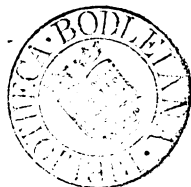


S. H. 1825

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THE
PRACTICAL APIARIAN;

OR,
A Treatise



ON THE
IMPROVED MANAGEMENT

OF
BEEES.

BY **GEORGE STRUTT,**
BOXTED, SUFFOLK.

“The busy tribes
Of **BEEES** so emulous, are daily fed
With Heaven’s peculiar manna.”

—◆—
CLARE :

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PREFACE.

At a time when the Press is teeming with matter for the dissemination of knowledge in every department of Art and Science, and in which the highest literary attainments are employed ; the Author of the following Pages feels a diffidence in placing his little Work before a discerning Public : conscious, that, having no pretensions to literary merit, his mode of conveying information upon an interesting and useful subject, will not stand the test of criticism.

Encouraged, however, by the express wishes and support of many valuable and highly respectable Friends, who have visited his Apiaries, he ventures his little Bark on the wide ocean of Literature, consciously assenting to the proverb, that,

“ Vessels large may venture more ;
But, little Boats must keep in shore.”

It is presumed, that the labours,—the management,—the properties,—and (if it may be allowed) the virtues of Bees, have excited the attention and admiration of mankind, from the earliest ages of the world ; and, although those subjects

have employed the time and researches of many learned men, in order to render these Insects more serviceable, than in their wild state ; yet, much remains to be learnt, and which can only be acquired, in the school of nature, observation, and experience.

In that school only has the Author studied, and founded his knowledge of Bees ; his leisure hours from business have been exclusively devoted to these his favorites, who have never failed to make a grateful return for the care bestowed upon them : and, happy will he be, if the hints herein contained, should lead to the preservation of Bees, the improvement of the Apiary, and the increase of its useful stores.

“ Burn Bees, and have Bees,” is an adage with which the Author’s ears and feelings have often been assailed ; but, he trusts, that the time is not far distant, when such absurdities and cruelties will be opposed by every thinking mind, and the practice entirely discontinued ; the Author himself being practically convinced, that there is no necessity to destroy a stock of Bees to obtain their store.

The method of managing Bees herein laid down, is the result of practical experience and close attention ; and, altho' the Author is well convinced that much improvement may yet be made, he will be satisfied if his practice may be useful in facilitating the labours of the Bee-Fancier, and stimulate others more able than himself, to offer their improvements and experience to the Public at large.

It must be admitted, that the labours of the Bee contribute largely to the comforts and pleasures of man ; under proper management, the stores of the Hive afford not only the most delicious and useful substances for domestic purposes, but, by the penetrating Science of Chemistry, they expand their virtues in the various forms and powers of medicine.

In addition, the Author begs leave to inform his Friends, and the Public at large, that Models of the Boxes which he has in general use for Bees, together with an explanatory Pamphlet, may be had of him, at his Apiary, FINSTED-END, in the parish of Boxted, Suffolk.

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THE
PRACTICAL APIARIAN.



*Oh LORD, how manifold are thy works, in
wisdom hast thou made them all!*



CHAPTER I.

“ If animals have a real right to our attention, how much more are we obliged to soften as well as we can the evils of our fellow-creatures. Let it not be sufficient for us to supply our own wants, but let us endeavour to supply those of others; and never suffer any thing to sink under misery that it is in our power to relieve.”

STURM.

OF all insects, Bees claim our greatest attention and regard: for who can look at them, and see their industrious habits, without being struck with amazement? and at the same time, filled with gratitude to that All-wise Being; who has, in his great goodness, not only sent the Honey upon the

B.

different trees and flowers, which all our synthetic powers could never form, nor our ingenuity collect, but has also sent these little creatures to gather it for us. What injustice, ingratitude, and cruelty, therefore, must that person be guilty of, who, after these insects, have, by astonishing industry, collected great store of that which is both food and medicine—what cruelty, I repeat, are they guilty of, who, to come at their treasure, unnecessarily destroy them by burning or suffocation.

G. STRUTT, the author of these Pages, is proprietor of those Bees which were publicly exhibited in the parish of LEE, near Blackheath, Kent, in the summer of 1824, and which gave great satisfaction to many Bee-Fanciers, and to numbers of Families in and around the Metropolis; since when, he has very much improved the Boxes for keeping the Bees in Colonies, and which he flatters himself will be found, upon trial, far superior to any hitherto invented, both in respect to the preservation of the Bees, and the facility

of taking any part of the Combs which may be thought proper, and returning the remainder to the parent Stock. By using Boxes, made according to the Model, an opportunity is given to keep a supply of clean and sound Combs, which cannot be so well accomplished in any other way, and which is of the most particular consequence to the prosperity of the Stock.

In most Plans hitherto adopted, there is much damage done by the destruction of numbers of Bees, which are, at the time of deprivation, destroyed by improper management, much to the loss of the Apiarian. In the present Plan it will be found there is not a fourth-part of the danger of destroying the Queen-Bee at the time of deprivation, as in any other way.

There is something so entertaining, and at the same time, as it were, so truly bewitching, in many of the actions of the Bees, that it is impossible for any one to attend to them without being very much attached to them. I am not only speaking

of my own feelings, but what others have said. Many who came to see my Exhibition, by their manner of expressing themselves, shewed how sensible they were of the goodness of the Almighty in having sent such industrious servants to gather Honey for our use. The general expression has been, almost the moment they entered the room,—“Pretty creatures! oh, what a beautiful sight! a grand lesson for mankind! what a field is here for contemplation!” with many other acclamations of the same nature. Ladies who have brought their children with them, have, at the time they have been admiring their works, been particular in their way of expressing themselves, by recommending them to imitate the Bees in their habits of industry, unity, and love, amongst each other. A grand lesson may the young mind receive, by paying strict attention to the habits of these industrious creatures.

For my own part, I cannot think any one can be either cruel or indolent, who has the management of Bees; by management, I

mean, those who take a real pleasure in attending to them. I do not mean by this, to say every one who keeps them, for there are thousands who have kept them many years, that have thought but little of them. The reason, in a great measure is, because they have never had an opportunity of seeing them at their labour; nearly all they see or know of them is, that they keep going out and coming home; and they are pretty certain by their actions they are very industrious: but the most convincing proof they have is at Michaelmas, or much about that time, when the cruel operation takes place of burning or suffocating them.—To the shame of man, they stand and look at this cruelty with countenances as placid and serene, as if it were matter of course, or in fact, amusement. The children who are present, are introduced at a very early age to such scenes, and like their parents, grow up to be cruel. The sincere wish of my heart is, that the inhuman and horrid practice, which was, no doubt, contrived in the earliest ages, may be entirely done away. It is, in my opinion, a great

disgrace to this Nation, which is said to be the most enlightened in the world.

There has of late been much talk, and some good laws made, to prevent cruelty to animals; but it seems the poor industrious Bee has been forgotten; although, I have no doubt, many of our Lawgivers would have no objection to taking a glass of good Metheglin, which is allowed to be superior to many of the wines brought from foreign Countries,—of course much cheaper, and probably more congenial to health.

Some have said, that it is whimsical to save the Bees longer than a year or two, for that, if you do not burn them they would die of themselves. I do not pretend to say they will not die, but this I am certain of, that in the common way of suffocating them to come at their treasure, there are millions deprived of life which might be preserved, and which would, undoubtedly, gather Honey the next season. From the experience and success I have had, since I have been a Bee-Fancier, I am and always,

shall be, an advocate for the preservation of their valuable lives. I consider it not only humane, (and surely humanity cannot or ought not to be called whimsical,) but there is good policy attached to it.

I am certain, by my Plan, a much larger quantity of Honey can be raised than in the common way of managing Bees. As a proof of the utility of the Plan I pursued, before I invented the present Box, which is allowed by all who have seen it, to be far superior to my former one, in the year 1822, I took from seven of my Stocks, TWO HUNDRED AND SIXTY-SIX POUNDS of very fine Honey ; still leaving a great sufficiency for the Bees to subsist on during the winter. In fact, I left much more than was wanted ; I really think I left as much as I took ; of this I am almost certain ; as I have, in my way of managing them, an opportunity of weighing the Colonies at any time, without annoying the Bees.

From a particular Colony, upon which I wished to make an experiment, I took

EIGHTY-FOUR POUNDS of Honey, had a good swarm and cast from it, and still left the foundation stock, as I thought at the time, a sufficiency to subsist on during the winter; nevertheless, I must confess, I had been rather unmerciful to them, in taking so much, (but it was an experiment) for in the spring, say in March, I was obliged, as I thought them in low circumstances, to return them some Honey. I gave them about two pounds, with this assistance, they prospered well.

The thing that is most likely to deter people from following my Plan is, that they cannot come at their treasure so soon as in the old way. As that is the case, it will not be so agreeable to those who are inclined to covetousness. But, after the first year, at any rate the second, you may begin to reap the profits of your patience, and every year afterwards, if no accident happen to your Stocks, as unfavourable seasons, &c. &c.

The foundation once well laid, cannot

fail of being a profitable concern, saying nothing at all about the humanity and the pleasure of viewing them at their labour; which, to a thinking person, is very great; and to those that never thought but little before, I am certain it will have the effect of bringing serious, very serious reflections to their mind. Their habits of industry, their love and friendship amongst each other, their subjection to their Sovereign, and many other endearing qualities they are possessed of, cannot fail to make them the most interesting, and at the same time, instructive creatures. An Apiary is a good school—well furnished with improvement for a reflecting mind.

From the observations I have made, when watching Bees at their labour, I am convinced there is nothing amongst the human or brute creation that disagree so little. For instance, look at a number of men working together, if, by any means, they run against each other, stamp too hard, or make too much of an interruption of any kind, how very likely they are to use severe

language, and often come to blows; and amongst the brutes generally, how soon animosity is created, by crowding them amongst each other; but the Bee, although it is armed in the way it is, never, but in extreme cases, draws the weapon nature has provided it with: for I have many times, and with the greatest pleasure observed them, in the gathering season, when all of them seemed to be attending to their work with every mark of industry; in the greatest hurry imaginable; coming in at the spout leading to the Box, they frequently alight upon each other, run against and tumble each other down, yet there is no disagreement on account of it, although it must be attended with interruption to them; it really is a most pleasing sight to see!

In my way of managing Bees, not an hundredth part of the damage can be done by Wasps, and other enemies, as is done to those kept in the common way. A Wasp no sooner enters, but he has the Bees attacking him; and as he has not been used

as the Bees have to the glass, he, upon being attacked, flies directly at it, in hope, I suppose, of getting out, but that he finds to be impossible, at any rate through the glass; and as to find the door-way, that is certainly beyond his art: for as he has, perhaps, never before entered in at it, he is entirely at a loss where to seek for it.— In fact he keeps so long striving at the glass, and at the same time buffeted as he is by the surrounding multitude, whom it is certain, will not let such an intruder be at rest; at last he is obliged to yield, and loses his life: and when dead, and sometimes before that event, dragged out, and thrown upon the ground as an unwelcome guest.

Now, in the common way of keeping Bees, though I allow there is some pleasure in seeing them going and coming from their Hive, yet, when they enter, which is momentarily, the pleasure ceases; on the other hand, in *my* way of keeping them, the greatest pleasure is after they enter; for then they are seen going in all

directions to different parts of their habitation to unload themselves, and return into the fields and gardens for more.

There is not a doubt but a Wasp having once entered the Hive does some damage, as most likely, he, in the conflict, wounds some of the Bees, and, perhaps, mortally; but I cannot think, from the observations I have made, that the Wasp can smell the Honey contained in the Box which is within doors, as they can in common Hives standing without doors, because they are at a greater distance and quite hid from their view. I have seldom known a Wasp enter my Colonies; and when, at any time, one of these bold intruders have; it has afforded me some amusement to see how roughly the Bees treated him for taking such a liberty. It really is amusing to see with what courage the Bees attack him; one gives him a slap on one side, he in a passion, turns, no doubt, with an intention of returning the compliment; another, perhaps, at the moment hit him on the other side; by such means, he is kept in continual

state of agitation; and, although, much stronger in his nature than Bees are, still, in the course of a very short time, he is so much fatigued, that he is obliged, though reluctantly, to yield; without even tasting of that which enticed him to enter their abode. I have known many of my neighbours lose great quantities of Honey by these robbers; and, also, many Stocks entirely spoiled. I am happy to say, I never lost, either Honey or Bees, from their depredations; although, one year, since I have been a Bee-Fancier, there were great numbers of Wasps, and a very great deal of damage done to the Stocks around me,

CHAPTER II.

“ From industry and economy, springeth content and happiness.”

AN Apiary for six Colonies, must be thirteen feet in length, in the inside; six feet wide, and seven feet high; a window at each end, two feet square, or thereabouts, which must be made to open, as it will be necessary so to be almost every day in the summer; for, if the windows are not opened, Bees, that accidentally get into the Apiary, will most likely fly upon the glass, and be deprived of life. It is seldom that a Bee will fly from a window after it is once lodged thereupon, but exerts itself to get through till it is quite exhausted.

The front of the Apiary must be as near fronting the South as possible; the doorway into it must, if possible, be at the West end; as it will not be so cold in that quar-

ter, as on the East ; this is, if the Apiary is attached to another building ; but, if it is entirely detached, the door may be in the centre of the North side.

Why I recommend the Apiary to be of the height I have stated, is, because it must be recollected, that when the Colonies are all in a full and prosperous state, the heat is beyond what may be generally supposed ; of course, the more the Apiary is ventilated in the summer, the more comfortable it is for the Apiarian when viewing these industrious and faithful servants ; and the Bees will be much refreshed upon entering the spouts, which will be kept cool by the above-mentioned means.— Every one who has experienced fatigue, by being exposed to the heat of the Sun, knows how comfortable and refreshing is retirement to a shady place ; and, I cannot but think, that the Bees are equally refreshed, and return to the fields and gardens with renewed vigour.

The bench for the Boxes to stand upon,

must be the same length of the Apiary : namely, ~~twelve~~^{thirteen} feet long, two feet high from the floor, and of the same width. It must be made of strong materials, as it may, in good and prosperous seasons, have to bear a great burden ; sometimes, perhaps, seven or eight hundred pounds : and if it were, at any time, to break down, it would cause the destruction of many Bees, and be a great loss to the Apiarian. The part where the bench is put together, must be well jointed, so that not the least draught of air can get through ; if it were, it would be very prejudicial to the Bees ; to the young brood in particular ; for, besides subjecting them to the inroads of wood lice, and many other small insects, the inlet of external air, through small apertures, is hurtful ; and Bees, like the human race, to a certainty prosper best, when unmolested by enemies, or subjected to sharp draughts of air.

It is absolutely necessary to keep the Apiary particularly clean, by white-washing, and that with Lime ; by such means,

much damage will be avoided, that might otherwise happen.

It will also be proper to have a grass plat in front of the Apiary, about two yards wide; for, sometimes during a storm, the Bees come home in a great hurry, and are frequently beaten down. Now, if it was dug ground for them to fall upon, in all probability, they would be so mired with dirt, they would never be able to rise again; but, grass kept cut, nearly the same as a bowling-green, will have a very handsome appearance, and at the same time, be the means of saving many of their valuable lives.

There must be six places, at equal distances, through the front of the building; about a foot deep, and sufficiently wide to admit the spouts; and a half-oval board at each part, for the Bees to alight upon, about six inches wide, and nine inches long. These alighting boards must be laid rather slanting, so that the wet runs off them.—It is also proper to have a board, about eight or nine inches wide, a little above

the entrances, to throw off the rain, and prevent, as much as possible, its falling upon the alighting boards.

The top of the Apiary may be covered with tile or slate, according to fancy.— Some have recommended covering with reeds; but, I am confident, thatched buildings are improper, and ought, if possible, to be avoided; as they harbour numbers of insects, which are not only troublesome to Bees, but also prejudicial.

Although I have given such a description of an Apiary, yet one upon a more economical Plan may be built with clay; which is the principal material used in my Apiary. Even the benches that the Boxes stand upon are of clay, which, when well dried, answers the purpose as well as any other material: and, in respect to strength; to a certainty there is not the least danger of their breaking down.

There are many rooms in which Bees might be kept, without any inconvenience

or danger, to the owners or occupiers of such rooms; and this without being at any expence in building. Many have supposed, that Bees could not be managed well, unless they were kept in a building upon a ground floor. I was, for several years, of the same opinion: and if I had not had practical proof to the contrary, I should no doubt have remained the same; but I am convinced it is of little or no consequence, provided there be a platform, or the roof of another building, coming up within a foot of the bottom of the alighting boards, or some where thereabouts. What I should propose, is a platform about five or six feet wide, a little slanting; and to furnish it with pots, planted with different flowers, such as fancy may direct, and which are known to be pleasing to the Bees. I am convinced it would be very pleasant to them, particularly to the young ones at first going abroad; it would likewise give a very pleasant perfume into the room; and, at the same time, have a handsome appearance, either as viewed from the inside of the room, or from the garden.

The room I had for my exhibition, at LEE, was not less than twelve or fourteen feet from the ground,—no Bees prospered better. And I am of opinion, that the Wasps were not so likely to find them at such a height, as when they were nearer the ground. Another advantage in situation was, that they were not troubled by slug, snail, or mouse; being completely out of their reach.

I must here observe, that if Bees are kept in a room, as above-mentioned, attention must be paid to the window, so that they do not lodge upon it, and lose their lives; which will, in all probability, be the case, if neglected. To obviate this, I would advise, (and what I was obliged to do,) particularly in a southern aspect, nail a piece of Leno, or something similar, on the window frame, so that the window may be opened to admit air, without a spectator being in the least incommoded by the Bees, or the Bees themselves receiving injury, by getting into the room. Bees are not at all

disagreeable companions, even in a sleeping room; but far, very far to the contrary; for, it may sometimes happen, that a person may, either from sickness, or other cause, be sleepless, or depressed with ennui; at such times, what a pleasant amusement it will afford, to hear and see so many thousands, which, by their actions and voices, evince harmony, unity, and friendship, of the highest natural order.

CHAPTER III.

“Throughout all Nature we see something of infinity as the peculiar characteristic of its great Author.”

RULES FOR APPLYING MY NEWLY-INVENTED BOX OR BOXES FOR KEEPING BEES.

IN the first place, it must be observed, that your Apiary answers the description before mentioned in every respect, or as nearly so as possible. Admitting that you have strong Stocks in common straw Hives, or in any other way; when you perceive they are getting numerous, and apparently about to swarm, you must put a Box under them; and by thus giving them room, you will, in all probability, prevent their swarming,—though, sometimes, such will be the case, whatever may be done to prevent it. It is very much the interest of the Apiarian to keep Stocks as numerous as possible; for one strong Stock will gather more Honey than four weak ones; and, at the same time, find protection in

their great strength from any other Bees, or enemies, that might attempt depredations upon their property.

The best time to put the Box under Bees near swarming, I have always found, in the middle of the day, when the weather is particularly fine; because, at this time, the greatest number of the Bees are at work; and, of course, not so many at home, as at other parts of the day, and damage not so likely to ensue.

With respect to some of the Bees being crushed, I do really think, that I have sometimes put a Box under them, without destroying one. This could not have been the case, if the attempt had been made when they were all at home. Some have advised this business to be done in the evening; this, I think, particularly wrong; as the Bees will, at such times, anticipate night; and, instead of taking wing, will crawl about, get upon your clothes, and many of them be destroyed:—to say no-

thing of the great hazard you run of getting stung.

When I first began to keep Bees, I tried the evening plan, but was soon heartily tired of it; as I was convinced many were destroyed. Not only so, the pain I endured, by being stung by them; many of them having crawled upon my garments, in such a way, that I actually carried some to bed with me; no very pleasant bed-fellows it must be allowed. It will also be proper to have some one to assist you in this operation; and yourself and assistant to be, at all such times, protected by a thin veil and a pair of gloves; for, perhaps, an accident of some kind may happen, which it was impossible to foresee; this may enrage the Bees; and if so, you may receive some injury by not taking proper care. When every thing is ready, let the assistant take up the Box, or Hive, in which the Bees have been lodged, and quick as possible, put the fresh Box in the place from whence it was taken, with the entrance exactly corresponding with the path which the Bees

have been in the habit of using ; the assistant must, without delay, set the Hive, or Box, upon the empty one, and directly stop up the part which the Bees have been used to pass and repass in to the upper one ;—the passage being thus stopped, they will immediately go to work as busily as if nothing had taken place ; in fact, they will be pleased at having their habitation enlarged ; and, in the course of a few days, will give convincing proof of their industry, if the weather is favourable, by working Combs down into the Box. It is really a most beautiful sight to behold them at this time, fixing as it were, a foundation for their new Combs, and of which you may be convinced when you see them hanging down into the Box, not unlike to curtains festooned. Every part must be securely stopped, except that intended for their path into the spout ; by this means, many things, such as spiders, ear-wigs, &c. &c. that would otherwise be troublesome, are kept from entering their habitations.

When you perceive they have filled the Box with Combs, and appear to want room,—which, in favourable weather, I have known to be the case within a month; you must then proceed the same with the next Box; and when the lower one is about half filled with Combs, and the middle Box about half filled with Honey, and sealed up, then is the time you may venture to take off the top Box, or Hive; the Plan of which operation I shall give in the following Chapter.

CHAPTER IV.

“ All who are not corrupted by passions or bad habits, are naturally inclined to compassionate every thing that has life or feeling.”

ABOUT four o'clock in the afternoon, place yourself in such a position, that you can hold one of your hands tight upon the bottom of the Hive, admitting your upper store to be an Hive; and partly connected with the top of the Box, to keep every thing steady; then, with the other hand, force the slider of the top Box up, and be sure the communication is cut off, so that a Bee cannot pass; or, if you find you cannot force the slider up with your hand, which may sometimes happen, you may use a mallet, or something of that kind;—I have, in general, taken a four pound weight, which by holding close in the palm of the hand, a more solid blow may be struck than with any thing else I have been able to think of: I imagine it does not jar the Bees so much as any other

way might ; of course, it is not so much disturbance to them. A little practice will make any one master of this part of the business.

The communication being cut off, darken the windows, and shut the house up close ; having so done, leave them an hour and a half, or two hours ; after which time, you may set the door and windows open : and, putting a wedge about three inches thick under the side of the Hive you intend taking next the door, many Bees which are in the top Hive, will immediately come out, take wing, and flying out at the door, return in at the spout amongst their fellows. As there will most likely be some Bees remaining amongst the Combs, in the Hive you have taken,—after they seem settled in the evening, turn the Hive bottom upwards, and put a cloth upon it ; if you tie a string around the cloth, it will not be amiss, as it will prevent the Bees crawling out, as otherwise they might do, if this precaution were not taken. Early the next morning, as early as four o'clock, take the

Hive, to some shady place, as near to the front of the Apiary they came from, as convenient, and taking off the string and cloth, begin tapping the Hive with a small stick, and, in the course of a very short time, you will get rid of most of the Bees left behind ; by this means, you will possess the Honey and preserve the Bees. But, should a few still remain, which may probably be the case, as unwilling to leave their precious treasure,—then carry the Hive into your back-house, or some building convenient for the purpose,—and placing it as near the window as possible, begin tapping it as before ; and, as the Bees come up to the mouth, put them out of the window with a small wing or brush, which you must have in readiness : it will also be proper to have a cloth lying under the window, that if any of them fall, they may not be lost,—but may be carried and laid on the front of the Apiary, or put into the spout leading to the Colony, to which they belong. But, if you find there still remain some among the Combs, which possibly may happen, when you begin taking them out, be careful

you do not destroy them by drowning in the Honey; to prevent this,—have a bason of water, a little warmed, (suppose as warm as milk just taken from the cow,) standing by, and when you meet with any that seem incapable of flying, from being besmeared with Honey,—put them into the water, and stirring them about, with a feather or wing, they will immediately be cleared of the Honey; when so done, take them out of the water, and lay them near as convenient to their habitation upon a cloth, in the sun, one end thereof being fixed to the alighting board; they will then crawl about to dry themselves, and return to their former companions.

During all these operations, be sure to pay particular attention to the Bees you have thus in your power: for, it may happen, that the Queen is amongst them; if so, you must treat her with the greatest tenderness, for upon her life, perhaps, depends the future prosperity of the Colony she came from. If you should find her, take the earliest opportunity of placing her

with her Subjects, who will most joyfully receive her. I am only here speaking if such a thing were to happen, not that I think it at all likely, if proper attention be paid to the rules I have here laid down; nor will a tenth part of the trouble here treated of, occur, although I met with it when I first took in hand the management of Bees.

Some will say, But how are we to know the Queen? My answer is, there is as much difference between the appearance of her majesty,—the drones,—and working Bees, as there is between a smart dandy, and a country clown. A description of the three sorts of Bees is given in another part of this Work.

An accident relating to the Queen Bee, I met with, as follows:—after I had been keeping Bees a sufficient time to have them in such perfection as to think myself entitled to a share of their rich and luxurious store, I determined upon taking an Hive from one of my Colonies, accordingly about

four o'clock in the afternoon, I cut off the communication between the Hive and Box; it must here be remarked, that I began with Hives; and in about an hour afterwards, I went and raised the Hive up a little at the edge, next the door which was open, with a wedge about two inches thick; this gave the Bees that were in the top, an opportunity of coming out, which numbers of them immediately did, flew out at the door, and went in at the spout leading to the Colony to which they belonged; still there remained great numbers among the Combs in the Hive. The next morning, I took them into a shady place, a small distance from the front of the Apiary: and turning the Hive bottom upwards, fixed another Hive over it, which I had contrived on purpose for the operation, I then began tapping the lower Hive; by this means, many of them got into the upper one, but many still remained in the Hive among the Combs, and apparently determined not to quit. This surprised me, not at that time knowing the cause. Those I had started into the upper Hive, I took in front of the

Apiary, and having laid a table cloth upon the ground, in front of the spout leading to the Colony to which they belonged, I fixed one end of the cloth to the bottom of the spout; I then emptied the Bees out upon the cloth, it was about four o'clock, and in rather a cloudy morning; they began immediately to march up the cloth, and in a very short time the greatest part of them were amongst their former companions, who received them with the greatest cordiality. This was a most delightful sight, scarcely any of them took wing, but walked up the cloth in as regular order as a flock of sheep go along a road: and this I attributed to its being so early in the morning. It is true, that in a manner, I shewed them the way at first, by putting a few towards the spout, with a wing;—and, I can with truth say, I would rather drive ten thousand Bees in this way, than one hog in any way. However, a considerable number remained in the Hive, who seemed resolutely determined not to leave it. To obviate this, I took the Hive into my back-house, and placing it close to the window, began taking the

Combs out; and, as I came to the Bees, I put them out of the window, they making great resistance, and shewing an inclination to give me battle. After some trouble, I dislodged them all, but not without damaging some, by besmearing them with Honey. When I came to examine the Combs, I found there was a great number of young brood, almost ready, as it were, to be hatched. This in a moment convinced me that I had committed an error, and never have I erred in like manner since. Had I waited with patience, a few days longer, no doubt the brood would all have been out of the Combs, the cells would most likely have been filled with Honey, and not an hundredth part of the Bees left to dispute with me for possession; for, when they have filled the Comb with Honey, and sealed it, they begin to work in the lower Hives or Boxes.

Since I have been a Bee-Fancier, I have taken a Box of Honey weighing nearly SIXTY POUNDS with not more than twenty Bees in it. Those that were besmeared with Ho-

hey, I put into water a little warm, gave them a turn or two about, then took them out, and laying them upon a cloth in the front of their former habitation; as they dried, they took wing, or crawled up to home; so that, setting aside the loss of the young brood, there were not many of the working Bees destroyed.

A most unlucky affair, at least, what would probably have been of the most serious consequence was this, their Sovereign was among the Bees, which had remained in the Hive, and found lying in a perilous state upon the grass in the garden. I tried by warmth, and every other means in my power, to recover her; but, I feared it was too late, she was so much exhausted, and in fact, nearly dead. Not knowing what was best to be done, but still anxious for her preservation, I thought, perhaps, if she was returned to her Subjects, she might possibly recover. I accordingly put her into the spout leading to her former habitation. Many of her faithful and loving Subjects immediately assembled round her; but, in

the course of a few minutes, they found she was dead, and immediately carried her out. For several days after, they seemed extremely dull and inactive; though, at the same time, all my other Bees were busily employed.

I was exceedingly sorry to see them in this state, thinking the Stock was entirely ruined. But I believe, at the end of the fifth or sixth day, they went to their labour, the same as before. From this I concluded that the time they were so inactive and dull, they were without a Queen;—but, that a Princess was nearly ready, as it were, to be hatched among them, which was the fact; and, immediately upon her appearance, she was proclaimed, and received as their Sovereign, although in an infant state. From that time, all inactivity and confusion ceased, and they went to their work as well as any Bees upon my premises. This I relate as a caution, that others may not err in the same way, or if they should happen of any thing similar, not to despair, for it may happen, that a Princess is almost ready, the

same as I have every reason to think there was in this case.

Another particular circumstance, I have to relate.—In the middle of July, 1824, looking at my Bees, at nearly 11 o'clock at night; (a proper time you will say for meditation,) I found one of my Colonies to be in very great commotion, in all parts, from the top to the bottom. There were three Boxes upon each other, and a straw Hive at the top; the Bees were in a most agitated state, through the whole tier, and even in the spout leading to them, numbers were running about as if searching for something lost.

I was very much at a loss to know what could have caused such a great disturbance; and, at different times of the night, went to examine them. This I had a good opportunity of doing, as I slept in the room adjoining the Apiary. About half-past three o'clock in the morning, they shewed a great inclination to swarm, and actually, before

four, were swarming; they then took a turn round in front of their habitation, and began entering the Colony adjoining the one from which they came; the guards at the entrance not the least resisting, but received them in the most friendly way. By half-past four, all was settled and quiet. I have here to remark, that the Colony they went from, had swarmed, and cast before the swarm, a most astonishing large one. The cast was equal to most common swarms, and the third parcel was, I think, equal to a swarm of seven or eight thousand;—and, although the original had turned out such an amazing number,—yet, there remained a very good Colony therein.

The Colony recruited by this last parcel, was, before they received the augmentation, in rather a weak state; but, afterwards prospered uncommonly well, and not the least disagreement amongst them. I do not pretend to say, that such a circumstance never happened before; but, I never heard of such a thing. It was certainly unusual,

and I have not the least doubt, but all Bee-Fanciers will think the same.

From a very strong Colony, I have known a swarm containing seventeen thousand one hundred and twenty-eight working Bees, sixty drones, and one Queen! An astonishing proof, of what may be obtained from Bees, by attention and care.



CHAPTER V.

“ Let us never pass by a Bee-Hive with indifference. Let us admire them, and this admiration may lead us to more sublime thoughts. If we love to reflect on our Creator, we shall find Him here. This interesting scene will lead us to Him, and we shall adore his wisdom—his power—and his goodness, in the production of these little creatures.”

SUPPOSE a Box, upon the new Plan, is to be taken with its store ;—proceed as before mentioned, in respect to cutting off the communication. After the Bees are most of them dislodged, run a long knife around the inside of the Box, to separate the Combs from it ; then put back the hooks that fasten the top down, when you may take out the whole body of Combs hanging to the top ; and, by this means, you will have an opportunity of extracting any part thereof, which you may chuse.

It is well known, that there are different qualities of Honey contained in the same Hive, or Box. Now, by this method, you

may separate them better than in any other way.—When you have taken such parts as you think proper, put the remainder into the Box again, fasten the hooks, and set it upon the Stock it came from. This, it must be observed, is only necessary when you find there is young brood in some of the cells,—which, by being returned to the Parent stock, will be brought to perfection; and, by this means, you may in one season, preserve thousands of Bees, that would, in the general way, be inevitably destroyed.

By attending to this, you will increase your number of Bees; and, as the old saying is,—“The more hands employed, the more work may be done,” of course, you will have a greater quantity of Honey, and that Honey, by keeping the Bees in the way proposed—and following the rules given, will be much purer, than that which is generally brought to the market.

Mr. KEYS expresses himself thus, in respect to the Honey brought to market:—
“The Honey generally brought into Lon-

don and other markets, is mostly foul, and of a coarse quality, from the careless and uncleanly mode, by which it is extracted. The common method is, by taking the Combs out of the Hives by piece-meal, indiscriminately ; and crushing them with the dead Bees, brood, farina, and dross altogether ; which, must needs render it an heterogeneous and disagreeable mass ;—often, of a nauseous taste, and unwholesome in quality.”

This remark of Mr. KEYS, every one must see the value of ; and, I will venture to affirm, that by using my newly-invented Box, all these inconveniences, and disagreeable matters may be avoided. Time, and an impartial Public, will prove the utility of my Plan. And, proud am I to say, that amongst the hundreds, nay, thousands, who have seen my way of managing Bees, upon this Plan,—not one has expressed the least dissatisfaction, or disapproval ;—but, on the contrary, many who have been in the habit of managing Bees for a number of years, and as they say, have had the opportunity

of improving themselves, by examining the different publications upon the subject, have decided, that my Plan is preferable to any of which they have seen or heard. My success is an allowed proof of the utility of my practice ; and my earnest wishes are, that it may be generally adopted. Convinced, as I am, that it is in accordance with the most valuable feelings of our nature.

During the summer of 1824, I publicly exhibited my Bees, at Lee, near Blackheath, Kent ; where I had one Colony that possessed one hundred pounds weight of pure Honey ; of this, many, as well as myself, had ocular demonstration ; and, I believe, I might with propriety, have challenged the whole Kingdom, to have produced such another ; as the Honey therein, was all collected within a very short time.

In the early part of the spring of 1824, there were six weeks, peculiarly unfavourable to the Bee-Tribe ; in fact, they could collect but little, and it may be remembered, that a number of Stocks died, in the

month of April, from extreme want. I am happy to say, I lost none, nor did any of the persons who were keeping Bees, upon my Plan ; although, many others, who pursued the old Plan, lost their whole Stock. This is convincing, that, was my Plan generally adopted, millions of these industrious and valuable Insects, might be preserved ; which, to the shame of man, are annually destroyed.

I believe, that the quantity of Honey, above-mentioned, was collected within six weeks. This is truly astonishing, and the more so, when we consider the small quantity each Bee brings in at a time ; perhaps, not more than a small drop each journey :—what numbers employed !—what journeys must have been taken to accomplish such a Work ! Here, then, is a practical school for man, in which he may learn the effects of persevering industry.

I sold one Box of this Honey to a lady, for four pounds, sixteen shillings, who readily paid me my price ;—being convinced

that the Honey was pure, and therefore, more valuable; whereas, had Honey been bought in the market, it would have been, probably, found gross, or adulterated; and that, more from the ignorance, than intention, of those offering it for sale.

There are but few minds sufficiently grounded in the Principles of true Philosophy, to avoid, or escape the conviction, or imputation of pride or vanity, in their own Works; but, if emulation, excited by the expressed good opinion of our fellow-men, be thus construed, I cheerfully submit to the imputation, in relating the following circumstance:—contending, however, that much useful information has been obtained, and many improvements produced, both in Arts and Sciences, by similar means.

While in Kent, a gentleman with his family, came to see my Exhibition; they all expressed high gratification at the appearance and management of the Bees. And, when, the gentleman (after putting many questions to me upon the subject) was plea-

sed to express himself, in nearly the following words :—“ Well, my good man, I have been a Bee-Fancier, for forty years, or nearly so ;—I have had every opportunity of improvement furnished by different Authors, who have written upon the Nature and Management of Bees ;—I have a large circle of acquaintance, as Bee-Fanciers, from whose hints I have profited ;—and, above all, I have ever had a practical attachment to these valuable and industrious little creatures ;—but, *I do say, that you are my Master.* I sincerely wish you success, and if I can render you any assistance, either by an introduction to my friends, or by furnishing you with some Books which I have, upon the Management of Bees,—I shall do so with pleasure.” Some little time after, this gentleman sent his servant to me, with several valuable Works, on Bees ; together, with an invitation to his residence. I availed myself of his kindness :—in a few days, waited upon him, and was received with that urbanity and hospitality, truly characteristic of the English gentleman.—Not willing to detain the Books, I had ta-

ken them with me ; but, wishing a further perusal, under an idea that I might glean something profitable, I requested the loan of them for a few days longer ;—when, he generously replied,—“ Keep them, I make you a present of them, and I heartily wish, they may be of service to you.” I feel a pride in recording a circumstance so pleasing to my feelings, which, I trust, spring from a grateful heart.

When at Lee, I was an entire stranger to all around ; but, never in my life, have I experienced more kindness, than I did from the different families, who visited my Apiary ; many of whom, are of the first respectability. During my short stay in that village, all seemed interested and anxious to render me assistance, and I cannot deny myself the pleasure of thus returning them my humble and grateful thanks.

CHAPTER VI.

“Tis beauty points, but neatness guides the dart.”

IN preparing the Hive, or Box, for Bees about to swarm, some have advised sprinkling the receptacle with human urine; this practice, I do not approve,—for, although salt may be in some cases serviceable to Bees, I cannot conceive that conveying it to them in this way, is pleasant, either to the Bees, or the cleanly Apiarian. If salt is to be used, dissolve it in clean water, for this purpose. One great objection to the use of salt, in any way, within the habitation of Bees is, that it lays the foundation of damp, mould, and other destructive properties. My method for preparing a Box, or Hive for Bees swarming, is as follows:—prepare a little ale sweetened with sugar, and let the ale be good, and clear from sediment;—clear the Hive, or Box, from all loose matter,—as straw, dust, dirt, insects, &c. and let it be perfectly dry;—sprinkle with the sweetened ale, and proceed to fix the

Hive, or Box, as before directed. Success is not always ensured in this manner, nor indeed, in any other ; for, it will sometimes happen, that the Apiarian is deceived in his expectation, as to the settlement of his infant Colony ; and, that from various causes. An unaccountable distaste is sometimes taken to their new habitation ; sometimes the swarm are without a Queen ; in either case, their restlessness demands peculiar attention. If they take wing in a body, their course of flight must be narrowly watched, and on their alighting, be prepared with another Hive, or Box, to collect them. Sometimes, they will return to their former habitation ; this indicates the want of that indispensable head of the community,—the Queen-Bee, which had been probably lost, in their first separation from the Parent Colony ; to which, having again returned, they will adhere, until again headed by a Superior, for swarming. Speaking of salt, never use it withinside the Hive, or Box, for preparation ; but, a little sprinkled at times, upon the alighting boards, in the spouts, and even upon the

grass-plot, in front of the Apiary, is not only beneficial to the health of the Bees, —but, will also prevent the invasion and inroads of slugs, or other prejudicial visitors. Trees, also, planted near, or in front of the Apiary, especially such as throw out blossom, are inimical to the prosperity of Bees; and, for this reason,—when in blossom, they are frequently pestered with destroyers, of the minute tribes; and, when in fruit, the hostile Wasp, or other insects, equally destructive, are late and early attending for prey; and, which will be contended for, even with the myriads of, and in the Hive.

I think it wisely said, “Let us endeavour to apply the knowledge we have, rather than lose time in speculations more curious than useful.”

The swarming of Bees is an object, as before said, greatly deserving the watchful attention of the Apiarian; and, I have heard, that artificial means have been attempted to accelerate that object; but, never attempting any thing of the kind, I

can say nothing thereon : simply the pupil of nature in the management of Bees, I have endeavoured to ground my experience on her laws alone ; and, that experience convinces me, that the less Bees are disturbed, or put out of nature's path, so much the better : a deviation therefrom, is likely to produce disappointment to the Apiarian, and oftentimes, extensive destruction to his interesting charge. Therefore, let nature be the guide ; her powers—her laws—the wisdom of her Creator, are admirably exhibited in the polity, economy, and community of Bees. All their actions are worthy the contemplation of the Philosopher, and their necessities demand all the possible assistance of him who partakes their luscious store. The necessities of Bees, and the impediments to their prosperity, are manifold ; but, observation will prove, that assistance rendered to them, is not only received with apparent gratitude, but amply repaid by their increased labour and profit.

A prepared habitation at the time of swarming, is absolutely necessary, to pre-

vent their ranging to find one for themselves ; this, they will do, although at their peril, if not directed by the reason of man ; subjugated to his dominion, by an unerring Providence, they become familiarized by good management, and excite in the mind of their attendant and protector, the most sublime and gratifying ideas. In all my visits to an Apiary, managed upon my own Plan, I recognize the principle and practice of labour and love ; the Apiarian ought to be frequently in the company of his Bees, and to cultivate their acquaintance ; by these means, he will have opportunities of seeing their actions, and discovering their necessities, or obstacles to profit. He will also find, that their angry feelings are less excited ; and, in process of time, he will be enabled to carry on with them a mental conversation in the sublimest language : but the Apiarian, who, from long standing prejudices, pursues the common way of management, is deprived of these high set pleasures ; and, cruelly destroying his Bees, to obtain their precious store,—he, in them destroys a mine, that might produce him future wealth.

CHAPTER VII.

“ Indolence and procrastination, lead to poverty and misery.”

As cleanliness in the Apiary is essential to the health and prosperity of its numerous inhabitants, too much attention cannot be paid to this particular. The usual or common way prevents this attention, by the Bees being secluded from sight, save and except their egress and regress at the entrance of the Hive; where, by my Plan, every opportunity is afforded for watching their motions—their progress—and impediments. The Bee itself, is the most cleanly of insects; but, there are myriads of the minuter tribes, which, being allured by the treasure of the Hive, will sometimes enter it in such numbers, as to render the greatest exertion of the Bees fruitless, to dislodge them; added to which, the old-fashioned Hive offers many retreats for these robbers, where, in crevices out of the reach of the Bees, they lay, as it were, in ambuscade,

prepared for depredation, or for increasing their numbers; thereby extending impurities to the Honey, and contamination to the enclosed atmosphere, allowed to the Bees for breathing. I admit, that the Bees will exert themselves in every possible way to expel these marauders, or, if not able so to do, they will labour incessantly to close up with wax, these (to them) impervious retreats. But, on my Plan, these matters are in a great measure obviated; and, proper attention being paid by the Apiarian; the Bees are empowered to pursue their favourite labours without being called off for the purposes abovesaid. Sufficient space for exertion is highly necessary for Bees, and on my Plan of colonizing, small swarms or casts may be united much easier, and observation afforded; by which, any disagreement among them may be discovered, and the result provided for, either as to their reswarming or returning to the Parent Stock.

The flight, or range of Bees in their labours, is a subject which ought also to en-

gage the attention of the Apiarian ; for, although the whole world of sweets be laid before these indefatigable Insects, they have their favourite flowers, shrubs, trees, and fruits, in every class of vegetation, and in every period of season. Aroused from their torpid state by the cheering beams of the sun, in the early part of the year, they are too often tempted to range, even when the snow covers the ground, or when the earliest flowers are but beginning to disclose their latent sweets. This is a perilous time, and requires the closest attention of the Apiarian. Frequently will the chilling breezes paralyze these persevering adventurers, and render them incapable of regaining their home ; of course, death is the consequence, to themselves,—and loss of power to the Colony. To prevent this, the entrance of the Hive, or Box, had better be closed with a piece of wood, perforated with small holes, through which a Bee cannot escape, but, cleanly bored, and free from splinter ; that a free circulation of air may be obtained throughout the Hive, or Box.

With regard to the favourite resorts of Bees to collect Honey, Wax, or other matter, which they deem necessary to store,—observation and a knowledge of the vegetable world, might furnish ample scope for the abilities of the Apiarian. For myself, and my own circumscribed knowledge, as a Botanist, I have but little to offer; and, that little, gathered from actual experience, and repeated observation. The flowers of broom—the blossoms of gooseberries—currants—aromatic plants—and fruits in general, are most eagerly visited by the Bee; and, from these sources, I have found the most pure Honey obtained. Fruits, perfectly ripe, or in an early stage of decay, are visited by Bees, for the purpose of extracting the saccharine matter, which, by them concocted, is stored as Honey, but of a more inferior nature. The decaying plum, the peach, the nectarine, the grape, and many autumnal fruits, are contended for; and, only to the Wasp will the Bee yield, by whose superior strength and prowess, in single combat, it often meets with death.

CHAPTER VIII.

“The protection we afford to the inferior orders of Creation, and from whose labours we derive profit, is a duty we owe to the Creator.”

THE great necessity of watching every inroad upon the Apiary, by intentional or unintentional intruders, is of too much importance to be passed over, by a few loose remarks; for, although some useful hints may have been offered in the preceding part of this Work,—there are others, which it may not be amiss to record.—As before said, the enemies of, or intruders upon Bees, are numerous, and under some circumstances, fatal to the prosperity, not only of a single Colony, but to the whole Apiary. Once more, I advise, the most scrupulous attention to cleanliness; and, the adoption of my Plan, will, I am confident, facilitate this measure, not only in detecting nuisances, but also in exterminating them with the best possible effect.

The mouse is a formidable enemy to the

Apiary. Its inroads are often made with peculiar sagacity: sometimes, in the dreary nights of winter, when torpid, and in the state of a temporary death, the inhabitants of the Apiary, and the proprietors of its stores, are incapable of resistance or defence, the still hour of night is chosen by this marauder to effect his designs; should he succeed, his ravages are of the most serious nature, and often destructive to the whole Stock. Therefore, let his approaches be obstructed; a single foil may induce him to desist: but, to prevent repeated attempts,—borders of tin, or thin metal, nailed upon the frame of the Bee-House, and made to project about three inches therefrom, will effectually prevent the inroads of this busy animal; and, more so, if beyond the reach of his leap.

Snails and slugs are also greatly annoying to the labours of Bees, and require attention during their incursions, at all times; but, especially, before and after a shower. I have mentioned salt, as useful, in this case; and, I point out its effects upon some classes of reptiles,—effects, unknown to me,

but by actual experiment. Finding my Apiary marked with the slime—denoting the path of snails, or slugs, I determined on watching their motions. A short time afforded me both observation and experiment, upon a snail, approaching the Box, across the alighting board;—having some salt, I immediately strewed a little of it, before him; a few seconds brought him upon it, when its effects were immediately shewn.—Profuse frothing, great agitation, apparent paralization, and consequent death, confirmed the utility of salt, for this purpose; indeed, curiosity induced me to practice the same experiment upon slugs, worms, and many other reptiles of the kind, and the results were equally the same.

Query.—Would not salt prove highly beneficial to the Agriculturist, in seasons when slugs abound?

Salt strewed upon the grass or ground, a short distance from, and around the Apiary, will be found an effectual check to snails, or slugs; but, as the Bee-Fancier is supposed to visit his Apiary frequently,—he

will, on discovering any of these intruders' moving onwards thereto, arrest their progress, by instant death.

Another inveterate enemy to Bees, is— a small kind of moth, which intrudes itself almost unperceived; and, running up between the Combs where the Bees cannot get at it,—there lays its eggs, and then steals out of the Hive, in the best manner it can, to commence the same injury upon a neighbouring Hive. These eggs are soon hatched by the warmth of the Hive, and immediately commence the work of destruction, which can in no way be so effectually prevented, as by transplanting the Colony, (if I may be permitted the term) into a fresh Box, upon my Plan; in pursuance of which, the damaged Combs may be taken totally away, and the Bees, finding a clean House, will soon reinstate their store, by increased perseverance.

The gluttonous and determined Wasp, is also an enemy to Bees. He enters the Hive with the greatest confidence, meets with the greatest resistance, and if he some-

times succeed in carrying off his booty, it is not only dearly earned, but in Boxes used by me,—the conflict affords to the spectator, a delightful amusement; which, often ends in the death of the intrepid marauder, and the triumph of his more worthy opponents. As a preventative, and diversion of this pest; I advise, that when Wasps abound in the neighbourhood of an Apiary, their retreats be sought out, and the Wasps destroyed; I would also advise, that the Apiarian leave a few of the fruits, sought after by Wasps, Flies, and even Bees; these, will furnish food for some time, and the industrious Bees will not only escape the ravages of Wasps, during that time, but will also share with their enemies the luscious spoil. The irritability of the Wasp, is proverbial, and his strength, in single combat, superior to the Bees; but, in the Box, or Hive, he has to contend with united strength, and of course, upon unequal terms.

Flies, may sometimes attempt an entrance into the Hive, but the event, generally proves their destruction.

CHAPTER IX.

“ When Greek meets Greek, then is the tug of war.”

ALTHOUGH Bees evince a superior instinct to many of the inferior orders of creation,—and manifest a regularity, industry, and economy, exemplary and admirable,—yet, are they like the best regulated mind in man; subject, at times, to aberration and crime. A scarcity of Honey abroad, will sometimes tempt them to enter a neighbouring Hive, and purloin the precious store. Sometimes, they will take a wider range, to commit similar depredations; this, their owner cannot avoid; but, when he detects them in the fact, within his own Apiary, it is advised, that the door or entrance of the Hive, so invaded, be immediately closed, and so kept until the evening; by these means, the aggressors who are within the Hive, for the purpose of robbery, are kept prisoners; and, will very likely, receive a chastisement, that may prevent a repetition of their intrusion and crime. At all events, they will embrace the earliest opportunity

of escape, and return to their fellows. I have had Bees from a distant Apiary, upon the same system of robbery; I adopted the same mode of punishment and prevention; and, have known these robbers decamp, as late as ten o'clock at night,—no doubt, with a useful lesson. I generally kept a look out the next morning, and if I observed a repetition of their visits, I immediately had recourse to the same means of closing the door, and thus avoided that great damage, to which inattention would have led. In these cases, the duty of the Apiarian is that of an arbitrator, and close attention will enable him to decide with equity and justice. ^{Some} Many Bee-Fanciers in my own circle of acquaintance, have recommended, that the Apiarian take his stand in the morning, upon one side of the Hive, provided with an instrument something like a battledore, perforated with small holes, in order to avoid the resistance of the air; and, having closed the entrance of the Hive, await the coming of the robbers, and then deal out death upon all who attempt an entrance. This is both cruel and unjust; cruel, in depriving the Insect of that, for which we

cannot return an equivalent ; and, unjust, in depriving, perhaps, a neighbouring friend of future services, interesting, useful, and valuable. In short, my own mode of management, precludes the necessity of many coercive measures, which are practised in the old Plan, and in which Bees have just cause to view man, rather as an enemy, than a friend and protector.

To be cruel towards animals—to refuse them food and indispensable conveniences, is to act contrary to the will of our common Creator, whose beneficent care extend even to those beings, which are inferior to us.

The labours of Bees, as directed by natural instinct, is, undoubtedly, for the purpose of storing that food, which they cannot obtain abroad, in the months of winter ; and, although they will under proper management, and in favourable seasons, collect much more Honey than is necessary for their own support, the Apiarian must be cautious that he does not presume too much upon their labours, or deprive them of that Honey which may be wanted for their support. Many Stocks are destroyed through

want of attention to this subject ; indeed, the existence of whole Apiaries have been endangered by the covetousness of man, and the Bees themselves tempted to rob each other ; in which attempts, many are destroyed. Under these considerations, I advise, that no Honey be taken from the Colonies, until they are firmly established, and their stores ascertained as to weight. The season also, when they are examined, ought to be taken into consideration, before they are deprived of any part of their store. Experience proves to me, that Bees are not only industrious, but also temperate and economical in their appetites, and never wasteful. I have heard it said, that Bees will collect no more Honey than what is sufficient for their winter food : if any person entertaining this opinion,—will, with attention and care, pursue my Plan of managing Bees, he will not only decide to the contrary, but, will also be enabled to see and know their state, from time to time, and administer to their wants, or partake their store, as observation may direct. I sincerely believe, that more Stocks of Bees are lost, or rendered unprofitable through the negligence

or ignorance of persons pretending to keep them, than by any other means. And, again, although I may incur the imputation of egotism, I earnestly recommend the adoption of my Plan, in the management of Bees; being convinced, that as it is simple and practicable, so also will it tend to place these interesting creatures higher in the estimation of man, and be productive of benefits, which can be obtained in no other way that I have seen or heard of.

Feeding of Bees, when the Hive is to appearance scantily supplied, is also oftener practised than necessary. The only period when Bees are most likely to want food, is in the early part of the year, or when they have been imprudently deprived of their store, by marauders, or the Apiarian; this, seldom occurs under my management; if such a circumstance should happen, I would advise, common moist sugar, in preference to any thing else;—this, if they are in distress by want, they will readily take; but, if not, they will reject it. In short, frequent attention, good management, and moderate deprivation, will obviate all difficulty upon this matter.

CHAPTER X.

“ Experience is the legitimate parent of Knowledge.”

THREE years after I had become a Bee-Fancier, I was, on a very rainy day, examining one of my Apiaries, when I found one of the Boxes nearly filled with Honey, and the Bees busily employed in sealing the cells. As it was then, and had been raining hard all the morning, I was anxious to know from whence they obtained the material for this work, which they completed, with a despatch, truly astonishing. The rain prevented any Bee leaving the Box : of course, the material was in store;—and being determined to satisfy my curiosity, if possible, I took the best position I could, to survey their movements. In six hours observation, I imagined that I had made a discovery of what they were using, and felt satisfied therein. It is well known, that the matter with which the cells of Honey are stopped, or sealed, is of a different nature to the Wax, forming such cells; but, I have

never heard any person positively describe the nature, or composition of this matter, or how it was obtained. During the time I was watching, I observed many unripe or dead nymphs, fall to the bottom of the Box; soon as one fell, it was seized by a working Bee, which attempted to carry it up among the Combs; several of the surrounding Bees attempted to dispossess the Bee, who at first seized it,—but, firm to the purpose, he at last succeeded, and bore it from my sight. From the struggle for this dead or unripe nymph, I concluded, that honour and reward from the Sovereign, or the conversion of this nymph by concoction, to useful purposes, was the cause of this exertion. Upon examining one of these nymphs, by pressure between the thumb and finger, it was filled with a matter not unlike thick cream, and exactly corresponding in colour and apparent consistence, with the material used in sealing the cells. I relate this circumstance, not that it will prove useful to the Apiarian, but to shew, that Bees are economical, even in time, and rather than be idle in wet weather, will con-

vert dead or inanimate bodies to useful purposes.

On the first day of August, 1824, a gentleman visiting my Exhibition, said—he had kept Bees many years, and was partial to the Straw-Hive made square : upon asking my opinion, I replied, that experience had taught me, to reject the Straw-Hive, whether round, square, or any other form ; as it afforded an harbour for insects, injurious to Bees :—on the other hand, the Square Hive did not contain a healthy atmosphere for Bees, on account of its small number of angles, and those, at a great distance from its centre. Octagonal Boxes made of well-seasoned deal, and according to my Model, will not only secure their contents from annoyance and depredation, but will also be found much warmer, in the winter, than Straw-Hives, and more congenial to the well-doing of the Bees. The comparative expence between Wood-Boxes and Straw-Hives, appeared to be matter of consideration with this gentleman ; but, as I told him, this vanished ; when, upon trial, the

Boxes afforded much additional profit, convenience, and amusement; not only so, they will with care, outlast fifty-times the same number of Straw-Hives; and, in the end, prove much cheaper, to say nothing of external appearance. The gentleman agreed with my opinion, and gave up the point.

CHAPTER XI.

“ The hand of the diligent maketh rich.”

THAT Bees have an indignant aversion to indolence, is too clear to admit of a doubt. Finding a number of Bees in the room adjoining my Apiary; to which room, they had obtained access, through a small aperture, which they had made through some paper; I took them alive from the glass of the windows; and, to satisfy my curiosity, as to their reception, when unloaded; I put them immediately into the spout of the Box, from whence they came; at the same time, watching their motions. They were instantly surrounded by numbers of their fellows; who, having to appearance, examined the Bees I put in, attacked them without mercy, and despatched them in a short time. Thus, my curiosity; cost me the life of several Bees, and I could not but accuse myself of cruelty to these martyrs, who, had I put them out of the window, would have

found their way home with propriety, and been welcomed with the expected burden.

Young Bees, at the time they break from the cells, wherein they attain maturity, appear to undergo a strict examination of their powers, before they are admitted working members of the community—and willingly submit themselves to this examination; two or three of the elder Bees are the examiners; and the legs—the wings—the proboscis—and every part of the body is put to the test of strength and perfection, by these seniors. This operation lasts several minutes; after which, the young Bee is rejected, or assays its proper labours. In these first attempts, its ranges are within a small circle of the alighting board; till, emboldened by success, it wings its way, without fear or controul; apparently conscious, that the more ponderous its load, the greater welcome by those already at home. But, woe betide the Bee that returns empty!—and more surely so, if the weather and season are favourable for its range.

The Bee is an excellent mentor, and he who will study the Apiary, with a determination to profit from it, may learn the best of morals, and taste the sweets of the vegetable world. Here, he must, in many points, acknowledge the superiority of instinct; and abashed, confess his degenerated powers. Here, he may daily, nay hourly, witness the example and effects of persevering industry, and be constrained to admit,—that “the hand of the diligent maketh rich.”

CHAPTER XII.

“ Experience keeps a dear school, but there are those who will be taught in no other, and scarcely in that.”

At a time when Bees are expected to be about to swarm, the greatest attention is necessary on the part of the Apiarian ; if he is remiss at this time, his success will be at best, uncertain ; but, by close attention, he may hear from his Bees, those sounds, which give note of departure, and take measures accordingly. His Boxes must be ready prepared, as before directed ;— his eyes and ears must be open, as Bees sometimes leave the Parent Stock instantaneously. Sometimes, they are seen hanging from the Hive in large bodies, during the day ; and, if sufficient room be within the Hive, or Box, they will re-enter at night, when they may be heard piping at intervals, and with louder voices, as the moment for swarming approaches. The weather has an effect at these times ; serene warm weather accelerates, and dull, cloudy, or rainy wea-

ther retards their swarming ; other causes may supervene,—the want of a Queen, or a plurality thereof, may keep them undecided ; but, patience on the part of the Apiarian to wait the event, and promptitude to act, when it has happened, are the greatest auxiliaries to success.

Bees, which swarm early in the spring, are said to be the most preferable. Experience has, however, taught me, that the latter end of May, or the beginning of June, are the most likely times to produce profitable and healthy Stocks ; for, although the month of April proves warm, serene, and cherishing in some years, it is often followed by cold and piercing easterly winds, engendering storms of rain, hail, and not unfrequently severe. Frosts, are also, very prejudicial to Bees, not only in their excursions, but also in detaining them within doors. It must, however, be allowed, that when an early swarm is followed with warm and favourable weather, it is a fortunate concern. The moment a swarm of Bees take wing, they should be followed and watched ; the prepared (as before directed) Hive, or Box, should be in hand ; and,

on no account should they be left, until they are collected into their new habitation. No doubt, the Queen leads the way, and makes the first lodgement: various are the objects and situations selected for this purpose; but, when discovered by the Apiarian, he must neither lose time or attention, in securing them. Sometimes, they will remain upon the wing near the Apiary, and this probably, until they have assured themselves of the presence of the Sovereign herself; or the Sovereign herself, perhaps, collecting around her the greatest possible number of Subjects. It is at this time, that many persons have recourse to the old custom, of the key and the warming pan, thinking, that the acute sounds produced by beating the pan with a key, will induce the swarm to settle the sooner. The utility of this practice, I have yet to learn, unless, (as it has been urged,) it gives the owner a right in law, to follow and hive his Bees, upon another persons premises. At these times, I have used a drum, and found it answer well; but, when the Bees begin to lodge and cluster, all noise should cease; if not, many which are in the rear, may be

induced to return to the Parent Stock, and thus weaken a swarm which might otherwise be very strong and profitable. To dislodge them, and to collect them in the prepared Hive, or Box, if they are found upon the bough of a tree, bush, or shrub, place the Box under the bough, shake them into the Hive, or Box, and immediately place it with the open part downwards, upon a board, near the spot, and with the lower edge a little raised, in order that the Bees may enter it in greater numbers than at the door, which they will do, if you have already secured the Queen; if not, they will return to the place from which you hived them, and after being a little settled there, you must begin your work afresh;— at all events, let the Hive, or Box, when you have taken the Bees, be shaded by a cloth, or boughs from the tree, or bush, from whence you have hived them.

It may happen, that Bees will separate, when swarming, and alight in detached parties near each other; in this case, the Apiarian should first secure the largest number or cluster, for it is almost certain, that the Queen is in it, and without the Queen,

no settlement can be expected : this cluster being secured, place them near the spot where the remainder are lodged, and lightly sprinkling them with water, in imitation of a light shower, they will, if on a tree or bush, begin to descend, and in all probability, make their way to the Box containing the first body ; should this manner be fruitless,—a second Box had better be used, and securing the detached parcel in such Box, until the evening, place both Boxes in the Apiary, one upon the other,—stop both entrances, and draw back the slider of the lower Box ; this seldom fails to unite them, and after an hour or two confinement the next morning, they may be released, for the purpose of trying if they will go to work : if they appear still unsettled, or likely to swarm, they must be closely watched, and on their again rising, they must be closely followed and hived, with a fresh Box or Boxes. A small garden engine, or any other utensil that will distribute water in small drops, is extremely useful to the Apiarian at these times, and should be near at hand.

CHAPTER XIII.

“ Get what you can, and what you get, hold :—

“ Tis the stone that will turn all your lead into gold.”

IN favourable seasons, some Hives, or Boxes, will produce, not only one, but sometimes two, and even three swarms, or casts of Bees. This is not always indicative of strength or prosperity ; it is more likely to excite suspicion, that something exists not exactly right within doors, and the cause must be investigated : a plurality of Queens, is very likely to produce division ; should this be the case, the Apiarian must exert his ingenuity in searching for, and destroying all Queens, which lead off these weakening detachments, and return the working Bees to the Parent Stock ; or, if he is incapable of accomplishing this, he may unite two, or even three casts, in one community ; regard being paid, that not more than one Queen be suffered to exist among them, if possible. These circumstances will exercise both the patience and ingenuity of the Apiar-

rian, but perseverance will amply repay him, and increase that experience, without which, neither profit or amusement can be obtained. My way of managing Bees, under these circumstances, is as follows:—supposing two, or even three casts to rise on the same day, or some days apart;—I collect the first cast as before directed, and when settled, I place the Box in the Apiary, late in the evening:—a second cast offering itself, I collect them in a Box, the same way, as I collected the first; and, late in the evening, I take the Box containing this second cast, to the Apiary, I then remove the Box containing the first cast, and placing the second Box in the place of the first, I fix the first Box upon the top of it, I then close the entrance of both the Boxes, and drawing back the slider of the lower one, I watch the result, early the next morning; if I find the Bees restless, and the morning cold, wet, or dull and cloudy, I continue their confinement a few hours longer, and by observation, through the glasses, form my judgment, as to the probability of their union. This, I have frequently witnessed, in their sacrificing the

weakest Queen or Queens, and uniting under the more powerful or profitable survivor. It is also probable, that hunger may increase their inclination to labour, on regaining their freedom. Sometimes, however, the Apiarian is foiled in these matters, and must repeat his endeavours to unite the separate casts, with the aid of fumigation; this must be used with caution, if not the Bees may be entirely destroyed. The matter and means used by me, in this process, is as follows:—I constantly keep by me, a quantity of that fungus, commonly called *fuss-ball*; it is often found growing in meadows, or moist pastures; has the appearance of mushroom, when growing, with the exception that it does not expand like the mushroom at maturity, but still preserves its globular form. This fungus is best taken when full grown, then dried and preserved for use:—so much for the matter, for fumigation. I have also in readiness, a Straw Hive, made flat on the crown, and with a verge to the bottom, projecting four or five inches; and having when the Hive is inverted or standing upon its crown, a shelving

appearance inwards; thus, any common Hive, or Box set upon the verge, will fit close, and prevent the escape of the Bees: care must be taken that there be no shock or jar in setting the Bees over the fumigating Hive, and previous to setting the Box, or Hive thereon, I have at hand, a small stick, about four or five inches long, pointed at one end, and a slit at the other; in this slit, I confine a piece of this fungus, about the size of a hen's egg, I then drive the pointed end firmly into the inner centre of the crown of the fumigating Hive, now turned bottom upwards, for the purpose of receiving the Bees, and setting fire to the fungus, immediately set the Hive, or Box with the Bees, steadily upon the shelving verge; a smart rap or two, now, with a stick, agitates them, and an unusual buzzing is followed by hearing them rapidly falling into the lower Hive; as long as this buzzing is heard, I continue at short intervals to rap their now, to them, unpleasant and stupefactive habitation. Soon as the buzzing has ceased, I feel assured that the Bees are fallen, when I immediately take

off the Hive, or Box, and sprinkle or wash it with the sweetened ale, as before directed; (a fresh Hive, or Box would be preferable,) this done, I put the Bees in the stupefied state, into the Hive, or Box intended for their home, and turning up the Hive, or Box upon the board where it is to remain, and with the entrance shut, I carry it to the Apiary, and fix it in its intended station. This process cannot be safely, or effectually gone through, without an assistant. Expedition and care are essentially necessary; for, if too much delay occurs, the Bees will never recover the stupefaction; and, if any of them are crushed, the accident may fall upon the Queen, or Queens, and no royal survivor being left, inevitable destruction must ensue. With my Boxes, this process is considerably facilitated, and much useful observation and amusement obtained. Care, must also be taken, that when the Hive, or Box is placed at its proper station, the entrance be opened a little, for the admission of air, but not so much as to admit the passing of a Bee; for, on first recovering from their stupefaction, they are

extremely irritable, and would, if not confined, attack any person near them. In my Boxes, much amusement is had, in observing their recovery; amazement appears to be succeeded by wrath, the outlet is attempted in vain,—the Sovereign is sought, and if there is a plurality, the first which ascends is hailed supreme, and the other Queens despatched on shewing the first signs of returning animation. Curiosity, has sometimes induced me to inspect Bees in this stupified state more closely; for this purpose, I empty the fumigating Hive upon a table, or smooth surface, and separating the Bees, I am able to distinguish the Queen or Queens, from the drones, or working Bees. This curiosity, has also taught me experience; for, with two or three small Boxes at hand, perforated with small holes to admit air, and prepared as before,—you may, in one, or perhaps in each of these Boxes, secure a Queen or Queens, before you put the swarm, or cast, or casts into their intended habitation. Should the Bees on their recovery, shew a restlessness indicative of the want of a Sovereign, a little in-

genuity will enable you to introduce her majesty, who, if not wanted, will be quickly despatched ; or, if hailed as a Sovereign, tranquility soon follows, and that seen, liberty may be given, by opening the entrance. Should you, however, witness returning tranquility, before introducing a Queen, be sure to destroy those you have in bondage ; otherwise, you may, by setting them at liberty, risk the disturbance or destruction of your other Stocks.



CHAPTER XIV.

“ And reason raise o'er instinct as you can ;
 “ In this, 'tis God directs,—in that 'tis man.”

IT has been said, and I believe thought by many, that Bees will not prosper near piggeries, or other places from whence fœtid exhalations may arise ; I entertained this opinion myself, till observation and experience taught me the contrary. I have two Apiaries, so situated, that one is attached to a piggery, the other to a stable, and the opening between them, which is about twelve yards, is a pit of stagnant and putrid water and muck, and into which every refuse of the house,—as soap suds, water in which vegetables have been boiled, and such like matters are generally thrown ; here, I have seen the Bees in great numbers, sipping the fluid ; when, at a pool of clear water, not many paces distant,—few, very few in comparison, have been found. I do not profess, that I am able to account for this,—but probably, the extremely minute formation of

the organs in Bees, may enable them when drinking, to separate the pure fluid from its gross or putrid particles. Water appears to be necessary for Bees, and on no account ought an Apiary to be so situated, as to occasion a long flight to obtain it; on the other hand, a clear pool, or running water ought to be at such a distance, as to preclude the probability of Bees falling therein, when hastening home with their store, or to escape the pelting storm. I have heard it recommended, that Apiaries be placed on the brink of water, this I positively affirm to be injudicious; for Bees on their return to the Hive, are generally fatigued; and, if in a shower, a single drop of rain may beat them down, and if into water, their destiny is fixed; unless, the friendly twig or leaf is at hand to save them. That Bees are active and expert to extricate themselves from danger, is allowed,—but the duties of the Apiarian will extend to their protection and preservation, under all circumstances; and the propagation and growth of a few weeds in the neighbouring pools or streams, ought not to be checked,

as they often afford security to his industrious tribes.

My practice as an Apiarian, having been chiefly confined to the county of Suffolk, which, as being an agricultural county, I do not consider so profitable for Bees, as wood land and heath land combined; but, if woods of oak, or a number of oak trees, are at no great distance from the Apiary, it is a wonderful advantage; the honey-dew which lodges in such abundance upon the foliage of this monarch of the forest, furnishes to the Bees a rich and luscious harvest. Instinct teaches them that this harvest will be of short duration; at such times, the Apiarian may witness activity, exertion, and progress truly astonishing: the myriads of the Hive are seen at an early hour, issuing with a velocity and in numbers sufficient to excite apprehension, that they are deserting their home. At these times, all other flowers, plants, shrubs, or trees, are passed unheeded, and the favourite dew which covers or drops from the oak, engrosses all their attention.

Although it has been urged, that districts purely agricultural, are not so congenial to the prosperity and profit of Bees, as wood land and heath combined; the crops of the agriculturist, added to the blossoming of fruit trees, and the growing produce of the cottager's garden, will furnish employment for numerous Apiaries. In the fields and hedges, many early flowers present their sweets: the vetch, the pea, the bean, the colewort, clovers both red and white, the trefoil, and many others, which come under the denomination of agricultural crops, afford employment and store to these unwearyed Achymists. Clover produces abundance of Honey, but of the two sorts grown in this country, the white is not only most productive, but the Honey extracted therefrom, is more pure, more dense, more delicate in appearance, and of a richer flavour. That kind of tree or shrub, which is known to me, as the water willow, (a species of the alder, I believe,) is also a favourite with Bees; not only for extracting Honey from its flowers, but also an abundance of farina, useful for the internal fabric of the Hive.

In the garden, the Bee has a variety of favourites ; but, it is not always that the striking beauties of the parterre are visited by these rovers ; many of them which display all the tints and attractions of colour, are passed as unworthy of notice, on the way to the mignonette or eglantine : mignonette is peculiarly attractive to Bees, and as it is easily cultivated, and when in blossom produces a delightful fragrance,—so also, it affords a double gratification. Some time since, being permitted to walk in a gentleman's garden, for observation, I approached some noble sun-flowers, then in full bloom ; here, I found a number of my favourite insects, revelling in the plenitude of sweets, and humming their songs with all the jollity of bacchanals, but without their dissipation ; this convinced me, that the sun-flower is highly productive of Honey, and determined me to cultivate some, by way of experiment.

Of the quality of the Honey extracted from these flowers, I may at some future time be able to speak ; but, at this time, I

have an opinion, that, no Honey extracted from all the tribes of Flora, can equal that from the white clover, and happy shall I be in making an experiment, to settle and confirm that opinion, by fixing a small Apiary in the Neighbourhood of a field of white clover : convinced, as I am, that Bees will pass all other flowers, for such a repast.— Should I succeed, I flatter myself that I shall be able to produce Honey, nothing inferior to the finest in the world.

CHAPTER XV.

“ Who shall decide, when doctors disagree.”

To attempt a description of the different sorts of Bees, noticed by Naturalists, would be in me, highly presumptuous; and, my acquaintance with this tribe of Insects extending no further, than to that class under the immediate dominion and protection of man, I shall briefly give a description of the different members of that community, with a few observations founded upon actual experience.—And first of the **QUEEN**.

It is, I believe, generally admitted, that the **Queen Bee**, is the maternal **Parent** of the **Stock**, and the supremacy which she holds, seems to confirm the opinion. She is in all points superior to the drone and working **Bee**, except that her wings appear shorter, in proportion to her body; her length of body is greater than the other **Bees**,—the hinder part larger, and terminating in a sharp point; she is armed with

a sting, as the working Bee,—her upper part nearly of the same colour,—her under part and legs, are the colour of pure gold, and her whole appearance singularly beautiful. Any person having once seen and examined a Queen Bee, would be at no loss to point them out among ten thousand working Bees and drones. Being impregnated by the drones, she visits the cells of the Comb not filled with Honey, and deposits her eggs with a sagacity and prescience, truly wonderful; the eggs which are to become working Bees, are deposited in the smaller cells; those which are to become drones, in cells of a larger size,—and eggs which are to become like herself; in cells of a still larger size, and of a different form; being something like an acorn-cup inverted. All these cells are of course prepared for her Majesty, by the working Bees, whose attention towards her, under all circumstances, is unbounded, and whose exertions for her welfare and apparent comforts, are unceasing. The Queen Bee may therefore, be justly called the Head of the State, without which, the body would be

Useless and useless. I might here relate many curious observations upon the Queen Bee or Bees, and with which I have been greatly amused in my Apiary, but as they are more curious than useful, I pass them by, and proceed to the WORKING BEE.

The *working* Bee is truly so called, and exhibits the habits and results of industry, worthy the imitation of its biped Lord; who often cherishes and protects it, for no other purpose than to possess himself of its store, by the most cruel means. This Bee, is the smallest of the domiciled tribe, and is the most active and courageous; never submitting to insult or disturbance in its avocations, without an attempt at retaliation; often risking and losing its life in conflict with others of the winged tribe, and when irritated by man, they attack him with a ferocity and effect, astonishing and painful.—The poison injected by the sting of this Bee, is of the most acute nature; and many are the nostrums recommended for its neutralization:—houseleek, honey, vinegar mixed with salt and water, equal parts of oil, olive, and laudanum, and many others,

which have no certainty of effect, more especially if used with friction. The best remedy, I have yet found and proved, is *muriatic acid*; a small quantity of this, put upon the part affected, gives instant relief, and I would advise all persons keeping Bees, to have some of it by them, at all times; as a remedy at hand, will prevent much excruciating pain. The skilful Apiarian, however, will, when operating with his Bees, never engage without the veil, the gloves, and covering to other parts of the body, which are otherwise exposed to the attacks of Bees; and, he should always bear in mind, that tenderness and expedition are the best auxiliaries to success.

Observations made in an Apiary, conducted upon my Plan, will yield more experience in one or two seasons, than a whole life spent in the old way. In my Apiary, I am enabled to study the Bee, through all its stages, in all its avocations, and all its habits. I am enabled to partake its store, in great plenty, and of the richest consistence; and, in order that I do not deprive them of their necessary food for winter, in

the latter part of the season, I ascertain their weight, and form my judgment, as to what their wants may be, until again called forth to their labours, by the vernal sun, and the consequent blooming world.

The Apiarian has a wide field for the exercise of contemplation; he may, with attention, found his experience upon the unerring laws of nature, and acting thereupon, he may, with temperance and discretion, not only gratify his palate with the purest sweets, and render his exertions useful to his fellow-creatures; but, his mind may also imbibe ideas of a superior and more noble order;—which will beget in him, humility, adoration, and praise to the great Creator, whose mercy is over all his works, and whose inscrutable Providence is “*all things, to all men.*”

“Wonderful Insect!—teaching lordly man

“How insignificant his mightiest plan;

“When, close compared with labours such as thine,

“Who buildest without compass, rule, or line:—

“Beginning at the top thy wond’rous dome,

“And working downwards, till, complete thy home;

“Filling each waxen cell with nectar sweet,

“Which cruel man denies thee pow’r to eat:

“ He, when chill autumn’s flowerless hours are come,
 “ Attacks with sulph’rous fire thy precious home :
 “ Dooms a whole race to death, and takes thy store,
 “ To give his appetite, one luxury more.”

To the writer of the above lines, I am indebted for many favours, and for which, gratitude demands a public acknowledgement.

The DRONE, in every respect, answers to the general acceptation of his name:—clumsy in appearance, dull and indolent in his habits, he seems to exist for few other purposes, than that of propagation and reproduction. The Drone Bee, is undoubtedly the male; his body is larger, and of a more dusky hue, than that of the working Bee; his trunk or proboscis much shorter, his voice louder, and by which he may be known, when abroad. Proverbially indolent, he submits to every indignity, and having no sting as a weapon of defence, he yields at the first onset. Having answered the purposes of creation, he is sacrificed without mercy by the working Bees, and

ejected from the community, as a worthless incumbrance. This work of death to the Drones, generally occurs from the latter part of July, and through the month of August, from which time, Drones are rarely seen in the Hive, till the next spring, when a new generation offers itself to our attention. Drones seldom leave the Parent Stock, to accompany a swarm or cast; indeed, I have known a Parent Stock without Drones, at the time of swarming; but, this is very rare, and in my opinion, an ill omen, as they certainly are essential to a succession of the tribe. It does not, however, always happen that swarms or casts are without a few Drones; but, to ascertain this, I in general examine them, either before hiving, or after they are settled,—when, if I see no Drones, I catch a few from my other Stocks, and placing them upon the alighting board of the deficient Stock, I am laughably amused, in their reception by the working Bees. Sometimes, they will come, and saluting the stranger with a formal bow, re-enter the Hive,—piping, as if, for joy; others, coming out, survey the stranger with appa-

rent pleasure, and in a few seconds, lead the way to introduce him to the whole community, with loud piping, and gestures highly amusing. The term of existence allowed to the Drone, is certainly limited to one season; but, not so the Queen and working Bees, whose existence may with care, be extended to two, three, and probably more years.—And, may I here be permitted to say, that the recorded experience of the merciful and indefatigable Apiarian, would render essential services to mankind, and tend greatly to the preservation of this valuable part of Creation.

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CHAPTER XVI.

“ Wisdom hath builded her house.”

THE Honey-Comb, is a most exquisite work, and no doubt formed of the same materials, and in the same manner as it was, nearly six thousand years ago. Nothing short of infinite wisdom, could have furnished the Bees with powers equal to this work; and, although they are brought under the dominion of man, to increase his comforts, no human power can improve the fabric formed as a depository for their stores. The cells of the Honey-Comb, may be divided into four classes: namely, those for the reception of Honey, those for the reception of the eggs—the Queen—the working Bee—and the Drone, which appear to be deposited all separate; the cells for Queens have been before described,—those for working Bees, are the same form and size as the common cell for the Honey,—those for Drones, are the same form, but larger. The royal cells are made and finished in the best manner, and with the purest Wax, be-

ing as transparent as water, with a light tint of yellow, and all the cells of every description, are closed with a delicate kind of matter when they are filled, which renders them impervious to air, and with a strength which will resist the gravity of their contents in any position; the cells containing the brood remain closed, until the young Bees are matured, or till they are opened by the Bees themselves, for particular purposes, hinted at, in the preceding part of this Work. The cells containing Honey, are of course opened as necessity demands.

It is amusing and instructive, to see with what expedition and accuracy, these inimitable Insects form their Combs; I have witnessed the formation of a large piece of Comb, in a very short time,—when, as if something was wrong, it has been rapidly demolished,—and almost, as rapidly reformed, or built, about a quarter of an inch from its original point of suspension. In this scene, a previous conference appeared to be held, and particular Bees, which I called surveyors, gave, as it seemed, orders for

the alteration, which was set about, with the greatest expedition, and the Comb fixed in its more approved situation. Observation has convinced me, that Bees, in the summer months, are frequently working long after night fall, and before sun-rise; for, having examined them late in the evening, and early the following morning, I have seen by the enlargement of the Comb, that great part of the night must have been employed in building. How they obtained materials, I am not able to say,—but very likely, those employed abroad, had brought in a superabundance, which furnished employment for the builders all night long. The young brood of the Bees while in the cells, and in an immature state, appear to be under the immediate charge of the Drones, who in general cover that part of the Comb where the eggs are deposited, and assist in extricating the Bee when arrived at maturity, which is disposed of according to the distinction it bears. From repeated observation, I conceive, that from the time the egg is deposited, to its liberation as a perfect Bee, is about twenty days.

CHAPTER XVII.

“ For age and want save while you may,
 “ No morning sun lasts a whole day.”

THE uses of Honey are so numerous, and its properties when in a pure state so valuable, that it behoves the Apiarian, when he has taken the precious store, to extract it from the Combs in the purest and best possible manner. For this purpose, let all the Combs be examined, and put into three divisions, as to quality and colour: the whitest being No. 1, let Honey in each of the divisions be cut into small pieces, and cleared of dead Bees, or other impurities, and having a taper bag made of cheese cloth, with a hoof at the top, and three supporters, with a receiver under the point, put into it, pieces of No. 1, and let the Honey gradually drain from the Combs; its gravity and subtilty will carry it through the cloth, stirring it a little, when it begins to run slow. Repeat the operation with No. 2, and 3, clearing the bag each time of the Wax and refuse; thus you will have three sorts of

Honey, as to purity and value, and may dispose of it as you think proper. The remainder you may put into a tub with a small quantity of water, where, having remained two or three days, with frequent stirring,--you may strain it, and preserve the liquid for mead, the wax you keep for boiling, cleansing, and market. The liquid thus preserved, and being fermented, will make a small mead, and, in a few days, will be found a pleasant drink to those who are thirsty. But, should you intend making some good mead, the quantity of water may be greater in the outset, and having, as above strained it, (or better to run it through your tapered bag,) put Honey of No. 2, with it, in such quantity, that the liquid saturated with Honey, will bear an egg; should you find the egg not more than half immersed, put water to the liquid until you find it will just shew the egg upon its surface; after having again passed it through a strainer, put it into the utensil for boiling, and boil it over a tolerably good fire: while boiling, take off all scum that arises, and

continue the boiling no longer than scum arises ; for, boiling a long time, and being overcharged with Honey, spoils the mead. After sufficient boiling, put it into a tub to cool, and ferment it with a piece of toasted bread, well covered with *new* and good yeast; let it stand undisturbed two or three days, then turn it, and keep it in a cool and dry place ; it will be necessary, to keep a piece of paper, or other light body pierced with holes, till the fermentation ceases, when the bung may be fastened down, and in twelve months, you may have a liquor, little inferior to the finest wines. The flavour of mead may be improved by the introduction of lemon peel, during fermentation ; and to those making wine from native fruits, it is to be observed, that increased strength and flavour will be obtained, in using about four pounds of Honey, instead of sugar, to one gallon of wine.

Having cleared the Comb of all the Honey, the Wax, is the next object of attention. Put all the Comb you have, with a sufficient quantity of water, into a boiling utensil, so large, that its contents will not be likely to boil over :—boil these Combs

until all the Wax is dissolved; have a bag of cheese cloth, similar to that used for extracting the Honey,—and a tub, with a piece of board laying diagonally therein, put into the bag a small quantity of the boiled matter when hot, and press out upon the board in the tub, with a hand-staff; repeat the operation, till you have pressed the whole of the Wax and water through the bag,—clean the boiling utensil, making it hot over the fire, and rub it well with a piece of flannel,—return the pressed Wax and water into the boiler, so continue to do, until the Wax, now upon the top of the water, has a clean appearance. Having, now at hand, basons of such form and size, as you may deem proper; wet their insides with cold water,—skim off the Wax in the boiling utensil, and put as much of it into each bason as will make the cakes of a proper size, and set them in a place sheltered from the wind;—when cold, scrape off impurities, and rub them with a cloth, to a polish. Refuse Wax may be retained for family use, and it is to be observed, that Wax may be purified, by repeated boilings in fresh water.

CHAPTER XVIII.

“ To every thing there is a season and a time.”

My attention to Bees, throughout the year, is as follows : commencing with

NOVEMBER.

In this month, I lift them, clean every part of the Apiary, in order that no intruders or enemy may remain concealed.— The weight of each Colony being ascertained, I mark those that are light, as probably feeding may be necessary ; on such occasions, the entrance must be closed, so as to admit air only.

DECEMBER.

This month, I use the same precautions, as in the preceding ; and if snow comes on, I confine the Bees entirely, as sun-shine upon snow is too dazzling for their eyes, and tempt them into danger, which may prove fatal.

JANUARY.

If due attention has been paid in the two foregoing months, I find but little to do in

this month, except, frequently looking at them, for the purpose of ascertaining their state.

FEBRUARY.

In this month, I again ascertain their weight, and act accordingly, as to feeding and other matters. Fine weather in this month, will rouse Bees into activity; this must be checked by confinement, and will require great attention.

MARCH.

All the insect tribes being now on the eve of animation, I again lift my Boxes,—clean every part of the Apiary,—and, as the community is now increasing, I adopt feeding, where necessary, in greater plenty: observing, always to perform my operations, early in the morning, when the Bees are in the upper part of the Box, and partially torpid.

APRIL.

In this month, Bees begin to work in good earnest,—flowers are becoming plentiful,—and the Apiarian must increase his attention. Under these considerations, I am frequently at the Apiary to render needful

assistance, especially if the weather be unfavourable.

MAY.

In this climate, we frequently have unfavourable weather, in this month. The inhabitants of the Apiary are becoming very numerous, and close attention necessary: if feeding is necessary, I pay particular attention thereto, well knowing, that I run great risk of loss. In this month, also, I find it necessary to allow my Colonies more room, by additional Boxes; and, having given them more scope, I soon perceive the advantage, in their increased activity. At the latter end of the month, I am upon the look out for swarms, and have the necessary matters for the operation of hiving, always at hand.

JUNE.

This is the month, when I expect the greatest number of swarms, to which I find the greatest attention requisite, and in my operations and their results, I find great pleasure and amusement. The time of day when Bees rise to swarm is uncertain, but

I have generally found it to be from eight in the morning, to four in the afternoon;—this is not always to be depended upon, therefore, the Apiarian must be provided for all occasions of the kind. Much Honey is collected in this month, if the weather is favourable.

JULY.

Although June is the principal month for the increase of Bees, by swarms and casts, yet I have known strong Stocks raised in July; but, this was in a favourable season, and when plenty of store was to be found abroad. In very hot weather, I find it necessary to screen or shade my Colonies from the rays of the sun: I have experienced the result of inattention to this point; the Honey has been melted, and the whole Stock destroyed. Bees, are certainly fond of warm weather; but extreme heat and drought therewith, is, I know injurious to Bees, both in doors and out. In the evening of these hot days, I throw water upon the grass in front of my Apiaries; this is very refreshing,—and my observation early the next morning, is to discover snails, slugs,

or other intruders, who may have been brought upon the grass, in order to their being killed, either by the application of salt or other methods. This, and the two preceding months, I consider the time of trial to the Apiarian, and need all his ingenuity and perseverance, if he means to succeed.

AUGUST

Is generally unfavourable to Bees. Honey grows scarce in the fields,—the weather is hot,—Wasps are abroad,—and wars among the Bees themselves often occur. I now find it highly necessary to be alert, in discovering the causes of restlessness, and act accordingly. If Wasps nests are in the neighbourhood, I destroy them; if they come from afar, or I find my Bees robbing each other, I close the entrances of my Boxes, leaving room for nothing but air to pass. Assistance to Bees, under these or any other distressing circumstances, I cheerfully afford; being well assured of remuneration for my trouble.

SEPTEMBER and OCTOBER.

I find but little is necessary in these months, except caution, that, marauders and intruders be excluded, and prevented by all possible means.



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ERRATA.

Page 16, line 2, for TWELVE FEET, read THIRTEEN.

63, — 16, for MANY BEE-FANCIERS, read SOME BEE-FANCIERS HAVE RECOMMENDED.