

two suggestions, and hope they will be taken in the spirit in which they are offered.

This paper which I have to bring before you has to do with the diseases of bee larvae. Those of you who have followed bee literature for the last year or two, especially the bee journals from the United States, will have noted that there have been several new diseases spoken about, and how far they are known or prevalent in Ontario I am unable to state. Two years ago I remember there was some talk of 'black brood,' and I think a committee was appointed to send samples to me. Whether they did not meet with any cases of 'black brood' I don't know, but I know I have received no samples, and what I have to say with reference to these other diseases is taken entirely from literature which has come out in the United States bee periodicals.

THE DISEASES OF BEE LARVAE.

(By Prof. F. C. Harrison, O. A. C., Guelph.)

The diseases of the larvae of bees may be roughly divided into two groups, one in which the disease is contagious and the other in which the disease is not due to a special virus, but to some physiological or physical cause. The contagious diseases are the most harmful, as they spread from hive to hive and from one apiary to another, often producing a severe epidemic.

In all cases of infectious diseases there must be present a virus, or living organism, which may be a fungus or a mould-like growth, or due to minute organisms, which are popularly called bacteria. These micro-organisms may be carried from one hive to another in many different ways, and the following are the principal means by which contagion is spread and infection caused:

1. Bees entering wrong hives.
2. Bees robbing a diseased colony.
3. Feeding bees with honey from an infected hive.

4. Inserting diseased combs into healthy hives.

5. Using as a foundation a wax from a diseased colony which has been improperly boiled.

6. Transferring bees into hives that have been inhabited by a diseased colony without first thoroughly disinfecting it.

7. Placing a hive upon a stand previously occupied by a diseased colony.

8. The handling of healthy colonies by the bee-keeper after manipulating diseased hives.

9. The introduction of a diseased queen.

10. Healthy bees visiting flowers which may have been infected by diseased bees.

All these are means by which infection can be carried or transferred from one place to another, and evidence can be brought forward to show that disease has been produced by each of the different means above mentioned. "Foul Brood" being the infectious disease which is best known, naturally affords more examples of these methods of transmission than any one of the other contagious bee diseases.

It is important that all bee-keepers should clearly understand these means by which infection is carried, also they should have a knowledge of the appearance of the various diseases of bees, so that they can diagnose or tell the kind and character of the disease, in order to apply intelligently methods of prevention or cure.

"Foul Brood."—The larvae attacked by *B. alvei*, the cause of "Foul Brood," may die during all stages of their development. In every instance the larvae lose their white and glossy appearance when suffering from the disease and turn to a dull yellowish, and later on to a brownish, color. In the further progress of the disease they die and collapse into a darkish brown, coffee-colored, more or less tenacious, shapeless mass. This mass is characterized



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