

AMERICAN FOUL-BROOD IN BEES AND ITS TREATMENT.

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FOUL-BROOD is the name given to certain diseases which attack bees in the brood or larval stage. American investigators have determined three types of foul-brood, of which the most destructive to bees in this country is that caused by *Bacillus larva*: (White), and named American foul-brood. No investigations have yet taken place to determine the possible presence of the other two brood diseases—European foul-brood, caused by *Bacillus pluton*, or sac-brood, caused by a filterable virus. Almost every season beekeepers note and report diseased conditions of the brood of which they have no knowledge, and which differ from the usual appearance of the brood when attacked by *Bacillus larva*. These cases are not serious, as they are never reported in epidemic form, the colonies generally regaining form during the summer.

Since foul-brood causes a large annual loss of colonies and the destruction of an extensive amount of beekeeping equipment, it may be considered a very serious menace to honey-production in the Dominion. Greater efforts are now being made to control its spread through education and a more rigid enforcement of the Apiaries Act. The disease is found in the North and South Islands. Although certain areas have been rendered free from it, how long they will remain so will depend upon whether diseased colonies or infected material are introduced. The rapidity with which the disease spreads from place to place tends to dishearten beekeepers, and it is only by constant vigilance and the application of precautionary and curative measures that immunity from the dread disease can be won.

The precise date at which foul-brood made its appearance in New Zealand is not known. For some years prior to 1907 beekeepers were troubled with serious losses among their bees, and in that year samples of comb submitted to the United States Department of Agriculture for examination were reported upon as showing the gross characteristics of American foul-brood.

CAUSE AND SYMPTOMS.

The disease invades the colony by attacking the young larvæ during the time when they are being fed by the nurse bees, and the infected larvæ usually die just after the cells are capped over. The bees allow the resulting matter to remain there, and the number of hatching-bees decreases in proportion to the increase in the number of affected cells. Larvæ of the queen, worker, and drone may become infected, although the worker larvæ are more frequently affected by the disease. Adult bees are immune. The life of the worker bee is estimated in the summer at from six to eight weeks, and it is natural to find that as the disease advances the colony dwindles in numbers until it eventually dies out. The honey that is left in the combs is carried away by bees from other colonies, which also become infected and eventually die.