

ishing numbers of old bees at this season the hive would soon be depleted of its numbers. Colonies that are queenless may winter very well, but they are very soon all gone when the warm weather of spring calls them into active life. The dying out of the old bees thus rapidly at this season, when not accompanied by a corresponding increase of the hatching brood, causes that much feared and much talked of casualty, spring dwindling.

Therefore it is important that the bee-keeper see to it that the brood is hatching, to bridge over this important and critical period in the history of the colony.

It is a disputed point, even among very practical bee-keepers, as to how early brood rearing should be encouraged, but I think there need be no doubt about the economy of continuing it uninterrupted when once begun.

After brood rearing has continued for a time in winter quarters, it will cease entirely for want of water, and colonies will suffer from thirst. The higher the temperature the greater the suffering. They may be supplied to a limited extent with drink, provided the temperature is high enough (not under 50), or they may be set outside if the weather will permit, and take the chances of sudden changes of cold and winter blizzards, which is very demoralizing to colonies that have been wintered in a warm bee house. The prudent and thoughtful bee-keeper will often find himself in a dilemma at this point not easy to decide. Pollen is also necessary to carry on brood rearing to any considerable extent. If bees are out before natural pollen appears and the weather will permit, pollen may be supplied by a substitute of flour, which will take the place of natural pollen.

Before the time comes in the spring to set the bees out permanently, some attention should be given to the preparation of the yard. All rubbish, the harbor of the bee-moth and its progeny, should be removed; the yard made level and smooth, the shrubbery trimmed, and everything possible done for the pleasure and convenience of the summer work, and last, but not least, every stand leveled with a spirit level, for if this be omitted, the combs in the hives will hang to one side and be built irregular. When all is ready the bees should be carried out on a warm day and each hive set upon its own stand from where it was taken.

Examination of all colonies should be attended to without delay on the first warm days, after they have had a thorough flight, to determine: 1st. The amount of stores. 2d. The quantity of bees. 3d. If supplied with a good queen. This may be done by raising the hive and looking in at the bottom of a bottomless hive, or box hive, thus determining the operation the amount of stores and bees, or by removing the corner of the hive, if it has a fixed bottom. For a more minute examination the hive must be opened, if movable frame hive. If box hives are used they may be examined on cool mornings by raising the hive and examining the bottom board for immature young bees and larvae, which determines as near as we can the presence of a queen. I would advise that all such colonies be transferred to movable-frame hives, and queenless ones should be carefully marked, and particular attention given them at the first favorable opportunity, when the weather will admit.

Although these light and queenless colonies are really worth little, they will be a source of much trouble and annoyance if not properly looked after, by inducing robbing, which may result in a general demoralization of the whole apiary.

Weak colonies may be very much assisted by aid of the division board, by which we may contract the hives so as to confine the bees upon such a

number of combs as they will be able to cover, and by placing the stores upon the other side of the board they are made accessible to the bees and constitute a perpetual feeder.

By use of the division board, too, we may unite such colonies as we wish to unite by placing a colony containing a queen on one side of the board, and carefully cover with a cloth or quilt, and the other colony deprived of its queen on the other side, leave them thus for several days, when the board may be removed, and brood packed together as compactly as possible, and the work is done. All queenless colonies before mentioned should be disposed of in this manner. I have practised this mode of uniting bees almost entirely for several years, with the most perfect success.

If this work has been neglected, and our bees are found robbing, the entrances to all hives should be closed, so that but one or two bees can pass at a time, and if no disposition is shown to defend themselves, the hives should be closed or removed to a room or bee house. If the hive is closed and the weather is warm, and the colony of considerable strength, some caution should be exercised about their becoming heated and even melted down. If after carrying in, for a day or two, no disposition can be encouraged to defend their stores, the sooner they are united with a colony of more spirit the better.

I have only to say, in my opinion, if bees have been properly wintered and judiciously managed during the spring there will be no such thing as spring dwindling.

There is neither excuse, nor profit, in having strong and weak colonies in the same apiary. The light should be encouraged by feed and strengthened by brood from the strong. A comb of brood just hatching from a strong colony placed in a weak one will give it an astonishing impetus, and in the place where the brood was removed from, the strong colony is supplied with a nice empty comb or foundation, which will be filled with eggs, and the work of the hive go on without interruption. In this way the whole apiary may be built up into uniform strength, and when the harvest comes the result will be a uniform yield of honey.

The amount of honey, and consequently the amount of profit, depends entirely upon the force of workers we have ready when the harvest comes. If we feed when natural stores fail, and thus keep brood rearing steadily going on, the hives will be full of industrious workers when the harvest comes, our brightest dreams of a sweet harvest will be realized, and our bank balance will be a substantial encouragement of judicious management. —H. R. Boardman, in *Norfolk Chronicle*.

STARVATION FOR FOUL BROOD.

Foul brood is a disease caused by a fungus attacking the larval bees. It often destroys whole apiaries of hundreds of colonies in a few weeks or months. It is terribly contagious, being spread by the simple carrying of honey, by robbery or otherwise, from a diseased stock to a healthy one. Only the brood is diseased. In its decay there is given off a terrible stench, which he who runs may smell. The cappings of cells containing diseased brood will be concave, instead of convex, as they are if the larvae are healthy. In the centre of the capping will be a small hole, as if pricked with a needle. The dead brood will exist as a brown ropy or stringy mass, as the dead larva will not hold its form when pulled from the cell. This brown ropy condition is the surest indication of the disease.

Mr. C. F. Muth removes the bees to a clean hive, and then feeds salicylic acid in solution, using equal parts of the acid and borax, that it may be

soluble in water. This solution is mixed with honey. This acid is well known as an excellent fungicide, and was first discovered to be a cure for foul brood by the Germans. The Germans use, however, pure acid dissolved in spirits. The honey in the old hive is extracted and boiled. The comb is melted into wax, and the hive and frame either burned or kept some minutes in boiling water. Great care must be taken that no other bees get any of the honey before it is boiled. The fungous spores are killed by heating to 212 deg. F.

Mr. D. A. Jones jars the bees till he is sure all are filled with honey, then shakes them in front of a clean hive, which they enter. Here they are kept without food till they begin to die of starvation—from thirty to fifty hours. Then they are fed—and are rid of the disease. The old honeycomb and hives are treated as already described. If Mr. Jones is correct in thinking he has cured many cases of this dread malady—and it is hard to see how he can be in error—then it would appear that the fungous spores can only be conveyed in honey, or if otherwise conveyed are impotent to do harm. Mr. Jones says he can cure this terrible plague as easy as he can transfer a colony of bees from a box to a movable frame hive. If so, this is very important information.—*Professor A. F. Cook, Michigan Agricultural College.*

NORFOLK BEE-KEEPERS' ASSOCIATION.

The third annual meeting of the above Association will be held at 2 o'clock, on the last Saturday of this month (November) in the town hall, at Waterford. All interested in apiculture are cordially invited to attend, and the members are particularly requested to be present, as the officers for 1883 will be elected that day.

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