then resting it on the edge of a Kiver, and turning Bees toward your readiest hand; with two or three claps force them out into the Kiver: and then suddenly carry the Hive to the other place: and when you see more Bees ascended, have it backe againe to the Kiver, and there clap them out as before. This iterate as often as you see any store arise unto the upmost part of the Hive-skirt. Which when they cease to doe, the Hive is well nigh rid of his Bees. Betweene whiles, carrie the Kiver to the stall, and knocke out the Bees upon the Table. Then, having first loosed the spleets ends, take out the Combes, beginning at one side: and ever when you have taken out a Combe, wipe off the Bees with a feather of a Goose wing into the Kiver, and send it in, out of their sight. When the Combes are all gone, set the Hive and Kiver before the *Receiver*, that the Bees may take up your leavings. As soone as they begin to bee quiet, take away the Bolsters, and cloome up the Hive very close, leaving the doore no wider than must needs bee. And when all is done, set open your other stalls: and carry the Hive and Kiver from among the Bees.

If you thinke there be not sufficient provisions for this double Stall in that single Hive, bestow a full Combe or twaine, v: as need requireth, of the *Removers* upon them: and thus will your Bees delight and prosper in new Wax which in old corrupt Combes would decay.

In *Aquarius* or *Pisces*, when you have poised your Hives, those that you finde by their lightnesse, unlikely to indure the Spring for lacke of food, you may in like manner drive into such provided Stalls, as have fewest Bees: and so will those *Receivers* be much the better, and cast both the rather, and greater Swarmes. And if by chance, at any time after,

you

V

16.

How to helpe those
driven Bees that want.
V.c.8.n.11.

17.

Driving in *Pisces*.

C.10.
P. 2.

Of the fruit and profit of Bees .

18.

How to revive
those that are
chilled in
driving.

V.1.7.n.63

you finde a Stall decayed, thus may you save them. Otherwise, if he be fit to be fed (v.c.8.n.5) feed him, v.c.8.n.15 and 16.

If, the weather being mot warme, you finde some Bees chilled about the Hive; fill your warme hands full of them, and anone they will flie away to their fellowes. V: And if haply any chance to pricke you, (which they will seldom doe) your hand will have the more vertue to revive the rest.

This driving will not bee so troublesom as the former, because the poore Bees will easily change their hungry home for a place of plentie.

Exsection or Castration, is a third kinde of taking: which is the cutting out of part of the Combes, part being leaft for the Bees provision. And this was to be done at two times in the yeare, * *In ortu, & occasu Vergiliarum.*

* *Vergiliarum ortus* after *Columella*, l.9.c.14 is the eight and fortieth day from *Aequinoetium vernum*: after *Var.* the foure and fortieth: but then you must understand that they accounted the *Aequinoetium* to bee in the eight degree of *Aries*: (although *Hipparchus*, as *Columella* saith, had then found it to be in the first.) With us the Cosmically rising of *Vergiliae* or *Pleiades*, being seven starres in the necke of *Taurus* and in the foure and twentieth degree of that signe, is knowne to be in the third of May, the five and fiftieth day after the true *Aequinoetium*: which jumpeth with the account of *Columella*. And *Vergiliarum occasus* being in the same degree of the opposite signe, is upon the fift day of November.

19.

A third kinde of
Vindemiation.201

Exsection used
at two times.

But what part is to be taken, and what leaft, I finde it not determined. *Priore messe* (saith *Columella*) *dum adbuc rura pastionibus abundant, quinta pars favorum; posteriore, cum jam metunur hyems, tertia relinquenda est.* But *Varro* then requireth for their store two third parts; *Vt ne plus tertia pars: eximatur mellis, reliquum by emationi rlinquatur.* And *Aristotle* because (as *Columella* granteth) *hic modus non est in omnibus regionibus certus*: doth not prescribe any certaine part, but leaving it to the discretion of the Bee-master, faith, *Cum favos apiary eximunt, cibi tantum relinquant, quantum per hyemem sufficiat: quod si satis fit, servatur examen; sin mimnus, velmoritur ibidem, (si ne discedat hyems obstet) vel deserit sedem, si ser enum nanciscilur,*

This

21.

What part to
be exsected is
uncertaine.

l.9.c.15

Hist. An.1.9
.c.40.

P.2.
C. 10.

Of the fruit and profit of Bees .

This way of taking, as appeareth, was anciently used in plentiful Countries, as *Greece, Sicily, Italy, &c.* But the former exsection, to wit, in the Spring, Aristotle nowhere mentioneth: and surely it must needs doe more harme than good, seeing the Hives are then full of Schadons, which being spild, spill their swarming; and the store of Honie, which they seeke for, it then well spent.

And that also in the Autumne (which yet is the fitter time) seemeth no lesse unprofitable than troublesom: because the Bees, in the Spring following, if they lacke not Honie to live on, yet shall they lacke Cells to lay their young in, where by their breed will bee hindered. And at neighter time can it be done without much spoile of Bees.

But howsoever it saied with them, for our Country I take it to be verie unfitting. And therefore I say the lesie of it: referring the curious Reader unto the fifteenth Chapter of the ninth Booke of *Columella*, and unto *Georgius Pictorius*, who in his foureteenth Chapter writeth thereof at large.

The second part of this Chapter sheweth the trying of (1) Honie and (3) Wax, with the (2) making of Meth or Hydromel.



THE Hive being housed, v: squat it softly against the ground, upon the sides, not the edges of the Combes: and loosing the ends of the Spleets with your fingers, and the edges of the Combes: and loosing the ends of the Spleets with your fingers, and the edges of the Combes, where they sticke to the sides of the Hive, with a wooden Slice; take them out one after an other. Then having wiped off the halfe-dead Bees with the Feather of a Goose-wing, breake the Combes presently, while they are warme, into three parts: the first sheere Honie and Wax, the second Honie and Wax with Sandarach, the third dry Wax without Honie. And that they may breake right where you would have them, marke the places deeply with the edge of your knife. But first provide necessarie Instruments, as Panns, Kivers, Tongs, wide Sieves, or Wheat-ridders, a Slice, Knives, Straining-bagges, a Tub or Kieve, with a Tap and

Tap-waze,

22.

Exsection ancient, but
not profitable.

23.

Neither first.

24.

Nor second.

25.

Specially for our Country.

V.p.1.n.6

1.

The Combes to be
divided into three parts.

2.

Necessarie Instruments
being first provided.

C.10.
P. 2.

Of the fruit and profit of Bees .

Tap-waze, a hairen Clensieve, * Honie-pots, Wax-moulds, Meth-barrels, &c.

* Treene vessels, if they leake not, are better than earthen: which if they breake not by some mischance, the verie force of the Honie is able to cracke.

These things provided, take out the first Combe: and setting the Honie-end in a Ridder, resting upon Tongs over a cleane Pan or Kiver that will not leake; marke and breake off the first part for Honie, and leave it there: then going to the Kieve fitted with a Tap and Tap-waze, marke and breake off the first part for Honie, marke and break off the second part for Meth or Hydromel, and leave it ther: and lay the third part aside for Wax. Then taking out an other Combe doe the like, &c, till the Ridder be full.

If you meane to make two shoots, and so two sorts of Honie; let your assistant presently cut the first part into thin slices, and, without any more adoe, let the Honie runne his first shoot: But this is to be understood of the darker part of the Combes: for the pure white Cells in the upper part (which containe nothing but pure white, or yellowish Live Honey) you may as well crush betweene your hands: and this will be fine ordinary Honie.

But if, for some speciall use, you would have some Honie yer more fine and pure: then onely slice the purer part of the Combes, being yet warme with the temperate heat of the Bees, and so let the pure Live-honie runne through a cleane Clen-sieve. For, *in omni melle quod per se finit, (ut mustum oleumg) appellatur ac oeton, maxime laudabile est.*

Of all Honie that which runneth of itselfe, (as new Wine and Oile) and is called * *Acoeton*, is most commendable.

This *Acoeton* or finest Nectar, for his incorrupted puritie, is called Virgin-Honie. *Quod e favis sponte primum destuit, virgineum mel ungo appellatur.* Platus in Fernel. l.7. de Meth. Md.

Whereof there are two sorts. The right Virgin honie is of a Swarme: v. that which is of an old Stall, though it runne first and of itselfe, and were gathered the same yeare; yet being partly mixt with other, and laid up in corrupter vessels, not in the pure Virgin-Cells, v: is but a second or

bastard

3.
The dressing of
the first part
for Honie in
two shoots.

4.
The first shoot
for fine ordinary
Honie.

5.
Or for Virgin-
Honie, which is
most fine.

Nat. hist. l.
ll.c.15.

6.
Two sorts of
virgin honie.

V.c.6.n.14.

P.2.
C. 10.

Of the fruit and profit of Bees .

bastard Virgin-honie, rather to be called the finest ordinary *
V:c.6.n.30.

* *Acoeton* without droffe or dregges, because the Dregges of Wine and Oyle and such liquors, as as a Bed or *Gound* whereon they lye: in which respect we also call them *Lees* or *Grounds*. But this *Metaphor* to the Dregs of Honie is somewhat Catachcetical: because the Honie beareth his Drosse, and not the Drosse the Honie.

But the hard Corne-honie v: in the top of the Combes, specially if there be any store, because it will not runne, you must either wash into the warme Meth liquor; or melt it with the Cells on a soft fire, or in a hot oven, or in *Balneo Maria*, v: and so shall you have the Honie by it selfe, and the Wax swimming above it: which you may take away when it is cold. But so this good Honie will become but course: and therefore put it to the second shoot.

Having now taken so many Stalls as you can dresse this evening, v: take the rest as soone after as you may, v: and let the Honie be all tryed out, before you soake the second part.

The Hives being rid, carrie them into your Garden (a Pearch at least from any Stall) for the Bees to take up your leavings:v: And have still by you a paille of faire water to wash your hands in: which water must be fore the Meth.

When the Honie hath runne what it will; put this first shoot, whether it be ordinarie or Virgin-honie, into a picked bag, to straine it into his pot by it selfe. And let the remainder bee crusht with warme hands that it may runne againe for a second sort, which is likewise to be strained. That which is leaft at the last, in the Bags, Ridders, and else-where, wash into the second shoot of the Must v: to give it his just strength.

The weather being not warme, set the Honie by the fire to helpe the running.

Otherwise if you be in haste, and meane to make but one sort of Honie; first slice off the upper part of the Combe (even as much as you finde void of Sandarach) for Honie: and presently let your assistant worke all together with warme hands, and so make but one shoot, which afterward

is

7.

Corne-honie got out by
water or fire.

V.c.6.n.27. & 28.

V.p.3.n.7.

V.* in p. 1.n.4.

V. ibidem.

V.c.8.n 13.

8.

The second shoot for
course Honie.

V.n. 17.

9.

The dressing of the first
part in one shoot.

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V.n.7.

10.
The vulgar
Honie grosly
handled.

11.
The working of
Honie, and how
to helpe it.

V.p.3.n.7. 12.
Divers Countries
yeeld divers
kinds of Honie.

V.c.6.n.31.

is to be strained, V: Then going to the Kive, slice off the second part (even all that hath Honie) for Meth. And set aside the drie part for Wax. And thus will your Honie be good enough: and such as, compared with the vulgar Honie, may well goe for fine.

For the Honie-men (because thus to cut each Combe into divers parts, and diversly to dresse each part, would be too tedious to them that have much to doe) doe vie to make but one worke of all; with a thin light shovell pounding and compounding the Honie, and Wax, and Bees, and Schadons, and Sandarach all together. And then putting this confused stuffe into a strong hairen Bag, doe with a Presse or Wreng violently wring out all that will runne. And this, having first his season of heat over the fire, they put up inot barrels or other vessels to worke: whereby though it bee much purged, yet can it not choose but participate the nature and rafte of theose things where with it was so thoughly infected. This done, the Pulser remaining in the Bagge they slice with a shredding-knife into a Trough or other vessel, and all to wash it and mash it in faire water for Mede: which, when the sweetnesse is all washt out, being crushed dry, the balls they try for Wax.

Honie being put up warme into pots, will in two or three daies worke up a skum of Wax, Honie, and Drosse together: which being taken off with a spoone, put to the second part. In cold weather the Honie will not worke well without the heat of the fire. The best way is to put it into an oven after the batch is forth, but not before you can abide to hold your hand upon the bottom, for feare of over-heating the Honie. The next way is to stirre it in *Balneo Maria*, v: till it be all warme.

The differences and degrees of Honie in goodnesse, are as well naturall as artificiall. For as it is made better or worse by the ordering and handling of it; so is it in itselfe better or worse, according to the different condition of the soile where it is gathered. v. The Champion-honie is accounted almost twice as good as the Heath-honie, although they bee ordered both alike. For when the vulgar champion is sold

for

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for nine pound the Barrell, the like Heath-honie will scarce yeeld five. And generally the finer the Wheat and the Wooll is, the finer is the Honie of the same Region: v. and therefore no maruaile that the course Heath, hath as course Honie as Wooll.

Good Honie, whit it hath wrought, hath these properties whereby it is knowne: it is cleere, ordoriferous, yelow like pale gold (but right Virgin-honie is more crystalline at the first,v.) sharpe, sweet, and pleasant to the taste, of a meane consistence betweene thicke and thinne, so clammie, that being taken up upon your fingers end, in falling it will not part, but hand together like a long string, as that useth to doe which is clarified. So doth *Jacobus Syluius* describe the best honie. *Meloptimum sit purum adeo ut totumperluceat, odorum, flavum, acerrimum, dulcissimumg gustanti, & jucunddissimum, consistentia nec crassa nec liquida, sed tam sibi cohaerens ut continuitatem suam, quasi linea longissima, non intercisum servet, si digito attollitur: idem coquendo paucam spumam emittit.* And *Guil Plantius*. *Mel probum est quod inter crassissimum & tenuissimum, sit mediocre, sapore dulcissimum, & acerrimum, simulg dulcedinis sensum inferens & vellicau pungens linguam, color pallidum aut subrutulum, & pellucidum, odoratissimum & recentissimum, quodg sublatum non facil ob sequacem lent orem abrumpatur, pondere grave, & inter coquendum spume parum emittens.* In Fern. l.7. de Oxyneil.

This good Honie, specially that part which is in the bottom, will in time grow (like unto Corne-honie, v. in the uppermost part of the Combes) hard and white: such as is the Honie of * *Spaine* and *Narbona* in *France*, which is accounted the chieftest, and compared with that of + *Hymettus* and *Hybla*. But this is to be understood of ordinarie Honie: for the pure Virgin Honie will bee neither hard nor white; but changeth his liquiditie and crystalline cleernesse v. into a thicke softnesse, and bright yelow colour.

* *Quin Hispani & Narbonenses mittunt albissimum & lone prasantissimum, idemq; praedurum.* Suylu. l. l. Med.

+ *Nee Attico aut Hyblaco inferius, cum regionis temperatura, & thymi largaluxuries rtrobieq; eor sentinat;* Idem l.2.

V.p.3.n.4. &
c.6.n.31.

13.
How to know good
Honie.
V.c.6.n.29.

14.
Good Honie with
standing waxeth hard
and white.
V.c.6.n.27 & 28.

V.c.6.n.20.

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15.
The best of the
Honie is in the
bottom.

And alwaies the best part of all Honie is that which is lowest in the vessell. * For as the best oyle is in the top, and the best wine in the middle; so the best Honie is in the bottom. *Mellis exilior pars sluit at, qua eximenda est: pur a vero & valida sub sidit.* Arist. Hist. Ani. l.9.c.40. *In imo vase quod sidit, super natante pretiosius.* Plan. In Fern.l.7. de Oxymel.

* As among liquors Oyle excelleth in lightnesse, and Honie in heavinesse; so in both that part is best, which excelleth in his excellling qualitie: and Wine being of a midling weight, is best in the middle.

The weight of these three, one to another, hath this proportion. Oile is not so heaue as Wine by one tenth part: for if you fill a measure with Wine, and divide it into ten parts; the same measure with Wine, and divide it into ten parts: the same measure of oile is no heavier than nine of them. And Honie is heavier than Wine by the halfe: for if you fill a measure with Wine, the same measure of Honie will weigh that and halfe so much more. *Quoniarn Oleum leuius est Vino parte* nona, Mel vero grauius Vino parte dimidia; quacung mensura capit Mellis unci as quindecim, capit Vini uncias decem, & Olei novem.* Fern. Meth. l.4.c.6.

*Ceū potius decima.

16.
The dressing of the
second part for
Meth.

The second part of the Combes, appinted for Hydromel or Meth, you must first rid of the sandarach as neere as you can: cutting off that which is by itselfe, and * picking out that which is among the Honie: all which refuse, because of the wax that is with it, cast to the third part.

* If thus to part the Honie and the drosse shall seeme but a tedious piece of worke; you may leave it unto them that are expert in it. V.c.8.n.13. And make your Meth of more meere Honie.

17.
How to make the
Meth-liquor in two
shoots.

And then, when the Honie is all strained, and put up; lay this second part a soake in milk-warme faire water, (that which commeth from heaven is counted best) in the Kive or Tub with his Tap and Tap-waxe. But first wash the drie Combs therein, if any Honie chance to sticke unto them in the handling: then scrape and wash the Spleets, and lay them aside out of the way: and lastly, crush all the Pulse well betweene your hands, specially that with lieth lowest, and stirring it about all-to-wash it: and so let it steepe all that night.

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In the morning let this first shoot of the Must or Woort, being made of his just strength, v: runne through the Tap-Waze. The Pulse will remaineth, when you have squeezed out the liquor, breake and wash in fresh warme water in the Kive, for a second shoot. When it hath lien a while in soake, first take those parcels that swim, and squeezing out the liquor * between your hands, lay the balls aside to the third part: (but let your bees have the perusing of them) then take up those that lie in the bottome, and doe likewise: which because they have most Honie, you must take most paines in washing and crushing them. And while this is doing, let this small liquor runne into a vessell by it selfe. When it is out, wash into it all the remainders of Honie v: adding some course Honie, if need be, to make it of his just strength: v: and then let both shoots run together through a + Clensieve into the Kive againe. And thus shall you lose none of your Honie.

* If there be much Pulse, use a presse, when the liquor hath runne what it will.

+ The Clensieve is unto the Tap-waze for Methe, as the Strainer to the Ridder for Honie. V.n.7.

Meth or Hydromel is of two sorts: the weaker and the stronger, *Mede* and *Methaeglen*.

For the making of *Mede*, if the Must, when it is all together, be not strong enough to beare an Egge the bredth of a two-pence above it, then put so much of your course Honie into it as will give it that strength: which is sufficient for ordianry *Mede*. And afterward untill night, ever now and then stirre it well about the Kive.

If you would make a greater quantitie, then must you adde a proportionable measure of water and Honie: namely six of that for one of this. The learned Physician *Mathias de Lobel* requireth this proportion of six to one to be boiled to foure. His receipt of Spices is Cinamom, Ginger, Pepper, Graines, Cloves, *Ana* two drammes. The second morning put to the Must the scum of the Honie, stirre all together, and stoppe the Kive a little backward. When it

The first shoot.
V.n.19 & 14.

The second shoot.

V.n.8.

V.n.19 & 14.

18.
Two sorts of Hydromel,
Mede and *Methaeglen*.
19.
When the liquor is
strong enough for *Mede*.

20.
What proportion of
water to hony.

hath

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hath settled an houre or two, draw it out to be boiled. And when you see the grounds beginne to come, stay: and let the rest (save the very thick grounds, which cast to your Bees) runne into some vessell by it selfe: which, when it is settled, peere out into the boiling vessell through the Clensieve, and cast out these grounds also into your Garden.

21.
How, and how long the
Must must be boyled.

This Must being set over a gentle fire, when you see the Scum gathered thicke all over, and the bubbles at the side begin to breake it; having slacked the fire, to cease the boyling, skim it cleane. Then presently make a fresh fire to it: and when you see the second skum ready, having * slacked the fire againe, take it quickly away: then make to it the third fire, and let it boyle to the wasting of a fourth part, if it bee made of the washing of Combes; and to the wasting of one fift or sixt part, if it be made of cleane Honie: not ceasing in the meane spece to take off the Scum as cleane as you can. One houres boyling may suffice: but if the Meth bee of cleane Honie, it may as well be done in halfe the time.

* In stead of twice stacking the fire, you may twice coole the boyling Must with cold Must reserved: or else be sure that it doe boyle all the while onely at one side, and not all over.

22.
The receipt of Spices.

After all this, put in the spices, viz To a dozen gallons of the skimmed Must Ginger one ounce, Cinamom halfe an ounce, Cloves and Mace two drams, Pepper and Graines *Ana* one dramme, all grosse beaten, and one halfe of each being sowed in a bag, the other loose: and so let it boile a quarter of an houre more.

The end of boiling is thoroughly to incorporate the Boorne and the Honie, and to purge out the drosse: which being once done, any longer boiling is unprofitable; as diminishing more the quantitie, than increasing the strength and goodness of the Hydromel.

23.
How the Must is to be
used when it is boyled.

As soone as it is boiled enough, take it from the fire, and set it a cooling: the next day, when it is settled, poure it out, through a Haire-sive or linnen bag, into the Kive: (reserving still the Lees for the Bees) and there let it stand covered three or foure daies till it worke: and let it worke two daies.

Then

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Then draw it through the Tapwaze, and tun it into a Barrell scalded with Bay-leaves, making the Spice-bag fast at the tap. If there remain much grounds, you may purifie them by botling and skimming againe as before: but this will never be so good as the first: and therefore you may put it by itselſe, or with some remainder of the best, into a small vessell to spend first, before it be soure. If the *Meth* be not much, you may tun it the next day, and let it worke in the Barrell. Being tunned, it will in time be covered with a mother: which if, by jogging the vessell, or by other meanes, it be broken; the *Meth* will turne soure. But so will it make excellent Vineger, and the sooner, if it be set in the Sun: which the longer you keepe, the better it will be.

Methaegen is the more generous or stronger *Hydromel*: being unto *Mede* as *Vinum* to *Lora*. For it beareth an Egge the bredth of a groat or six pence: and is usually made of finer hony, with a lesse proportion of water; namely, foure measures for one: receiving also in the composition as well certaine sweet and holsome hearbs, as also a larger quantitie of spices: namely, to everie halfe Barrell or sixteene Gallons of the skimmed Must, Eglantine, Majoram, Rose-marie, Time, Winter-savourie, *ana* halfe an ounce: and Ginger two ounces, Cinamom one ounce, Cloves and Mace *ana* halfe an ounce, Pepper, Graines, *ana* two drams, the one halfe of each being bag'd, the other boiled loose. So that whereas the ordinarie *Mede* will scarce last halfe a yeere: good *Methaeglen* the longer it is kept, the more delicate and holsome it will be: and withall the cleerer and brighter, according to the *Etymon* of the name. V.* in p. 3.n.23.

He that listeth to know the many and sundry making of this holsome drinke, must leare it of the ancient Britaines: who therein doe passe all other people. One excellent receit I will here recite: and it is of that which our renowned Queene of happie memorie did so well like, that she would everie yeere have a vessell of it.

First, gather a bushell of Sweet-briar-leaves, and a bushell of Tyme, halfe a bushell of Rose-marie, and a pecke of Bay-leaves. Seeth all these, being well washed in a Furnace of

faire

24.

The making of
Methaeglen.

25.

The Queenes *Methaeglen*.

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faire water: let them boile the space of halfe an houre, or better: and then poure out all the water and herbes into a vate and let it stand till it be but milk-warme: then straine the water from the herbes, and take to everie * six Gallons of water one Gallon of the finest Honie, and put it into the Boorne, and labour it together halfe an houre: then let it stand two daies, stirring it well twice or thrice each day. Then take the liquor and boile it anew: and when it doth seeth, skim it as long as there remaineth any drosse. When it is + cleere put it into the Vate as before, and there let it be cooled. You must then have in a readinesse a Kieve of new Ale or Beere, which as soone as you have emptied, suddenly whelme it upside downe, and set it up againe, and presetly put in the *Methaegen*, and let it stand three daies a working. And then run it up in Barrels, tying at everie Tap-hole, by a Pack-thread, a little bag of Cloves and Mace, to the value of an ounce. It must stand halfe a yeere before it be drunke.

* If you marvell that so great a quantitie of water is required; it is partly because of the goodnesse of the Honie, which being pure and fine goeth further than ordinarie: and partly that it may have the longer time in boiling, before it come to his strength. And therefore some will have eight parts of water to one of Honie: but then they boile it so much the longer.

+ The third part at least being wasted.

The third Part consisting of wax and drosse, set over the fire in a Kettle or Caldron that may easily containe it: and poure into it so much water as will make the wax to swim, that it may boile without burning: and for this cause, while it is seething with a soft fire, stir it often. When it hath stood a while and is thoroughly melted, take it off the fire, and presently poure it out of the Kettle into a Strainer of thin strong Linnen, or of Twisted-haire, readie placed upon a Wrenge or Presse: and then winding and doubling the necke of the Bag, lay on the Cover and presse out the liquor as long as any Wax commeth into a Kiver of cold water, but first wet there with both the Bag and the Presse, to keepe the Wax from sticking. At the first commeth forth most water, at the last most drosse, in the middle-most Wax.

26.
The dressing of the
third part for Wax.

27.
First boile it with
water.

28.
Then straine it by
pressing.

The

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The Wax waxing hard, make into Bals, squeezing out the water with your hands, When you have thus done, presently while they are warme breake all the Balls in (2.) small Crumlets into a Skillet or Kettle set over a (3.) soft fire. While it is melting, stir it and skim it with a spoone (4.) wet in cold water: and as (5.) soone as it is melted and skimmed cleane, take it off. And having provided the (6.) mould, first (7.) warme the bottome, specially if the cake be small, and (8.) besmeare the sides with Honie, and then instantly poure in the wax (9) (being as coole as it my run) through a linnen straining-bag. When you come neere the bottome, peere it gently till you see the drosse comming: which straine into some other mould by it selfe. And when it is cold, either trie againe, or having pared away the bottome, reserve it, as it is, for some use.

When the Wax is in the mould, if any froth yet remaine upon it, blow it together at one side, and skim it off lightly with a wet spoone.

This done, set not the cake abroad, or where it may coole hastily upon, but in the warme house: and if it be great, cover the mould with a Platter, as close as you can, to keepe the top from cooling, till the (10.) inward heat be alayed: and so let it stand, not moving the mould till the cake be cold. If it sticke, a little warming of the vessell or mould will presently loose it: so that it will slip out.

(1.) So will they breake the smaller with lesse labour. (2.) That the wax may melt the sooner, and all together. (3.) For a rash fire will burne it, and change both colour and qualitie. (4.) That the skum sticke not. (5.) For over-heating will discolour the Wax, turning the bright yellow into a darke or reddish colour, not so commendable in Wax: for therby it is knowne to have lost of his fatnesse and sweetnesse, and to be the worse for all uses. (6.) Which may be a bason or other vessell of mettall or earth, bigger upward than in the bottom. (7) Lest the Wax first poured in (which is the best) being presently cooled, lie beneath the drosse. (8.) To keepe the Wax from sticking to the sides of the mould, and consequently to helpe save the Cake from cracking. For Wax shrinketh in cooling, as new walles in drying: and therefore if the Cake sticke not, it shrinketh together from the sides, and so is lesse than the mould, and whole: but if it sticke fast to the sides, then must it needs cracke, one part shrinking from another (specially if it coole hastily upon) as it hapneht commonly in great Cakes: For small one, whose inward heat is

29.
Next make the Wax into
Balls.

30.
Last of all melt it and
cast it in a mould.

31.
And keepe the cake from
cracking.

alayed

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alayed by that time the upper part beginneth to harden, are not so subject to cracking. (9.) & (10.) For the great heat of the Wax doth cast up the watie vapours mingled with it: which so long as the upper part of the Cake continueth liquid, doe easily passe: but when it is hardened and the Wax yet servent hot beneath; the vapours being violent through the inward heat, must needs either cracke the Cake, or heave it and make it hollow, or both, specially if it be verie great: for then will the heat be both stronger and longer: but this is helped by not sticking. V. *anti num* (8.)

The properties or token of good Wax are (1) most yellow, sweet, fat, (2) fast or close, (3) light, (4) pure, and void of all other matter. *Cera sit flavissima, adorata, pinguis, coacta, levis, pura, & aliena omnia materia carens.*

(1) That is most light yellow, fardest from red, and nearest to white: for as in gold the deepest, so in Wax and Hony (v.n.13) the palest yellow is best: yea the pure Virgin-wax at the first is white. V.c.6.n.14 (2) not hollow as the froth is (3) For Wax, like Oile, is best in the top, as Hony in the bottom (v.n.15.) except the hollow froth, which is to be skimmed away. v.n.30. (4) and therefore the bottom, unto which the drosse doth descend is not good.

The third part of this Chapter sheweth the singular vertues of

(1) Honie, (2) Methe, and (3) Wax *for
the use and comfort of man.*



onie is (1) hot and dry in the second degree: is of (2) subtill parts, and therefore doth pierce as Oile and (3) easily passe into the parts of the bodie: It hat (4) a power to cleanse, and some sharpnesse withall, and therefore it (5) openeth obstructions, it (6) cleereth the brest and lights of those humors, which fall from the head to those parts, it (7) looseth the belly, (8) purgeth the foulnesse of the bodie, and (9) provoketh Urine, (10) cutteth and casteth up Flegmatike matter, and therefore sharpneth the stomaches of them which, by reason thereof, have little appetite, (11) it purgeth those things which hurt the cleerenesse of the eyes, (12) it nourisheth verie much, (13) it breedeth good bloud, (14) it stirreth up and preserveth naturall heat, and prolongeth old age (*reade the note*) (15) it keepeth all things uncorrupt, which are put into it, and therefore (16) physicians doe temper therewith such medicines as they meane to keepe

long:

32.
How to know
good Wax.
Silv. De med.
Simpl. Dele. ctu.
Lib. I.

X.
The properties
and vertues of
Hony.

P.3.

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long: (17) yea the bodies of the dead, being embalmed with Hony, have been thereby preserved from putrefaction. (18) It is a soveragne medicament both for outward and inward maladies; (*reade the note.*) (19) It helpeth the griefes of the jawes, (20) the kernels growing within the mouth, (21) and the squinancie or inflamation of the muscle of the inner gargil, for which purpose it is gargarized, and the mouth washed therewith; (22) it is drunke against the biting of a Serpent (23) or mad Dog: and (24) it is good for them which have eaten Mushromes, (25) or drunke Popy, against which evill yet, Rofed-hony is taken warme. (26) It is also good for the falling sicknesse, and better than Wine, because it cannot arise to the head, as the Wine doth. (27) Lastly, it is a remedie against a surfet: for they that are skilfull in physicke, when they perceive any mans stomacke to be overcome, they first ease it by vomit: and then, to settle his braine, and to stay the noisome fume from ascending to his head, they give him Honie upon bread. In respect of which great vertues (28) the right composition of those great Antidotes, *Treacle*, and *Mithridate* (although they consist, the one or more than fiftie, the other of mare than sixtie Ingredients) requireth thrice so much Honie as all the rest. All which premisses considered, no marvell though the wise King said, My sonne eat Hony, for it is good: *Prov.* 24.13. that the holy Land is so often and so much commended for flowing therewith: *Exod.* 3,8.13,5.33,3. *Lev.* 20, 24. *Num.* 13,27, *Deut.* 8,8. And that the Eternall *Immanuel* did us it for his food. *Isa.* 7,15. *Luk.* 24,43. Yea Honie, if it be pure and fine, v. is so good in it selfe: that it must needs be good, even for them whose queisie stomackes are against it. But indeed the vulgar hony may well be disliked, as being sluttishly handled, & much corrupted with stoppings, and Bees both young & od, v. & some with other mixtures also.

2.
Against both outward
and inward griefes.

V.p.2.n.4.& 6.

(1) Galen de simpl. Med. Facult. Lib. 7 (2) tenuium partium. Simeon Seth.(3) facile distribuitur. Matthias de Lobel. (4) deter gendivim. Galen & Seth. (5) Lobel. (6) Wikerus, & Freitagius. (7) Seth. & Freitag: & Platius in Fernelium de syrups. (9) Seth. (9.) Seth. & Pictorius, (10) (11) Lobel (12) (13) Freitagius. (14) calorem nativum suscitatur & tuetur, & logam prorogat senectam. Plant. Loco supra citato.

Exempla

V.p.2.n.10.

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Exempla citat Franciscus Valerius Medicus Locorum com. Lib. 3. Cap. 13.
Antichus Medicus, & Telephus Grammaticus annosi senes Attico melle eas pane alicare excepta plurimum utebantur. Quas Galenus l.5. de Sanituend & ceu exempla vitae senum, quibus asset optima victue ratione illa senecta, proponit. Melle itque senibus plurimum utenam consulo, simodo suae ipsorum valetudinis rationem habere velint. Et l.3. c.19. Mellirum proserenda rita senectaq longaera agenda, authores affirmant: Democritus Philosophus, qui melle oblectatus assidue, in annientesimum nonumq; fati diem distulit, interrogatus, ut scribit Athenaeus, quomodo quispiam sanus vivere possit. Si exteriora oleo inquit, interior a melle irriget. Erat etiam Pythagoricorum cibus panis cummelle. Aristoxenus eos sine morbo vivere posse asserit, qui easemper in prandis comedant. Lucus multum Cynios vivere scribit, quid, apud Sardonem habitantes, melle semper rescuntur. Nec immerito, quoniam alimentum sit familiare, & natura aminum, duleedine quam possidet iutundum: obstructions insuper exmat, infarctumque liberes, rentremmolliat, corporis habitum calefaciat, urinam cieat, theracem pulmonesq; iuret, tonsillis & uramedatur. Qua cum tanta possit, vel Dioscoridis & Galeni testimonio haud immerito producmfir sysyid biysw; ptotohsnfr ifonrum esse medicamentum asserimus. (15) Seth & Plin. Hist. l.7. c.3. (16) Fictorius (17.) Cladius Caesar scribit hippocentaurum in Thessalia natum eossem die interijse. Et nos principatu illius allatum illi ex Aegypto in melle vidimus. Pl. hist. l.7. c.3. (18) Melcalidum siccumque ordine secundo aperit, puiradini obsistat, siceat, deterget, expurgatque meatus & ultera. Fern. Method. Lib. E. c. 12. Mel & saccharum personibus admista vires naturales in morbu sopitas & languentes exuscitant & erigunt: nati runique calorem qui solus mrobos concoquit & mutisitat: crassaque extenuando, ricsosa extergendo, & obstrmctaeoc pediendopurgationes quam facillimas praestant. Plantius in Fern de Syrupis. Item, Mel absterge vim habet, ora vasorum aperis, humores exocat, qua ratione in sordid a ulcera sinusque commode infunditur, decotum atque impossum abseedentem carnem glutinat, medetur lichenibus, impetigini coctum cum liquide alumine & illitum. Item aurium sonitui & dolori cum fossili sale trito tepidum instillatur: lendes & saeda capitis animalia illitum necat, oculorum caligintan discutis, faucibus, tonsillis, angina collutum gagarizatumque m detur, urinam oet, auxillatur tussi; contra havstum mecomium cum resaceo calid massumstur, adversus renemasungerura & robio st canis morsus lintium aut petum praeficit: crulum tamen aloum inflat, tussim lacesset: & cader despuratu utendum. Dioscorid. Lib. 2, cap.101 (19) (20) (21) (22) (23) (24) (25) Pictorius. Mellis natura talis est, ut putreseere corpora non finat; Faucibus, tonsillis, anginz, omnibusque oris desiderijs utilissimum, areseentique in febribus lingux. Pl. hist. l.22. c.24. (26) Lobel. (27) Pict. (28) Fernel. Method. l.7

Hony is most fit for (1) old men, v. for women and children, for such as are rheumaticke and flegmaticke, and generally for all that are of a cold temperature. (2) To young men, and those that are of a hot constitution it is not so good, because it is easily turned into choller: and yet *Lobel* saith wee know that Honie taken fasting doth much good unto some

natures,

3.
For whom Hony is
best.
V. (14) in note I.

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natures, which have hot livers: and in this point he preferreth our English Honie. *Minus* (saith he) *speciosum ac delicatum Anglum: sed quibusdam prasertim saltibus & paseuis, ubi lana commendatior, v. le Etum, biliosa excrementa inferius exter gendo pellit, & aciei oculorum prodesse putatur.* So that he seemeth to say, that our honie is hurtfull to none; because it purgeth that evill humour, which other Hony, in some bodies, is thought to breed. But the Proverb saith, *Too much of one thing is good for nothing:* and the Wis-man in his Proverbs, *It is not good to eat much Honie? Eat so much as is sufficient for thee:* &c. For all Hony often and immoderately taken (3) causeth obstruction, (4) contrarie to his naturall qualitie, and so in (5) breedeth the scab.

(1)(2) Galen. I.4. simpl. Med. Dist. 3.c.5. Item Seth. Pictorius, & Freitag. (3) Wikerus & Freitagius (4) vide (8) & (18) supra. (5) Lobel.

Raw Hony doth (1) more loose the belly, (2) causeth the cough, and (3) filleth the entrailes with winde, specially if it be of the courser sort. Being boiled it is (4) more nourishing, (5) lighter of digestion, and (6) lesse laxative, also (7) lesse sharpe and abstersory: for which cause they use it (8) to knit together hollow and crooked ulcers, and likewise (9) to close other disioned flesh. It is also good against the (10) pleurisie, against the (11) phthisis, and all other diseases of the lungs.

(1) (2) (3) Freitag. Pictor. & Wikerus. (4) Freitag. & Wiker. (5) Wikerus. (6) Pictorius. (7) Gal. & Seth, & Fernelius Method i.lib.6.c.13. *Crudum cocto & despumato deter gentius quidem multo est & mordacius: sed co minus agglutinar.* (8) *ad finetum glurinationes, Seth. sinuosorum ulcerum, Galen.* (9) (10) (11) Pictorius.

Honie is clarified by boiling: and that either by it selfe, or else with a fourth part of water, or other liquor. But alwaies in boiling skim it, that it may be pure.

By it selfe you must boile it untill it will yeeld no more * skum, (which will be about halfe an houre) and that with a very soft fire, or in a + double vessell; left, by over-heating, it get a bitter tase, and left it suddainly run over and flame.

4.

English Hony.

V.p.2.n.12.

5.

Too much Hony
unholosome.

6.

The different operations
of raw & boiled Hony.

7.

Two waies to clarifie
Hony.

The

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* The right skum, which is drosse, is short and brittle: which when it is cleane taken away, the force of the fire will cause the very Hony to rise up like a skum: but that will then be tougher and more clammy than the drossie skum, and to will all the rest be, when it is cold, as being overboild: therefore be sure to take it off in time.

+ i. A vessel set in a vessell of boiling water: called, *Balnoum Maria*, which is best.

V. Fernel. l. 4
.c. 15.

Lesse white may
serve, if the
Honie be good.

With water it is to be boiled an houre at the least, even untill the water be evaporated: v. which thing is knowne by the bubbles that rise from the bottom: then, to make it more pure, put into every pound of Honey the * white of one Egge, and afterward skim it againe in the boiling. The fire may be more fervent at the first; but toward the end it must be slacke: for it is then apt to be set on fire, as the meere Hony, and to become bitter with violent heat.

The course Honie being boiled and clarifed hath a pleasant tase, and is comparable for most uses to the purest bottom-honie being raw.

Which pure Honie, if you be disposed to boile it, will aske lesse time to be clarifed, as yeelding little or no skum at all: and in taste and vertue it is more excellent.

When your Honie is boiled enough, take it from the fire; and rather too soone, than too late: for if there bee any drosse remaining, you shall finde it in the top, when it is cold: but over-much boiling consumeth the spirituous parts of the Honie, and turneth the sweet taste into bitter.

8.
The quintessence
of *Honie*

9.
The vertues of
it.

And such is Honie in his owne kinde, both raw and boiled. It is also altered by distillation into a water, which *Raimundus Lullius* that excellent Chymist calleth the Quintessence of Honie. This Quintessence dissolueth Gold, and maketh it porable: likewise any sort of pretious stone that is put therein. It is of such vertue, that, if any be dying, and drinke two or three drammes thereof, presently he will revive. If you wash any wound there-with, or other sore; it will heale quickly. It is also good against the Cough, Catarre, and paines of the Male, and against many other diseases. Being given for the space of six and fortie daies together to one that hath the Palsie, it helpeth him. Which thing

John

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John Hester a Practicall Chymist, in his Key of Philosophie, proseseth himselfe to have proved. It helpeth also the falling sicknesse, and preserveth the body from putrefaction. Of so marvellous efficacie is this water.

The making of it is after this manner. Take two pound of perfect pure Honie, and put it into a great Glasse, that foure parts of five may remaine emptie: * Lute it well with a Head and Receiver, and give it + fire untill there appeare certaine white Fumes: which, by laying wet clothes on the Receiver and Head, and changing them when they are warme, will turne into a water of a red colour like blood. When it is all distilled, keepe the Receiver close shut, and let it stand till it be cleere, and of the colour of a Rubie. Then distill it in *Balneo Maria* seven times: and so it will lose this reddish colour, and become yellow as Gold, having a great smell and exceeding pleasant.

* The Lute may be made of Clay, Flockes, and Salt-water, tempered together; or of Meale and whites of Egges.

+ The Lute being first dried in the Sunne or by the fire.

Now as Honie is good by it selfe, either altered or in his owne kinde; so is it also being mixt with many other Simples: which here to declare would seeme but tedious and impertinent. Not withstanding it shall not be amisse, in two or three instances, to give you a taste of such Confections; and first of those that inwardly, than of those that are outwardly received.

Of the first sort are Marmalade, and Marchpane, preferved Fruits, as Plums, and Cherries, &c. Conserves of Roses, Violets, &c. with Syrups of the like matter.

Marmalade is thus made. First boile your Quinces in their skins till they be soft: then, having pared and strained them, mix there-with the like quantitie of clarifed Honie: and boile this together till it be so thicke, that in stirring (for you must continually stirre it for feare of burning) you may see the bottom; or, being cooled on a Trencher, it be thicke enough to slice: then take it up and box it speedily. You may also adde a quantitie of Almonds, and Nut-kernels: also Cinamom, Ginger, Cloves and Mace, of each a like quan-

titie,

10.
The making of it.

11.
The vertue of Honie in Confections.

12.
Marmalade made of Honie.

VII.

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titie, pounded finall and put into the Honie with the Quinces, and in boiling to be stirred together. This is very good to comfort and strengthen the stomach. For want of Quinces you may take Wardens, Peares, or Apples, and specially the Peare-maine, Giliflower, Pipin, and Roiall.

13.
Marchpane.

Marchpane may be made after this manner. Boile and clarife by it selfe, so much Honie as you thinke meet: when it is cold, take to every pound of Honie the white of an Egge, and beat them together in a Bason, till they bee incorporat together and wax white, and when you have boiled it againe two or three walmes upon a fire of coles, continually stirring it, then put to it such quantitie of * blanchd Almonds or Nut-kernels stamped, as shall make it of a just consistence: and after a warme or two more, when it is well mixt, poure it out upon a Table, and make up your Marchpane. Afterward you may ice it with Rose-water and Sugar. This is good for the Consumption.

* Steepe them a night in cold water, and the peeles will come off.

Preserve Fruits after this manner.

14.
Preserves.

The Damascens, or other Fruit, being gathered fresh from the tree, faire, and in their prime, neither greene or sower, nor over-ripe or sweet, with their stalks, but cut short; weigh them, and take their weight in raw fine Honie: and putting to the Honie the like quantitie of faire water, boile it some halfe quarter of an houre, or till it will yeeld no skum: then having slit the Damascens in the dented side for feare of breaking, boile them in this liquor with a soft fire, continually skimming and turning them till the meat commeth cleane from the stone, and then take them up. If the liquor be then too thinne, boile it more: if in the boiling it be too thick, put in more faire water, or Rose-water if you like it. The liquor being of a fit consistence, lay up and preserve therein your Fruits.

If they be greater Fruits, as Quinces, Pipins, or the like; then shall it bee expedient, when you have bored them through the middle, or have otherwise coared them, to put them in as soone as the liquor is first skimmed: and then to let them boile till they be as tender as Quodlings.

Conserves

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Conserves of Roses is thus to be made. Take of the juice of fresh Red Roses one ounce, of fine Honie * clarified tenne ounces, boile this together: when it beginneth to boile, adde of the leaves of fresh Red Roses clipt with Scissors in little pieces foure ounces, boile them to the consumption of the juice, and presently put up the Conserves into some earthen vessell. Keepe it long therein: for in time it waxeth better and better. *Sylv. 1.3. de med. Simp. Mist.*

After the same manner is made Conserves of Violets. Syrup of Roses make thus. Steep fresh Roses in hot water over the Embers, (the vessell being covered) untill the Roses wax pale: then straine out the Roses, and put fresh in their places, untill they also are pale: this done ten times, or untill the water be red. And this being purged with Whites of Egges, (to every pinte of liquor one) boile it gently with like quantitie of fine Honie, untill it be of convenient thicknesse. If you prepare it for present uses, the lesse boiling will serve: if you meane to keepe it, it requireth more, for which purpose the sunning of it is good. This purgeth a little, specially being new. *Sylv. Med.S. Mist. 1.3.*

Or thus. Seep one pound of Red Rose leaves in foure pound of water foure and twentie houres. When the water is strained, put unto it tow pound of fine Honie, and boile it to the thicknesse of a Syrup, taking off the skumme as it riseth. It tempereth the hot affections of the braine, it quencheth thirst, it strengthneth the stomacke, it procureth sleepe, and stayeth thin rheumes. *Fern. Meth. Lib. 7.*

The syrup of Violets is made, after the same manner, of fragrant Violets, and steeped untill the liquor be blew. Being well boiled it may be kept a yeare without vinewing or corruption. It tempereth and purgeth hot and sharp humours; and therefore is good in a Plevrisie: it expelleth Melancholie, and the effects thereof, as head-ach, waking, dreaming, and heavinesse of heart: it is fit to be used before, and after purging. *Plintius in Fernel. Meth. 1.7.*

If any man like better to make these Consections with Sugar, let them take the like quantitie of Honie: for Sugar

also

15.
Conserves.
Mel rosatum.
* Cum uncijs aquae
tribus mediocriter
despumetur.
V.n.7.

Mel Violatum.
16.
Syrups.
Syrup of Roses.

Syrup of Violets.

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also hath with his sweetnesse a power to * preserve, as being a + kinde of Honie.

* Condiuntur fructus aut mele, aut Saccharo. *Foruel. Meth. 1.4.c.17 & Sylv. Simpl. Med. Mist. 1.3.*

+ Saccharum quod ex India & faelici Arabia convenitur, concreseit in calamis: estque mellis species, nostrate certe minus dulce, sed similes of vires obtinens, quo dad ab stregendum, desiccandum, & digerendum pertinet. *Galen. De simpl. Med facult. Lib. 7.* Item, *Est & quoddans mella concreti genus quod Saccharum nominant: quodque in India & falici Arbia in arandinibus repretur.* Saccharum est mel in arundinibus collectum. *Plin. 1.41.c.8.* Saccharum mellis species cum sit, siccaeat quoque & abstergit. *Fern. Meth. 1.6.c.12.*

But in respect of the marvellous efficacie, which fine v. and pure Honie hat in preserving health, v. that groose and earty stuffe is not whit comparable to this Celestiall *Nectar*. Although some queint and Ladilike palats (whom nothing but that which is farre faught and deare bought can please) unhappily neglect it. In preserving Fruits it hat more power through the viscositie thereof. Also Conserves, and Syrups being made with Honie * continue longer, and doe more kindly worke their effects. So that wee may conclude with *Ecclestasticus, cap. 11.3.* *The Bee is little among such as flye: but hir Fruit is the chiefe of sweet things.*

* Ex melle consecretus syrupus diutius asservantur: is quoque magis inodit, Re detergit. Ex Saccharo suavior, sed non neque efficax. *Fern. Meth. 1.4.c.12.*

Honie is used in outward medicines for divers purposes: * not onely to conteine the other ingredients in forme of a Plaister; but also to open, to cleanse, to dry, to digest, and to resist putrefaction. And therefore it hath the predominance in that excellent Salve, called + *Unguentum Aegyptianum*: which serveth to clease and mundisie old sores, and to take away both dead and proud flesh. The receipt where of is this. Of Verdegrece five ounces, of strong Vineger seven ounces, and of Honie foureteene: boile first the Honie and Vineger, and stirre them together: after a little while put in the Verdegrece, being pounded to powder: and then, stirring all

together

17.
Honie to be
preferred before
sugar.
V.p.2.n.4. & 6.
V.n.1. & 2.

18.
Honie good in
outward medicines.

19.
A salve for an old
sore.

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together, let them boile untill the Ointment have his just thicknesse and Purple colour.

* Mel panaciae & alijs quib usdam emplastris miscetur, ut corpus puaebeat emplasticum, & praeterea siccet, tergeat, digerat, a purredine vindicet. *Sylv. De med. Simpl. Mist. 1.3.* Mel calidum siccumque ordine secundo aperir, putredini ob sistis, siccet, deterger, expurgatque meatus & ulcera; nee ut sal, corporum substantiam coarctat. *Fern. Meth. 1.5.c.12.*

+ *Sylv. De med. Simp. Mist. 1.3. sect. 10 & Fern Meth. 1. 7.*

Another of like vertue, but not so much corrosive.

Boile a quart of good Ale in a Skiller to halfe a pinte, skimming off the froth as it ariseth: then put in a spoonfull of good Honie: and skimming still as need is, let it boile to the halfe, or till it be so clammy that being taken up upon a stickes end it will not drop, but string down like clarified Honie.

What are the vertues and properties of Meth or Hydromel, may partly be knowne by that which hath beene said of Honie. For seeing Honie is the chiefe matter whereof it is made; it must needs, together with the substance of Honie, participate the naturall qualities thereof. The which, by the purifying in boyling, together with the accesse of sundry holsome ingredients, v. are rather confirmed and increased, than any way extenuated or diminished. Therefore said Lobel, *Mulsum, ubi aqua plurimum mellis non multum, diuturna intestingg, mellis ebullitione in vinum longe ut dissimulabit.* And Pictorius, *Hydromel long a vetustate transit in vinum stomacho convenientissimum.* Meth, when it is old, is a Wine most agreeable to the stomach: it recovereth (1) the appetite being lost, it (2) openeth the passage of the Spirit or breath, it (3) softneth the belly, it (4) is good for them that have the cough. (5) If a man take it, not as his ordinarie drinke, but, as Physick, now and then; he shall receive much benefit by it against Quartan Agues, against Cacexies, and against the diseases of the braine, as the Epilesie, or the falling Evill: for which Wine is pernicious: it (6) cureth the Yellow Jaundise: it (7) is also good against Henne-bane with Milke, and against the

Winter

20.
Another.

21.
The properties and
vertues of Mede and
Methaeglen.

V.p.2.n.21. 22, & 24.

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Winter-cherrie, it (8) nouisheth the bodie. (9) So that many have attained to long old age, onely by the use thereof. And therefore no maruaile that *Pollio Romulus*, who was an hundred yeares old, imputed the greatest cause of his long continue health to this Sovereigne drinke. (10) For being asked of *Augustus* the Emperour, by what meanes especially he had so long preserved that vigor both of minde and body, his answer was, *Intus mulso, for is aleo.*

(1.2.3.4.) *Pictorius: & Plin. Hist. 1.22.c.24* (5) *Lobel, (6.7.8.9.10) Plin. Hist. 1.22.c.24.*

The same thing is more manifested by the generall example of the ancient *Britaines*: who, above all other Nations, have ever beene addicted to Meth and Methaglen. For under Heaven there is no fairer people of complexion, nor of more found and healthfull bodies. Of whose *Methaglen* *Lobel* writeth thus; *Cambricus ille potus Methagla, non patrio, uti putant illi, sed * Graco nomine dictus, est altera liquida & limpida Septentrionis theriaca.*

22.
Meth much used of the
ancient Britaines.

23.
Whence Meth and
Methaglen have their
name.

Methaglen.

* *Hydromel* hortalibus, quibus vineta defunt, pro vino est, Ideoque Cambriis à verbo *Meth* dicitur. Pro qua voce Germani (quibus Teutonice idiomate solenne est Dipro Tb usurpare, ut in Dr, Du, Dur, Bander: pro The, Thie, Thur, Tünder) adeoque Angli etiam, Alijque populi boreales à Germanis oriundi, coramptè dicunt *Mede*. Medonis plura unum bibunt Poloni & Litvani, quod Melle abundant, inquit Andreas Matthiolus. *Methaglen* vero, quod *Hydromel* est prestantius, à verbo αἶμαρ live contrahit αἶμαρ, id est, vinum splendidum denominatur quod (modò vici sit & tunc confectum) non minus colere succino, quam sapore & virtute præ vinis vitaceis splendat. De hoc Mercator in *Transjordanis*: Ex melle incolæ delictatum potum conficiunt: qui etiam terram perit, vinum Creticum etiam Malvasium opusculantibus, facile imponit. Et *Vlysses Aldrovandus* de mulso. Fit præterea et melle potus gemma totius sunt Sarmatiae, viciisque Mesopotamiae familiaris. Unde etiam per totam Europam fert, præcipuè per Germaniam divulgatur. Deoque multiplicitè aromatizaddito, (Mellodorus vocant) tam * nobile saporis ut sanctorum sanium mensuratur sit, et principes saluti bibant. Item Mercator in *Sabemus* de civitate Egra. Terra agratissima, terra pulcherrima est, Janus pulchre ædificat, civis rebusque populi, magnificè et eximia virtute præstantissima vinum immiscet: sic uti antiquioribus et fecundissimis horis et agris variisque pomis et fructibus generosis liquoribus. Claret hodie hactenus ob Medonem (potissimum ex melle) qui nulla potesturquam in hac civitate excelsior.

And as good and old Methaglen excelleth all Wines, as

well

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well for pleasantnesse in taste, as for health; so being burnt it is better than any burnt Wine, for comforting and setling of a weake and sicke stomach, and for recreating the naturall heat.

The manner of burning it (if you know not) may be this. First set on the fire a * deepe Skillet or Kettle, almost full of water: when it boileth, put in a Pewter pot full of *Methaeglen*: before that beginneth to boile, skimme it and put in two or three brused Cloves, and a branch of Rose-marie: then beat the yoke of an Egge in a dish, put unto it a spoonefull of the *Meth* cold, and stirre them together to keep the yolke from curdling: then put to that a spoonfull of the hot *Meth*: and after than an other, and an other, alwaies beating them together: and then, some and some, put all into the pot, still stirring it about. Then as soone as it boileth, take up the por, and, saving you hands harmelesse, powre it into another warme pot of like capacitie, firing it as it runneth: and so brue it till it will burne no more. A *Methaeglen* posset is of the like vertue.

* The deeper the pot standeth, the sooner it boileth. You may, for a need, set the pot on the Harth in the midst of hot Embers: but take heed the flame melt not the *Pewter*.

Wax hath no certaine elementar qualitie, but is a meane betweene (1) hot and cold, and betweene dry and moist. It (2) mollifieth the sinewes, it (3) ripeneth and resolveth Ulcers. (4) The quantitie of a Pease in Wax, being swallowed downe of Nurces, doth dissolve the Milke curded in the paps, and (5) ten round peces of Wax, of the bignesse of so many graines of Milet or Hempseed, will not suffer the Milke to curdle in the stomach.

Moreover, it maketh the most excellent light, fit for the uses of the most excellent; for cleernesse, sweetnesse, neatnesse, to be preferred before all other: Which *Scaliger* in his *Aenignata*, giving it the precedence, doth intimate.

*Aut Apis, aut Hircus, vel pinguia viscera Pini
Offendere diem, post simul ante diem.*

(1) *Galen*

Z

24.
The properties and
vertues of naturall Wax.

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(1) *Galen de simp. Med. Facul. 1.7. (2,3,4,5.) Georgixi Pictoriuius. Cera flira magis emollit, relaxat, dolocem solvie: eoque illa utimur ad abseesve calefaciendos, emolliendos, concoquendos, & maturandos. Iohannes Guintherius Andernacus. Omnis cera mollit, calefacit, explet corpora: recens melior. Datur in sorbitione dysentericis, favique ip si in pulvere alicae cerae haurit, non patiuntur coagulari lac in stomacho. Si inguen tumeat, albam ceram in pube fixisse remedio est. Nec huius ulus, quos mixta alija praestat, enumerare medicina potest. Pli. Nat. hist. li. 12. Cap. 24.*

25.
Artificiall Wax.

26.
To make white Wax.

This naturall yellow Wax is by Art, for certaine purposes, made white, red, and Greene.

Wax is whited after this manner. Take the whitest and purest Wax: which, being cut into small peeces, put into an earthen vessell, and poure Sea-water or Brine into it, as much as may suffice to boile it. And cast in also a little Niter: all this set over a soft fire. When it hath boyled up twice or thrice, lift the vessell from the fire, and, the wax being presently cooled with cold water, take it out: and when you have scraped of the drosse, if any such hang on, and put it into other Salt water, seeth it againe. And having boyled up twice or thrice, as before, lift it from the fire againe. And then take the bottom of an other earthen pot, or a little round board with a handle in the middle like a Churn-staffe, but without holes: and having first wetted the bottom of it in cold water, dip it into the hot vessell, and assone as this wet bottom toucheth the wax, pull it out againe, and you shall have sticking to the bottom a thin cake: which when you have taken off, wet the bottom againe, and dip it as before: and thus doe till you have taken up all the wax in cakes. These cakes hang in the open aire upon a line drawne through them, so that they may not touch one an other, besprinkling them with water in the Sun-shine untill they be white. If any man would have wax whiter, let him boile it oftner, and doe all other things in like manner as before.

Hanc dealbanda sera rationem docuit Dioscorides, 1.2.c.105.

To make Wax red, Take to one pound of Wax, in Summer three ounces of cleere Turpentine, in Winter foure.

These

27.
To make red Wax.

P.3.
C. 10.

Of the fruit and profit of Bees .

These dissolve over a soft fire, and by and by take it off to coole a little. Afterward mix therewith the red Root of *Anchusa* or * *Vermilion*, well ground on a Marble or Glasse, and sweet Oile, of each one ounce: stirre all these and mix them well together. For want of Vermilion, take three times so much red Lead, but is not so good.

To make green Wax, take in stead of *Vermilion*, the like quantitie of *Vert-degreee*.

And such is Wax in his kinde, both Naturall and Artificiall. Natural Wax is altered by distillation into an Oile of marvellous vertue. *Raymund Lulli* greatly commendeth it, proving it to be rather a Celestiall or Divine medicine than humane; because in wounds it worketh miraculously: which therefore is not so well allowed of the common Chirugians. For it healeth a wound, be the same never so wide and big, being afore wide-stitched up, in the space of eleven daies or 12. at the most. But those that are small, this Oile healeth in three or foure daies, by annointing onely the wound therewith, and laying on a cloth wet in the same. It stayeth the shedding of the haire, either on the head or beard, by annointing the place therewith.

Also for inward diseases, this Oile worketh mirades, if you give one drachme at a time to drinke with white Wine: for it is excellent in provoking urine which is stopped, it helpeth stiches and paines in the loines, it helpeth the cold Gout, or Sciatica, and all other griefes comming of cold.

The making or drawing of this Oile is on this wise. Take of pure new yellow Wax so much as will halfe fill you Retort or Body of Glasse: melt it on the fire, and then powre it into sweet Wine, where in let it soake: wash it often, and wring it between your hands: then melt it againe and powre it into fresh Wine, wherein soake it, wash it, and wring it as before: and this doe seven times, every time putting it into fresh Wine. When thus you have purified the Wax,

* Cinabrium.

Minium.

28.

To make greene Wax.

29.

Oile of Wax.

30.

The vertues of it.

31.

The making of Oile of
Wax.

to

C.10.

P. 3.

Of the fruit and profit of Bees .

V.n.10.

to every pound there of adding foure ounces of the powder of red Bricke finely brused: ;put it all together into your Retort of Glasse well luted: v. then set the Retort into an Earthen por, filling it round about and beneath with fine sifted Ashes or Sand; and set the pot with the Bodie in it on a Furnace, and so distill it with a soft fire. And there will come forth a faire yellow Oile, the which will congeale in the receiver like Pap when it is cold. If you should rectifie this oile or distill it often, untill it will congeale no more: then shall you make it over hot to take inwardly, and so quicke in the mouth, that you cannot drinke it downe. In the comming forth of this Oile, shall appeare in the Receiver the foure Elements, the Fire; the Aire, the Water, and the Earth, right marvellous to see.

32.
The vertue of Wax in
compound medicines.

So vertuous is Wax by it selfe, both in his owne kinde, and altered by distillation. It is moreover of great use mixed with others, and is the ground and foundation of *Cere-clothes* and *Salves*: whereof to set downe two or three examples shall not be amisse.

33.
A Cere-cloth.

A *Cere-cloth* or *Ceratum*, so called of *Cera*. Doth consist chiefly of Wax and Oile mixed in such proportion, as may make the ointmente of just consistence: and therefore (I) being made in Summer, or compounded with Turpentine, Lard, Gum, Marrow, or any liquid thing, a greater quantity of Wax is required: and being made in Winter, or compounded with Rozin, Pitch, Metals, dried Hearbs, Powders, or any dry thing, a lesse quantity of Wax than Oile is convenient.

V.n.7.

The Ingredients being prepared, first melt the Wax, and whatsoever else of like nature, as Pitch, Suet, &c. in the Oile over a gentle fire, or in a double vessell, v. for feare of burning: when they are melted together, put in the Powders and other like Ingredients, if there be any: and assone as you have stirred them well together, (before the liquor be very hot) set it a cooling, and make your *Cere-cloth*.

A

P.3.

C. 10.

Of the fruit and profit of Bees .

A *Cere-cloth* to refresh the wearied Sinewes and tired Muscles is thus to be made. Take (2) Oile and Wax ana two ounces, Turpentine two drams, & Hony halfe an ounce.

To comfort the stomacke and helpe concoction, make a *Cerat* thus. Take (3) Oile of Masticke, of Mint, of Wormwood, of Nutmeg, and *Speeke, or any of these, and a convenient quantitie of Wax.

For the wormes in the belly of a childe or other, Take Wax and Rozin Ana one ounce, Treacle one spoonfull, Aloes two drams. Melt & mingle the Wax & Rozin together in a Pewter-dish, upon a Chasing-dish and Coales: being melted, skimme it cleane: then taking it off, put in the Treacle, and stirre it among: then having pounded the Aloes to powder, strew it upon, and stirre it in, so that it may not clod And if, by this time, it be too cold to come from the dish; warme it a little upon the Chasing-dish againe: then having wet the Table with Butter, poure it thereon, and worke it together with your knife: and so make it up in a Roule. To make the Dish cleane, warme it, and wipe it with a woollen cloth.

This *Cerat* is to be applied to the Brest, and to the Navell. For the Navell, spread it upon a round peece of Leather three inches over, with a hoale in the middle; that, the Navell comming through, the plaister may lie both closer and faster: and for the Brest, spread it upon a square peece three inches broad, and twice so long: and lay it a thurt the Brest, between, or close under the Paps.

This doe twice together, and let the Plaisters remaine each time upon the place, untill the heat of the stomacke have dried them, and made them loose: which, in some that are much troubled with the wormes, will be within foure and twentie houres; although in some they will sticke a whole weeke together.

(1) Fern. Meth. Lib. li.c.19. & 20. (2) Fern. Meth. l.4.c.19. (3) Fern. Meth. l.5.c.22.

For example of a Salve, take Emplastrum de janna, marvellous effectuall in curing greene wounds and new ulcers.

It

34.

A cere-cloth to refresh the Sinewes and Muscles.

35.

A Cere-cloth to comfort the stomacke.

*Nardinum.

36.

A Cere-cloth for the Wormes.

37.

A Salve for a greene wound

C.10.

P. 3.

Of the fruit and profit of Bees .

It aswageth inflammation, it cleanseth, it closeth, and fileth with flesh, and maketh whole. It is thus made: * Take the juice of Parsley, Plantan, and Beronie, ana one pound: Wax, Pitch, Rozin, and Turpentine, ana halfe a pound: boile the Wax, Pitch, and Rozin in the Juices, softly stirring all together, untill the quantitie of the juices be sasted: and then taking them off the fire, put in the Turpentine, and mix it with the rest.

Another of Like effect.

38.
An other.

Take Deere or Mutton Suet, Wax, Rozin, anna two ounces: Turpentine one counce: boile these together, and skim them: then take this liquor for the fire, and, when it is somewhat cooled, put in two handfulls of the Tops of unset Hysop, and stirre it about, and setting it over the fire againe, boile it softly about a quarter of an houre, till it be greene: and then straine it, and let it coole. This is chiefly to bee made in *May*, becuse then the Hysop is in his prime.

* Sylvius de medicam. Simpl. Mist. Lib. 3. & Fern. Meth. lib.7.

P S A L. I I I. V. 2.

Magna opera I E H O V AE, exquisita
Ab omnibus qui delectantur in illis.

F I N I S.

A Guide to assist you in reading and understanding

The Feminine Monarchie

This section is made up of four parts:

Appendix I

The Millissaeen Calendar

Appendix II

A dictionary of Old English words

Appendix III

***References used by Butler and quoted
In The Feminine Monarchie***

Appendix IV

The books of Charles Butler

Appendix I

The Milissaeen Calendar

		The activities in the beeyard.
Spring		
Pices	(Feb. 19 - Mar. 20)	First fair day in Pices set the <u>bees at Libertie</u>
Aries	(Mar. 21 - April 19)	A dangerous month for <u>robbing - feeding</u>
Taurus	(April 20 - May 20)	Remove Barres from the better stalls. Shut weaker stalls in <u>evenings</u> .
Summer		
Gemini	(May 21 - June 21)	Hives must have their largest entrance. Take off hackles form <u>those hives likely to swarm</u> .
Cancer	(June 22 - July 22)	Extreme hot and dry - keepe on the hackles to cooleth the <u>hive</u> .
Leo	(July 23 - Aug. 22)	After last swarm, kill drones. Raise hive on stoole and <u>cloom</u> .
Harvest (Autumne)		
Virgo	(Aug. 23 - Sept. 22)	A dangerous time from waspes, and robbing.
Libra	(Sept. 23 - Oct. 23)	<u>Try whether the Bees will live</u> .
Scorpio	(Oct. 24 - Nov. 21)	Time to kill and drive bees. <u>Set up winter doores</u> .
Winter		
Sagittarius	(Nov. 22 - Dec. 21)	Dress hives for winter. Sweep the stooles cleane. Cloom and <u>mend all brackes and faults</u> .
Capricornus	(Dec. 22 - Jan. 19)	The three still moneths. Bees lie still in their Hives, passing this fruitlesse time in sleepe <u>and slumber</u> . Yet on milde and warme
Aquarius	(Jan. 20 - Feb. 18)	houre, <u>they flie</u> .

A Bee Calendar

Appendix II

The following terms used in the *The Feminine Monarchy* may be totally unknown to you. To understand any work, a certain vocabulary is necessary. You will certainly need to grow your vocabulary to read this book. Many words in the old English language are fairly easy to figure out: words like *roule* at first may seem difficult to understand but if you sound out the word it comes out *roll*, and *staffe* comes out *staff*, a pole or stick. Many of the words used by Butler are no longer in common use, thus a search of the Old English Dictionary was necessary for me to understand what Butler was trying to explain or say. I pass these definitions on to you as an aid to your understanding as well.

Agues 1. An acute or violent fever.

1377 LANGL. *P. Pl.* B. XIII. 336, I cacche e crompe..Or an ague in such an angre. 1393 *Ibid.* C. XXIII. 84 Bules and bocches · and brennyng Aguwes. 1494 FABYAN VII. 377 Y^e kynge was taken with suche a flixe, and therwith an agu, that he kept his bedde. 1541 BARNES *Wks.* (1573) 325/1 Peters wyues mother had a gret agew. 1611 BIBLE *Lev.* xxvi. 16 And the burning ague, that shall consume the eyes [Vulg. *ardore*, WYCLIF *brennyng*.]

Amazons 2. Hence, A female warrior. *lit.* and *fig.*

1578 T. N. tr. *Conq. W. Ind.* 14 There were Amazons women of warre, in certaine Ilandes. 1593 SHAKES. 3 *Hen.* VI, IV. i. 106 Belike she minds to play the Amazon. 1702 *Lond. Gaz.* mmmcccxl/2 About 200 Virgins in two Companies richly attired, many of them like Amazons, with Bows and Arrows. 1777 ROBERTSON *Amer.* (1783) III. 86 An opinion that..Amazons were to be found in this part of the New World.

Ambrosia 1. a. In Greek mythology, The fabled food of the gods and immortals (as in Homer, etc.). Used by Butler to describe pollen (a solid food).

1590 T. WATSON *Poems* (1870) 169 Now Melib us..drinks Nectar, eates diuine Ambrosia. 1603 FLORIO *Montaigne* (1634) 144 It is for Gods to mount winged horses, and to feed on Ambrosia. 1753 CHAMBERS *Cycl. Supp.*, The Ambrosia is commonly represented as the solid food of the gods.

Ana Appended orig. to proper names, and subsequently also to nouns denoting hobbies, activities, etc. with sense of: a. Notable sayings of a person, literary trifles, society verses, items of gossip etc. of a place.

Anchusa The colouring principle of alkanet root; an amorphous resinoid substance of a deep red colour.

1863 WATTS *Dict. Chem.* I. 290 Nitric acid transforms anchusin into oxalic acid and a bitter substance..Alkalis form with anchusin blue compounds

Anon *strictly*, Straightway, at once, forthwith, instantly.

1611 BIBLE *Matt.* xiii. 20 He that heareth the word, & anon with ioy receiueth it. 1862 TRENCH *Miracles* xvii. 281 The toiling rowers are anon at the haven where they would be.

Bason A basin such as a large bowl. Also a bench with a plate of iron or stone flag fitted in it, and a little fire underneath.

Behouefull Behouefull obs. form of BEHOOF 1. Use, benefit, advantage. Chiefly in *to, for, on*, (formerly *into, till*) (*the*) *behoof of*. (*In, on behoof of*, are due to confusion with *behalf*.) *pl.* rare.

Bethwyn A name given locally to various twining plants: a. The Great Hedge Convolvulus (*C. sepium*).

b. The Bear-bind (*Polygonum Convolvulus*). c. The Traveller's Joy (*Clematis Vitalba*).

1609 C. BUTLER *Fem. Mon.* (1623) iii. Fijj. And then with a small pliant Garth or Belt of Bethwyn, Bramble, Brier, or the like, gird the Hackle close to the Hiue. 1875 PARISH *Sussex Gloss.*, *Bethwine*, the wild clematis.

Bolsters 3. Applied to various parts of mechanism which form a solid support or base, on which other parts rest or exert pressure. b. A support for a bee-hive. *Obs.*

1609 C. BUTLER *Fem. Mon.* v. (1623) Kij, Reare the full Hiue with three Bolsters, two on the West side, and one on the East, some foure or fiue inches high. *Ibid.* (1634) 47 Also rear the swarms, that being under-hived do lie forth, with a Skirt or Bolsters of that thickness, that may but let in the Bees.

Boorne A small stream, a brook; often applied (in this spelling) to the winter bournes or winter torrents of the chalk downs.

c1325 *E.E. Allit. P. A.* 973 Bow vp to-warde ys bornez heued. **1362** LANGL. *P. Pl. A.* Prol. 8 Vndur a brod banke bi a Bourne syde. **c1440** *Bone Flor.* 609 Ranne bowrnes all on blode. **1576** LAMBARDE *Peramb. Kent* (1826) 260 Sundry smal brookes, or boornes. **1612** DRAYTON *Polyolb.* 3 The Bournes, the Brooks, the Becks, the Rills, the Rivilets. **c1630** RISDON *Surv. Devon* §281 (1810) 292 Whereout..a spring breaketh, by some called a borne. **1634** MILTON *Comus* 313 And every bosky bourn from side to side. **1657** HOWELL *Londinop.* 10 Those ancient and present Rivers, Brooks, Boorns



Bootlesse 2. Without help or remedy; incurable, remediless, helpless.

1228 in *Mem. Ripon* (1882) I. 52 In pna quæ vocatur boteles. **c1350** *Will. Palerne* 3984 It is a botles bale..to willne after a wif at is a waywarde euere. **1567** DRANT *Horace Sat.* ii. (R.), That were a bootlesse case. **1659** SPRAT *Plague Athens* (R.), They saw the city open lay, An easy and a bootless prey.

Blanco Marie Butler uses this term to describe boiling a liquid in a double container to prevent the burning or scorching of the liquid being boiled.

Blowing The action of blossoming or blooming. **b.** A bloom or blossom

c1380 WYCLIF *Serm. Sel. Wks.* I. 220 e blowing of es fruitys must faile.. **1797** HOLCROFT *Stolberg's Trav.* (ed. 2) III. lxix. 58 Flowers..whose periodical blowing is advertised in our newspapers.

Boulter 2. A piece of cloth used for sifting; a sieve, strainer; a bolting-machine. **b.** The fabric used for this purpose. **1612** *Naworth Househ. Bks.* 43, Iij yardes of boulter ijs. *vjd.* **1754** *Stow's Surv.* (ed. Strype) II. V. xviii. 382/2 [Duty on] Bolters and Bewpers the dozen pieces *ld.* **1530** PALSGR. 462/1, I boulte meale..in a boulter.

Borderers . One who dwells near the border of a country or district; *spec.* one who dwells near the border of England and Scotland.

1494 FABYAN VII. ccxxxvi. 274 A great parte of Northumberlonde, the whiche he hadde wonne from the borderers. **1513** BP. RUTHALL *to Wolsey* in *Nat. MSS.* II. 8 [They] dare not trust the borderers which be falser than Scottes, and have doon mor harme at this tyme to our folkes. **1599** SHAKES. *Hen. V.* I. ii. 142 A Wall sufficient to defend Our in-land from the pilfering Borderers. **1805** SCOTT *Last Minstr.* III. vi, Stern was the dint the Borderer lent. **1839** STONEHOUSE *Axholme* 63 Inhabitants of the Isle, or Borderers, as they are termed in the Inquisition of 1607.

Brake 2. A framework intended to hold anything steady; a frame in which a horse's foot is placed when being shod; also in *Ship-building* (see quot.).

1609 C. BUTLER *Fem. Mon.* v. (1623) Kij, Then make a Brake behind the stoole of foure stakes, 2 two foot, and 2 foure feet long.

Cacexies **a.** Chance, hazard, hap. A hazardous happening

1340-70 *Alisaunder* 24 Case fell, at this Kyng Was with siknes of-sought. **1375** BARBOUR *Bruce* II. 24 He tauld hys brodyr halyly..how he chapyt wes throw cass. **c1440** *Gesta Rom.* lii. 230 (Harl. MS.) Fel cas, that ther was a knyamid andronicus. **1483** CAXTON *Gold. Leg.* 237/3 And thus by cacse of fortune..she toke the body of the prothomartir.

Castlings 1. That casts, in various senses of the vb. **a. trans.** Of a bow, etc.: Throwing, shooting (see also quot. 1483). **b. intr.** Of bees: Swarming.

a1300 *Cursor M.* 26020 is reuth es like a castand gin. **1483** *Cath. Angl.* 55 Castynge as a bowe, *flexibilis*. **1485** CAXTON *Higden* V. xiv. (1527) 201 A wonder fell man and ferre casting. **1545** R. ASCHAM *Toxoph.* I. (Arb.) 29 Except they be..vnbent like a good casting bowe. **1565-78** COOPER *Thesaur.* *Acer arcus*, a strong or quicke casting bowe. **1627** DRAYTON *Agincourt* 28 Like casting Bees that they arise in swarmes.

Cephen A drone-bee larva or drone bee.

[**1601** HOLLAND *Pliny* I. 318 The Drones at the beginning be termed Sirenes or Cephenes.] **1609** C. BUTLER *Fem. Mon.* I. (1623) Cijj, They will..call out the Drones, yea and pull out the Cephenes that are shut vp in the cells. **1657** S. PURCHAS *Pol. Flying-Ins.* 21 They lay their **Cephen**-seeds in a wide comb by themselves.

Cerat A kind of stiff ointment composed of wax together with lard or oil and other ingredients.
1543 TRAHERON *Vigo's Chirurg.* VIII. 199 The description of Oyntments, Cerates, Playsters, etc. **1658** ROWLAND *Moufet's Theat. Ins.* 916 It [wax] is also the ground of all Cerats and Plaisters. **1810** HENRY *Elem. Chem.* (1840) II. 294 Fixed oils unite with wax, and form..cerates.

Cerecloth 2. used as a plaster in surgery;

1609 C. BUTLER *Fem. Mon.* x. (1623) Zijj, A Cere-cloth to refresh the wearied Sinewes and tired Muscles. **1625** DONNE *Serm.* 663 A Sear-Cloth that Souples all bruises. **1667** PEPYS *Diary* 14 July, I..did sprain my right foot..To bed, & there had a cerecloth laid to my foot.

Chirurgians One whose profession it is to cure bodily diseases and injuries by manual operation;

1297 R. GLOUC. 566 Maister Philip Porpeis, at was a quointe man, & hor cirurgian. **c1386** CHAUCER *Melib.* 45 (Harl. MS.) A sirurgien..up ros, and to Melibeus sayde, etc. [*Of 6-text*, 2 *MSS.* have sirurgien; 2 surgien; 1 surgen; 1 surgeon; 1 surgeon.] **14..** J. ARDERNE in *Rel. Ant.* I. 191 To aske counsell at all the lechez and cerurgienz that he myghte fynd. **1530** PALS. 455, I bynde with a clothe as a cirurgyen dothe his pacyentes sore.

Clensieve A fine sieve or strainer of fine muslin.

1609 C. BUTLER *Fem. Mon.* (1634) 157 Let the pure hive-honey run thorow a clean Clensieve. *Ibid.* x. (1623) Xj, The Clensieve is vnto the Tap-waze for Methe, as the Strainer to the Ridder for Honie.

A correspondent, Mr. A. Wallis, remembers *clensieve* or *clensiff*, applied **a1850** to a strainer of fine muslin, used in straining port wine. Cf. the following:[**c1460** *Medulla* in *Prompt. Parv.* 79 *Colum.* a clansynge syfe. **c1475** *Pict. Vocab.* (Wr.-Wülcker 808) among instruments of the Brewer, *Colatorium*, a clenynge sefe. **1879** G. F. JACKSON *Shropsh. Word-bk.* 81 *Clansing-sieve*, a large sieve used in brewing to strain the hops from the wort.]

Cloomed Adhesive mud or clay.

1609 C. BUTLER *Fem. Mon.* (1634) 41 Keep the Hives always close..The best Cloom, for that purpose, is made of neats dung. **1669** WORLIDGE *Syst. Agric.* ix. §3 (1681) 184 Wiker-Hives made with spleets of Wood, and daubed with Cow-cloom tempered for that purpose.

Cop 2. A round piece of wood within the top of a bee-hive.

1609 C. BUTLER *Fem. Mon.* (1634) 37 The Cop is a round piece of wood an inch or two thick..convex, turned or hewed fit to the concavity of the top of the Hive.

corre *gen.* The Celtic word for a shouting of many, an outcry.

Forms: 6 corrynogh, **corre-**, corri-, corynoch, 7 corronach, corinoch, coranough, 8 cronach, coranich, 9 coranoch, 8- coronach.

1500-20 DUNBAR *Dance Sevin Deidly Synnis* 112 Be he the Correnoch [*Maitl. MS.* corynoche] had done schout, Erschemen so gadderit him abowt.

Cowl-staffe. A pole used by two men to carry an object between them 1. A tub or similar large vessel for water, etc.; *esp.* applied to one with two ears which could be borne by two men on a cowl-staff. *arch.* or *dial.*

c1250 [in **COWL-STAFFE**]. **1297** R. GLOUC. (1724) 265 In lepes and in coufles [*v rr.* **c1400** kouueles, 15th c. cowles, couelle] so muche vyss [= fish] hii solde hym brynge, at ech man wondry ssal of so gret cacchyng. **c1430** *Pilgr. Lyf Manhode* III. lx (1869) 171 A kowuele ther was bi nethe, that resceyuede alle the dropses. *Ibid.* lxii. 173 Cowuele. **c1440** *Prompt. Parv.* 97 Cowle, vesselle, *tina.* 12 The Cowl is a water-vessel borne by two persons on the cowl-staff. **1883** *Fisheries Exhib. Catal.* (ed. 4) 127 Cowel for carrying fish. **1888** ELWORTHY *W. Somerset Word-bk.*, *Cowl*, a tub or barrel swung on a pole, or more commonly mounted as a wheel-barrow, used for carrying pigs'-wash or liquid manure.

Cypres Band 1. The henna-shrub (*Lawsonia alba* or *inermis*), with fragrant white flowers, found in the Levant.

1748 *Phil. Trans.* 566 The Cyprus grows..as a Shrub of ten or fifteen Feet in Height, and has very much the Appearance of Privet.]

Damascens 3. *damascene plum*: 1. A small plum, black or dark purple, the fruit of *Prunus communis* or *domestica*, variety *damascena*, which was introduced in very early times into Greece and Italy from Syria.

Deal 1. A slice sawn from a log of timber (now always of fir or pine), and usually understood to be more than seven inches wide, and not more than three thick; a plank or board of pine or fir-wood. In the timber trade, in Great Britain, a *deal* is understood to be 9 inches wide, not more than 3 inches thick, and at least 6 feet long. If shorter, it is a *deal-end*; if not more than 7 inches wide, it is a **BATTEN**. In N. America, the standard deal (to which other sizes are reduced in computation) is 12 feet long, 11 inches wide, and 2 inches

thick. By carpenters, deal of half this thickness (1 inches) is called **whole deal**; of half the latter (inch) **slit deal**. The word was introduced with the importation of sawn boards from some Low German district, and, as these consisted usually of fir or pine.

Divers Different or not alike in character or quality; not of the same kind. *Obs.* in this form since c1700, and now expressed by [DIVERSE](#)

1625 (*title*) Free Schoole of Warre, or a Treatise whether it be lawful to beare Arms for the Service of a Prince that is of divers Religion.

Dog daies **1.** The days about the time of the heliacal rising of the Dog-star; noted from ancient times as the hottest and most unwholesome period of the year.

They have been variously calculated, as depending on the greater dog-star (Sirius) or the lesser dog-star (Procyon); on the heliacal, or (by some in modern times) the cosmical rising of either of these (both of which also differ in different latitudes); and as preceding, following, or both preceding and following, one of these epochs; and their duration has been variously reckoned at from 30 to 54 days. In the latitude of Greenwich, the cosmical rising of Procyon now takes place about July 27, that of Sirius about Aug. 11; in Mediterranean latitudes, the former is somewhat later, the latter earlier. The heliacal rising is some days later than the cosmical; and all the phenomena now take place later in the year than in ancient times, owing to the precession of the equinoxes. Thus very different dates have been assigned for the dog-days, their beginning ranging from July 3 to Aug. 15. In current almanacs they are said to begin July 3 and end Aug. 11 (i.e. to be the 40 days preceding the cosmical rising of Sirius).

Dorre Describes a humble bee

Dram A weight, orig. the ancient Greek [DRACHMA](#); hence, in Apothecaries' weight, a weight of 60 grains = of an ounce; in Avoirdupois weight, of 27 grains = of an ounce; = [DRACHM](#) **3. a.** A fluid dram (= fluid ounce) of medicine, etc.; hence **b.** A small draught of cordial, stimulant, or spirituous liquor.

c1440 *Promp. Parv.* 130/2 Drame, wyghte, *drama*, *dragma*. **1555** EDEN *Decades* 12 Stones of gold weighing .x. or .xii. drammes. **1601** SHAKES. *All's Well* II. iii. 233 Yes good faith, eu'ry dramme of it, and I will not bate thee a scruple. **1741** *Compl. Fam. Piece* I. i. 27 A Dram of Saffron, tied in a Rag. **1892** W. K. BURTON *Mod. Photogr.* (ed. 10) 17 Four ounces of sulphide of soda..one dram of citric acid.

Dregs The most worthless part or parts; the base or useless residue; the refuse or offscourings.

1531 ELYOT *Gov.* I. xiv. They..neuer tasted other but the fecis or dragges of the sayd noble doctrines. **1546** *Supplic. Poore Com.* (E.E.T.S.) 65 Symple creatures..taken for the dregges of the worlde. **1581** J. BELL *Haddon's Answ. Osor.* 358 Traditions of men: Mounckish vowes..pilgrimages, and innumerable such dredge. **1675** TRAHERNE *Chr. Ethics* ix. 121 Matter is the dreg of nature, and dead without power

Dressed Straightened (*obs.*); prepared; clothed, attired, etc.

1382 WYCLIF *Luke* iii. 5 Schrewide thingis schulen be in to dressid thingis. **1526** *Pilgr. Perf.* (W. de W. 1531) 99 Delycates or deynty dressed meates.

Drone Pot A pot used to catch **1.** The male of the honey-bee. It is a non-worker **2. fig. a.** A non-worker; a lazy idler, a sluggard

c1000 ÆLFRIC *Voc. in Wr.-Wülcker* 121/10 *Fucus*, dran. **a1100** *Ags. Voc.* Ibid. 318/35 *Fucus*, dræn. **a1131** *O.E. Chron.* an. 1127, Swa drane doth in hiue. **c1394** *P. Pl. Crede* 726 As dranes do nou t but drynke vp e huny. **c1440** J. CAPGRAVE *Life St. Kath.* IV. 21 Dranes loue weel reste. **1531** ELYOT *Gov.* I. ii. If any drane or other unprofitable bee entreth in to the hyue. **1523** FITZHERB. *Husb.* §122 There is a bee called a drone, and she..wyll eate the honny, and gather nothyng. **1607** HIERON *Wks.* I. 389 It helpeth not the droane, but the bee. **1637** HEYWOOD *Dial.* Wks 322 The Bee makes honey till his sting be gone, But that once lost, he soone becomes a Drone

Dross In general: Refuse; rubbish; worthless, impure matter.

c1440 *Promp. Parv.* 133/1 Drosse, or fylthe..qwat so it be, *ruscum*, *rusculum*. **1596** DALRYMPLE tr. *Leslie's Hist. Scot.* IX. 200 His chambre..with the tempest was dung in dros. **1632** G. FLETCHER *Christ's Flegmaticke B.* Signification. **1.** The thick viscid fluid or semifluid substance secreted by the mucous membranes, esp. of the respiratory passages; mucus. **a.** In old physiology, regarded as one of the four bodily 'humours', described as cold and moist, and supposed when predominant to cause constitutional indolence or apathy.

b. In modern (or corresponding early) use; esp. when morbid or excessive, and discharged by cough, etc. Now chiefly in popular use, and no longer applied to the mucus of the nasal passages. So mod.F. *flegme* (dial. *fleume*, *flume*).

Emets **1. a.** A synonym of [ANT](#). Chiefly *dial.*, but often used *poet.* or *arch.* horse-emmet, the Wood Ant (*Formica rufa*).

1779 JOHNSON *Life Pope* Wks. IV. 99 Looking on mankind..as on emmets of a hillock. **1802** BINGLEY *Anim. Biog.* (1813) III. 293 The horse-emmet, or great hill-ant.

Exsection The action of cutting out or away; an instance of this.

1607 Schol. *Disc. agst. Antichr.* I. iv. 174 Instrumentes of exsection. **1609** C. BUTLER *Fem. Mon.* (1634) 155 Exsection..is the cutting out of part of the Combs. **1671** BOYLE *Usefulness Nat. Philos.* (1772) II. v. xii, The exsection of the spleen. **1794** E. DARWIN *Zoon.* I. 151 The heart of a viper or frog will renew its contractions..for many minutes of time after its exsection from the body. **1889** Syd. Soc. *Lex.*, *Exsection*, a cutting out.

Flockes Forms: 3-5 **flokke**, 3-6 **flocke**, 6- **flock**.

1. A lock, tuft or particle (of wool, cotton, etc.). As a type of something valueless or contemptible: **c1440** *Promp. Parv.* 167/2 Flokkys of wulle or oer lyke, *floccus*. **1563** W. FULKE *Meteors* (1640) 48 They look white, like flocks of wooll. **1592** LYL Y *Midas* IV. ii, I will never care three flocks for his ambition. **1705** W. BOSMAN *Guinea* 250 A sort of Hair as thick set as Flocks of Wool.

Fortnight **1.** A period of fourteen nights; two weeks.

a1000 *Laws of Ina* §55 O æt feowertyne niht ofer Eastron. **c1275** LAY. 25675 Nou his folle fourteeniht [c1205 feowertene niht] at he hire haue i-holde for riht. **13..** *Guy Warw.* (A.) 4236 Al a fourten ni t sike he lay.

Fustian **1.** Formerly, a kind of coarse cloth made of cotton and flax. Now, a thick, twilled, cotton cloth with a short pile or nap, usually dyed of an olive, leaden, or other dark colour.

c1386 CHAUCER *Prol.* 75 Of fustyan he wered a gepoun. **c1450** *Merlin* 279 His clothinge was blakke fustyan with bendes on the sleues.

Gargil The gullet.

Gawns as in ____ gawns **1.** A gallon.

1565 in T. Sharp *Diss. Cov. Myst.* (1825) 50 It' payd for iij gawnes of ale in the pagiand. **1609** C. BUTLER *Fem. Mon.* iii. (1623) Eiv, The abating of one inch in each dimension, abateth a gawne in the content. **1691** WOOD *Ath. Oxon.* II. 379 His fare was course, his drink of a penny a gawn or gallon.

Grin **1.** A snare for catching birds or animals, made of cord, hair, wire, or the like, with a running noose. *Obs. exc. dial. or arch.*

Groat Its standard seems to have been in the 14th c. theoretically one-eighth of an ounce of silver; but its actual intrinsic value varied greatly in different countries and at different periods. (The adoption of the Du. or Flemish form of the word into English shows that the 'groat' of the Low Countries had circulated here before a coin of that denomination was issued by the English sovereigns.) **a shilling, pound of groats**: a Flemish money of account bearing the same proportion to the ordinary 'shilling' or 'pound' as the groat or 'thick penny' did to the ordinary penny.

2. The English groat coined in 1351-2 was made equal to four pence. This ratio between the groat and the penny continued to be maintained; but owing to the progressive debasement of both coins, the 'old groats' which remained in circulation were valued at a higher rate (see quots. 1465, c1483, also 1552 in b). The groat ceased to be issued for circulation in 1662, and was not afterwards coined under that name. The 'fourpence' (popularly 'fourpenny bit,' 'fourpenny piece'), which was issued from 1836 to 1856 (and after 1888 reissued for colonial circulation) was occasionally called a 'groat,' but the name was neither officially recognized nor commonly used. The Scottish fourpenny piece, first struck in 1358, is called a 'groat' (AF. *grote*) in an English Act of 1390, and this name was used in Scotland itself in the 15thc. Its value was already only 3d. English in 1373, and 2d. in 1390; later it fell much lower. In Ireland the groat was first struck in 1460.

Hackle 3. a. The conical straw roofing of a bee-hive. b. The straw covering of the apex of a rick. c. The case of a Florence flask.

1609 C. BUTLER *Fem. Mon.* (1634) 26 Swine..rubbing against the hives, and tearing the hackles. 1655 W. MEWE *Let. to Hartlib in Ref. Commw. Bees* 49 My Appiary consists of a row of little houses..which I find as cheap at seven yeares end as straw hacles. 1713 J. WARDER *True Amazons* 44 The Mouse will..shelter himself betwixt the Hackle and the Hive.

Harbingers 2. One sent on before to purvey lodgings for an army, a royal train, etc.; a purveyor of lodgings; in *pl.*, an advance company of an army sent to prepare a camping-ground; a pioneer who prepares the way. *Hist. and arch.* **Knight Harbinger**: an officer in the Royal Household (the office was abolished in 1846).

1386 CHAUCER *Man of Law's T.* 899 The fame anon thurgh out the toun is born..By herbergeours [*v.r.* -jours], that wenten hym biforn.

Hey 1. A country dance having a winding or serpentine movement, or being of the nature of a reel. 1529 SKELTON *Agst. Garnesche* 170, I cannot let thè the knave to play To dauns the hay and run the ray. 1549 *Compl. Scot.* vi. 66 Thai dancit al cristyn mennis dance, the northt of scotland..ihonne ermistrangis dance, the alman haye, the bace of voragon, [etc.]. One of the most pleasing movements in country-dancing..is what they call 'the hay': the figure of it, altogether, is a cypher of S's, or a number of serpentine lines interlacing or intervolving each other.

Hir obs. ME. form of [HER](#)

Hony 1. a. A sweet viscid fluid, of various shades from nearly white to deep golden, being the nectar of flowers collected and worked up for food by certain insects, esp. the honey-bee.

Forms: . 1 huni , hunæ , 3 huni , 3-4 huni, (uni), 4-5 huny, (4 houny, 5 Sc. hwnie, -ny), 6-7 hunny. . 4-7 honi, (5 ony, hoony), 4-8 hony, 5-6 honye, 5- honey, (6-7 honie, honnie, honny). . Sc. and north. 7- hinny, -ie, -ey.

1508 FISHER *7 Penit. Ps.* cxxx. Wks. (1876) 227 O swete wordes, more sweter than hony and suger. 1563 WIN ET Wks. (1890) II. 48 Quhais speche wes..nocht wordis sa mekle as certane hwnie. 1582 T. WATSON *Centurie of Love* xii. Poems (Arb.) 48 Hunny mixt with gall. 1590 SPENSER *F.Q.* II. iii. 24 Sweete wordes, like dropping honny, she did shed. 1611 BIBLE *Exod.* iii. 8 A lande flowing with milke and hony..

Hony - dewes 1. A sweet sticky substance found on the leaves and stems of trees and plants, held to be excreted by aphides: formerly imagined to be in origin akin to dew.

2. An ideally sweet or luscious substance; often, like dew, represented as falling: sometimes applied to the nectar of flowers or to honey itself.

1577 B. GOOGE *Heresbach's Husb.* IV. (1586) 180b, The leaves..bedewed with Hony..In the morning, our common people call it Manna, or Hony dewe, cleaving to the leaves before the rising of the sunne.. 1657 S. PURCHAS *Pol. Flying-Ins.* 133 Pliny affirmed the Hony-dew to bee either the sweat of the heaven, or the slaver or spittle of the stars, or the moisture of the aire purging it self.

Hybla Of or pertaining to the town of Hybla in Sicily, celebrated for the honey produced on the neighbouring hills; hence *poet.*, honied, sweet, mellifluous. 1614 T. ADAMS *Devil's Banquet* 17 Not the Hyblæan Nectar of heauen, whereof, he that drinks, shall neuer thirst againe. 1682 TATE *Abs. & Achit.* II. 1123 Thronging and busy as Hyblæan swarms. 1742 YOUNG *Nt. Th.* II. 536 From friendship..The Wise extract Earth's most Hyblean Bliss. 1880 SWINBURNE *Study Shaks.* 201 Golden and Hyblæan elequence!

Hymettus Of or belonging to Mount Hymettus in Attica, famous in antiquity for its honey and marble; hence *poet.* honeyed, sweet (cf. [HYBLÆAN](#)).

1601 HOLLAND tr. *Pliny's Nat. Hist.* XVII. i. 499 Foure goodly pillars of Hymettian Marble. 1658 J. ROWLAND tr. *Moufet's Theater of Insects* 908 He that will make a good mixture of wine and honey, must mingle with new Hymettian Honey, old Falernian Wine. 1795 COLERIDGE *To R. B. Sheridan in Poetical Works* (1912) I. 88 Thy temples with Hymettian flow'rets wreath'd.

Jawes Yellowish.

1. A morbid condition caused by obstruction of the bile, and characterized by yellowness of the conjunctiva, skin, fluids, and tissues, and by constipation, loss of appetite, and weakness.

Three varieties (*yellow*, *black*, and *green*) are recognized and distinguished according to the colour of the skin in each case. Yellow vision, often referred to as a characteristic of this state, though the source of much literary allusion, occurs only in rare instances.

b. Applied to other diseases in which the skin is discoloured or which resemble jaundice in some way, as *white jaundice*

Kiver, keuer A shallow wooden vessel or tub.

1407 in Kennett *Par. Ant.* (1818) II. 212 Et pro novo Cowele empto, ix^d. Et pro novo Keverem empto, viii^d. **1609** C. BUTLER *Fem. Mon.* x. 1, Wiping the Bees,...into a keuer or other vessel. **1610** *Althorp MS.* in Simpkinson *The Washingtons* (1860) p. vii, Itm little keavers...**1676** WORLIDGE *Cyder* (1691) 109 Either a tub or kiever or else a square chest. **1706** PHILLIPS, *Keeve* or *Keeper*, a kind of Tub

Lanthorne-hive 1. a. A transparent case, e.g. of glass, horn, talc as in a transparent hive. Forms: 3-4 lanter(e), 4-6 launtern(e), 4-7 lanterne, (4 -tirne, 4-5 -tyrne, 5 -tarne, laterne), 5 lantane, lawnterne, -tryn, 5-6 lantron, 6 lantren, -trin, -turne, 6-7 *lanthorne*, 8-9 lanthern, 6-9 lanthorn, 4- **a1400-50** Alexander 5398 Lit lemand een as lanterns he had. **c1470** HENRY Wallace XI. 1255 Lyk till lawntryns it illuminyt so cler. **1587** FLEMING *Contn. Holinshed* III. 376/2 The said lanthorne to be maintained by those two widowes that shall haue the hanging of them out. **1615** CROOKE *Body of Man* 460 It is like a sliuer of the Muscouy glasse whereof we vse to make Lanthorns. **1635** QUARLES *Embl.* V. xii. 289 Alas, what serves our reason, But, like dark lanthornes, to accomplish Treason With greater closenesse?

Lee-sides a. That side of any object which is turned away from the wind. Opposed to *weather-side*.

1577-87 HOLINSHED *Chron.* III. 815/2 The Carrike was on the weather side, and the Regent on the lie side. **1609** C. BUTLER *Fem. Mon.* i. (1623) Civ, They fly alow by the ground..in the..lee-sides of the hedges of the prevailing winds.

Litch 1. A handful (of reeds, etc.); a bundle (of cords, yarn, etc.). In mod. use, 'a tangled mass' (*Eng. Dial. Dict.*).

1538 ELYOT *Dict.*, *Thomices*, lyches of hempe wherwith halters are made. **1552** HULOET, Liches or linckes of cordes, halters, or ropes, *thomices*. **1609** C. BUTLER *Fem. Mon.* (1634) 39 Being thus prepared, take out of that wet bundle a litch of 40 or 50 reeds or straws.

Lute 1. Tenacious clay or cement composed of various ingredients, and used to stop an orifice, to render air-tight a joint between two pipes, to coat a retort, etc., and to protect a graft. Also with *a* and *pl.* a particular kind of this substance. *lute of wisdom* [= med.L. *lutum sapientæ*], a composition for hermetical sealing, variously described by alchemists. *fat lute* (see quot. 1836-41).

1599 A. M. tr. *Gabelhouer's Bk. Physicke* 57/1 Put it in a glass, agglutinate the same, with a lute made for that purpose. **1605** TIMME *Quersit.* III. 193 The ordinary lutes wherewith to stop vessels of glasse against faint vapours are these. **1660** SHARROCK *Vegetables* 68 Lute is made with horse-dung and stiff clay well mix'd together. **1662** R. MATHEW *Unl. Alch.* §89. 151 Take a good Retort of Glass, and put on it a good coat of strong Lute made of Blood, Lome, Hair, and sharp Sand

Marchpane 1. Originally: a flat disc of marzipan mounted on wafers and usually decorated with motifs made from similar paste or other materials (by the 18th cent. often iced with sugar and mounted on a rich fruit cake, esp. a bridecake). Subsequently: a cake or sweet made of marzipan; = *MARZIPAN* *n.* **1516** R. FABYAN *New Chron. Eng.* (1811) VII. 587 A march payne garnysshed with dyuerse fygures of aungellys. **1517** R. TORKINGTON *Diarie* (1884) 13 The Duke sent to the Pilgrims gret basons full of Marchepans. **1548** N. UDALL et al. tr. Erasmus *Luke in Paraphr. New Test.* vii. 25 Wylde honey and locustes hathe he preferred before the martspaines and other swete delycates of kynges. **1600** R. SURFLET tr. C. Estienne & J. Liebault *Maison Rustique* V. xxii. 723 Marchpanes are made of very little flower, but with addition of greater quantitie of filberdes, pine nuts, pistaces, almonds, and rosed sugar.

Marvaile 2. a. A wonderful or astonishing thing; a cause of surprise, admiration, or wonder; a wonder. Recorded earliest in *it is marvel*: see sense 5a.

Melissaeen Year Pertaining to bees. See appendix III

1609 C. BUTLER *Fem. Mon.* (1634) 44 The Melissæan year is most fitly measured by the Astronomical months.

Moities obs. ff. *MOIETY* 1. A half, one of two equal parts: a. in legal or quasi-legal use.

1444 *Rolls of Parlt.* V. 104/2 Ye to have the oone moite yerof, and he that espieth..hit forfaitable, to have the oyer moite. **1545** *Test. Ebor.* VI. 224 The moitie or half pairte of the mannor.

Mundifie Cleansed; *spec.* (of a seed, etc.) having the husk or other covering removed.

c1425 tr. J. Arderne *Treat. Fistula* (Sloane 277) 27 Considere e lech bisily e wounde ymundified if it be wele

tretable and with-out hardnes. **1558** W. WARDE tr. 'Alessio' *Secretes* (1568) 3 Pine apple kernelles mondified. **1566** T. BLUNDEVILLE *Curing Horses Dis.* f. 6^v, in *Fower Chiefyst Offices Horsemanshippe*, Giue him..barly faire sifted, and wel soden and also mundified, that is to say, the huske pulled away, lyke as when you blanch Almondes.

Musicke The word has often been used specifically to denote the art of musical performance, sometimes with particular reference to instrumental performance, although contextually it can denote other branches, as composition, musicology, etc.

Forms: ME *musiqe*, *musycque*, *mvsik*, ME, 16 *musice*, *musyque*, ME-15 *musyk*,

Must **2. a.** Any juice or liquid undergoing or prepared for alcoholic fermentation; the juice of any fruit.

Obs. 2. a. Any juice or liquid undergoing or prepared for alcoholic fermentation; the juice of any fruit.

a1382 *Bible* (Wycliffite, E.V.): *Song of Sol.* (Bodl. 959) viii. 2, I shal yuen to ee drinken of spiced wyn & of e must [L. *mustum*] of my poungarnetis. **a1398** J. TREVISA tr. Bartholomaeus Anglicus *De Proprietatibus Rerum* (BL Add.) f. 245^v, A Busshe hatte Rubus..and e fruyte er of is furst rede... The muste [L. *succus*] erof is reed and deynteth and dyeth as blood.

Nether ends Lower, under (in contrast to *higher*, *over*, or *upper*).

1. With partitive terms, esp. *part* or *end*. Also (in OE.) *absol.* in *pl.*

. **1570** BILLINGSLEY *Euclid* XI. xxix. 341 Lines..which ioyn together the angles of the vpper and nether bases. **1604** E. G[RIMSTONE] *D' Acosta's Hist. Indies* II. xii. 108 Experience dooth teach vs, that the middle region of the ayre is colder than the neather.

Niter Wine which is full of air bubbles, either through being naturally sparkling or from having been freshly poured.

a1700 B. E. *New Dict. Canting Crew*, *Nit*, wine that is brisk, and pour'd quick into a Glass.

Noisome Noysomenesse **1.** Harmful, injurious, noxious. *Obs.* **2.** Annoying, troublesome. **3.**

Disagreeable, unpleasant, offensive **4.** Offensive to the sense of smell; foul-smelling

1609 P. HOLLAND tr. A. Marcellinus *Rom. Hist.* XXII. v. 193 No savage beasts are so noisom and hurtful to men, as Christians are to themselves. **1650** T. VENNER *Via Recta* 98 All fat is of itself ill and noysome to the stomach. **a1450** *York Plays* 277 A noysomemare note newly is noysed. **1542** *Lamentable & Piteous Treat.* in *Harl. Misc.* (1745) IV. 511 The Waye is altogeth in a Maner noysome, croked ouertwhart, and in many Places narowe.

Nonce **1. for the nonce. a.** For the particular purpose; on purpose; expressly. Freq. with infinitive or clause expressing the object or purpose. In quot. 1949: for the purpose of teasing or joking; for its own sake. Now *Eng. regional* (*south.*) and *Sc.*

a1200 *Ormulum* 7160 Wel itt mihhte ben att he Wass gramm..All forr e naness, forr att he Swa wollde don hiss lede To ben all ess te mare offdredd. **a1225** *MS Trin. Cambr.* in R. Morris *Old Eng. Homilies* (1873)

Nymphes **3. a.** An insect in that stage of development which intervenes between the larva and the imago; a pupa. Authors note: As used by Butler, it is used to describe very young adult honey bees.

1577 B. GOOGE *Heresbach's Husb.* IV. (1586) 185b, The other common sort, when they begin to haue fashion, are called nimphes. **1609** C. BUTLER *Fem. Mon.* (1634) 28 The young weak nymphs falling in those shady places..are in danger to be chilled. **1658** ROWLAND tr. *Moufet's Theat. Ins.* 898 At length they grow to be Nymphs, *i.e.* little Bees, but without wings.

Palats An Austrian dish of stuffed pancakes. Pancakes stuffed with jam which one eats all over Central Europe.

Paucine **1.** Smallness of number; fewness; a small number. **2.** Smallness of quantity; scantiness.

a1425 *Found. St. Bartholomew's* (E.E.T.S.) 35 Whom the grace of God from the forsayid paucyte encresid yn- to .xxxv.¹⁰. **1566** *Form Com. Prayer in Liturg. Serv. Q. Eliz.* (Parker Soc.) 534 That they, neither respecting their own weakness and paucity..may by thy power obtain victory.

Pearch .A rod of a definite length used for measuring land, etc.; hence **a.** A measure of length, esp. for land, palings, walls, etc.; in Standard Measure equal to 5 yards, or 16 feet, but varying greatly locally: see quotes. Also called **POLE** or **ROD**.

1542 *RECORDE Gr. Artes* (1575) 207, 5 yardes and a halfe make a Perche. **1669** *WORLIDGE Syst. Agric.* (1681) 330 A Perch, or Lug is sixteen foot and a half Land-measure, but is usually eighteen foot to measure Coppice-woods withal. **1672** *PETTY Pol. Anat.* (1691) 52 The Perch of Ireland is 21 Foot. **1763** *Museum Rust.* I. lxxiii. 315 Besides these statute measures, there are in England what may be called customary perches,

differing one from the other in length in various counties. **a1850** JAS. GRAY *Introd. Arith.* (ed. 100) 8, *Tables*, 5 Yards = 1 Pole or Perch.

Penurie of Winter 1. The condition of being destitute of or straitened in the necessities of life; destitution, indigence, want; poverty.

1432-50 tr. *Higden* (Rolls) V. 51 Origenes, lefte in grete pennury [*in summa penuria*], helde a scole of grammar at Alexandrye. **c1489** CAXTON *Sommes of Aymon* iv. 121 Late vs goo agenst her..and tell her our grete penurye and our nede.

Phthisis A progressive wasting disease; *spec.* pulmonary consumption: see quot. 1873 **b.** With defining word, applied to tuberculosis of various organs.

Pipins 2. **a.** The name of numerous varieties of apple, raised from seed.

Poising To weigh or balance

7. *intr.* for *refl.* To be balanced or held in equilibrium; to hang supported or suspended; to balance itself in the air, to hover. Also, to hover or be poised in readiness *for* (something). Hence **poised** *ppl. a.*, balanced, etc. (in quot. **a1643**, weighted, loaded); also, of persons, their behaviour, etc.: composed, self-assured; **poising** *vbl. n.* (also *attrib.*) and *ppl. a.*, balancing, weighing, hovering, etc. (see senses above).

1545 ELYOT, *Ascalon*, an hebrue woorde, signifieth a poysyng, or a balance. **a1643** W. CARTWRIGHT *Ordinary* II. iii. Your poyz'd dye That's ballasted with quicksilver or gold Is grosse to this. **1697** DRYDEN *Virg. Georg.* II. 344 The heavier Earth is by her Weight betray'd, The lighter in the poising Hand is weigh'd.

Polyarchie 1. The government of a state or city by many: contrasted with *monarchy*.

1609 C. BUTLER *Fem. Mon.* (1634) 5 The Bees abhor as well Polyarchy as Anarchy. **1686** J. SCOTT *Chr. Life* (1696) 56 Any Government..whether it be Monarchy or Polyarchy. **1890** J. H. STIRLING *Gifford Lect.* viii. 153 Polyarchy is anarchy.

Princes Also 5 **prinses**, *Sc.* **prynsace**, 5-7 **princes**.

I. 1. A female sovereign or ruler; a queen. *arch.*

c1470 HENRY *Wallace* VIII. 1381 Ingland sen syn has boucht it der enewch, Thocht scho had beyn a queyn or a prynsace. **1483** *Cath. Angl.* 291/2 A Pryncesse, *principissa*.

Pulse 2. **a.** Plants yielding pulse; esculent leguminous plants. 1. The edible seeds of leguminous plants cultivated for food, as peas, beans, lentils, etc. **a.** *collect. sing.*: sometimes const. as *pl* **1388-9** *Abingdon Acc.* (Camden) 53 Et de xij d. de stramine puls' vendito. **1542** UDALL *Erasm. Apoph.* 304 Deriued of the moste vsed Poultz called cicer. **1555** EDEN *Decades* 260 All kyndes of pulse, as beanes, peason, tares, and suche other. **1697** DRYDEN *Virg. Georg.* I. 110 Where Vetches, Pulse, and Tares have stood, And Stalks of Lupines grew.

Quodling obs. form of **CODLING**², apple, etc.

From the beginning the name seems to have been applied to a hard kind of apple, not suitable to be eaten raw; hence to any immature or half-grown apple. In the beginning of the 17th c. it was applied to a variety suitable to be cooked while still unripe; but the peculiar codling shape appears to have determined the modern application.

Rathe 2. **a.** Done, occurring, coming, etc., before the usual or natural time; early.

Originally with *too*: cf. **RATHE** **b.** esp. of fruits, flowers, etc., which grow, bloom, or ripen early in the year.

1609 C. BUTLER *Fem. Mon.* v. (1623) Iij, Those swarmes..if they be rathe, will swarme againe unless they be ouer-hiued.

Ridder A sieve or riddle.

c725 *Corpus Gloss.*, *Glebulum*, hrider. **c1000** ÆLFRIC *Hom.* II. 154 a abæd his fostormodor an hrider. **1398** TREVISA *Barth. De P.R.* XVII. cxxxvi. (Bodl. MS.), Corne is iclensed w^t seue oer widerne. **c1430** *Two Cookery-bks.* 32 Take a seve or a whete rydoun, & ley in pesyn er-on. **1619-20** in Swayne *Sarum Church-w. Accts.* (1896) 309 A sieve called a Rudder, *4d.* **1667** *Phil. Trans.* II. 527 Wash it [lead-ore] clean in a running stream; then sift it in Iron-Rudders. **1669** WORLIDGE *Syst. Agric.* 331 *Rudder*, or *Ridder*, the widest sort of Sieves for the separating the Corn from the Chaff

Reumes . = **RHEUMATIC** *a.* 1.

1592 GREENE *Upst. Courtier* Wks. (Grosart) XI. 242 The filthy reumicast of his bloudshotten snowt. **1596** P. BARROUGH *Meth. Physick* VII. v, Sirupes laxatiue for the purging..of matter that is rheumie and filthie.

Scab **a.** Disease of the skin in which pustules or scales are formed: a general term for skin diseases, but sometimes *spec.* = itch or scabies (also, *dry scab*), ringworm or tinea, syphilis; *wet scab*, eczema

Schadons The larva of a bee.

1609 C. BUTLER *Fem. Mon.* (1623) I3, The weather keeping them [*sc.* Bees] in, they can do nothing but breed and hatch their schadons. **1657** S. PURCHAS *Pol. Flying-Ins.* 71 That no schadon..can break through into a cell on the other side. **1736** BAILEY *Househ. Dict.* 93 The skaddons or young bees that are in the combs.

Sciatica A disease characterized by pain in the great sciatic nerve and its branches.

In the first quot. misapplied, perh. with jocular intention.

a1450 *Mankind* (Brandl) 484 Remembre my brokyne hede..e, goode ser, & e sytyca in my erme. **1477** *Paston Lett.* III. 215 Elisabet Peverel hath leye sek xv or xvj wekys of the seyetyka. **c1520** SKELTON *Magnyf.* 1956 Allasse, I haue the cyatyca full euyll in my hyppe! **1543** TRAHERON *Vigo's Chirurg.* V. v. 169 Nowe we wyll come to the cure of the goute (called sciatica) of the huckel bones.

Settle **1.** A sitting place. Also *transf.* and *fig.*, a 'seat', position, abode. *Obs.* **2.** Something to sit upon; a chair, bench, stool, or the like.

Beowulf 1782 (Gr.) Ga nu to setle. **a900** tr. *Bæda's Hist.* III. xiv. [xvi.] (1890) 202 Ond mon mæ en to dæ e a stowe his se les [orig. *locum sedis ejus solitariae*] on æm ilcan ealonde sceawian.

Shrewes

Forms: . 1 screuuu, screauua, scraeua, 6 shreaw, 6-7 **shrewe**, 6- shrew. . 6 shrowe, schro, 8 shrow. . 6 shyrewe, 9 *dial.* shirrow, sheroo, shorrow.

1. Any of the small insectivorous mammals, belonging to the genus *Sorex* or the family *Soricidae*, much resembling mice but having a long sharp snout; a The common European shrew is *Sorex vulgaris*.. The shrew was popularly held to be venomous and otherwise injurious; cf. *shrew ash*, *-bitten*, *-run* below.

Skimmington **1.** The man or woman personating the ill-used husband or the offending wife in the procession intended to ridicule the one or the other.

Skirt **b.** The rim or base of a bell or bee-hive.

1609 C. BUTLER *Fem. Mon.* iv. (1623) Kij, The Bees..otherwise might be prest to death betweene the two skirts. **1688** HOLME *Armoury* III. 462/1 The Skirt, the bottom of the Bell. **1707** MORTIMER *Husb.* (1721) I. 275 Some reckon it better to place the Hive..into another, in a place that the skirts may be uppermost. **1736** BAILEY *Househ. Dict.* s.v. *Bees*, When you buy a new hive, try it..whether there be not a hollowness some where or other in the skirt.

Soltice **1.** One or other of the two times in the year, midway between the two equinoxes, when the sun, having reached the tropical points, is farthest from the equator and appears to stand still, i.e. about 21st June (the summer solstice) and 22nd December (the winter solstice).

c1250 *Gen. & Ex.* 150 Two eueleng hes timen her, And two solstices in e er. **1432-50** tr. *Higden* (Rolls) I. 201 There is a welle..whiche floethe ouer with watere abowte the solstice of somer. *Ibid.* III. 51 Whiche Olimpias began in the solstice of wynter, when men of Grece begynne theire yere. **1549** *Compl. Scotl.* vi. 50 The tropic of Cancer..is the solstice of symmyr... The circle of capricorne is callit the solstice of vyntir.

Speeke ***Nardinum** **B.** *adj.* Of the nature of or relating to nard. *rare.* Oil of white Lillies. **oil nardine**, oil of nard.

1545 T. RAYNALDE tr. E. Roesslin *Byrth Mankynde* II. vi. f. 78^v, Take oyle nardine [*L. oleum Nardinum*, Ger. *öll von spicanardi*], oyle of whyte lyllies, of eche an ounce and an halfe.

Spleets A small strip of split wood or willow Hence **spleet** v.1 *trans.*, to fit (a bee-hive) with slips of wood.

1609 C. BUTLER *Fem. Mon.* iii. §9 If the hiue be then fourteene inches ouer within, it may wel receiue foure spleets. **1657** S. PURCHAS *Pol. Flying-Ins.* 60 Mr. Southern and others..advise, that if Bees finde fault with a Hive, and will not continue in it, to pull out the spleats. **a1679** SIR J. MOORE *Eng. Interest* (1703) 104 Your Hive being pruned put in your spleets. **1704** *Dict. Rust.* (1726) s.v. *Bee-hives*, Either Wicker-Hives made with Spleets of Wood,..or Straw-Hives. **1766** *Museum Rust.* VI. 2 Bind their stems together with a spleet of willow, or some tough wood. *Ibid.*

Spild Spoiled

Surfet Forms: 4 **surfeyte**, **sorfait**, 4-5 **surfaite**, **-feet**, **sorfete**, 4-6 **surfait**, 4-8 **surfet**, 5 **-fayte**, **-fett**, **-ffete**, **-phette**, 5-6 **-fete**, **-fette**, 6 **-fayt**, **-ffet**, **-fyt**, **-fecte**, *Sc.* **-phat**, 6-7 **surfit**, 7 **-ffett**, 6- **surfeit**.

1. Excess, superfluity; excessive amount or supply of something. (In later use only as *fig.* from 4.) 3. (An) excessive indulgence, (an) excess. (In later use only as *fig.* from 4, 4b.)

4. Excessive taking of food or drink; gluttonous indulgence in eating or drinking. An excessive indulgence in food or drink that overloads the stomach and disorders the system.

Sweeke Part of a trap for catching birds.

1594 BARNFIELD *Affect. Sheph.* (Arb.) 13 If thou wilt Make pit-falls for the Larke and Pheldifare, Thy prop and sweake shall be both ouer-guilt. 1623 C. BUTLER *Fem. Mon.* vii. (1634) 120 The three sides or parts of the Prop (the Poste, the Sweeke, and the Brace,) are three Stiks: all, almost half an inch broad, and half a quarter of an inch thick. *Ibid.* 121 First bait the Sweek with a thin piece of good Cheese, or Bacon, or Suet.

Tap-waze A strainer placed over the tap-hole in a mash-tub or the like, to prevent any solid matter from passing into or through the tap.

14.. *Voc.* in Wr.-Wülcker 606/28 *Quaxillum*, a tapphose. 1480 Maldon, *Essex, Court Rolls* (Bundle 51, No. 3b), i vatte, 1 taphose, 1 rother. 1609 C. BUTLER *Fem. Mon.* (1634) 157 But first provide..a Tub or Kive, with a Tap, and Tap~waze. 1707 MORTIMER *Husb.* (1721) II. 322 Till it [wort] runs clear, which it will not do at first tho' your Tap-hose be never so well adjusted. 1736 BAILEY *Househ. Dict.* 232 Having an open headed cask with a tap, and tap-owze. 1854 A. E. BAKER *Northampt. Gloss.*, *Tap-ooze*, *Tap-whisk*, the wicker strainer placed over the mouth of the tap in a mash~vat when brewing, to allow the wort to ooze through, and to prevent the grains passing. [See also *TAP* *n.*¹ 8.]

Tinging That tings; ringing, as metal; that emits a ringing sound.

1609 HOLLAND *Amm. Marcell.* XXIV. iv. 250 Neither the tinging sound [L. *tinnitus*] of the yron tooles digging hard by could bee heard. 1611 COTGR., *Charivaris de poelles*, the carting of an infamous person, graced with the harmonie of tinging kettles, and frying-pan Musicke.

Titmouse A bird -- *Sterna anglica*, or the genus *Hydrochelidon*; **marsh tit** or **titmouse**, **marsh wren** *U.S.*, a wren of the genus *Cistothorus*.

1831 A. WILSON & BONAPARTE *Amer. Ornith.* I. 199 They [red-winged starlings] are known by various names in the different States of the Union; such as..*marsh blackbird, marsh tit, [etc.].

Treacle a. *Old Pharm.* A medicinal compound, orig. a kind of salve, composed of many ingredients, formerly in repute as an alexipharmic against and antidote to venomous bites, poisons generally, and malignant diseases.

Trencher II. 2. A flat piece of wood, square or circular, on which meat was served and cut up; a plate or platter of wood, metal, or earthenware. *arch.* and *Hist.*

1547 *Bk. Marchauntes* bij, Thei mak them kisse a trenchor or a small platter of gold, siluer, or lead: which thei name the platine. 1573-80 BARET *Alv.* T357 A Trencher to eate meate on,..A broad trencher..A round trencher. 1624 CAPT. SMITH *Virginia* III. ii. 48 They imagined the world to be flat and round, like a trencher. 1696 PHILLIPS (ed. 5), *Trencher*, a square, thin Plate of Wood, for People to cut their Meat upon.

Troughs 1. a. A narrow open box-like vessel, of V-shaped or curved section, made of wood, stone, metal, or earthenware, and often a fixture, to contain liquid; *esp.* a drinking-vessel for domestic animals; also, a tank or vat used for washing, kneading, brewing, tanning, fulling, and various other purposes. (Often with prefix, as *drinking-*, *hog-*, *horse-*, *kneading-*, *pig-*, *water-trough*, etc.: see the first element.)

TUN c. *Brewing.* A mashing-vat (*mash-tun*) or fermenting-vat (*gyle-tun*).

1713 [see *mash-tun* s.v. *MASH* *n.*¹ 5]. 1743 [see *gyle-tun* s.v. *GYLE* 4]. 1815 J. SMITH *Panorama Sc. & Art* II. 569 The mash-tun is shallow in proportion to its diameter... When the mashing is completed, the tun is covered, to prevent the escape of heat. 1830 M. DONOVAN *Dom. Econ.* I. 221 He urges it to a tumultuous effervescence,..threatening the overflow of the tun.

Verdegrece 1. A green or greenish blue substance obtained artificially by the action of dilute acetic acid on thin plates of copper (or a green rust naturally forming on copper and brass), and much used as a pigment, in dyeing, the arts, and medicine; basic acetate of copper.

Vinewing **vinewing** *vbl. n.* hoariness of voice
1552 [see **FINEWING** *vbl. n.*]. **1565** COOPER *Thesaurus, Mucor*, filthe: vinewynge: hoarenesse. **1580** HOLLYBAND *Treas. Fr. Tong, Mucilage*, venueu, hoarinesse.

Vindemie The taking of honey from beehives.
1609 C. BUTLER *Fem. Mon. v.* (1623) Kijj, At the Vindemie, in a fair calm morning, before any Bees be abroad, shut up close all the stalls in your Garden.

Vulgar 2. a. *pl.* Persons belonging to the ordinary or common class in the community, esp. the uneducated or ignorant. *Obs.* b. A person not reckoned as belonging to good society. 3. *the vulgar*, the common people. 4. Something repulsive.
1513 BRADSHAW *St. Werburge* Prol. 84 Some small treatyse to wryte breuely To the comyn vulgares theyr mynde to satisfy. **1549** CHALONER *Erasm. on Folly* Gj, He preferred also the Ideote and simple vulgars, before other learned and reputed persons..

Wafer-cake 2. The thin disk of unleavened bread used at the Eucharist in the Western Church before the Reformation, and subsequently in the ritual of Roman Catholics, Lutherans, and some Anglicans.
1559 QUEEN ELIZABETH *Injunct. D3b*, The vsuall bread and wafer, heretofore named singing Cakes, which serued for the vse of the priuate Masse. **1570** GILBY in *Part of a Register* (1593) 16 The adoration of the Sacrament, in the Countrey where they knocke and kneele to a Wafer, is a popishe pollicie. **1698** FRYER *Acc. E. India & P.* 94 The Widow..bestows Holway, a kind of Sacramental Wafer

Wagge 3. *to play (the) wag*: to play truant. *slang.* Also, *to hop the wag*: see **HOP**
1851-61 MAYHEW *Lond. Labour* III. 87 Used by school-masters for the correction of boys who neglect their tasks, or play the wag. *Ibid.* 197 They often persuaded me to 'hop the wag,' that is, play truant from school. **1889** JEROME *Three Men in Boat* xvii. 284 A boy, when he plays the wag from school. **1900** 'H. LAWSON' *Over Sliprails* 154 Oh! why will you run away from home, Will, and play the wag, and steal, and get us all into such trouble?

Walmes 3. a. The bubbling and heaving of water, etc. in process of boiling (melting, etc.). Also, one such motion; a 'wallop', a bubble.
a1000 CYNEWULF *Juliana* 583 In æs leades wylm scufan. **c1425** *Seven Sages* (P.) 2363 Thys sevene walmes sygnifye Seven deuels in thy Companye, That ben thy seven clerkys. **a1450** LOVELICH *Grail* lvi. 397 That water that Cold was before, Anon brenneng hot it be-Cam thore, and with grete walmes it boyllede so faste, that the dewkes hondis it brende. **1594** T. B. *La Primaud. Fr. Acad.* II. lix. 333 Euen as fire causeth water to swell and to send forth great waumes. **a1648** DIGBY *Closet Opened* (1677) 28 Let it have a little walm of heat after it. **1688** HOLME *Armoury* III. 85/2 Walm, a little seething or boiling up of Liquor in a Pot.

Wardens b. **French pippin, warden**, varieties respectively of apple and pear; **French plum**, the fruit of a variety of *Prunus domestica*, dried and exported from France.
1664 EVELYN *Kal. Hort.* (1729) 191 Golden Pippin, French Pippin, Kirton Pippin. *Ibid.* 226 The..Squib-Pear, Spindle-Pear..and French Wardens.

Woort Forms: 1 **wyrt**, 5 **wirt**; 4- **wort**, 4-7 **worte** (5 **wortte**), 4 **wourt**, 5 **wurt**(e, 5-7 **woort** (6 **woorte**).
The infusion of malt or other grain which after fermentation becomes beer (or may be used for the distillation of spirits), unfermented beer. Of beer: (*to be*) **in wort**, still unfermented.
c1000 *Ags. Leechd.* II. 268 Bewylle one riddan dæl on hwætene wyrt. **c1325** *Gloss. W. de Bibbesw.* in Wright *Voc.* 158 Fro wort to ale. **a1387** *Sinon. Barthol.* (Anecd. Oxon.) 16 *Ciromellum*, worte. **c1450** *Two Cookery-Bks.* II. 107 Seth hem [sc. quinces] in goode wort til ey be soft. **1492** *Acta Dom. Concil.* (1839) 243/1 e spoliatioun..of..half a chalder of malt in ail and wort. **1574** R. SCOT *Hop Garden* (1578) 54 In the first Woorte..there goeth out of these Hoppes almost no vertue at all. **1588** SHAKES. *L.L.L.* V. ii. 233 Nay then two treyes, an if you grow so nice Methegline, Wort, and Malmsey. **1602** ROWLANDS *Greenes Ghost* 8 They put in willowe leaues and broome buds into their woort in steed of hoppes. **1626** BACON *Sylva* §385 It were good also to try the Beere, when it is in Wort, that it may be seene, whether [etc.]. **1697** W. DAMPIER *Voy.* (1699) I. 314 This in 2 hours time will ferment and froth like Wort.

Wrenge I. 1. a. *trans.* To press, squeeze, or twist (a moist substance, juicy fruit, etc.), esp. so as to drain or make dry. Also *transf.* and in fig. context. (Cf. 14b.)
b. To strain (juice, moisture, etc.) from a moist or wet substance by squeezing or torsion; to extract (fluid) from or out of something by pressure, etc.

Appendix III

Charles Butler was a scholarly educated man. He was fluent in English, Latin, and Greek. His passion for those things around him was enhanced by his knowledge of ancient Greek and Latin authors. Many of these are referenced in his work, *The Feminine Monarchie: or The Historie of Bees*. As with any scholar submitting a paper to the public, Butler documents these references in relationship to his own work and observations. He draws on the rich history of bees from previous authors and gives full credit where it is due. In addition he cites authorities in his own time for their work in medicine and chemistry.

The following authors and their work still are of interest today to those who would study beekeeping history.

(Hist.) * often quoted.

Aristotle -- A philosopher of the ancient world who lived during the reign of Alexander the Great. He is known for a number of works: *Nicomachean Ethics, Politics and Economics, Metaphysics, Logical Treatises, Rhetoric and Poetics, and History of Animals*. It is this last work which is so often quoted by Butler. It's ten books are an encyclopedia of the world's knowledge about animals of his time. This includes a number of references about honey bees. Although not a beekeeper, Aristotle recorded a number of interesting facts about bees and the keeping of bees evidently from the current literature of that time as well as personal observations and talks with those that sold honey and kept hives. Most modern city libraries will have copies available of Aristotle's works.

(Colum) Referenced on a number of occasions.

Columella Columella is known to us as the author of *Res Rustica* and *De Arboribus*. He lived and died sometime just prior to 27 BC. Columella was a Roman soldier who turned to agricultural pursuits. His 12 books titled *Res Rustica* is considered the most comprehensive and systematic book on agricultural affairs by a Latin author. His ninth book treats among other things, insects and bees. It is evident from his writings that he had personal knowledge of the keeping of bees. As an aristocrat, he most likely had servants who attended to his bees. His book *De Re Rustica* should also be available at most city libraries.

(Plin. Nat.hist.) * Often quoted.

Pliny the Elder Pliny the Elder died with the great eruption of Vesuvius in A.D. 79. During his life time, Pliny wrote with great productivity. In all his work is composed of 37 books called "*Natural History*." Pliny collected interesting facts about his world and thus this book became a natural encyclopedia of information. It is quoted often as a source of information for those of the middle ages. However, Pliny, although interesting,

is not scientific in the sense of the word today. He passed on much misinformation -- he did not check his facts. But what he does say is of interest because it tells us something of the understanding of the world as he saw it. As a source of scientific information, the *Natural History* is not very reliable. This book is also available in many city libraries.

(Vir. Geor.4) * often quoted.

Virgil Virgil was a Latin poet known to beekeepers for his poem "*The Georgics*". This poem is made up of four books: Agriculture, Planting, the Breeding of Cattle, and the management of Bees. Book IV on Bees is a literary classic and was very popular during Butler's time. Virgil was not aware of the modern discoveries about the honey bee and used the conventional wisdom of his day to write about honey bees. Of their virtues -- he sings, but of a king and folk lore that was very incorrect from the scientific perspective that has been acquired since his day.

It is from these authors that Charles Butler had to break ranks as he sought to write the facts about bees as he knew them and compare his personal knowledge with the "facts" as written by the philosophers (Pliny, Virgil, Aristotle, and Columella). We are truly indebted to Charles Butler for these references to various authors. Thus, "it is possible to see just where he was coming from!" as some would say in today's vernacular. Other authors and works Butler refers to include: Homer's *Illiad*, (St. Augustine *de Genesi ad Litteram*, Lucretius, A. Gellius, Ambr. Hex., Generat. An., Metam. Lib., De Consolatione Honorij, Paulus Iovius, Theremie, Ceu potius decima, In Fern. De Oxyniel, Nardinum, Planatius, Fern. *Elius Methodi*, Galen, *de simpl. Med. facult.*, Sylvius, *de medicam. Sipl. Mist.*, Pictorius, Freitag, Wikerus, Scaliger, *Aenigmata*, Raimundus Lullius (Chemist), John Hester (practical chemist) and the Bible.

Only a very scholarly and knowledgeable writer would be able to recite these works. It would mean that Butler was able to read both Latin and Greek or that someone (most unlikely) would have read them for him and that these books were available to him. He may have been exposed to the classics of the ancients as a student at Oxford. As an accomplished author, Butler uses supporting documentation to complement his vast knowledge about bees and things related to them.

Appendix IV

The Books of Charles Butler

Charles Butler wrote six books according to a short biography of Butler found in *Athenae Oxonienses* written by Anthony Wood, M.A. and published in 1721. The *Feminine Monarchie* which was first printed in 1609, was revised and printed again in 1623, and then revamped and printed using the rules of spelling and Grammar endorsed by Butler in 1634. According to Wood, it was reprinted into Latin in 1673 by Rich. Richardson and another with a changed title published in 1682.

Wood also identifies a book with the title *Rhetoricae libri duo, quorum prior de Tropis & Figuris, posterior de voce & gestu praecipit, &c.* written in 1600 at Bassingstoke by Butler. It was published again in 1618 and 1635. Butler had an interest in Rhetoric very early in his career. According to research I found on the internet on Seventeenth Century Intonation by Lee S. Hultzen, Butler's edition was said "to be better than Talaeus (a book published in 1597 called Rhetoric) most plaine and farre more easie to be learned and also supplying very many things wanting in Talacus." A copy of this book is on microfilm at the Institute for Advanced Studies in Princeton, New Jersey. It is very rare.

Following the revision of the *Feminine Monarchie* in 1623, Butler wrote a small book of 71 pages in Latin called *Ευπτενεια "De Propinquitate Matrimonium impediende, Regula"* published in 1625. This book can be translated as, "A rule, which is a hindrance to the marriage of kinsmen." According to existing records, this book was written in defense of the marriage of his son to a close relative.

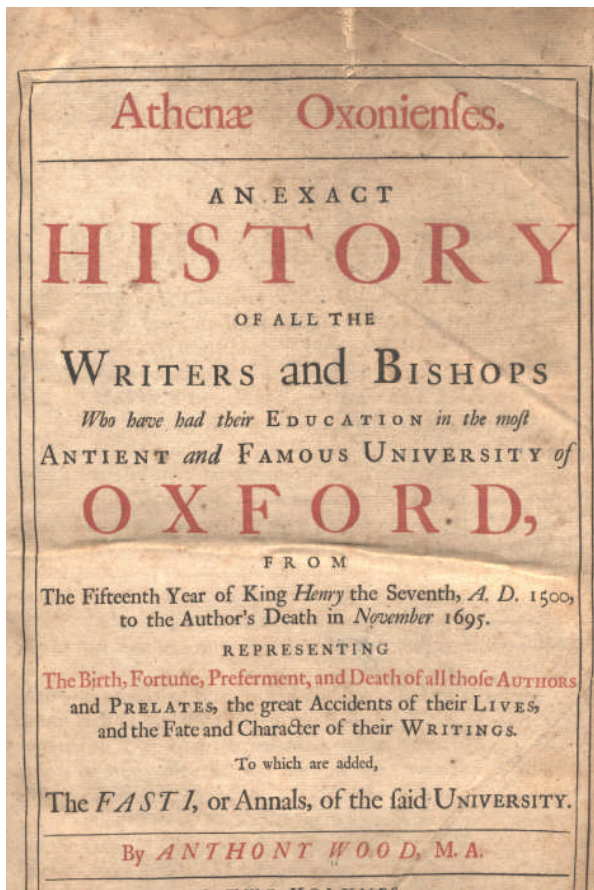
This was followed by another book in Latin titled *Oratoriae libri duo* printed in Oxford in 1633 and in London 1635. This is a very productive period of Butler's life. Heinrich Plett, indicates in his work "*A Reference to Moderizing Classical Rhetoric*" that not much change took place in the art of English Poesie with the exception of Charles Butler's *Oratoriae Libra Duo*. This book introduced the dichotomy of "Punctualis Distinctio and Literalis Distinctio" which modern linguistics would identify as inter-segmental and segmented categorization. This was followed just a year later with his, *The English Grammar, or The institution of Letters, Syllables, and Woords in the English tung"*. This book is valuable for the phonetic spelling of words – it provides educators with an idea of what Old English words sounded like in the 1600's.

As indicated above with the publication of *Feminine Monarchie* in 1634, Butler was intent on establishing his thoughts on how the English language should be written. This was a busy time for Butler. In 1636 he published the book, *The Principles of Musik, in Singing and Setting* in English. These later two books

have been reprinted in facsimile editions and are studied as historical sources for those who study the English language and the development of Music in England.

Butler was multi-faceted as you can see from the titles of his books. Woods says of him, “he wrote and published these books following, which shew him to have been an ingenious Man, and well skill’d in various sorts of learning.”

Copied below you will find the entries for Charles Butler from *Athenae Oxonienses* published in London 1721 by Anthony Wood, M.A. This is also titled “An Exact History of all the Writers and Bishops Who have had their Education in the most Antient and Famous University of OXFORD, from the Fifteenth Year of King Henry the Seventh, A.D. 1500, to the Author’s Death in November 1695. Representing the Birth, Fortune, Preferment, and Death of all those Authors and Prelates, the great Accidents of their Lives, and the Fate and Character of the Writings.



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Justinian was one, who was afterwards a Knight, and died about 8 July 1620. In the Judgeship of the *Prerogative Court* succeeded *John Gibson LL. D.*

An. { *Dom.* 1583.
25 }
26 } *Elizab.*

Chanc. the same, viz. *Robert Earl of Leicester.*

Vice-chanc. *Thom. Thornton* Batch. of Div. and Canon of *Ch. Ch.* Jul. 11. He was actually created D. of D. the Day following by Dr. *Humphrey.*

Proct. { *Tho. Leyson* of *New Coll.*
{ *Rich. Eedes* of *Ch. Ch.*

Elected in Convocation 10 Apr. at which time *Edw. Hble* M. A. and *Hen. Jervys* Batch. of Div. were *Scrutators.*

Batch. of Arts.

Apr. 30. *Franc. Hicks* or *Hykes* of *St. Mary's Hall*, now in great esteem for his great knowledge in the *Greek Tongue.*

29. *George Cranmer* of *C. C.* } Coll.

Jun. 19. *Hen. Airay* of *Qu.* }

Dec. 16. *John Pelling* of *Magd. Coll.* — See among the Batch of Div. 1597.

Hen. Jacob of *St. Mary's Hall* was admitted the same Day.

Jan. 17. *Hen. Bright* lately of *Brasen-n.* now of *Bal. Coll.*

— See more among the Masters 1586.

Feb. 5. { *John Dove*
{ *Rich. Parry* } of *Ch. Ch.*
{ *Nath. Torporley*

Parry was afterwards a Bishop, and *Torporley* an eminent Mathematician.

6. *Charles Butler* } of *Magd. Hall.*

7. *John Stradling* }

28. *Griffith Powell* of *Jesus* } Coll.

29. *John Shaw* of *Queen's* }

Admitted 169.

Maft. of Arts.

Apr. ult. *Sabin Chambers* of *Broadgate's Hall.*

May 3. *Henry Smith* of *Hart Hall*, lately of *Linc. Coll.*

Jun. 1. { *Will. Tooker* } of *New Coll.*
{ *Rog. Hacket*

J. Edwys



Note the entry
Batch. Arts Degrees
for 1583

Feb. 6 Charles
Butler of Magd.
Hall

CHARLES BUTLER was born at one of the 77
Wycombs (*Great Wycomb* I suppose) in *Bucks*, entred
a Student into *Magd. Hall* in the Year 1579, took a
Degree in Arts, and being made one of the Bible Clerks
of *Magd. Coll.* was translated thereunto. Soon after,
proceeding in that Faculty, he became Master of the
Free-School at *Basingstoke* in *Hampshire*, where conti-
nuing 7 Years, with the enjoyment of a Cure of a little
Church called *Skewres*, was promoted to the Vicaridge
of *Lawrence-Wotton* three Miles distant thence, (a poor
Preferment God wot for such a worthy Scholar,) where,
being settled, he wrote and published these Books fol-
lowing, which shew him to have been an ingenious
Man, and well skill'd in various sorts of Learning.

The feminine Monarchy: or, a Treatise of Bees, *Ox.*
1609. oct. *Lond.* 1623. *Ox.* 1634. qu. translated into *Latin*
by *Rich. Richardson*, sometimes of *Emanuel Coll.* in *Cam-*
bridge, now, or lately, an Inhabitant in the most plea-
sant Village of *Brixworth* in *Northamptonshire*.— *Lond.*
1673. oct. In this Version he hath left out some of the
ornamental and emblematical part of the *English* copy,
and hath, with the Author's, scatter'd and intermix'd
his own Observations on Bees, and what of note he
had either heard from Men skilful this way, or had
read in other Books. But this last Translation being
slow in the sale, there hath been a new Title put to it,
and said therein to be printed at *Oxon.* 1682. oct.

Rhetoricæ libri duo, quorum prior de Tropis & Figuris,
posterior de voce & gestu præcipit, &c. *Oxon.* 1618, the
4th Edit. and 29. qu. *Lond.* 1635. oct. It was written
by the Author at *Basingstoke*, 1600.

De propinquitate matrimonium impediende regula gene-
ralis. *Oxon.* 1625. qu.

Oratorie libri duo. *Ox.* 1633. qu. *Lond.* 1635. oct.

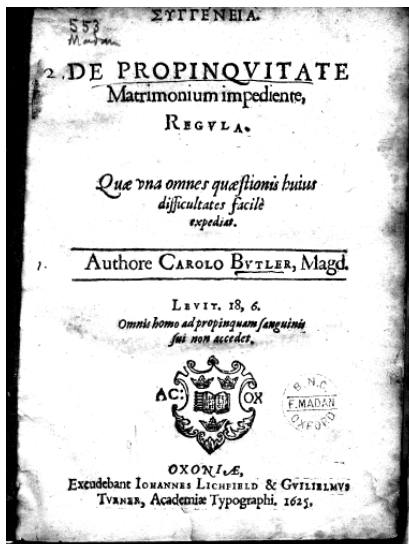
English Grammar. *Ox.* 1634. qu.

The principles of Music. *Lond.* 1636. qu. He took
his last farewell of this World on the 29th of *March*
in sixteen hundred forty and seven, and in that of his 1647.
age 88, or thereabouts (after he had been Vicar of
Wotton St. Laurence before-mention'd 48 Years) and
was buried in the Chancel of the Church there.

This is the short biography found for Charles Butler in the book.

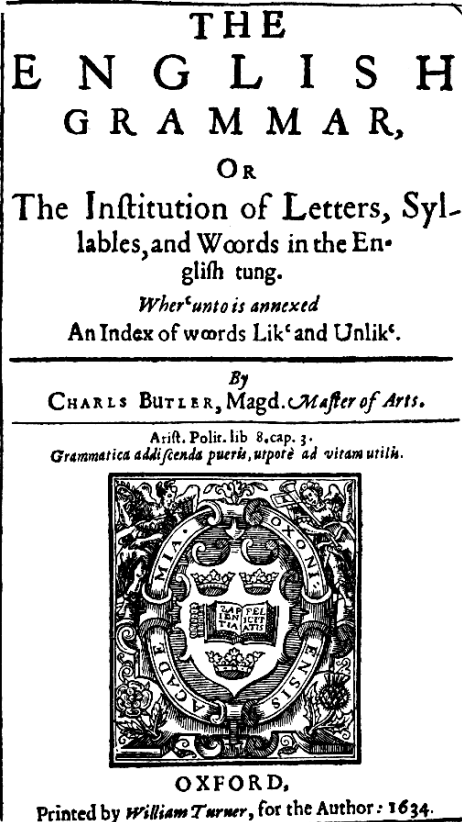
Let's take a look at each of these non-beekeeping books:

First, *De Propinquitatē Matrimonium impediēte, Regula.*



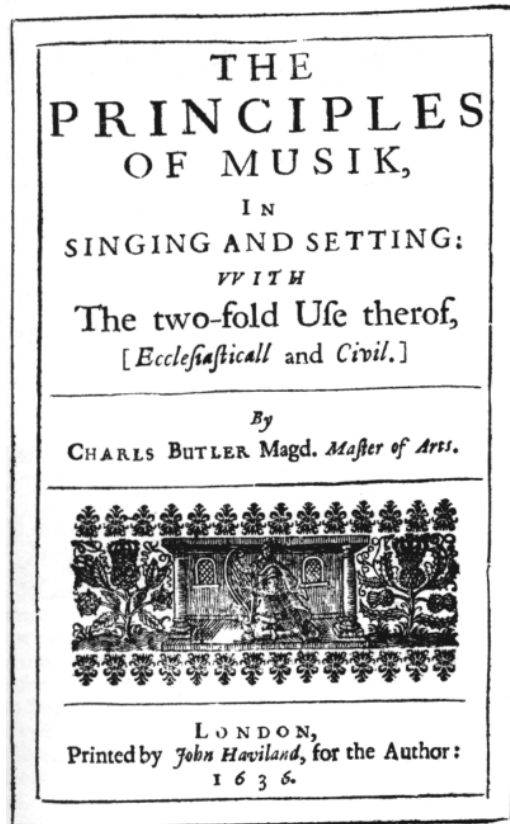
This book was of very minor importance and has had no lasting impact on the development of the English character or civilization. Briefly stated, it is a defense of the marriage of Charles Butler's son, William, to a cousin, Mary Butler.

As has been the custom, the marriage of closely related relatives was discouraged (the impediēte). Using various references to Biblical passages in the story of the marriage of Jacob to Rachel by showing the close relationship between Rebecca Jacob's mother and Laban the father of Rachel, Butler built an argument for the marriage of close relatives based on Biblical grounds.



If one is interested in the study of the English language, this book is very interesting. Anyone reading any book in the English language of the late 1500's and early 1600's will see a wide variety of spellings for individual words. These words in many cases were borrowed words from the Saxons, Juit's and Angles which made up the Teutonic Tong with its various dialects. Additional words from German, French, and Latin made it into the English language as well. Butler's idea was to standardize the language based on spelling words in the manner of their sound. For example, Butler writes, "wher'as many woords in our Languag' ar written diversly, even at hom': neither our nu" Writers agreeing with the old': nor either nu' or old' among themselvs." He pointed out the uniformity of the Latin language which did not exist within the English language. He established an alpabet of 28 letters and 8 aspirat's. Needless to say, Butler's alpabet was not adapted into the General language but it gives us today a good idea of the pronounced sounds of words then used.

Reading this work takes a laborious effort. Butler believed strongly in his theory of what the English language should be and thus, the 1634 publication of the Feminine' Monarchi is strongly influenced by this book.



It appears that Butler was also an accomplished musician. In addition to setting down the songs of the queens and princes in the hive (See Chapter 5 Item 32.) and composing notes by the use of a "winde-instrument" he was able to use his musical training to replicate the sounds made by the queen. He considered music from that of the singer and also as a composer. Chapters one and two are concerned with the fundamentals of music and chapters three and four deal with composition.

Music was civil and ecclesiastical. His relationship as vicar of Wootton St. Lawrence certainly put him into the singing and playing of notes in church services.

I found it very difficult to follow Butler's teachings in this book. He talks of moods in music (Dorian, Lydian, Aeolian, Phrygian, and Ionian). I am not knowledgeable of musical terms and thus, may not appreciate the true value of his teachings.

What is clear by this book is that Butler's range of knowledge was vast and covered many fields -- not just beekeeping.