

APICULTURE.

THE WONDERFUL ORGANISATION OF THE HIVE.

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A close study of bees reveals a multitude of interesting facts, and the closer the study the more wonderful it all appears, but there is nothing which impresses the ordinary observer more than their remarkable instinct for organisation. Considering the number of bees in the hive—probably forty thousand of them—and the numerous duties, large and small, which have to be performed, the functioning under normal conditions of this army of workers appeals to one as almost perfect.

How the bees direct their large working force is, of course, somewhat of a mystery. We can understand that the young bees, when they first emerge from their cells, would for the time being take on nurse work, such as the preparation of food and feeding of the larvae, and other light home duties. Then at the next stage they would gather pollen (the lighter load from the field) and later on nectar—the heavier work. Of course there are numerous other duties, but we are for the moment considering the probability of the age of the bees having some connection with the distribution of work. It is quite evident that, under normal conditions and with regular forces of young bees emerging the work of the colony is facilitated by bees of certain age doing work for which they are best suited. The colony, however, does not rely entirely on this principle, for we can remove a queen from the hive for a time and have no young bees emerging over a fair period, and on the return of the queen and the energetic resumption of work by the colony, the organisation does not appear to be much upset.

It is often thought that the queen bee governs the colony, but such is not the case; the worker bees are the ones that hold the reins of management, and to a large extent they control even the queen's particular work. Everything done is for the future welfare of the colony, and every worker is prepared to make a sacrifice toward that end. Should the queen be failing, or not carrying out her duties as they should be carried out in the opinion of the worker bees, then for the colony welfare the bees will usually supersede her, and rear another queen in the hope of obtaining better results. The drone bees, too, are controlled by the workers. They are reared in large numbers during prosperous times when a force of them is considered necessary, but during adverse periods the worker bees usually destroy the majority of them, as it would be against the best interests of the colony to keep them, consuming large quantities of food as they do.

There is wonderful organisation when a colony is preparing to swarm—preparation of queen cells to provide a mother in the old hive when the swarm leaves, selection of the period for the issue of the swarm, and the taking in of a supply of food to cover the swarm's journey to the new home, and to give them a good start there. In many cases the bees find and prepare a new home previous to issuing pell mell from the hive.

The developments just previous to issue are very interesting to watch. A number of workers will run about buzzing and dancing. Other bees on the trail of the dancers will take up the call, and so on, until a general excitement prevails, and out goes the swarm. The queen answers the call, but she does not lead the swarm as is often supposed.

The organisation of the smaller duties about the hive is of much interest. It is not uncommon to find, perhaps, five or six bees right on the outside of the hive busily engaged in blocking up a crack between the supers, using propolis (a gum usually obtained from trees) mixed with wax for this work. How is the organisation so controlled that a few bees will separate themselves from forty thousand to carry out a small operation such as this, and on the outside of the hive? Perhaps a thousand or more bees were aware that the crack in the hive was causing some inconvenience, yet only five or six—just enough for the task—are attending to it.

A colony preparing for the winter months must properly organise its forces to obtain the best results. With the approach of cooler weather the bees contract their sphere of operations—by this clustering together they are better enabled to keep up the temperature of the hive. The brood nest is reduced, too, and the empty cells there are filled with unsealed honey, if procurable, for use as convenient during the cold weather. The bees commence to reserve their vitality by resting so that their life will be lengthened and they will be able to survive the long winter period, and be in a condition to make a good start during the following spring.

A good knowledge of bees and their work enables the apiarist to work out many problems himself. Get to know what the bees do, and one is on the right track to knowing what is to be done for them.—Agricultural Gazette of N.S.W., Vol. XXXVI, Part 6.

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