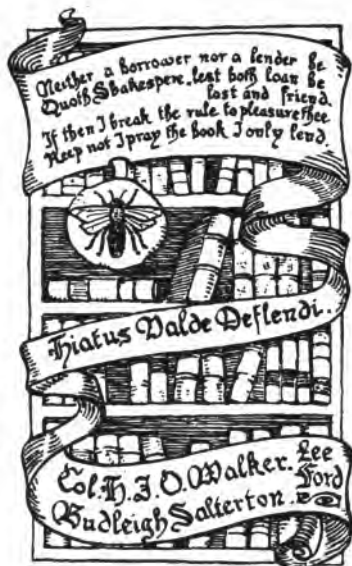


MILLER
RTYMB
.6267
E
1721
.1



The six leaves following the title
Signature 2 to 26, should
have been bound up
following the Catalogue
of Books, and just preceding
the back of the work, p. 1

THE
English APIARY:
OR, the COMPLEAT
BEE-MASTER.
Unfolding the Whole
ART and MYSTERY
Of the MANAGEMENT of
B E E S.
BEING

A *Collection and Improvement* of what has
been Written by ALL AUTHORS,
relating to this SUBJECT, as well An-
tient as Modern.

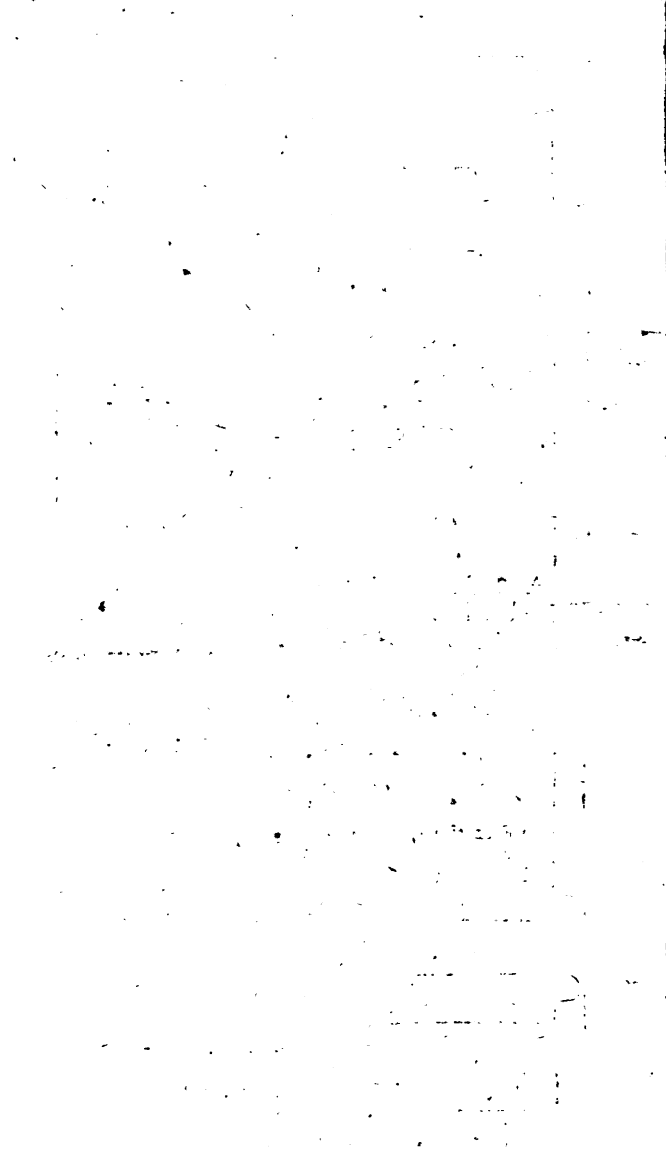
With a *New Discovery* of an Excellent
METHOD for making
Bee-Houses and Colonies,
To Free the Owners from the great Charge and
Trouble that attends the *Swarming* of BEEs, and
is much more Advantageous than any Method hi-
therto Practised.

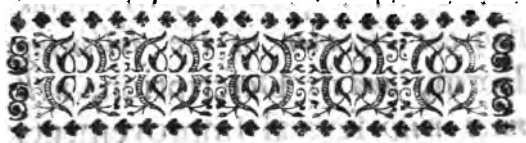
By JOHN. GEDDE, Esq;

Approved by the ROYAL SOCIETY.

L O N D O N :

Printed for E. Curll, W. Mears, and T. Corbet, in
the Strand. M DCC XXI. Price Bound 2 s.





THE
APPROBATION
OF THE
ROYAL SOCIETY.

THOUGH we find several Draughts of different BEE-Hives, to the Intention of preventing Swarming, (in the Treatises hitherto Published relating to the Management of BEES;) yet since none of those Ways prov'd so Effectual, as may justly exclude Second Thoughts,

a

and

The Approbation of
and farther Experience ; We think
that the Reader in the following
Form, and its Description, will
meet with several Improvements
of those Attempts that were made
before.

And the Method herein pre-
scribed, hath been Experimented by
many Persons of Quality, and O-
thers in most Counties of England,
with good Success ; and appear not
only to be far more Commodious,
but more Profitable than in any other
Way ever yet Practis'd. *

Though neither this Book, nor
all the Books that can be written,
are not, nor can be able to give
Directions in every Case that may
happen in Managing BEES ; for

* See Phil. Transact. Numb. 96.

the ROYAL SOCIETY.

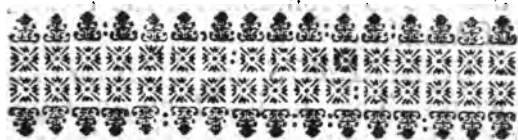
there is not any one Year in which the most Experienced BEE-Master may not find somewhat New or Unusual, which nothing but Reason and Practice will provide against.

Yet thus much may be certainly affirmed; That by the Methods laid down in this Treatise, and a due and careful Observation of them, in few Years, (God willing) there need not be any, or few Poor in the Land, Viz. Such as may want Bread or Cloaths. Every Cottager, having but Room to keep BEES in, may, from one Stock, in a small Time, raise Twenty, which, with little Care and Labour, may be better than 10 l. per Annum to him, (without their trespassing on any one's Property for

The Approbation of the R. S.

what they get,) of which he is Master and Disposer.

And now that all, if they will, may save their BEES, I hope none will be so Injurious to themselves, and Cruel to take both their Labours (Wax and Honey) and Lives together; who may, if spared, provide Food, and what will produce Rayment: Wax and Honey seldom goes out of the Market unbought; tho' now, more is the pity, there is scarce any in a Market to be Sold in England, where, if we will, we may have such as the whole Earth hath not better, thereby supplying ourselves, and our Neighbours; who, by our Sloth, and Negligence, import Us Base, Course, and Adulterate.



THE INTRODUCTION



THE *Honey-Bee* is known by long Experience, to be such an Industrious and Profitable Creature, that it has been ever accounted a delightful and profitable Labour to provide for its Preservation, by procuring it a House to live and work in, and Food in Winter and other bad Seasons, when, through Distress, it cannot provide for itself.

MELISSUS King of Crete, is reported to have been the first that Invented and Taught the Use of **HIVES**, and of *Honey*, which is

The INTRODUCTION.
become so Profitable for the Health
of Man.

GULIELMUS de CONCHIS
writes, That in his Time, a Con-
sul of *Rome* was so much delighted
with this excellent Creature, that
he caused *HIVES* of Thin Horn to
be erected in his Gardens, that
through them he might observe their
Work.

History affords many more In-
stances of Honourable Persons in
all Ages, who have delighted in this
Care of *BEEES*: Nay, many at
this Time in *Poland*, and other
Kingdoms, make good Revenues by
the profitable Improvement of *BEE-*
keeping; and it is certain, that if
Api-factories were encouraged, a
Kingdom might be considerably ad-
vantaged thereby.

But the Antient *Forms* of *Hives*
are subject to so many Inconveni-
ences, Charge, Trouble, and Ca-
sualties, that We have been much
discouraged from the pleasant and
Profitable Improvement of *BEE-*
keeping;

The INTRODUCTION.

keeping; this many have discover'd and complain'd of: And I have found it by Experience; wherefore it animated me to Try, if by a *new Form of Hives*, these Inconveniencies might be redress'd or prevent'd. So after I had *prov'd* several *Forms*, I, at last, found out One, which fully answer'd my Expectation, and *which* I here offer to the Publick.

After I had communicated in general, my Experiment to several Persons of Quality, they judg'd the Invention Commodious, and better than they any Way yet devised; and they desired me to Publish it, which I was unwilling to do, until, by farther Experience, I had found the great Advantage and Convenience of the same.

But while I was thinking only of communicating this Invention to my Friends and Acquaintance, I was inform'd by an Ingenious Gentleman, that the Illustrious *Royal Society of GRESHAM COLLEGE*; those

The INTRODUCTION.

(those great Encouragers and Promoters of Learning, and Honourers of Invention) had in a *Transaction*, * given a Description of one of my Boxes (which they had gotten from Sir Robert Murray, and he had gotten from Sir William Thompson, who had it from me, together with a written Description of its Parts and Use; not intended for Publication, but for private Satisfaction only :) And that they had Approved of the same as the best Form of *Hives* yet invented.

This Encouraged me to the Publication of the *House* and *Hives* together; for I supposed,) if that Illustrious Society esteemed so much of the *Lame* and *Defective* Representation of a Part, then would they much more esteem the Whole Invention, when certified of the long Experience of the *Commodiousness* and *Conveniency* thereof.

The

The INTRODUCTION.

The Subject-matter then of the *Tract* hereunto subjoined, is the *Description* of the *Hives* and *Houses*, together with their *Use*, *Advantage*, and *Excellency* beyond any other *Forms* of *Hives* yet *Invented*; which I intend to treat of with all possible *Brevity* and *Perspicuity*. But first, I would propose the following *Hypotheses*, or fundamental *Truths*, upon which, as upon a *Base*, the whole *Structure* of my *Discourse* is founded; and they are these:

I. It is Natural for all *BEEES* to begin at the *Top*, and to work *downwards*.

II. That *Bees* *Swarm* for want of *Room*.

III. That a great *Hinderance* of their *Labour* is *Confusion* about *Swarming*, and mispending their *Time* in *Luxury*.

IV. That

The INTRODUCTION.

IV. That Idleness causes Luxury, and Extravagant and Unprofitable Increase of *BEEES*, which being, by this commodious Method of Labour and Industry, prevented; the usual, but unkind Requital of Smothering and Drowning, is likewise avoided.

V. That the great Charge and Trouble attending upon Swarming of *BEEES*, does Discourage the Owner, and Consume his Profit.

1675.

John Gedde.



T H E



THE CONTENTS.

CHAP. I.

THE Definition and Description of a
BEE

Chap. ii. Of the Kinds and Colours
of BEES. 6

Chap. iii. Of their Nature and Properties. 7

Chap. iv. BEES Politicks, Ethicks, and
Oeconomicks. 9

Chap. v. Of their Senses. 11

Chap. vi. Of the Queen-BEE. 14

Chap. vii. Of the Drone. 18

Chap. viii. Of the Generation of BEES. 21

Chap. ix. Of the Hives, and ordering
them. 24

Chap. x. Of Seats for the Hives, and
the BEE-Garden. 28

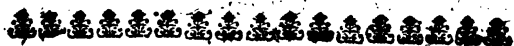
Chap. xi. Of the BEES Work. 32

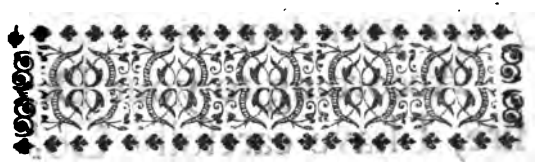
Chap. xii. Of the Swarming and Hiving
of BEES. 37

Chap.

The CONTENTS.

Chap. xiii. <i>What Flowers the BEES gather of.</i>	52
Chap. xiv. <i>Of the Ordering of BEES.</i>	56
Chap. xv. <i>Of BEES Age.</i>	65
Chap. xvi. <i>Of BEES Fighting and Robbing.</i>	66
Chap. xvii. <i>Of BEE'S Enemies and Sickneses.</i>	71
Chap. xviii. <i>The making of Mead.</i>	75
<i>An Excellent Receipt for making Metheglin.</i>	80
<i>An Excellent Receipt of Mr. Remnant's of the Cures perform'd by Honey.</i>	81
<i>A New Discovery of an Excellent Method of BEE-Houses and Colonies, to prevent their Swarming.</i>	87





TO THE
BOOK-SELLERS.

Gentlemen,

I Return you my
heartly Thanks for
the great Pleasure

I have received in the Per

A 3 rusal

vi *To the Book-Sellers.*

rusal of the *BEE-Manu-Script* you sent me.

According to your Desire, I have carefully Col-
lated it with most Wri-
ters upon this delight-
ful Subject, as *Columella*,
Varro, *Aristotle*, *Pliny*, *Vir-
gil*, & *alior. Script. de Re
Rustica*, among the Anti-
ents; and among the Mo-
derns, the following Au-
thors of our own Nation;
Mr. Southern, *Mr. Levit*,
Mr. Butler, *Mr. Remnant*,
Mr. Hartlib, *Mr. Lawson*,
Mr.

To the Book-Sellers. vii

Mr. Gouge, Mr. Hill, my Ld. Bacon, and the Reverend Mr. Purchas; which last has justly observed, That *The Knowledge of BEES*, was never truly communicated to the World, by any, but by Englishmen; * and his OPINION is farther confirmed by the Accuracy of this Performance, wherein all that is *Useful* in the abovementioned Writers, is carefully preserv'd; and their frequent *Excursions*

* See his Theatre of Political Flying-Insects, in Quarto, Pag. 102.

viii *To the Book-Sellers.*

ons from the Subject, judiciously omitted.

The only Writers (I think) since Mr. Gedde's Time, are Mr. Rusden, and Mr. *Warder* of *Croyden*, (now living,) who has very well corrected several Erroneous Conjectures, of Mr. *Rusden*, taken by him upon Trust, without any Experience of his own: And tho' at the same time, it must be confessed, that Mr. *Warder* has largely transcribed from others, yet he has given Us
some

To the Book-Sellers. ix

some remarkable Experiments of his own.

Upon the whole, I am certain, you may not only safely commit this Manuscript to the Press, but I dare say the Publick will be so much obliged by it, that every Purchaser will return you his Thanks.

I am, Gentlemen,

*Red-Lyon Square,
Aug. 14. 1781.*

Your Obligated,

Humble Servant,

CHA. NOURSE.

BOOKS ; Printed for E. Cull.
at the Dial and Bible against
Catherine-Street in the Strand.

1. **A** Discourse of *Fish and Fish-Ponds*,
shewing the best Manner of making
Ponds, and of the Management of *Fish* ; also how Meadow-
Ground may be improv'd from 2 *l.* to
6 *l.* per Acre. Done by a Person of Honour.
Price 1 *s.* 6 *d.*

2. *The whole Art of Fishing* ; being a Col-
lection and Improvement of all that has been
written upon this Subject. With many New
Experiments, shewing the different Ways of
Angling, and the best Methods of taking all
Sorts of Fresh-Water Fish. To which are
added, *The Laws of Angling*. Price 2 *s.*

3. *A Compleat System of Husbandry and
Gardening*. Shewing, 1. The several New
and most Advantageous Ways of Tilling,
Planting, Sowing, Manuring, Ordering and
Improving of all Sorts of Gardens, Orchards,
Meadows, Pastures, Corn-Lands, Woods, and
Coppices. As also of Fruit, Corn, Grain, Pulse,
New-Hays, Cattle, Fowl, Beasts, Bees, Silk-
Worms, Fish and Fish-Ponds. Also the Pro-
gnosticks of Dearth, Scarcity, Plenty, Sick-
ness, Heat, Cold, Frost, Snow, Winds, Rain,
Hail and Thunder. 3. *The Interpretation
of Rustick Terms*. With an Account of the
several

A Catalogue of BOOKS.

Several Instruments and Engines used in this Profession, and exact Draughts thereof, curiously engraven on Copper. The whole collected from, and containing what is most Valuable in all the Books hitherto written on this Subject; with many New Experiments and Observations. By *J. Woodbridge, Esq;* 8vo. Price 6s.

4. *The LADY'S RECREATION:* Or, the Art of Gardening Improv'd; Containing, I. *The Flower-Garden*; shewing the best Ways of propagating all Sorts of Flowers, Flower-Trees, and Shrubs, with exact Directions for their Preservation and Culture in all Particulars. II. The most commodious Methods of erecting *Conservatories, Green-Houses, and Orangeries*; with the Culture and Management of *Exoticks, Fine Greens, Ever-Greens, &c.* III. The Nature of Plantations in *Avenues, Walks, Wildernesses, &c.* with Directions for the Raising, Pruning, and Disposing of all lofty *Vegetables*. IV. *Mr. John Evelyn's Kalendarium Hortense*, Methodically reduc'd: Interspers'd with many useful Additions. By *Charles Evelyn, Esq;* To which are added, Some Curious Observations concerning *Variegated-Greens*, by the Reverend Mr. Laurence. Price 2s.

BOOKS of Husbandry and Gardening lately Printed.

A *Philosophical Treatise of Husbandry and Gardening*; being a New Method of Cultivating and Increasing all sorts of Trees, Shrubs, and Flowers; containing many

A Catalogue of B O O K S.

ny useful Secrets in Nature for helping the Vegetation of Trees and Plants, and for fertilizing the most stubborn Soils. By *G. A. Agricola*, M. D. Translated from the *Highb Dutch*, with Remarks, and adorn'd with Cuts; the Whole revis'd and compared with the Original; with a Preface confirming this New Method.

A Philosophical Account of the Works of Nature, endeavouring to set forth the several Gradations remarkable in the Mineral, Vegetable, and Animal Part of the Creation, tending to the Composition of a Scale of Life: To which is added, An Account of the State of Gardening, as it is now in Great Britain, and other Parts of Europe; together with several New Experiments relating to the Improvements of barren Ground, and the propagating of Timber-Trees, Fruit-Trees, &c. illuminated with many curious Cuts.

New Improvements of Planting and Gardening, in 3 Parts, both Philosophical and Practical; explaining the Motion of the Sap, and Generation of Plants, with other Discoveries, never before made Publick, for the Improvement of *Forest-Trees*, *Flower-Gardens*, or *Parterres*; with a New Invention, whereby more Designs of *Garden-Plats* may be made in an Hour than can be found in all the Books now extant. Likewise several rare Secrets for the Improvement of *Fruit-Trees*, *Kitchen-Gardens*, and *Green-House Plants*; the Third Edition corrected. To which is added, *The Gentleman and Gardener's Kalendar*. All by *Dr. Bradley*. Printed for *W. Mears*, at the Lamb without Temple-Bar.

T H E



THE
English APLARY.
OR, the COMPLETE
BEE-MASTER.



CHAP. I.
The Definition and Dissection of
a BEE.



A BEE is a Flying Insect, four Winged, six Legged, her Shape is little, Brown, bowing, oblong; her Eyes are covered with a Horny - Membrane, or Tunicle, for their better Defence and Safe-guard; they are of a shining Black, like Jet, transparent as Glass, immoveable,

12 *The English APIARY: Or,*

ble, not sunk within their Heads, but somewhat prominent, no Eye brows, their Eyes are placed on the out-side of their Cheeks, or rather are instead of Cheeks; oblong, greater above than below; the Horns are called by *Aristotle*, *Antennae*, because they hold them forth before them; they are very pliable, they grow almost at the top of either Eye, for Defence, with two Joints, one close to the Head, the other towards the middle, so that she can put them forth at full length, when she will, and draw them down again close to her Head; and they are the proper Instruments of the Sense of Feeling, by which, with the least touch, she suddenly scenteth any tangible Object. The *Drone's* Eyes are far larger, being almost two thirds of their Head, with two moveable wreathed Horns, growing out together between the Eyes, but extending like a Fork.

For gathering her Provision, she hath two Instruments, her Fangs, and her Tongue; her Fangs in fashion of a pair of Pincers, hang not as the Jaws of other Insects, one over another, but sideways, one against the other; her Tongue is of that length, that her Mouth cannot hold it, but being doubled

bled between her Fangs under her Throat, it reaches to her Breast ; it is divided into three-Parts, whereof the Two outmoſt ſerve as a Caſe to cover the Third, which, being the Chief, the BEE, in her Works, putteth forth beyond the other, and draweth in again as ſhe pleaſeth, and the Third is likewise parted into Three ; ſo that there are Five in all.

In their Fangs or Chaps, wherein are their Teeth, their principal Strength conſiſteth ; for in their Conflicts, where they ſlay One, with their Sting, they kill Twenty, with their Teeth, quickly biting off their Wings, or breaking the Legs of their Adverſaries ; and as many as are bitten, in a ſhort Space will certainly die.

Their Stings they chiefly uſe againſt Men, Beaſts and Fowls, for knowing their Bitings are little, or no ways prejudicial againſt ſuch able Creatures, they will kill themſelves to injure others ; for their Sting like a barbed Arrow, once entred into Skin or Fleſh, is holden ſo faſt, that they cannot draw it out again ; and when they would be gone, leave therefore a Part of their Entrails faſtned to it.

4 *The English* APIARY: Or,

They are Hairy almost all over their Bodies, especially the fore-part.

They have four dry pellucid skinny Wings, two growing near together, on either side of their Shoulders, but the inmost are somewhat shorter than the other, lest they should hinder their flying; these, by often using, grow torn and ragged (the infallible Characters of old Age, and Death) and are unable to support them.

The hinder Part of their Bodies is full of Rings or Pleights.

Their Tails are somewhat sharp (the *Drone's* more obtuse) within which is their Sting joined to their Entrails.

They have a Place for Evacuation under them, and for Generation also as some conceive.

Their Feet are six, dewclawed, pliant, full of Joints, hairy; and, as it were, two Toes at the extremity of either Foot, their hindmost Feet are longest, that they may put them forward to their foremost, which receive from their Tongues the Bee-Bread and Wax, and working it on the Thighs of the hindermost, they stand in the mean Time on the middlemost; and tho' they do, ordinarily stand and go on all their Feet, yet the two foremost have,
with

with them, the Use of Hands, wherewith they stroke and clear their Eyes, before their setting out, but principally in their working, for the disposing of their Labours to their Thighs. All their Feet are scabrous and rough, to take hold at the first touch.

In their Head is a Brain, their Back and Breast is a kind of reddish fibrous Flesh, in their Stomach is a Heart, and other necessary Members; in the hinder Part of their Bodies, is a little Bottle or Bladder, the Mouth of it reacheth or openeth into the Stomach.

In this they carry Honey, which with their Heat, they defecate, purge, and concoct, so that it rarely, if at all, corrupts. Sometimes they carry Water likewise in this Bottle; they have but one contracted Entrail, which extended, is as long as the Body: The Excrements are liquid, fluid, and Yellow.



C H A P. II.

Of the Kinds and Colours of BEES.

Several acknowledge, divers Kinds, but we in this Part of the World acknowledge, but one sort of Domestick Honey-gathering BEES, there is some difference in the bigness of them, but it is accidental, for they that are loaded with Water, or Honey, seem greater and longer than those that are empty. The Nymphs also, when they come first Abroad, are not grown to the full bigness, which afterwards they arrive to, and the Old ones do wither and become little again.

Likewise in these three Ages, their Colours also do vary; for in their middle Age, they are Brown, whereas before they are more Pale, and at the last they grow Gray, or whitish again, but these are differences of BEES of the same Hive, and not of one Hive from another, since these divers Sorts are in every Hive.

C H A P. III.

Of their Nature and Properties.

BEES are naturally skillful in all their Labours, and interchangeably perform them ; their Sting is more often the Cause of their Ruin, than Instrumental for their Relief, for losing it, they unavoidably lose their Lives.

The Robbing-BEE, or Thief, boldly discovers his Purpose, as soon as he comes near the Hive, which he intends to assault, with a loud threatening Noise, proclaiming their Destruction if they shall resist, and not willingly permit their Goods to be plundered.

In a Storm the BEE S will help themselves, by flying under the Lee-side of an Hedge, or encompassing a high and hilly Place, if there be any, and so take the Advantage of the Wind ; but if it be a plain Country, where Evasions avail nothing, then they fly low, almost close to the Ground, and rest often.

They are not inebriated with sweet Ointments, nor much offended with stinking Savours: I have known Twenty Hives together, stand against a Dung-hill divers Years, and thrive and prosper

8 *The English* APIARY: Or,

per well, yet it were better to provide another Place if there be any.

They love not their Keepers more than Strangers, but they being used to them, with greater Confidence venture among them, and so may any one else, and take them in their Hands, if they carry themselves peaceably towards them (except when they be offended before) they will find all Love and Favour from them.

BEES revive speedily when they seem dead, being brought to the Sun or Fire.

When the Hives are full of BEES, and well supply'd with Meat, neither Moths, nor any other hurtful Creature can much endanger them, but when few and weak, they easily miscarry by every Adversary; and when so few that they cannot thrive alone, they will, with a mutual Consent, (except their Generals, to whom such a Resolution is deadly) sometimes join themselves to another Hive, but always with Hazard, often with Destruction.

BEES delight to play Abroad before the Hive, flying in, and out, as thick as if they were fighting or swarming, in breeding Time, once a Day usually, if it be fair Weather, and ordinarily at a
set

set Time, and at other Times when they have been long shut up with Cold, or close Weather, the first fair Day, they will Fly Abroad, both to recreate themselves, and also to ease their Bodies, for they evacuate for the most Part flying.



C H A P. IV.

BEEES *Politicks, Ethicks and Oeconomicks.*

They have all the same *Common Laws*, and with *Common Care*, observe them all, and have one common Bond, not to have any thing lawful for one, which is not lawful for another, and they have one common Respect and Reverence to their Commander, by whose Counsel their Commonwealth is govern'd. They express, if not great Reverence, yet I am sure great Love to their Commander, without whom they will not Act, and with whom they will do any thing, go any whither, stay any where, and be content with any thing.

Their *Ethicks* and *Oeconomicks* appear
in

10 *The English* APIARY: Or,
in many Particulars. As they laboriously gather Honey, they shut up the Cells still as they fill them, and until Winter comes will not open them, but live in the mean Time on BEE-Bread, or Wax, and such Provision as they get Abroad.

They are neat and cleanly Creatures, never suffering any Filth or Excrement long in the Hive, emptying themselves always Abroad. And if in Winter while they are weak, Filth be contracted, yet as soon as the Spring comes, and they grow numerous and strong, they diligently cleanse their Hives, and carry out all. Neither will they suffer their Dead to continue long in the Hive, but carry them forth to Burial.

Their War is only Foreign, for though in the same Hive, by a violent or accidental Congression of two Swarms, there be sometimes a deadly Contest, it is still Foreign, for they never United under one Commander. They never fight for Food, but communicate alike of all they have, and when it is spent (if no gathering Season) starve all together, when they fly not far from their Hives, but about them, the Weather being fair, it is an usual Token of an approaching Storm or Tempest. But, above

the Compleat BEE-MASTER. IT
bove all, one excellent Skill they have,
they know certainly when they breed
a Male, and when a Female, which ap-
pears by this; they lay their Cepten (or
Male) Seeds in a wide Comb by them-
selves, and the Nymph-Seeds in the rest,
which are of a smaller size.

C H A P. V.

Of Their SENSES.

BEES have all the five Senses, tho'
there do not appear all those outward
Organs of Scenting, which some other
Animals have; of all their five Senses,
their Sight seems weakest, yet is it
clear, especially afar off: But their Sight
is not so quick near-hand, for sometimes
they will fly against you, if you come
suddenly cross them, when they are la-
den; and also near the Mouth of the
Hive, if they light beside the Door,
they will run up and down seeking for
it, as if they were in the Dark, but
then up they rise, and flying back a
little Way, turn again with a better
View.

As many as fall besides the Stool when
it waxeth dark, ten to one but they lie
Abroad

12 *The English* APIARY: Or,

abroad all Night; and if at any Time being disturb'd, they Fly out of the Hive, although they be fresh and lusty, they will leap up and down, run and fly to and fro' until they be weary, but by no means can they find the Way in again.

And therefore it is that when they fly Abroad, they take much Pains at the Door, in rubbing their Horny Eyes, that they may better discern their Way forth and back again.

Their Smelling is quick and excellent, for they will scent Honey a Mile from their Hives, and when they fly aloft in the Air, by it, scent any flowry Meadow or Heath.

As soon as the Honey-Dew is fallen, they presently scent it, although the Oaks that receive it, be afar off.

Their Feeling is as active as their other Senses; nay more, for it is most individuate, it inheres in the subsistence of the Creature.

Their Feeling is so quick, that if you touch a Hive very softly, or knock upon the Ground near the Stool, they presently resent it.

Their Taste is evidently as active as their other Senses, thereby they make choice of Waters.

And,

And, *Lastly*, For their Hearing, that also is good, otherwise to what purpose is the Calling before they swarm, and also their Incouragements in fight.

But farther to manifest it, if a Swarm arise, and the Queen-BEE miscarry, and fall by the way, (as it often happens) her Company, notwithstanding, will light, expecting her coming, but being hived, they presently miss her; and, with a mournful Murmur, bewail their Condition; some run up and down distractedly within the Hive, others without; and making a sudden stop, fall into a Passion of Mourning, and then run up and down again, and Mourn again, but in the mean time send many to seek her. I have often found her where she hath been fallen, and carried her to the Hive, where I have observed (not without Admiration) at her first coming, they have, in a moment, changed their former Note and Carriage, and with clapping of their Wings, and rejoycing Murmurs, congratulated her Presence, and those that were seeking for her, altho' some Rods distant, in an Instant returned all Home, and with a rejoycing Gratulation, welcomed their QUEEN.

THE *Queen-Bee* is a fair and stately Creature, longer by the half, and much bigger than a common Honey BEE, yet not so big as a Drone, but somewhat longer; she differs from the common BEE both in Shape and Colour; her Back is all over of a bright Brown, her Belly even from the Top of her Fangs, to the tip of her Train, is clean, beautiful, and of a sad Yellow, something deeper than the richest Gold; her Head is more round than the little BEES, by reason her Fangs are shorter; her Tongue is not half so long as theirs, and thereby Nature hath disabled her for working, for it is impossible for her short Tongue to extract much out of any Flower, were she never so industrious.

Her Wings are of the same size with an ordinary BEE, and therefore in respect of her long Body, seems very short, they reach but to the middle of her Train, or nether part; she hath straighter and longer Leggs and Thighs than a Honey-BEE, which are of the Colour
of

the Compleat BEE-MASTER. 15
of their Belly, but her two hind Legs,
more Yellow, she hath a lofty Pace, and
Countenance expressing Majesty.

Her nether Part is much longer than
her upper Part, and more sharp than
any ordinary BEES, having in it four
Ringles, or Partitions, and in each
Ringle a Golden Barr instead of those
three whitish Rings, which other BEES
have at their three Partitions; the Sting
is but little, and not half so long as the
other BEES.

The Queen's Cells wherein she breeds,
are not usually at the Bottom, or un-
der the Combs, but on the Edges, some
on the Out-side, some more inward in
the Middle of the Combs; and in some
Hives there are six or seven, in some
not so many, and in others nine or ten.

The Materials for the Queen's Gene-
ration is a spermy Matter, injected thick
like Cream, inclining to Yellow.

I once had a good Swarm likely to
miscarry, the Queen BEE's Wings being
accidentally torn, so that going out of
the Hive, she fell beside the Stool, and
although once and again finding her
before the Hive, I put her into it, yet
afterwards she was lost, and almost all
the BEES neglected their Work, and
began

16 *The English APIARY: Or,*

began to pine away, until I furnished them with a new Commander.

Oftentimes when a Swarm goeth forth, the young Commander being Weak, falls down sometimes beside the Stool, or sometimes farther off, with whom some of the Company will stay, such as see her fall, and encompassing her round, will continue with her, except taken up, until they perish together.

It is more than probable, that the Old Queen BEE, goeth forth sometimes with the latter Swarm, and this is the Cause of the not Thriving of many Old Stocks. I have exactly viewed divers such Stocks that I have taken, and could never find a Queen BEE among them.

If therefore you perceive a Hive, after it hath Cast twice, to have some quantity of BEES, and yet to work negligently, or not to increase in the Spring, suspect them to want a Queen, and supply them with one as soon as you can, if no other way, by driving a poor Swarm into them, for which purpose always reserve some. I have observed some few BEES in the Spring, in every good Hive, with Crests, Tufts, or Tossels on their Heads, some Yellow, some Murrey, in manner of a Plume, some standing upright, some hanging down, they

the Compleat BEE-MASTER. If they are seldom seen but in May, and a little after, their working, I conceive, wears off this Ornament.

The Queen BEE goeth almost last out with the Swarm, sometimes she cometh forth half an Hour before the Swarm riseth, with a great Company which environ, and attend her on the Stool, but her Company moves not until the greatest Part are passed out of the Hive, and then those that environ'd her begin to arise, and she with them.

Being necessitated, their own Leader miscarrying in swarming, or by some Accident afterwards, I have preserved the Stock, by putting to them a Queen BEE taken from another.

All Domestick BEES, at first, are imperfect Creatures, Worms, fixed to their Cells for Twenty Days, and then come forth winged.

There be in every Hive ordinarily on the out-side of the Combs, (yet sometimes in the middle) little concave Cells (but one in a Place) almost like Acorn Caps, but not near so broad, yet somewhat deep, very strong and thick of Wax, Orbicular, wherein the Queen BEE injects a spermatical Substance, thick like Cream, but more Yellow, wherein the Queen BEE is bred perfect.

18 *The English APIARY: Or,*
at first in all the Parts, and lying almost
round in it, feeds of it, and so grows as
the Chicken in the Shell, until it be
disclosed.

The Queen BEE lives not retired
(constantly) in any Part, but as Occasion
serves, is sometimes in one Part of the
Hive, sometimes in another, but works
not, Nature denying her fitting Organs.
And because some have observed large
orbicular Cells on the Edges of the
Combs, they have therefore supposed
them to be their Palaces, but they are
scarce capable of half their grown Bo-
dies, and are only Seminaries for Ge-
neration, not Places for Habitation.



BOOK II. CH. A. B. VII.

Of the DRONE.

THE Drone is a BEE without a
Sting, the vulgar Opinion is, that
he is made of a Honey BEE that hath
lost her Sting, but no Man ever saw that
a BEE became a Drone; they are of
the same Species with the Honey-BEE,
but of a different Sex.

The Drone is the Male BEE, and that
for many Reasons. First, Though they
be great Masters of the Honey, yet un-
til

the Compleat BEE-MASTER. 19

til the BEES begin to leave breeding, and have conceived for the next Year, (which some do in *July*, most before *August* is expired) they suffer them, after they begin to beat them away, which if some Stalls do not, they die naturally before *October*; when they are quite gone, then do the BEES lay no more Seeds that Year, but only breed up those that are in the Cells.

Secondly, As the Earlier, and the more the *Drones* are, the greater and Earlier are the Swarms: So where the *Drones* are few and late, there is small Increase. And therefore if you kill the *Drones*, before they have done swarming and breeding, (as some fondly do before *Midsummer*, to save their Honey) neither will the Swarm come forth that were formerly bred, nor the Stock henceforth breed any more. After which time, bringing in Bee-Bread as much as before, and having no Young Ones to spend Part, they lay it up Carelessly in their Cells, where it corrupts and turneth to stinking Stopping, which will cause them to dislike their Hive, and if by Care they be then preserved, in *February* following, when the Breeding Time begins, finding their Wombs barren, and loathing themselves, they
will

20 *The English APIARY: Or,*

will yield their Goods to them that will take it, and after a while, by conversing with the strange Bees, they will like of their Company, and go away with them to their Drones, but every fair Day, they will with them, return to fetch that which they left behind.

When the Old BEES have ended their first Breed of Females, then (after the same manner in the Drone-Comb, which is but one in every Hive, and almost the backwardest, made with deep and wider Cells) they breed the Drones.

But chiefly, that the Drones are Males is, that they have too large Testicles, greater, proportionable to the Body, than any other Creature.

The Drone works not at all, Nature having denyed them fitting Fangs, and Tongue, for they are very short.

And whereas poor Stocks, (I mean such as have few BEES, tho' otherwise well provided) let the Drones alone, not disturbing of them, much less killing them, yet not one will outlive October.

Timely ridding of the Drones by the BEES, is a good Sign that they are like to be forward the next Year; because the Stocks that have cast often, do bear long with their Drones, although there be

the Compleat BEE-MASTER. 21

are twice so many as are needful for the BEES that are left; therefore about 2 Fortnight after their last swarm, it is good to diminish their Numbers, which you may do safely in the heat of the Day, killing them with your Fingers, and bruising them thus before the Hive Mouth, will sometimes cause the Females to take the Work out of your Hand.

C H A P. VIII.

Of the Generation of BEES.

THE First and Chiefest breeding of BEES is in the End of February, and you may visibly see their Eggs when they are first injected into the Cells, and there is nothing in these, but the Seed itself, and is much bigger, than a Fly-blote, yet it is not blown, for then it could not be termed an Egg, but when they have Conceived, they deliver their Seed not by their Tail, but by their Mouth; they are bred usually in the Combs, before or in the lower Part of the other Combs, the Honey being laid up in the backward Combs, and in the upper

22 *The English APIARY: Or,*

upper Parts of the other, if the Hives be not provided beforehand, or supplied daily with Food in stormy and unseasonable Weather, the Young Brood will die in the Cells, and you may see the Old Ones carry them out in abundance upon the first Change of the Weather, and then breed again; often towards the End of Summer, if Honey-gathering be not plentiful, they will draw out the young unfledg'd Cephens, left, for want of sufficient Meat, they should all starve together; so then after they are disclosed, they must have Meat, out of their Cells they cannot come, now the Query is how they should have it? the BEES, after they have for some time sat about them, and by their warmth comforted them, after bringing them Food in their Mouths, and feeding them one by one, as Birds do their young, and after Eighteen Days, or thereabouts, that they have attained their growth, are shut up by the BEES, with a waxen Cover, and continue so about the same space, wherein they are metamorphos'd, and eating the Cover before them, come forth winged Creatures; their Colour is at first Ash-colour, and so are their Wings, but after a little space, they convert to a dark Brown, until

the Compleat BEE-MASTER. 23

until they grow Old, when they become Grey; as in dry Weather, BEES gather most Honey; (supposeth with Moderation) so moist Weather produceth store of BEES; now the Reason why moist Weather produceth store of BEES, is, because the BEES do separate and Breed the faster, and nourish their Brood the better, by the Moisture that falleth in those Times, which in dry Weather they cannot so well get; or rather approve not so well of, for after a warm Time, you may see them drinking on every Herb, you can hardly set your Foot on the Ground, or Grass near the Hive, but you must tread on them, and that when their Water is just by.

Too much fair Weather is Destructive to the Increase of BEES, forgoing forth every Day to gather, they are there with wearied, and neglect Breeding; and so though they leave fat Stalls, yet in a short time, few Hives, and therefore Columella adviseth to stop them in, every Third Day, that they may attend to Breeding.

Of the Hives, and Ordering them.

THE Straw Hives are the best, and the BEES do best defend themselves from Cold, when they hang round together in manner of a Sphere, or Globe, and therefore the nearer the Hives come to that Fashion, the warmer and safer they are, but, of Necessity, the Bottom must be broad, and the Top must rise three or four Inches higher than a Globe.

So then that Hive hath the best Shape that is likeliest to an Egg, with one End cut off, as we usually order it when we eat it; it may consist of twelve Straw Rolls, let the three first be of one Compass, a Foot or somewhat more in Diameter, the four next above them more arge, bellying out a little, each beyond his Fellow, that the Combs may be more firmly fastned, let the other Five, by little and little, be narrowed to the Center at the Top, that it may be Pyramidal, and after this Proportion, if the Hive consists of more Rolls, for this is the Shape of a small Hive; I have some consisting of Seventeen or Eighteen Wreathes; Hives are to be made of any Size, I have many

many Hives containing five Pecks, with a Swarm yearly, and last (by Succession) longer than those that are hived in small Hives; and although a half-Bushel-Hive will contain a competent Stock, yet the Swarms, for the most part, are small, and the Castlings of themselves worth nothing; and the BEES that are ordinarily left, when they have cast twice, are so few, that they quickly miscarry. However, let your Hives be rather too little than too great; if too great, the Bees will be more lazy, working uncomfortably, because they despair ever to finish and furnish their House, but yet if there be a competent number of BEES, they will work industriously, (tho' the Vacuity be large) and compleat as much with Combs as shall be sufficient for them. But an over-large Hive is prejudicial to their swarming.

When you have provided your Hive, clip off, and cut away all the staring Straws in the inside, and make it as smooth as you can; the best and readiest Way to perform it is this: *First*, Wet the Skirts of your Hive, then hold it a turn or two over a Blaze of Straw, and then take it off, do it a second time, and, if need be a third; and after, rub it with a piece of Mower's rubbing Stone, so
 still D shall

shall you much ease the BEES; howsoever, when you have done as much as you can, yet shall you hear them, if you listen in an Evening, harping like Mice, and that for divers Nights together.

And if it were an Old Hive, tho' it were Musty, yet, holding it over the Fire several times, will sweeten it, and the BEES will better like in such a Hive, so ordered, than in a new one, not purged with Fire.

Many rub their Hives, before they use them with Fennel, or other sweet Herbs, and sprinkle them also with Honey and Beer, or other sweet Liquors, but I seldom use it, only, as before expressed, purify and sweeten them with Fire; and, perhaps set them, before they be used, open in the Air a few Days, out of the Danger of Rain.

After this, the next thing is to stick your Hive, and various are the Fashions. This Method I observe, I take a Willow Stick, about Nine or Ten Inches long, and, according to the bigness of it, cleave it into several thin pieces, each I shave till it will bow, then sharpening both the Ends; I stick three such Splinters in the Centre of the Crown of the Hive, and bend the three other Ends to the sides of the Hive, that they stand like

the Compleat BEE-MASTER. By

like so many Bowes, and then enter them in a Triangle, and afterwards put a strong Splinter quite through the middle of the Hive, within Four Inches of the bottom ; if it be a large Hive, I put another cross that, about an Inch lower, otherwise not.

Mr. *Levitt* prescribes this Course : Take a Stick of Sallow or Hasel, as thick as a Man's Thumb, a Foot long, Cleave it Cross-wise till you come within a Hand's breadth of the other End, then bend each Quarter several Ways, cutting off the sharp Edges in the middle of every one, then putting the End that is not cleft into the Crown of the Hive, and bending every of them a several way, stick them into the sides of the Blive, that they may force the upper End hard to the Crown ; and if the Hole of the Hive at the top be little, then cut the upper End of the Stick with a Shoulder, and this is to keep the Crown of the Hive from sagging downward, as they will do (except your Hives are exceeding good) when they are heavy laden with Honey. Then take a small Stick, cleave it in the middle, cut both the Parts flat and smooth, and put them crosswise into the Hive, within four Fingers of the Board.

28 *The English APIARY: Or,*

But this Inconvenience I find in it, they cannot be taken out but altogether, and therefore the Combs will be much broken, and the Honey run out when you take a Hive.



C H A P. X.

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

LET your BEES be seated (says *Colanella*) not far from your House, out of the danger of an Echo; cover them well above, and stop them well below: I have found in a rowe of Hives standing on the North side of a long Barn, whose height hath intercepted the Sun-Beams all the Winter, less Provision (almost by half) hath served those Hives, than would have served others standing always in the Sun, for coming seldom forth they did eat little; and yet in the Spring were as forward to work, and to swarm, as those that had twice as much Honey, (otherwise alike) in the *Autumn* before.

Some Bees will be late at their work, after Sun set, and if, when they return, they find it dark about their Hives, they must lie abroad, if not altogether perished, let

let the Door therefore be somewhat to the *West*. Let the *Bee-Garden* be well fenced from Cattel; and, as well as may be, defended from Winds, especially the *West* and *South-west* Winds, which are, with us, most constant in Summer.

Let their Entrance be low (because of the *Mause*) but longer in Summer, and shorter in Winter; but in *Autumn* shortest of all, not having passage for a *Bee* or two at once, to prevent the Danger of robbing both by *Bees* and *Wasps*.

Oftentimes a poor Hive standing by a full Neighbour, if they lie out, and the Weather be not fitting for them to swarm, they will, as it were, make a League of Amity with them, and first growing familiar, will, with their Supernumerary Bees (all not being able to work in the full Hive) replenish their Neighbours with Bread and Meat, whereby they will swarm almost as soon as the best, which otherwise would not have swarmed that Year, or very late.

But which is more considerable, you may have much pure Honey, without any Trouble or loss. About Mid-*April* in a warm Spring, observe what Hives are full, and begin to lie out and set a Hive, with the Combs, that the *Bees*

died

died out of, the Winter before, next to such a full Hive, and you shall have them work into it presently, and carry in abundance of Honey; of Necessity, many of them must have been idle in their own Hive, there being no room for half to work; they take this as a retiring House, which they will work in, and stay in it Night and Day, only keeping an Intercourse with their own, which will swarm never the later, and as soon as, by Emission of a Colony, there is room ready in their own Hive, they will go again to their Leader, and leave their Provision; if some few stay when you take it, knock them out, and they will return to their Old Habitation. Mr. Purcell declares, that he had, in the Year 1656, in Four such Bye-Hives, thus gathered, in Eight Days before the End of April, near Four Gallons of Honey, and the Hives also swarmed in April; this was pure Virgin Honey, as White as Milk.

But if they stand a Week in May, and swarm not, then take the Hive they retir'd to, and carry it some distance from the Stool, and knock it on the top and sides, and they will all go out to their own Hive; but if you dare not venture thus, then drive them into an empty Hive, and the Day following knock them

the Complete BEE-MASTER 31

them out near their own Stock, and they will quickly return into it.

Let the Grass before your Stools, or Benches, for a Rod or two at least, be kept short, with often mowing, for long Grass and Weeds, much more Beans and Pease are prejudicial; for the young weak Nymphs falling on those shady Places, and (except the Weather be warm and dry) are in danger to be Chilled before they can rise again. Let it not be a bare Ground, for in Winter it will be wet, and Chill the Bees when they light on it, and in Summer dusty, and falling on it, if they rise not presently, but go a little, their Feet being Dew-clawed and scabrous, will quickly furr, and they will be so Clogged, that they will not be able to rise at all.

Let them not stand above a Foot, or a Foot and a half from the Ground at the most, for if they stand higher, they are more subject to the Violence of the Wind, and when beaten down beside the Hive, and if there be a present Shower, or the Sun suddenly be overcast, they will quickly Chill and perish.

Smoak is very offensive to Bees, let them not stand therefore near a Brick-Kiln, Lime-kiln, Brew-House, or where any long continuing Smoak may bear down upon them. Let

34 The English ANNA: Or

Let your *Bee-Garden*, or the Ground adjoining to it, be planted with all sorts of Plumbs, Cherries, &c. and all sorts of Flowers that they delight in.



CHAP. XL

Of the BEE'S Work.

WHEN the Earth, begins to put on her new Apparell, and the Sun runs a most even Course between the Night and the Day, then, most commonly, (sometimes before in warmer Seasons) the Industrious *Bee*, hating Idleness more than Death, diligently visits every Tree and Flower, that may afford her Materials for her livelyhood.

The Flowers (which they only gather of) are neither bitter nor sharp, as some say, that affirm they gather on Radish and Mustard seed.

Take an Old Hive, wherein some Remnants of the Combs hath been left sticking to the sides; or, if there be none, fix toward the Crown of the Hive in several Places, little Fragments of Wax; and hold it a little over a Blaze of Straw, that the Wax may melt and diffuse

diffuse about the sides of the Hive, and such a one will they more contentedly work in than any other, presently to that Foundation of Wax, fastning their Wax new gathered. They fasten the first Wax near to the Centre of the Hive, if they be many, but if they be few, then near the side, they make their Combs perpendicular, beginning at the Top, and working down to the Bottom; the Heat of the Bees maketh the Wax warm and pliable.

They will not only work artificially the Wax they gather into thin Hexangles, but work a solid Piece of Wax into a Comb, as I have often experienced, by putting a piece of Wax under a Hive almost combed to the Board.

How much Wax they bring at once, doth appear by the new Swarm, whose first Week's work is spent chiefly in building Combs, wherein they are so earnestly, that part of many of their Burdens fall from them, before they can fasten them to the Combs, and lie by the skirt of the Hive, like the White Scales that fall from young Birds Feathers, but whiter and brighter.

The Swarm when it beginneth to work, falls down toward the Bottom of the Hive, in appearance, sitting in, that there

34 *The English APIARY: Or,*

there may be a Vacuity above; but as the Combs descend, so do the Bees ascend; and after a Week or Ten Days, will be all above.

They fetch in their Honey, little or much, Nine Months in the Year; the *Bee-Bread* is conveyed by their Fore-Legs to the Thighs of their Hind-Legs, and so nimbly, that unless you have a quick Eye, you cannot perceive it. In the Spring when the Air is colder, and the Bees duller at their Work, it is more visible; namely when they gather off the Agletts, or Catkins of the Hasel, or the Willow a little after.

They unload into the empty Cells, the *Bee-Bread* which they gather for Food when they cannot work, and to feed their Young; but if it continue any long Time uneaten, it will dry and fowre, and thereby tasteless, and so useless; but this is never the Chief Cause of their Departure from their Hive, but rather the Fewness of Bees, having over-swarmed, or else the Loss of their Commander. For hive a Swarm into Old Combs, where is much Stopping, yet they will thrive well, for they will draw it out of the Cells, and carry it forth: And let the Combs be never so Old, (except they have taken Wet)

and

***The Compleat BEE-MASTER.* 35**

and so be rotten and crispy, they will like them; only if they be very Old, they will take down the outward Part, and work it with new Materials; and they will continue as long in them, as if they had been put into New Combs.

Into Old Combs, (after Nine or Ten Years standing, the Bees by Casualty dying) I have hived little or late Swarms, which have continued in some of them Ten Years more; sometimes they have trimmed up such Hives as they have found standing, (the *Bees* being Dead) and have gone of themselves into them, and thrived better than others hived into New Hives, or New Combs, so that Blackness (as is commonly thought) is not an Infalible Sign of a faulty Hive, for the Combs have successively sundry Colours.

It is not amiss, especially if the Hives be poor) to cleanse away in the Spring, the Dross that the *Bees* have contracted all the Winter.

They kill, after the last Swarm, all the Blood Royal, and in the Spring early, breed New, that they may be ready to go with the First Swarm. The Vulgar when they see the *Bees* go Home laden with *Bee-Bread*, suppose they carry Wax, but if you taste it, you will easily

36 *The English* APIARY: Or,

easily resolve yourself. When it is new gathered, it is sweet, and not unpleasant, but not so sweet as Honey. And that it is not Wax, take notice of an Old Stock, into which they carry plentifully of it, and yet, at the End of the Year, there is no more Wax (if so much) than in the Beginning, whereas a Swarm will sometimes work down half their Hive in a Week, and yet you shall see them carry little of it, if any at all.

And the Reason why the Old Stocks carry in so much, is; because they have many Young Ones to feed; whereas a Swarm, for the first Ten Days, ordinarily have not hatched much *Spat*, or young Brood, and they feed for the most part abroad.

The Liquid Honey the *Bees* gather with their Tongue, whence they let it down into their Bottles; each holding a Drop, you may see their Bellies strut, many think, because they see nothing on their Thighs, they come Home empty, but they are better, and more heavily laden than the other.

Their Diligence and indefatigable Industry is most evident and eminent in the Spring, after they have been long Confin'd with the Winter's Frost.

of the Sustaining and Hiring of BEES.

BEES Chief Breeding is in *March*, and *April*, the Old Stocks having Bred in the Spring, and with a new Supply replenished their Hives, they presently prepare to send forth a Colony or two, out of every Hive that is good.

In extraordinary Dry and Windy Times, many, tho' they be full, will not swarm at all; for having waited long for an Abatement of the Weather in vain, and they, by lying forth under, or about the sides of the Hive, cooling themselves, and being well provided for, are loath to leave their Labours, to go a-new to labour, sometimes it falls out, because they have no Commander ready. I once had a very good Hive full, and well replenish'd with Multitudes of Bees, yet never swarmed in many Years, I was resolv'd to let them alone, and in the Eighth Year they swarmed twice; and also other Years after.

The Swarm consists not of younger Bees than the Stock, for there go forth both Old and Young, and it parts not into several Companies, but when there

E

are

38 *The English* APIARY: Or,

are more Queens than one, some *Drones* go along in every Swarm, but seldom a Dozen, and therefore whereas some lay it down as an Infalible Rule, That those Swarms that have not many *Drones*, will not thrive, is not always true.

A warm, Calm, and a showry Spring, causeth many, and early Swarms; but it is to be supposed, if stormy and cold Weather follow immediately after, but it must not continue long. I once had many Hives (the beginning of the Spring being mild and warm) very forward, so that by the End of *March* they began to lie forth; and altho' the Weather, within a Week of *April*, did somewhat alter, yet (being full of Brood within, which came daily to Perfection, they lay forth in abundance, by Mid-*April*; but the Spring continuing tempestuous and cold until a Week in *May*, Ten of the best wholly perished, not being able, (because of the Cold) to go forth to gather Meat.

Now those that were poor began not to breed so early, and though they were not so well supplied, yet had they few Mouths, and endured the Extremity, and swarmed that Year, though later than ordinary.

Sometimes

Sometimes also in regard of the uncertainty of the Weather, early Swarms are not the best. I had once (1652) Twenty Swarms before Mid-Maj, and many more after, and of all, but one survived until the next Year, the Year being so dry, that by *Midsummer* there was scarce any Flowers.

Many times may Swarms prove not so well as those that are cast in the Beginning of *June*, the Wind oft times continuing high and cold, and the Season Close, so that many Swarms are like to perish.

If a Swarm by bad Weather be checked and hindered in their Work the first Week, they will seldom work courageously all the Summer following.

Dry Weather makes plenty of Honey, and moist of Swarms; so that when a dry Summer follows a moist Spring, the *Bee-Folds* are Rich, but if the Summer be also moist, the Increase of *Bee* will be great; but because of the Scarcity of Honey, this Increase will prove a Decrease; the more Swarms you have at the End of Summer, the fewer Stalls shall you have at the Beginning of the next; for, (except some very early Swarms, and some good Stocks which Cast betimes, or not at all) they will

40 *The English APARY: Or,*

alldie for Hunger; for the Weather keeping them much in, they can do nothing but Breed, and when they go abroad, bring in nothing but *Bees Bread* and Water, wherewith they feed their Young, but can find nothing to lay up in store; so that moist Weather gives them two Causes of swarming, plenty of *Bees*, and plenty of Money; and so neither Winds, nor Clouds, nor Rain can stay them.

Before they swarm, their After-swarms, within two or three Days, they will, by a peculiar and distinct Voice, make it known throughout all the Hive, but this Voice is not heard, but some few Hours before they go forth with their first Colony.

The Signs of the first Swarms are somewhat uncertain, but lying out, about, or under the Hive, in the Mornings and Evenings only, is a very probable Sign of swarming, whereas to lie out constantly is a Sign of not swarming.

When they will presently swarm, you may sometimes know, by their gathering together at the Door, and not only upon the Hive, but on the Stool also, and when you see them begin to hang one upon another in swarming time,

the Compleat BEE-MASTER.

time, and not before, and to grow it to a Cluster, that they cover the Stool in any Place, then they will certainly rise presently, if the Weather hold; but commonly some few do first fly forth to and fro' the Hive Door, with a greater Noise than ordinary, and do allure out more Company unto them, and so the Noise made by them is more smart, when they begin to dance before the Hive, and making many circling Motions.

If they begin a Comb under the Board, it is a sure Sign of not swarming; sweep them down that hang under, and embitter the Place, and gently drive them into the Hive with a Brush of wet stinking Weeds, or smoak them in; but do what you can, some Hives will not swarm at all, or not a great while.

Always chuse a Hive answerable to the Swarm, a forward Swarm, if great, may be put into a Hive holding somewhat more than three Pecks, but if it be a Prime Swarm, in the beginning of June, into a Hive holding three Pecks; if at Midsummer, into one, somewhat less, but I like no Hive that holds not somewhat above half a Bushel.

41. The English APIARY: Or,

As soon as the Swarm is settled, go presently to Hive it, (having Hives of all sorts always prepared) for fear of rising again, and of others coming to them, if it be in the heat of the Day, and the Sun come to them, they will not stay long; where there are many Hives, there is a likelihood of others rising, and if they are within hearing they will fly all together, therefore hive them presently, and if any other arise before you have done, stop them up with a Cloth, (and when you have dispatched, let them out) but if you have finished before they come forth, or come toward you, cover the first with a Sheet, until the last is settled elsewhere; but if they fly about the cover'd Hive, seeking to enter there, set down a prepared empty Hive by it, and they will often go in of themselves.

But if two prime Swarms rise together, then there is no prevention, but, for the most part they will settle together, hive half of them into one Hive, and the Remainder into another, and if the Queen-Bees are divided, they will continue severally, but if otherwise, they will go together again, and if so, knock them down into a Fan, or upon a very broad Board, and set two Hives

over

over them, having first laid Sticks to bear up them a little from the Bottom on every side, and with a Wing or Brush of Woods, sweep some to one, and some to another, as equally as you can; but if, notwithstanding all this, they will all go to one Hive, then fetch a weak Castling, and knocking down near half of them upon the Fan, carry the other away the distance of a Rod, or more, and set the Castling over those in the Fan, so shall you have two good Hives. If your Swarm light upon a Bough, shake them in gently, and set them upon a Board or Fan, underneath the Place, having laid two Sticks first, (near an Inch thick) about half a Foot asunder, to bear up the Skirts of the Hive, that no Bees are crushed, and that they may more readily enter; and if any rise (as usually some will) shake them down, and lay a handful of *May-Weed*, *Wormwood*, &c. in the Place where they settled, and they will quickly remove and go to their Fellows; but if they light very high, then carry up a Cloth with you, and cover them in the Hive, and bring it down with the Mouth upwards, and set them below as before, and fetch what Remainder is left in another empty Hive covered, and

44. *The English APIARY: Of;*

and when you are down, knock them out by the side of the former; sometimes you must do it a Third, or a Fourth time before you have all.

If they light upon the Body of a Tree, (they will be troublesome to hive) you cannot take half of them in at once, but sweep with a Win, or Brush of Weeds, as many as you can, and set them under the Place, and fetch the Remainder as before.

Sometimes it will not be amiss to saw down gently the Bough where they hang, fastening first a Line to it, and so softly let it down, or bring it down in your Hand; I have brought down many, and hived them with ease below. At other times when they have been very high in the Middle or Out-side of a Tree, I have carried up a Fan, and fastened it by the Ears underneath the Swarm, and so hived them as easily as if they had been near the Ground, and in the Evening, without any Trouble, fetched them down and set them in their Place.

If they settle on a dead Hedge, or on the Ground, set the Hive over them, propping it underneath if there be Cause, and with a handful of wet Weeds, stir them softly underneath, and they will go up; and to allure them the sooner,
anoint

anoint the Edges of the Hive with a little Honey, and sprinkle a little within it.

To cause Sticks that lie out more freely to swarm, I have first rubbed the bottom of the Stool against the Door well with Wormwood, or the Juice of Elder, and all the sides about the Door, and laid Wormwood, or May-weed also close to the Mouth, and also before, and above the Door; and then in the heat of the Day, I have taken off their Cover, so that not being well able to rest, they have presently swarmed.

Bees will swarm any time of the Day, between Eight in the Morning, and Four in the Afternoon, but the chief Time is, between Eleven and One; the swarming Months are, *April, May, June* and *July*, rarely, tho' sometimes in *August*; and if they be checked by changeable Weather, and discouraged at the first for a Week together, they will scarce work kindly all the Year after.

Signs of After-swarms, are more certain, for about Ten Days after the First Swarm is cast, sometimes a little sooner, sometimes a Day or two later; the next Princess will begin to Tane in her Treble Voice a mournful and begging Note, as if she did pray her *Queen-Mother*,

46 The English ARIARY: Of;

her, to give her leave to be gone, unto which, if the *Queen* reply, turning her Back to the young *Princess's* Treble, as commonly she doth, (tho' sometimes not intreated in a Day or two) then she consents, and the Third Day after expect a Swarm; the First Day, how fair soever, they will not go, and not ordinarily on the next, but on the Third, tho' it be somewhat Close, and cloudy, yet sometimes the Weather being very Cold and Windy, I have known them stay five or six Days after Liberty granted.

In the Evening before they swarm, the young *Princess* goeth, calling from one part of the Hive to another, and resting a while between, she still renews her Calling; in the Morning before, she often descends to the Bottom of the Hive, with shriller and thicker, longer and more continued Notes than the First.

If the *Queen-Mother*, after a long Intreaty be silent, then there is no way but the *Princess* must die, as sometimes the *Commons*, (knowing best their Numbers within, and the State of the Weather abroad) will kill her and all the Infants of the *Blood-Royal*, but not ordinary.

Some.

the Compleat BEE-MASTER. 27

Sometimes a Third, nay, a Fourth will arise after a Second, if the Prime Swarm be broken, but all (ordinarily) within a Fortnight. I have known the last (but rarely, and in bad Weather) Seventeen Days after the First.

The ringing of Basons and Pans is needless, for they will settle of themselves, except they have chosen a Place before, and then when their Company is all out, they will fly directly thither, and ringing will prevail nothing.

To Arm them that Hive the Swarms is needless, they may securely do it without any Cover or Defence, except they be about the Body of a Tree, or settled very high, then get on a pair of Mittens, and a thin Cypress Cover over the Head and Face. The Second Swarms will usually fly longer about (before they light) than Prime Swarms, because they would allure as many as they could to come forth, to augment their Numbers.

Sometimes Swarms will settle in two or more Clusters, a little distance one from another, (seldom Prime Swarms) usually the Cause is, because there are divers Commanders, and each gets a Company. Hive the greatest Cluster first, and set it down towards the other, then

48 The English APICARY: Or,

then into an unspleated Hive, shake down the other, and when they are all in, knock them down by the first, and they will go together.

The Second Swarms, except they are Early, and out of large Stocks, seldom thrive alone; therefore unite Two or Three together; you may do it thus, having hived that Swarm that you intend to put to another, as soon as it begins to be Dark, take a Fan, and laying a couple of Sticks on it, set your first hived Swarm on them towards one End of it; then fetch the other, and between your Hands, clap the Hive hard on the one side, holding it close to the other, most of the Bees will fall down at the first clap, but repeat your knocking, and they will all fall down, and if they enter not presently, stir and guide them to the Hive with a Brush of Weeds, and such as go any other way, sweep them to their Fellows, and they will all quickly and quietly ascend; within an Hour or two you may (for the most part) set up the Hive again in its Place; I have not lost Forty Bees in thus uniting Twenty Swarms, besides the Commanders, which of Necessity must perish.

The

The Chief Cause, of Swarms returning Home again, is, the Miscarriage of the Queen, who cannot well lose her Wings, and assaying to fly, falls beside the Stool; sometimes flies farther, but being quickly weary, falls short of her Company. You may easily know if it be thus, for as soon as you have hiv'd the Cluster, the first Inquiry they make is for their Leader (whose coming while they hang, they did anxiously expect) but now being liv'd, and missing her, they presently discover it with a mournful murmuring; sometimes crying out together, and then are all suddenly silent; and by and by again renewing their sad Lamentations, tumultuously likewise running before the Hives, and about the sides, discontented and distracted; others are flying (but pitifully complaining as they fly) about the Garden with abusive Quest searching for her, and if they do not in a short space meet with her, will all, comfortless, return to the Stock again. But if they find her, or she be brought unto them, they presently Congratulate her Return with continu'd shaking of their Wings, and Rejoydings, witnessing their present Satisfaction. But, if (not finding her) they return Home, the next

F

time

time they come forth is not at the Will of the Commons as before, the next Princess must obtain Leave of the Queen-Mother, as in second Swarms. Now when you see their discontented Carriage, presently seek about (beginning at the Stock, where they rose, and go that way the Swarm took) and you shall undoubtedly find her, for she is encompassed with a Guard which will never stir from her, though they starve in the Place; take her up therefore, removing the *Bar* that environed her (you may do it securely with a little Stick) and carry her to the Swarm, and you cannot but with Wonder behold the sudden Alteration.

If a Swarm light near the Place where another was hived a Day or two before, when you have hived it, set it Ten Foot distance, where the other stood, for some *Bees* of the first hiv'd swarm, will, for two or three Days, hanker about the Place, and will boldly enter your other Hive, supposing it their own Company, and so miscarry by the others, who will deal with them as Enemies.

The Swarms will, the Day after they are hived, busily follow their Labour, but removing them from the Place where they were hived, doth not a little

the Compleat BEE-MASTER. 51

little discourage them; if therefore the Weather be not fair, they will not stir the first Day, and so as the Weather lasteth, droop and grow faint, and sometimes totally Miscarry. To prevent this, the Day after they are set up, about Noon, (except it rain) put a little Honey under the Hive near the Mouth, and some at, and before the Entrance, less than a Spoon-full will serve.

If the Weather continue cold and cloudy a Week together, without a little Supply they will die, there for every Day refresh them with a little Honey; you may put it into the Hive upon a piece of an Old Comb in the Evening; they can indure four or five Days without Meat, but try them not too far.

If your Stocks Cast a second Swarm after *Midsummer*, the best way is to return it Home again, and hive it as you do other Swarms, and about six of the Clock, knock them out on a Table before their Stock, and they will go in, and if they come forth again, do so the second time, and as often as there is Occasion; but look heedfully when you first knock them out for the Queen-Bee, and take her away, and then shall you be sure to prevent farther Trouble, thus

F. a. shall

52 The English APHARMS Or,

shall you keep your Stocks full and lusty.
Set the poorest Swarms on a Plank by
themselves, and when they have done
working, daub them round, allowing
Air, only through two or three Quills;
set them in a dry cold Place of your
House or Barn, and so being little sen-
sible of the Alteration of the Air, they
will sleep much and eat little.



CHAP. XII. What Flowers the BEES gather of.

IT hath been almost generally receiv-
ed, that Bees gather from all sorts
of Flowers; but Bees gather not of
such Flowers as have deep Sockets, as
Batchellors-Buttons, Cuckoo-Flowers,
Dead-Nettle, Wood-Betony, wild Blue
Tears, Red Honey-Suckles rarely, and
divers others; and of these the Humble
Bees gather plentifully, Nature furnish-
ing them with larger Fangs, and longer
Tongues than the Bees.
Ordinarily they gather not of many
small Flowers, as Robin, Pimpernell,
Haresfoot, &c.
Nor ordinarily of many Physick
Herbs, as Agrimony, Centaury, St. Johns
Wort, Mugwort, Motherwort.

Not

the Compleat BEE-MASTER. 57

Not of bitter Herbs, as Wormwood, Lavender-cotton, Southernwood, &c.

Not of very dry Flowers, as Docks, Sorrel, Mercury, Wheat, Rye, Oats, &c.

Not of those that have a strong stinking smell, as Smallidge, Hemlock, Crown-emperial, &c.

Not of those that are Soporiferous, as Mandrake, Red Poppies, Nightshade, Black-briony, &c.

Not of those that are very Cold and Unctious, as Orpine, Houflock, Prick-madam, &c. For all oily and unctious Things are hurtful to them.

Not of those that have a strong sweet smell, as Feverfew, Maudline, English Laurel, Myrrhe, &c.

Of very few Flowers that grow in Ponds, or Rivers.

Not of those Flowers that shut hard and close at the top or Lips, as it were, as Toad-flax, Snapdragon, Fox-gloves, which the Humble-Bee will open, (being stronger) and gather of.

Not of very double Flowers, as double Primrose, Wall-Flowers, &c. Except where the Leaves are very fine, as Dendelyon; nor of such whose Strigs or Horns extend far out of the Flower, as Ayens, except there be an Excrescency.

14 The English Amaryllis

of God in the middle of it is Gilli-
flowers have sometimes gather of such flow-
ers as are hurtful, the Tied, Tied, and
the Hop are very pestilent, and Yew-
Tree.

Tulips kill Bees, for closing a little in
the afternoon the Bees that are within
are imprisoned, the doors being out-
bowing and smooth, they cannot get
out, and will be dead before the next
day when they open.

BEES gather of these Flowers fol-
lowing.

In March.

Hazel, Willow, Sallow, Daffadill,
Violet Gooseberry, Mistletoe, Crocus,
Flax, Primrose, Dandelion, Bearfoot,
Black-Thorn, single Wall-Flowers, &c.

In April.

Ad-hoop, Oak, Peach, Cole, Tur-
nep, Sycamore, Ribwort, Spick-gill-
flower, Furze, Strawberry, Broom,
Beane, Bearsear, Ozite, Plumb-tree,
Cherry, Peach, Apple, Crab, Barber-
ries, Beech, Pear, Maple, Birch, Apri-
cots, &c.

In

BEES IN MAY.

Water-Creases, Angelica, Parsnep,
Onion, Leek, Garlicke-seeds, Tamarisk,
Thrift, Sage, Mouse-ear, Raspis, Mary-
gold, small Yellow Honey-suckle, Pop-
py, Woodbine, Medlar, Barnett, wild
Tansey, Archangel, Haw-Thorn, Elder,
White Honey-suckle, Pease, &c.
In **JUNE** the Bees are
Dow-berry, Blue-bottle, Dyers-weed,
White Bryony, Origanum, Hyssop, Com-
mon Thistle, Burragel, Parsley, Roses
Red Damask, Mustardseed, Mallows,
Melilote, Calamint, Cowcumber, &c.
In **JULY** the Bees are

Tobacco, Cardus-Benedictus, Pen-
ny-Royal, Scarlet-Beans, May-weed,
Gourds, Harts-Mint, Skerfets, Yarrow-
Nip, Sow-Thistle, Succory, Dill, Fen-
nel, Holyhock, French Marygold, La-
vender, Black-berry, Buck, &c.
In **AUGUST** the Bees are
Red Eysbright, Knapweed, Heath,
Ivy, &c. In

In SEPTEMBER.

You are to take notice, that many of these Flowers blow twice a Year, as Rosemary, Archangel, Burrage, altho' not the same Roots, many afford Matter of gathering in the Morning before the Dew is quite exhaled, which in the heat of the Day yield as little as Pease, and a tall rank Grass, with a Stalk a Foot and half long, with a Bushy Ear. If there be Flowers enough near at hand, to make up their Burden of that sort they begin withal, they will meddle with no other that Journey; but if they have begun to gather of a Flower they like, and cannot find enough to furnish them, then they will make up their Load of some other.



C H A P. XIII.

Of the Ordering of BEEES.

IN February, lift up your Hives on the one side nimbly, and, with a Wing, wipe away all the Sharings of Combs, Pross, Dung, &c. which although the

Bee.

The Complaint BEE MASTER. 37

Bees in time would perform, yet hereby shall you save them a great deal of Labour.

If your Old Stocks have any Crumbling or Crispy Combs, take them out in the Spring, for they cannot work to them; lay the Hives on one side, having ready a Fire of dried Cow-dung, in a Chafing Dish without a Flame, the Smoke will drive the Bees inward, and you may securely perform it.

Bees are much offended with long Hair on Head or Beard, but such therefore, as must be often among them, wear it short, or be well covered.

If a BEE have stung you in hot Weather, depart for a while, for there issues with the Sting, a strong poisonous fluid, which you may smell, but howsoever the BEES knowing thereby, that some of their Company are wronged, will, with eagerness, vindicate the Injury, coming thick about you.

The best time to do any thing about them, is, in the Morning before they stir, or when they are now gone abroad, or in the Evening when they are returned from their Work.

Be very careful about the Door of the Hive, for Negligence herein, occasions the loss of more BEES than any other

58 *The English* APIARY: OR,

other Neglect, from the Dor-mouse and Tit-mouse in Winter, and the Wasp and Robbing-Bees in *Autumn*.

Let the Doors be somewhat long, but not much above the height of a BEE, and more or less open, according to the Seasons; but rather leave too narrow an Entrance than too large; a thin Board in Winter, cut in Notches like a Grate, well fastened to the Hive, with Cow-dung and Ashes tempered together, two Notches open in Winter, is enough for a good Hive, one for a poorer.

When they have wrought a Week in the Spring, the better Hives may have three or four Notches open, and by degrees more, until they be full, then take away the Grates until *Autumn*; but be sure to set them early to the Old Stocks that have over-swarmed, and to the poor Swarms, and in a dry Year sooner than in a moist, the Wasps and Robbing-BEES being then most busy.

When you see the Wasps forsake eating of dead BEES, before the Stools venture into the Hives, set up the Doors to the poorer Stocks, and narrow the Passage of the better, that it may not be above an Inch long.

BEEES

BEEES are an Annual Creature, and live not beyond a Year with the Vantage, on the same ground; therefore all the Old Stocks must be taken every Year.

It hath been enquired, how much Honey will serve a Hive of BEEES all Winter, the number of BEEES, the Spring altering later or sooner, makes this uncertain, but I would not willingly let that Stock continue, that had not five Pints at the least. Sometimes it will be convenient to hoist up such Swarms that you fear will Cast, especially if *Midsummer* be past; for, altho' they may live, yet ordinarily they will be weak and poor; and the Stock whence they came so impoverished, that if it continue, it will scarcely swarm the Year following; raise them up by putting four Brickbats of an equal distance, under the Skirts of the Hive, let them go no farther inwards than the Verges, then daub them up well, leaving a fitting Passage for them to go out, and set them down again in *January*, which although they may work down to the Board, yet you may do it, by laying the Hive on the side, and making a Smoak (as before) in a Cold Morning, to drive the BEEES up; with a long sharp

60 *The English Art and Mystery of Beekeeping*

asp. Knife, Cut the Combs in little
within the Hive, (as I have often done)
and there will be no Danger nor
Damage.

If you will Drive your Bees, take
this Course; when your Stock hath
Cast a second Swarm, the Night fol-
lowing drive the Old Stock into the
Swarm, and they may do well, except
it be late in the Year: I have driven
Ten Hives in the beginning of May,
(not swarming the Year before) all
which after swarmed the same Summer,
and the Prime Swarms did very well.
Old Stocks before they have swarmed,
and early Swarms driven, seldom miscari-
ry: I have known them driven twice in
Three Weeks, and full of Honey the se-
cond time; I know one swarm Drove
the Third time by a foolish Neighbour;
and had above 4 Gallons of Honey: at
either of the two first Drivings, and
above three Quarts the Third time; but
it was so late, that the Bees died that
Winter. If you have a Stock that lay
out the Year before, and swarmed not,
and doth so the Year following, and
Midsummer be past, drive it, and send
to one (if the Year be indifferent) it
will do well.

Now

Now to preserve your Stocks, and yet to make some Advantage of your BEES, take this Course, that I do, about *Bartholomew-tide*, I survey my swarms, and all those that I find not by the Weight competently supplied, with Five Pints of Honey at the least, I take, and I examine my Old Stocks, especially such as have swarmed twice, or oftner, and where I find few Bees, which you shall know, by giving the Hive a little knock on the out-side with your Finger, if the Murmur be sudden and short, but few, if smart and long, descending from the Top downwards, then a sign of Plenty, And if few, tho' never so well stored with Honey, yet will not continue over the next Spring, but will be a Prey to Robbers; therefore better to take them, than lose them and their Honey also; but yet if you desire to save any that are well supplied, then drive a swarm you intend to take into them, so shall you have a good Stock.

The Method to take Hives in the latter Part of the Year, is by Burning, which thus do, take an Old Linnen Cloth and cut it into narrow Pieces, half an Inch broad, and two Handfulls long, dip them in Brimstone, and having digged an Hole near
G the

82 *The English* APIARY: Or,

the Hive, somewhat more than a Foot over, and half as deep, set in the Bottom two or three crooked Sticks, into which, put as many of your Rags, kindle them, and set the Hive over, stopping the Verges close, and in a short space they will fall down stifled.

For Driving, have a spare Hive, of the breadth, in the Skirt, of that Hive you will drive, setting it on the Ground, put a Sheet over it, and well fastning it with a strong Pack-thread round about it, within an Inch of the Skirts, then having a Trevit, Pail or Firkin ready, set the empty Hive therein with the Mouth upwards, then lift the Hive you would drive, nimbly from the Stall, and set it upon the empty one, and gather up quickly the Sheet that hangs down, and fasten it well likewise, about an Inch from the Skirt, and turn them thus tied together, that the empty one may stand upward, and knock gently with the Palms of your Hands on the side and Crown, sometimes in one Place, then in another, and often stop a little, that they may ascend, then reiterate your clapping again; in half an Hour they will all, or most part be gone up; if you do it in the Evening, let it stand unmolested all Night; if in the Morning,

Morning, let it be before Sun; if there are any *Bees* behind, when you take out the Combs, sweep them off with a Wing, and they will find their fellows.

For feeding them I altogether dislike, except in the beginning of the Year, in tempestuous Weather, or the backwardness of the Spring, for about a Week.

A watering-Place near your *Bee-Garden* is very necessary, they cannot subsist without it; and if you can bare the Banks of the North side of your Pond from all Bushes and Rushes, shelvingly, where they may drink under the Wind, and in the heat of the Sun, and suck it out of the Earth above the Water, which they rather desire, than to suck the pure Water itself.

But if you have neither Pond nor River within twenty Rods of your *Bee-Garden*, set Water in Wooden Troughs in your Garden, and have light Boards or Corks within them, to rise or fall with the Water, with many small Clifts or Holes, for the *Bees* to stand on and drink; keep Hens and Chickens, especially Ducklings from the Troughs, for they will destroy your *Bees*.

They will be very much about Sinks, and where greasy Water is thrown; nay they rather delight to drink out of Saw-pits and holes where the Water is

thick and troubled, than out of Ponds, by reason of the saltness that is in Sinks and such Places, which makes them strong and lusty, and therefore Salt is prescribed to be laid under weak Stocks.

The best time to remove Bees (if you are to carry them far) is in the End of *January*; altho' if you are necessitated, you may do it well enough presently after *Michaelmas*. A little before you take them from their standing, lift up a little the Skirts of the Hive, and put three or four Tile-merds under the Verges, that (the Hives standing above the Board) all the Bees may ascend; of some will be left on the bottom of the Stool, and be lost; then spread a Sheet upon the Ground before it, and nimbly take it off, and set it upon the Middle of the Sheet, and gathering it up round, tye it up close about the Crown with a Noose, tye it also about the Middle; with a Packthread, then put a strong Staff through the Noose, let it hang perpendicular, not swaying one way or other, Let it be carried between two Persons to the Place you intend it, and set it down, but open it not presently, for the Bees being disturbed, will be ready to fly forth, see

it up in the Evening, and stop it up close (leaving breathing Holes) until a fair Day, and then open the Door.

*** ** ** ** **

G H A P. XIV.

Of B E E S Age.

B E E S live but a Year and a Quarter at the most, for those *Bees* that seem in *May*, to be lusty, full, brown, smooth, well winged, will, by the End of *July* following, begin to wither, become less, look Grey, and have their Wings torn, and be all Dead before the End of *August*, and yet they live twice so long as the *Drones*; but by Succession, they may continue many Years. It is well known, that some Hives continue Twenty Years and more, but their short Life is occasioned by their unwearied Labours.



Of BEES Fighting and Robbing.

BEES when they are abroad at their Work, are very gentle and peaceable, and will not resist, if they can fly away, whereas at their Hives they are very furious.

When two Swarms settle together, and eagerly bid Defiance each to other, (this falls out seldom, yet sometimes it happens) always expect a Martial and deadly Skirmish.

When a Company, with their Leader, forsake their own Hive, and enter into another, their Difference is irreconcilable, but by the Death of one of the Commanders.

I had once Two large Swarms, that rose immediately one after the other, and before the first were fully settled, the last came and settled with them, and began to kill each other most desperately: I caused them to be hived that were yet alive, half being slain in little more than a quarter of an Hour; but the Remainder being Hived, yet ceased not their Quarrel (although I threw strong Drink upon them) but still continued the Battle, that before
Night

Night, there was not above a Pint left. But although two Companies coming together with equal Forces, be thus desperately cruel; yet, when they rob, they shew less Rage, but are not less hurtful: The lubiest and best stored Stocks, will be first prying into their Neighbours Weakness; and they usually set upon some well provided Stock, whereas the farcest of the Booty, is a fitness to their Defects; they are Impudent when they meet not with bold Resistance, only Resolution can make them give over; they first come with a few, and make an Assault, but still renew their Numbers, and not prevailing that Day, with the next Morning, before the True BEES be stirring, venture in, and if the Opposition be not resolutely maintain'd, they will come so numerously, as Waters at a Breach, that resistance is to no purpose, and then they do fall to Plundering, going and returning until they have carried all away, to whom often the true BEES (seeing their Condition otherwise desperate) will join themselves, and accompany them to their Hives, and help to carry away their own Goods.

Sometimes many Stocks will be up in Arms together, and then it is no easy

68 *The English* APLARY: Or,

fy. manner to quiet them, the best way is by narrowing their Doors when once Mid-July is past, that but a BEE or two may enter at once, (I mean of the poorer Stocks) but if this have been neglected, and they be together by the Ears; then make a smock of Muleh and wet Straw; and throw Water about the Hive Door where the greatest Conflict is, straitning the Passages of those that are robb'd; sometimes (if the Skirmish be violent) stopping them up close, and throw Water upon those that eagerly seek to enter, and in less than an Hour, finding no Entrance, and Trouble without, they will return Home. After Sun-set open them, and all the Robbers that are alive will go to their own Hives; examine their state after, and if you find but few Bees, never trouble yourself for their Preservation, for one time or other they will be robbed, if not, they will never thrive.

But if there be a considerable quantity of Honey still left, and also of Bees, then stop them up again close, allowing them Air through a Quill; stop them well, for in the Day-time they will be gnawing to make a Hole out, and the Robbers will be often visiting the Door, which, if they find open, (if
you

you do not presently stop them in again) the last Danger will be worse than the first. After Sun-set allow them a Passage to go forth, to take the Air, and empty themselves; take this Course seven or eight Days, and when you give them a free Passage in the Day, let it not be till Nine of the Clock; and the first and second Day, stop up their Enemies; and in eight Days they will forget them.

Or if you do not know the *Phundering Bees*, which you may easily, Cast Flour on the *Bees* you let out, and observe whether they go, and when you know them, with a long Pen-knife through the Hive, cut the Combs toward the Top, that you may find them work, to mend what you have broke. Although they will not admit of strange *Bees* in their Hives, yet divers Stocks will Conspire together to undo their Neighbours; and usually they prey further from Home.

The chief times of their Robbing, are in *Autumn* and the *Spring*, usually about the End of *August*, but in dry Years, about a Fortnight before, the lustiest (being most numerous in *Bees*) practice it on the Old Stocks, such chiefly as have over-swarmed; on such also

as have lost their Leaders, who are too Cowardly to resist, and will quickly go along with them, and help to carry their own Goods.

Another time of Robbing is in the Spring, and then those poor Old Stocks that escaped in *Autumn*, must be carefully watched, poor swarms also shall now be tryed, until the Flowers be plentiful. Swarms are with more difficulty prevailed against, than Old Stocks; for they may not have wrought down to the Board, and so the Entrance be more easie, yet they are more Multitudinous, whereas Old Stocks, tho' they have more Provision, yet have fewer Soldiers.

Once, if you perceive that Wasps, in Multitudes, or Robbing Bees, have made a Breach into an Old Stock, delay no longer, but take them, for although your Care by stopping them up, and narrowing their Entrance, you may prevent their present Destruction, yet will they not escape in the Spring: but there is more Hopes of a Swarm.

C H A P. XVI.

Of BEES Enemies and Sickneses.

Although the worst are from themselves, namely *Bees*, yet *Mice* also are very destructive, sometimes getting in at the Door when too large, sometimes they make their Way through the Hive near the Crown, and shake down the Combs, and eat the Honey; and, if let alone, will often make their Nests among the Combs; be careful of your Door: often, especially in the Winter, view your Hives. If you see any crumbles of Wax at the Door, be sure there is something amiss. Keep Traps about your Stalls.

Wasps in Harvest do great Mischief, at first when they come, they content themselves with dead *Bees*, but after venture into the Hives, and most in cool Mornings when the *Bees* stir not, and never give over, but invite their Fellows; nay, they are often the Robbing *Bees* Harbingers, who usually end where they begin; and tho' there be an Antipathy between them, yet will they readily join to plunder poor Hives; they are hardier and stronger than *Bees*.

In

72 The English APIARY: On

In the Spring, at your Places where your *Bees* drink, and on the South-side of your Pales, you may see the Mother *Wasp*, drinking or gathering; by killing them, you destroy as many Nests as *Wasps*, for every Mother-*Wasp* makes a Nest, and when they have bred, let their Nests be sought out, and burn or scald them; or (which is sooner done) in the Evening, with an Iron Spade, (having observed before which way they go) seek for their Nest by putting it in to the Ground, you may know when you meet with it by the hollownesse of the Ground, then loosen the Earth round and stamp it in: Set Glasses with strong Wort, sweetned Water, (or rather Pots covered with a Paper, and a Hole in the Middle, for in the other, the *Bees* will be often drowned.

The *Hemitt* now and then catches a *BEE*, her manner is to fly about the Hive, and when she seeth a *BEE* resting herself upon the Stook, seizeth upon her, and carries her away in her Feet.

The great *Titmouse*, called a *Colemouse*, with a Black Head, is more hurtful, she will eat ten or twelve *Bee* at a time, and soon after be ready for more; she feeds her Young ones also with them: she eats not the whole *Bee*, but divides it in
the

the middle, and pulls out the Bag of Honey with the Entrails, letting drop the skinny out-side; when she comes to the Hive and finds none, she knocks with her Bill at the Door, and as soon as they come out, she catcheth first one, then another, until her Belly be full. In the Spring she watcheth for them in the Willow and Sallow Trees. Destroy their Nests in Breeding-time, and shoot them in Winter.

The *Spider* is a great Devourer, if the Hives be empty; or have but few *Bees*; she will make her Webs within: but for the most part she lies between the Boards, where they fold one over another, in the Day, and in the Night weaves her Webs before the Hives, and also in Hedges to catch them; and they will grow quickly greater than large Pease by eating of *Bees*.

The *Moth*, with her Mealiness, offends them; but except the Hive have very few *Bees*, she doth no great hurt, yet then she will lay her Blots in the Combs, which will consume them all; ordinarily she breeds her Young by the Heat of the *BEEs*, under the Skirts of the Hive.

The *Pismires* are very hurtful, troubling the *BEEs* and devouring their Honey,

ney; scald them in their Nests, and Tar the Places where they use to ascend.

Sparrows feed on *Drones*, taking notice of their often flying to the Hives, & feared they destroyed the *Bees*, but when I caused their Young to be taken, I found their Crops full only of *Drones*.

Crabs burned are hurtful to them, also the smell of Dung, and Places subject to *Eccho*, this, and great Noise much exasperates them. Snow is very hurtful when it dissolves, for the *Bees*, with the Heat, being invired out of the Hive, are dazled and blinded, flying a while up and down, being weary, think to rest themselves on the Snow, which they no sooner touch but are killed; be sure therefore, at such times, to shut them in.

Sharp Frosts, nipping Blasts, drifting, fleet, cold Winds, and boisterous in the Spring, are very prejudicial, for the *Bees* coming Home weary and laden, are beaten down after in Multitudes, and unless the Sun shine out presently, or the Winds Calm, never recover the Hives; take heed of an Eddy Wind from some Building, and let them stand not above a Foot or little more from the Ground.

BEES

the Compleat BEE-MASTER. 75

BEEs are sick in dry Years, and at such times when the Flowers are blasted. They are troubled with a Scouring, by gathering or feeding on Tythymal, and the Buds of Elm, but they seldom gather of the Elm.

If you desire to have your Bees thrive and prosper, keep them well from Winds and Wet, Heat and Cold, destroy their Enemies, and let them enjoy a sufficiency of Food, gotten by their own Industry; and if there be a Want in some, timely supply them, and doubt not of, (by God's Blessing on your Endeavours,) the Increase and Prosperity of your Bees.

Mead, or Hydromel is of Two sorts, the Weaker and the Stronger, *Mead* and *Methaglin*.

C H A P. XVII.

The making of MEAD.

IF the *Must*, when it is all-together, be not strong enough to bear an Egg, the breadth of Two Pence above it, then put so much of your Coarse Honey, of H. 2. into

76 *The English APIARY: Or,*

into it, as will give it that strength, which is sufficient for ordinary *Mead*; and afterwards until Night, ever now and then stir it well about the Tub, according to the Quantity that you will make, so must you add a proportionable Measure of Honey and Water, namely Six of Water for One. The Learned Physician *Lobell*, requireth this Proportion of six to one, to be boiled to four; his Receipt of Spices is Cinnamon, Ginger, Pepper, Grains, Cloves ana, two Drams. The second Morning put to the *Must* the Scum of the Honey, stir all together, and stoop the Tub a little backward; when it hath settled an Hour or two, draw it out to be boiled; and when you see the Grounds begin to come, stay, and let the rest (save the very thick Grounds, which cast to your *Bees*) run into some Vessel by itself, which when it is settled, pour out into the boiling Vessel through a clean Sieve, and cast out these Grounds also into your Garden.

The *Must* being set over a gentle Fire; when you see the Scum gathered thick all over, and the Bubble at the side, begin to break it, having slack'd the Fire to cease the boiling, skim it clean, then presently make a fresh Fire
to

to it, and when you see the second Scum ready, having slack'd the Fire again, take it quickly away; then make to it the third Fire, and let it boil to the wasting of a Fourth Part, if it be made of the washing of Combs; and to the wasting of one fifth or sixth Part, if it be made of clean Honey; not ceasing in the mean space to take off the Scum as clean as you can. One Hour's boiling may suffice; but if the *Mead* be of clean Honey, it may as well be done in half the time. Instead of twice slack-ing the Fire, you may twice cool the boiling *Must* with cold *Must* reserved; or else be sure it do boil all the while only at one side, and not all over. After this put in the Spices, *Viz.* To a Dozen Gallons of the skimmed *Must*, Ginger one Ounce, Cinna-mon half an Ounce, Cloves and Mace ana two Drums, Pepper and Grains ana one Dram, salt gross beaten, the one half of each being sowed in a Bag, the other loose, so let it boil a quarter of an Hour more.

The End of boiling is thoroughly to incorporate the beome and the Honey, and to purge out the Dross, which being once done, any longer boiling is Unprofitable, as diminishing more the

78 *The English APIARY: Or,*

quantity than increasing the strength and goodness of the *Hydromell*; as soon as it is boiled enough, take it from the Fire, and set it a Cooling; the next Day when it is settled, pour it through a Hair Sieve or Linnen Bag into the Tub, (reserving still the Lees for the *Bees*) and there let it stand covered three or four Days till it work, and let it work two Days, then draw it through the Tap-way, and Tun it into a Barrel scalded with Bay-leaves, making the Spice-Bag fast at the top; if there remain much Grounds, you may purify them by boiling and skimming as before; but this will never be so good as the first, and therefore put it by itself, or with some Remainder of the Best, in to a small Vessel to spend first before it be soure; if the *Mead* be not much, you may tun it the next Day, and let it work in the Barrel. Being Tunned, it will in time be covered with a Mother; which if by jogging the Vessel, or other Means, it be broken, the *Mead* will turn soure, but so will it make excellent Vinegar, and the sooner, if it be set in the Sun, which the longer you keep the better it will be.

Melbe-

the Compleat BEE-MASTER. 79

Metbeglin is the more generous or strongest *Hydromell*, for it beareth an Egg the Breadth of a Groat or Sixpence, and is usually made of finer Honey, with a less Proportion of Water, namely Four Measures for One; receiving also in the Composition, as well certain sweet and wholesome Herbs, as also a larger quantity of Spices; namely to every half Barrel, or sixteen Gallons of the skimmed *Must*, Eglantine, Marjoram, Rosemary, Time, Winter-savory, ana half an Ounce, and Ginger two Ounces, Cinamon one Ounce, Cloves and Mace ana half an Ounce; Pepper, Grains ana two Drams; the one half of each being bagged, the other boiled loose. So that whereas the ordinary *Mead* will scarce last half a Year; good *Metbeglin* the longer it is kept, the more delicate and wholesome it will be, and withal the clearer and brighter.



THE ART AND MYSTERY OF BEES,
 OR THE ART OF AN EXCELLENT

RECEIPT,

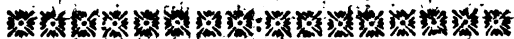
For making *Metheglin.*

*Which Queen Elizabeth did so well like,
 that every Year she would have a
 Vessel of it.*

FIRST, Gather a Bushel of
 Sweet-briar-Leaves and a Bu-
 shel of Time, half a Bushel of
 Rosemary, and a Reck of
 Bay-Leaves; seeth all these, being well
 washed, in a Furnace of fair Water;
 let them boil the space of half an Hour,
 or better; and then pour out all the
 Herbs and Water into a Vat, and let it
 stand till it be but Milk-warm, then
 strain the Water from the Herbs, and
 take to every six Gallons of Water, one
 Gallon of the finest Honey, and put it
 into the boome, and labour it together
 half an Hour, then let it stand two Days,
 stirring it well twice or thrice each Day.
 Then take the Liquor and boil it anew;
 and when it doth seeth, skim it as long
 as there remaineth any Dross. When it
 is

is Clear, put it into the Vat, as before, and there let it be cooled; you must then have in readiness a Tub of New Ale or Beer, which, as soon as you have emptied, suddenly whelm it upside down, and set it up again, and presently put in the *Methbeglin*, and let it stand three Days a working, then Tun it up in Barrels, tying at every Tap-hole, by a Pack-thread, a little Bag of Cloves and Mace, to the quantity of an Ounce. It must stand half a Year before it be drank.

If you marvel that so great a quantity of Water is required, it is partly because of the Goodness of the Honey, which being pure and fine, goeth farther than ordinary; and partly that it may have the longer time in boiling, before it come to its strength, and therefore some will have Eight Parts of Water to One of Honey, but then they boil it so much the longer; the Third Part at least being wasted.



Another Excellent Receipt.

MR. REMNANT saith, That a Friend of his had such a foul ITCH, that he was like a Leper, whom he thus Cured. He

2 The English APIARY: &c.

He took an empty Wine-Pipe, and
nock'd out the Head, and made a Li-
quor of *Water* and *Honey*, making it pret-
ty strong with the *Honey*, and heat it as
hot as he could endure to stand in it,
and put it into the Pipe, and caused
him to stand in it up to his Neck a
pretty while, and this he did Three
Days one after another, and he was
recovered as clear as ever. The like
experience he made for *ACHES*. If
they be renewed with a little *Honey*,
very Day it will be better.

The Use of *Honey* with Bread to Old
Folks, makes them Live long, preserv-
ing all the *Senses* sound, and entire.

Honey will give Life to *Wine*, after it
is Flat, *Flowers*, *Fruits*, and all Simple
and Compound Medicines by Mixture
of it, are preserved from Putrefaction.

Honey is very useful to clear Wounds
and Ulcers. It is very effectual to pro-
duce Hair in Baldness, and to Cure
Quotidian Agues, especially Oil of *Honey*
distill'd. It is also excellent for staying
a Looseness, and helps the *Bloody-Flux*
and *Cholick*; and is good in many
other Distempers.

F I N I S

Fig. 3.

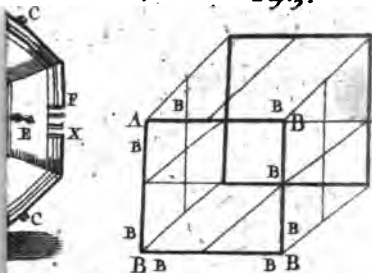
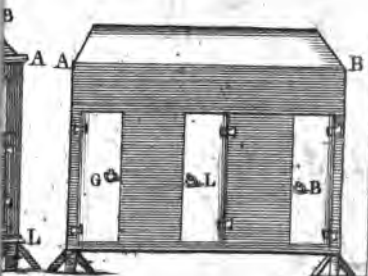
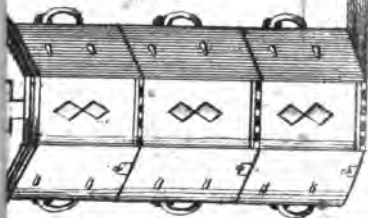
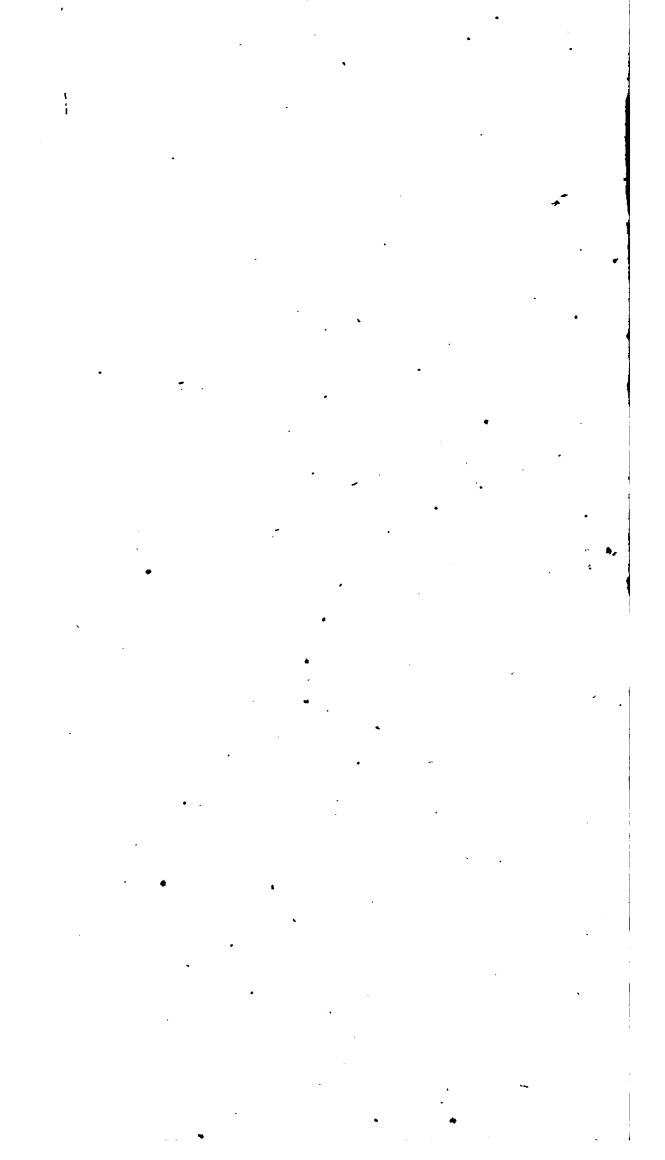


Fig. 4.





A
NEW DISCOVERY
OF
An Excellent Method
OF
BEE - HOUSES
AND
COLONIES.
TO FREE

The Owners from the great Charge and Trouble that attends the Swarming of BEES, and delivers the BEES from the evil Reward of Ruin for the Benefit they brought their Masters; advantaging their Owners manyfold above whatever any Method heretofore practic'd doth.

Experienced Seven Years by *John Gedde*,
Gent. Inventor; and Approved by the
Royal Society at *Gresham College*.

L O N D O N:

Printed in the Year 1675. And
Reprinted in MDCCXXII.



ADVERTISEMENT.

HIS Majesty hath given and granted by Letters Patents under the Great Seal of England, (bearing Date the 23^d of April 1675.) to John Gedde and his Partners, the full and sole Power, Privilege, and Authority of using, practising, exercising and enjoying the New Art and Invention for the Improvement of Bees, during the space of Fourteen Tears, according to the Statute made in that behalf: Barring and Excluding all others whatsoever from Making, Using, Practising, Counterfeiting, Imitating, or Resembling the same, without the special Licence and Consent of the said John Gedde and his Partners, first had and obtain'd, under the Penalties by the said Statute in like Case provided.



A
DESCRIPTION
OF THE
BOXES or HIVES.



THE Boxes may be made of *Wainscot*, or *Firr-Deals*, or of the same Materials that the *London-Pails*, for carrying Water, or as your Bushel or Peck-measure in the Country.

For their Dimension, it is fit that each Box be of that largeness, that it may contain a Bushel, the height not exceeding Twelve Inches, and its Breadth one Third more than the height; that so they may the more conveniently stand upon one another, and that when the

Bees come in Loaden, they may not have a great height to go up.

The Box is in Figure an *Octagon*, or Eight Square, or Round, each side 9 Inches in Breadth; it is cover'd close at the top, having a Square Hole in the middle 4 Inches long and broad, with a Shutter that slides to and fro in a Groove, about half an Inch longer than the Hole. It has 4 Windows, each in Figure a *Rhombus*, or like an ordinary Pane of Glass, opposite to one another, and in them Panes of Glass, Shutters to cover them. The Door for the *Bees* is divided into 6 Holes, half an Inch wide, and an Inch in Height; for the better helping the *Bees* to carry out their Dead; each of these Holes has a Shutter, that slides up and down in a Groove, to cover less or more as the Season requires, or, as Occasion offers. Each Box has two Iron Handles, with Joynts to be placed about the middle of the Box on the sides thereof, for lifting the same up, to set another under it, or for transporting the same for use, when the *Bees* have wrought down to the lower Box. At the top of the Box there is a Grease or Rebbit all round it, about half an Inch in depth on the outside, and an Inch in height, and another in the

the

the inside at the bottom, which serves to fix them, when set upon one another. Each Box has also a Hole at the bottom upon the side, that shuts with a sliding Cover; this is to be open'd and us'd (when the Boxes are plac'd one upon another, and the uppermost is full of *Wax*, and all the *Bees* are wrought down to the lower Box) for shutting the square Hole in the top of the lower Box, that its Cover may divide and cut the Work, in the upper Box from the Work in the lower. And for this End, it is fit that the square End of that sliding Shutter be covered with Lattin or Iron well sharpen'd, that it may cut the Work the better.

Within each Box there is a square Frame made of four Posts joyned together, by 12 small Sticks, and six other crossing these, and one standing perpendicular in the middle of the Frame, the Frame consisting of the 4 Posts, and 19 small Sticks; this Frame is to be put within the Box, and fastned to 4 sides thereof by 8 Scrues, two in each Post; upon this Frame are the *Bees* to fasten their Work, and this is very convenient, for when you have removed a Box full of Work, unscrew the Frame, and then you may take out all the Work with-

out breaking the Box, Frame, or Work, and then you may, with Pleasure, behold the excellent Fabrick, which these industrious Insects have ingeniously fram'd.

The Use of the Panes of Glass, is not only for Pleasure, to behold the Work and Labour of the Bees, but also to know their Strength, Idleness, Faults, or want of Room, that so you may enlarge or remove them as you please. And whereas some may think that the Work of the Bees will darken the Glass; I declare that I have found the contrary by Experience.



C H A P. I.

A Description of the several Figures of a single Box, its Frame, and of a Colony, or three Boxes plac'd on the top of one another.

Fig. 1. **R**epresents a Box projected, lying on its side, with its open end to the Eye, where the Frame is projected, &c.

B B B B B B B B The Box.

C C C G The Serue-Pins.

E O The

E O The Windows.

F X The Doors for the *Bees* to go in and out at.

G The Place by which the Cover of the Hole in the top is shut.

H H The inner Rebbit, or Crease at the bottom.

Fig. 2. Represents a Box standing upright.

H The *Bee*-Hive set upright.

B The square Hole through which the *Bees* work down.

X The Shutter that covers the Hole upon Occasion.

D The piece of Wood that fills up the Groove in the Box that is uppermost.

E X The Doors for the *Bees*.

F N Two sliding Shutters that slide down, each covering three Holes.

G H The Windows with Panes of Glass in them.

Y The Handles for lifting the Box when full.

I The Rebbit or Crease on the top for fastning Boxes upon one another.

K The Pegs that fasten Boxes together.

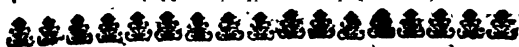
Fig. 3. Represents the Frame.

A The Frame for the *Bees* to fasten their Work on.

B The Nuts for the Scrue-Nails fastned in the 4 Posts or Pillars upon which the whole Frame hangs, and to which the 12 Sticks are fastned.

C The 6 cross Sticks that cross the rest.
B The perpendicular Stick in the middle, by which they ascend and descend, betwixt the Boxes.

Fig. 4. Represents a Colony, or three Boxes standing on the Top of one another, it needs no Description; for it is nothing else but 3 Boxes placed one on the Top of another.



C H A P. II.

The Description of the BEE-HOUSE.

THE *House* may be made either of Wood, Bricks, or Stone, &c. And covered either with Lead, Tile, or Thatch, &c. yet whatever it be cover'd with, it must be ceil'd closely with good well seasoned Wood, and so smooth as no Vermin may have access or place to lodge in; also the bottom must be lin'd with Boards well

well join'd together, it will be convenient that it be two Foot high above the Ground, and stretch'd half a Foot without the Door, that it may be convenient for the *Bars* to rest upon, before they enter the House, and when they come forth to view the Weather, or to lie and Sun themselves in a fair Day; this extension of the floor will serve also for preserving the Floor from Vermin, that none creep up the Wall of the House, or enter.

A L The height of the Wall of the House, which is two Yards from the Floor to the lower Part of the Roof.

B Two Gables arising above the side-Wall.

C The fore-part of the House, it must be covered, so as at convenient times it may be all laid open to the view of the Sun, whereof it must have.

First, D. a long and broad Door hanging down upon Iron Hinges to fold up, and so fastned by an Iron Hinge. The breadth of this Door must be one Third the height of the Wall of the House, and it is so long as betwixt one Corner of the House and the other.

E. O. Two Doors fastned with Iron Hinges side-ways, joyning in two Crea-
ses.

ses made in them, as two opening Doors are commonly made to joyn; they are of equal breadth and length.

F X Two narrow Doors, each in length equal to the preceeding, but far less in breadth; these open side-ways, and shut in a Rebbit, or Crease made, as in the former Doors: These Doors are open all the Summer, and shut all the Winter. The Reason why the Doors are thus fashion'd and fastned, is: *First*, The great Door hanging downward, is only to be lifted up, and open'd once or twice in the Year, at most, when you are to remove any Boxes for taking your Honey, or when you are to add a Box more, then they all are open'd. The other two Doors next to it, are opened upon like Occasion, or oftner, as the *Bee-Master* pleases, when for pleasure he desires to view their Work; for they give Light to the Glass Windows; so that when he looks through the Doors in the back of the House, then the Glasses receiving Light, at the other side will shew the Work the better. But observe, this must not be done in the heat of the Day; also, the upper folding Door is kept shut at these times to keep off the Rays of the Sun from the Boxes and the *Bee*.

In the Figure of the back of the House, G L B represents the 3 Doors therein opposite to the 3 Colonies placed within the House; if you place more Colonies, you may make more Doors.

Y Z and R Represents that part of the Floor of the House, that below the two lowest Doors in the front of the House, is protracted some 3 or 4 Inches.

Each Pillar of the House must be protracted a Foot and a half below the Floor, for Feet for the House to stand on, and to keep out Vermin.

Your House must be furnished with good Locks, Hinges, and other Things thereto belonging.

Also you must make a Spout of Lead, to convey the Water that drops off the Roof, to the Corner of the House, that it may fall there, and not upon the Part of the Floor in the Front of the House, upon which the *Bees* rest themselves, when going out or coming in, lest it should kill any *Bees*.

The House may be made Nine Foot long, and a Yard in breadth within, from side to side.

As for the height of the Roof above the Walls, it may be made flat, or of
any

any convenient length, as the Bee-Master pleases.



C H A P. III.

Of the Convenient Scituation of your BEE-Houses.

HAVING describ'd the Boxes and House, it will be fit in the next Place to advise you how to scituate your House with greatest Conveniency for the warmness, quiet, and conveniency of your Bees flying abroad, and returning Home.

First, Of all your Gardens, Commons, and Inclosures, that which you would bestow most pains upon, in Planting and Hedging, is the fittest Place for building of your Bee-House in; for Bees get their most Profitable Food off Trees.

Secondly, Take care you be well guarded from the North-Wind, or cold Storms, and see that the House be fenceable against all their Enemies and yours.

Thirdly, Place your House in the most Dry Valley-Ground, that the ascent may be when they go abroad, and the descent when

when they return Home loaden with Work.

Fourthly, Build not your House directly *East* and *West*, but a Point or two from the *South-East*, to the *North-West*, because the *Bees* come not forth in the Morning before the Sun is risen, and they continue after the Sun is set, at Work and Exercise, if the Night be fair and calm, whereby, in several Days, some Hours are gain'd to their Advantage.

Fifthly, Beware that you over-lay not your Ground with too many Colonies, for there will be more profit of a few Colonies well nourish'd, than of many in over-laid Ground: Wherefore, build your House according to your Ground.

Sixthly, It will be worth the Expence and Pains of any *Bee-Master* to plant such Trees in his Ground, as conduce most for the Food and Nourishment of *Bees*, as the Oak, Palm-Tree, and Elm, &c. Also, it will be convenient that he plant his Gardens with Time, Balm, &c.

Seventhly, If the House be built near Meadows, where Cattel feed, it will conduce to their thriving; for it is observ'd, that Cattle thrive best where there are most *Bees*.

C H A P. IV.

How the House is to be furnished with Colonies; how the Boxes are to be placed, and the BEES transplanted into them.

YOUR House being built in a convenient Place, you must next know how to replenish it; and for that End, the fittest Time of the Year must be observed, which is the beginning of Summer, when Bees are at the Swarming, and looking out for a new Lodging, then is the fittest Time to transplant them from the Old Hives to this new Form of Hives, which you may thus effect.

First, Take one of your Boxes, and rub it, and dress it with proper Things, and after the same manner as you use to do your Old Hives when a Swarm is to be put into them. Then open the square-Hole in the top of your Box in the middle or Centre of the Bee-House, in respect of the length; and as to the breadth of the House, within an Inch of the Door of the House, place that Front where the little Holes are, by which the Bees go in and out. Then take a
well

well-filled old Stock, or a well-furnish'd new Swarm in the old form of Straw-Hives, and taking Care first to mark that side of it that is the usual Passage of the *Bees* in and out; place it upon the top of the aforesaid Box, with its Front to the Front of the Box; then having Clay ready prepar'd, plaister it round on the Edge of the Old Hive, so as to stop all Passages from the *BEES* coming out any other way but through the Box; and if it happen that the Old Hive be broader than the top of the Box you are to place it on, then take a thin Board made broad, with a Hole cut in it even with the Hole of the Box, and so put the Hive on it, being between the Hive and Box; let all the Windows of the Box be kept shut, except at such Times as you have Occasion to look at them towards Evening, or in a Morning, to see how they go forward with their Work.

Also, let all the Doors of the House be kept shut but upon like Occasion, except the small Ledge at the bottom, which must be always open, save in the Winter.

When you find the first Box full of Work and *BEES*, except it be very late in the Year, take another Box of the Colony, and having prepared it as the former

former, lift up the first Box, with the Hive upon it, by a Pulley fastened to the top of the House, or by Hands, and put the second Box in the Place of the first, under the first Box and Hive, having Persons ready upon the lifting up of the Box and Hive, with their Hands to direct it so as they may fall in the Creases or Rebbits; and so leave the BEES to work down into the second Box, till they have filled it also, which is not to be expected the first Summer, except the Summer be very advantageous. Then at the usual time of the Year, for taking of BEES, take off the Old Hive for Use, which will be filled with Work, but no BEES, for they will be working in the lowest Box. This Transplantation of the BEES, is only used the first time that you build your House and erect your Colonies.



CHAP. V.

How to remove your Honey seasonably.

FOR the commodious removal of the *Honey*, you must observe, that although there be three Boxes in one Colony,

Colony, yet you must know by your Glasses, that there be two of them full of Work, and the Body of the BEES working in the lowest Box. Likewise special respect must be had to the Season of the Year, that Plenty may be left to the Bees; also see that the Season be good, the Scituation good, and the Hives and Boxes well ordered; there is no doubt but two Boxes may be taken off of one Colony, being once well stock'd with BEES; the Boxes are to be taken off in this manner. *First*, Open the little Door on the side of the upper Box, and shut the Hole of the lower Box Top, then having well considered of their strength, take off the Upper Box; then unscrew the Pins of the side, and lift out the inner Frame with the whole Fabrick, in which there will be no BEES; and out of it you may take what may be well spared of Honey and Wax, then may you screw in the Frame into its Place again; then opening the Passage between the Hives, the Hole in the top of the lower Box; then put on again the Box you take off in the place it was, for to be a Relief to the BEES, in case the lowest hold not out to be Provision enough for the Winter. And so let it always be Circulated as soon as the

lowest Box is full of BEES; and the Provision made, you may, even in Summer-time take off the upper Box of Honey, and put in an empty Box under the lowest.



C H A P. VI.

A Remedy, in Case of Absurdity committed by the Inspectors of the BEES.

WHEN through the Indiscretion or Mistake of the BEE-Masters, by reason of an ill Season, too small a quantity of Provision shall be left, then feeding may be necessary. The best Expedient is to put a Box with suitable Provision under them. There are several sorts of Provisions used by BEE-Masters, as Honey, Boil'd-Wort, Bean-Meal mix'd with Honey, and many other Expedients which we refer Persons to, according to the Conditions of their Family and the Country.

If therefore there be no small Springs, Brooks, or Rivulets wherein there are Pebble-Stones a little surmounting the Surface of the Water, then set Troughs of Water with little Chips swimming in

in them for the BEES to light on, and take the Advantage of the Water without Hazard,



C H A P. VII.

Of the Excellency of the New Method above the Old.

THE Excellency of this *New Method* above the *Old*, will most clearly appear by comparing them together, by shewing the Inconveniences of the *Old*, and the Conveniences of the *New*; for, it is an approved Axiom, that *Contraria juxta se posita magis elucescunt.*

First then, *I will propose the Inconveniences of the Old Method.*

1. The Charge of keeping a Person all the three Months of Hay and Corn-Harvest to attend them.

2. The Trouble of preserving them in their Swarming, from going away, and getting them into their Boxes.

3. From the loss of Time in the Confusion that they are in before they Swarm, for three Weeks or a Month, and their unset-

unsettlement for a Week afterwards, which takes up one third of their Time,

4. The mispending of their Time in Idleness and Luxury, wherein they only beget a numerous Brood of Beggars that dye in the Winter, instead of employing all that Time in a Channel of profitable Labour for their Owners, which, with the former Loss, makes two thirds of their Time.

5. The destroying of the most industrious part of the BEES by smothering or drowning, which is an ill Reward of the Industry of so good Servants, and a great Loss to the Owners of them.

6. The Inconveniency of being exposed to Cattle, Vermin, and excessive Heats and Colds, with many other Casualties.

Secondly, I will propose the Conveniences, or Advantages, of this New way.

1. In this New Way there is no charge of keeping a Person to attend them, only their Recreation in having Inspection into them, how they go forward in their Work, and having no Occasion to Swarm.

2. In

2. In this Way they Hive themselves by an Additional Box.

3. By their Additional Box, which preserves them from Swarming, Idleness and Luxury; there is two Thirds of their Time gain'd for their Owners Profit.

4. All the vigorous BEES are preserv'd alive, to repeat their Industry for their Master's Advantage.

5. By the Commodiousness of your House, which is close and strong, and the Conveniency of your Boxes, which are also close, you have Safety and Preservation to your Bees.

6. By reason of your Glass-Lights, you are always able to make a Judgment of the State of your Bees.

Now considering the Charge, Trouble, Loss and Hazard in the *Old Method*, that eats up the Profit, and discourages the Owners. This *New Method* that frees them from all these Inconveniences of Charge, Loss, &c. must, of Necessity, by any judicious Person, be preferr'd for the Good of the Commonwealth, and of every Bee-Master.

Farther, The Profit of 3 Colonies may be supposed, in a seasonable Year, to advance to the Owner, the Value of 14 or 15 Pounds *per Annum* when settled, and.

and that without any Charge or Trouble; whereas the *Old Method*, with as many *Bees* as these 3 Colonies are stock'd with, will not amount to above 3 or 4 Pounds *per Annum* in Honey and Wax, from which is to be deducted the Charge of a Person for 3 Months, in Hay and Corn-Harvest, which cannot be worth less than 40 Shillings, besides Trouble and Hazard, &c.

Several Objections Answered.

Object. 1. Some may Object, That this *New Method* is only a Project that has never been practis'd or experimented, and, consequently, not fit for a Wise-Man to disburse a Sum of Money upon. I Answer, That the Reasonableness of the Proposal, with the Certificate I have of several substantial Persons, living near the Place where this hath been Practis'd and Experimented with Success full Seven Years; together, with an exact Account thereof given in the Printed *Transaction*, (Numb. 26. July 21. 1673.) Of the Illustrious *Royal Society*, at *Gresham-College*, is enough to encourage any ingenious Person to run so small a Hazard, for so great an Advantage.

2. *Object.*

Object. 2. If then this Experiment of so great an Advantage, has been known for several Years by many Persons, how comes it to pass that it has not been practis'd also by many Persons? *Answer.* The Person that managed it, has not been so free to accommodate Persons with the perfect Measures and Secrets of it, although it has been often and earnestly desired of him by Persons of Quality.

Object. 3. Seeing the BEES are still preserv'd from Destruction, then we find by Calculation, they'll increase to so great a Number and Swarm, as the Colony won't be able to contain them.

Answer. If the Honey be seasonably taken from them, so as Room be left to work in, they'll be more Industrious, and less Luxurious; so that Experience will teach you, that they Increase in Number only, because of Idleness and Heat, for these make them Luxurious.

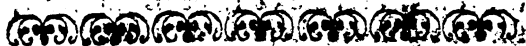
Object. 4. That your depriving them of their Honey, and not destroying them, keeps them only alive to be starved in Winter.

Answer.

Answer, It being clear from the Premises, that they have redeem'd $\frac{2}{3}$ of their Time, and, consequently, made $\frac{2}{3}$ of Provision more in that Time; the Owners may as safely take away $\frac{2}{3}$ of their Honey, (upon a right Judgment made by Inspection through the Glass,) and leaving but one Third, as they that leave a Stock full of BEES and Honey.

Object. 5. That the Charge of 5. or 6. Pounds in setting them up at first, does bring a present Inconveniency upon the Owner.

Answer, The ample and sudden aforementioned Advance of his Profit and Freedom from the continued Charge of Old BEE-Hives, does abundantly overballance that present Inconveniency or Charge.



F I N I S

