

labours in an empty box that has been filled, sooner than any others. Drawers in old stocks should be turned so as to let the bees into them as early in the spring as blossoms are seen.

RULE VII.

The Method of compelling Swarms to make and keep extra Queens for their Apiarian, or Owner.

Take a drawer containing bees and brood comb, and place the same in the chamber of an empty hive, take care to stop the entrance of the hive, and give them clean water daily, three or four days. Then unstop the mouth of the hive and give them liberty. The operator must observe Rule six in using the slides, in removing the box from the original hive.

Remarks.—The prosperity of every colony depends entirely on the condition of the Queen, when the season is favourable to them.

Every bee-master should understand their nature in this respect, so as to enable him to be in readiness to supply them with another Queen when they chance to become destitute.

The discovery of the fact, that bees have power to change the nature of the grub (*larva*) of a worker to that of a Queen, is attributed to Bonner. But neither Bonner nor the indefatigable Huber, nor any other writer, to my knowledge, has gone so far in the illustration of this discovery as to render it practicable and easy for common people to avail themselves of its benefits.

The Vermont hive is the only one, to my knowledge, in which bees can be compelled to make and keep extra Queens for the use of their owner, without extreme difficulty, as well as danger, by stings, in attempting the experiment.

The idea of raising her royal highness, and elevating and establishing her upon the throne of a colony, may, by some, be deemed altogether visionary and futile; but I will assure the reader, that it is easier done than can be described. I have both raised them, and supplied destitute swarms repeatedly.

When the drawer containing bees and brood comb is removed, the bees soon find themselves destitute of a female, and immediately set themselves to work in constructing one or more royal cells. When completed, which is commonly within forty-eight hours, they remove a grub (*larva*) from the worker's cell, place the same in the new-made Queen's cell, feed it on that kind of food which is designed for Queens, and in from eight to sixteen days they have a perfect Queen.

As soon as the bees have safely deposited the grub in the new-made royal cell, the bees may have their liberty. Their attachment to their young brood, and their fidelity to their Queen, in any stage of its minority, is such that they will never leave nor forsake them, and will continue all their ordinary labours, with as much regularity as if they had a perfect Queen.

In making Queen's in small boxes or drawers, the owner will not be troubled by their swarming the same season they are made. There are so few bees in the drawer, they are unable to guard the nymph Queens, if there are any from being destroyed by the oldest, or the one which escapes from her cell first.

In examining the drawer, in which I raised an extra Queen, I found not only the Queen, but two royal cells, one of which was in perfect shape; the other was mutilated, probably by the Queen which came out first. Now when there are few bees to guard the nymphs, it would not be very difficult for the oldest Queen to gain access to the cells, and destroy all the minor queens in the drawer.

When a drawer is removed to an empty hive, for the purpose of obtaining an extra Queen, it should be placed some distance from the apiary, the better to prevent its being robbed by other swarms. When it is some distance from other colonies, they are not so likely to learn its comparative strength. There is but little danger of its being robbed, until after the bees are out of danger of losing their Queen, which generally occurs in the swarming season.

The Queen is sometimes lost, when she goes forth with a swarm, in consequence of being heavily laden with eggs, and too feeble to fly with her colony; in which case the bees return to their parent stock in a few minutes. It fact all occurrences of this kind originate in the inability of the Queen. If she returns to the old stock, the

swarm usually comes out the next day, if the weather is favorable. If the Queen is too feeble to return, and the apiarian neglects to lock her up and restore her to her colony again, (which he ought to do,) the bees will not swarm again until they have made another, or are supplied, which may be done immediately by giving them any spare Queen.

The Queen is sometimes lost, in consequence of the young brood being too far advanced at the time of the departure of the old Queen with her swarm. She may become barren or diseased, and die of old age, and all the grubs (*larva*) may have advanced so far towards the perfect fly at the time of her death, that their nature could not be changed to a Queen before the bees had become apprized of her true condition, or she may be lost at second swarming, as explained in remarks on Rule second, or she may be lost by accident when she goes out of the hive into the air for exercise, or for the purpose of forming the sexual union with the drone; because, on returning to the hive, she has been known to enter her neighbour's hive by mistake, and lose her life before she could make her escape.

Note.—I think all close observers of bees will accord with this doctrine, when they reflect upon the fact that the Queen frequently sallies forth for exercise or for other purposes, of which we see repeated indications during the breeding season, to wit: the bees assume the appearance of the commencement of swarming: they fly very thick before the hive, and run in every direction on its outside. In short, it would seem that hostilities had commenced in great earnest betwixt that and some unknown hive, or that they were in a real sport. Now the bees miss their sovereign when these peculiar feats are seen, and on her return, all is quiet.

RULE VIII.

On Supplying Swarms Destitute of a Queen, with Another.

Take the drawer from the hive, which was placed there according to Rule seven, and insert the same into the chamber of the hive to be supplied; observing rule six in the use of the slides;—or remove a box containing brood comb as above described, and the bees will make one for themselves—or take a Queen from any small swarm, and introduce her at the mouth of the hive.

Remarks.—Colonies destitute of a Queen may be supplied with another the moment it is found they have none, which is known only by their actions.

Bees, when deprived of their female sovereign, cease their labours, no pollen or bee-bread is seen on their legs; no ambition seems to actuate their movements; no dead bees are drawn out; no deformed bees, in the various stages of their minority are extracted, and dragged out of their cells, and dropped down about the hive, as is usual among all healthy and prosperous colonies.

Colonies that have lost their Queen, when standing on the bench by the side of other swarms, will run or fly into the adjoining hive without the least resistance. They will commence their emigration by running in confused platoons of hundreds, from their habitation to the next adjoining hive. They immediately wheel about and return home again, and thus continue, sometimes for several days, in the greatest confusion, constantly replenishing their neighbor's hive, by enlarging their Colony, and at the same time reducing their own, until there is not a single occupant left; and remarkable as it is, they leave every particle of their stores for their owner or the depredations of the moth.

Colonies lose their Queens more frequently during the swarming season than any other.

In the summer of 1830, I lost three good stocks of bees in consequence of their losing their Queens, one of which was lost soon after the first swarming—the two others not many days after the second swarming—all of which manifested similar actions, and ended in the same results, which are more particularly explained in remarks on Rules two and seven.

The Queen, when lost in swarming is easily found, unless the wind is so strong as to have blown her a considerable distance. A few bees are always found with her, which probably serve as her aids, and greatly assist the apiarian in spying her out. She is frequently found near the ground, on a spike of grass, the fence, or any place most con-

venient for her to alight, when her strength fails her. I once had quite a search for her Majesty, without much apparent success. About the same time there were flying about me a dozen or more common workers. At last her royal highness was discovered, concealed from my observation in a fold of my shirt-sleeve. I then returned her to her colony, which had already found their way home to their parent stock.

The Queen may be taken in the hand without danger, for she never stings by design; her timidity disarms her of every species of hostility; she may be drawn in quarters, and she will not sting. In trying many experiments I never could discover in her, the least hostile feeling, except when conflicting with one of her own species; her only exertion seems to be, to make her escape; and yet she has a sting much longer than a worker.

The Queen is known by her peculiar shape, size, and movements. She differs but little in color from a worker, and has the same number of legs and wings. She is much larger and longer than any of the bees. Her abdomen is perfectly round, & is shaped more like the sugar-loaf, which makes her known to the observer the moment she is seen. Her wings and prothorax are short. Her movements are stately and majestic; at the same time shy, and rather inclined to conceal herself from human observation; with seeming jealousy of being caught. I have known her to remain in the air on the wing several minutes after her whole colony were alighted when I stood near the swarm. She is much less in size after the season for breeding is over. She is easily selected from among a swarm at any season of the year, by any one who has often seen her. Cut off the limb and shake the bees on a table to find the Queen.

RULE IX.

On Multiplying Colonies to any Desirable Extent, without their Swarming.

The large drawer, No. 1, should always be used for this purpose. Insert slides, as in Rule 6, and remove the drawer containing bees and brood comb, place the same in the chamber of an empty hive, stop the entrances of both the new and old hives, taking care to give them air as in Rule 4. Give clean water daily, three or four days. Now let the bees, in both hives, have their liberty.

Remarks.—This operation is both practical and easy, and is of prime importance to all cultivators, who wish to avoid the necessity of having them when they swarm; and yet it will not prevent swarming, except in that part of the divided colony which contains the Queen at the time of their separation. The other part being compelled to make another Queen, (and they generally make two or more) may swarm to avoid their conflict, as explained in remarks on Rule 2. The hive containing the old Queen may swarm for want of room; but, at any rate, in performing the operation, it has saved the trouble of having one swarm, and prevented all danger of their flight to the woods.

Multiplying colonies by this rule is a perfectly safe method of managing bees.
(To be Continued.)

RECIPE FOR COLORING BLUE.

By L. Ellsworth.

Take two bushels purslin, (*Portulaca*) known as "pusley," which grows in our gardens in abundance; add a sufficient quantity of water to cover it when pressed down into the kettle, and boil until thoroughly cooked; then strain off the liquor; also one pound of ground logwood, boiled separately; dissolve one quarter of a pound of alum in a sufficient quantity of water to cover four pounds of wool or cloth; then boil the wool or cloth in the alum water two hours; then add the purslin liquor and the logwood, and boil two hours more. When the article is first taken from the dye it will have a purple hue, but will soon turn to a handsome blue, on being exposed to the air. The quantity may be increased or diminished as required—observing the above proportions.

The cost is as follows:—
2 bushels purslin, \$0.00
1 lb. logwood,05
¼ " alum,02½

Total, \$0.07½ for 4 lbs. goods.
Naperville, Ill., 1844.