

APIARY EXPERIMENTS AT RUAKURA.

THE "DEADMAN" SUPER CLEANER SYSTEM.

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[Mr. Trythall's note which follows may be regarded as a progress report in connection with a policy of experimental and demonstrational work instituted by the Horticulture Division of the Department at the Ruakura Apiary. Other matters under investigation include daily weight and daily temperatures of hives, advantages or otherwise of various makes of hives, various capping-melters, thick honey, &c. It is proposed to publish in the *Journal* records of these investigations as completed or definitely advanced.]

ONE of the best experiments carried out at the Ruakura Apiary during the past year has been the testing of a drip-comb super cleaner as originally used by Mr. G. A. Deadman, of Merlin, Ontario, a description of which appeared in the *American Bee Journal* for October, 1916.

The cleaning-up of wet combs from the extractor, especially after the last extracting, when the honey-flow is practically over, has always been a troublesome process, and often fraught with the danger of setting up "robbing" in the apiary. The usual practice is to return the supers containing such combs to the hives to be cleaned up. In large apiaries this often causes undue excitement, especially if attempted (which it never should be) before sundown, and many are the cases of robbing and subsequent loss of colonies which have occurred through this cause. Then, again, there is little benefit derived from the small amount of honey usually present in the combs, since it is divided among so many colonies that the extra gorging which the bees do nearly consumes the available honey.

The Deadman device, as shown in the illustration, consists of a large stand or floor-board, capable of holding one hive of bees (which is placed in the middle at the front) and five piles of supers. The floor-board is so constructed as to allow free communication between each stack of supers and the central hive, but the only means of entrance from outside is the ordinary opening of the central hive.

The five piles of supers can be tiered up to any height required. Care, however, must be taken to see that the joints and roofs are all tight-fitting. They will then be quite safe from attacks from robber-bees, the only entrance, as already stated, being through the centre hive. The entrance shutters can be reduced to a minimum, which

the bees will easily defend. As the piles of supers are at the sides of the centre instead of on the top, the bees remove the honey as soon as possible, and if the colony is short of stores it soon makes the best of its opportunities.

If there are many supers to clean up it is advisable to place surplus accommodation on the hive. By this means last year we secured at Ruakura a good number of beautifully filled and capped sections from our drip-combs.



THE "DEADMAN" SUPER CLEANER IN OPERATION AT THE RUAKURA APIARY.

Another advantage can be claimed for this system. Supposing that foul-brood has recently developed in one or more hives of an apiary and has escaped detection when the honey supers were removed, it is quite likely, under the old plan of cleaning up the drip-combs, for the disease to be conveyed to a number of other hives throughout the apiary. On the other hand, by the use of the Deadman device it is only likely to be transmitted to the one hive at most, and if that hive shows a clean bill of health the following spring it

speaks well for the general state of the apiary, even though it may not be absolute proof that no disease exists.

This appliance was on view at Ruakura on the field-day held in connection with the Waikato Beekeepers' Association in February, and I have since heard that two of the members at least made and tested the device shortly after getting back to their own apiaries. One has since reported that he has found it a great boon, and is highly delighted with it.

THE INFLUENCE OF BEES ON FRUIT CROPS.

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THOSE who cultivate the soil must, to be successful, take advantage of the various forces of nature which are likely to help them in their work. In regard to fruitgrowing it must be remembered that the whole industry stands on an artificial foundation. Fruit-trees such as we cultivate rarely exist in a natural state. Rarely do fruit-trees growing under natural or wild conditions produce such a mass of blossom as is given by our artificially conditioned trees. Nature evolved a less prolific tree, and planted it where conditions favoured its growth. We plant the tree where we wish, and all the conditions may not be favourable to its well-doing. One important phase of fruit-production is fertilization of the flowers. The question of self-sterility or otherwise as existing in fruit-trees is a much-debated point, and it is not necessary to discuss it here, because even supposing all varieties of fruits to be capable of fertilizing themselves with their own pollen, there must still be extraneous aid or it will be but imperfectly done.

The pollination of flowers is effected in many ways. Various insects perform a large part of the work, and wind also assists. It is to be remembered that in spite of nature's provisions wild trees do not produce their fruit with certainty year after year. It may be that the weather is too damp to allow of the customary free dispersal of pollen by wind, and were that so it would naturally follow that insects also would be less abundant. Now, an orchardist expects a crop of fruit every year, therefore he should call to his aid whatever will contribute to the perfect fertilization of the flowers.

Pollination may take place in two different ways, namely: (1) Cross-pollination—when the pollen of a flower is distributed to the pistil of another flower; (2) self-pollination—when the pollen of a flower is distributed to the pistil of the same flower.