

and the newer one, to which he gave the quite appropriate name of *Bacillus Larvæ*.

Reverting to the later discoveries of Dr. Maasen, we find that he, too, in dealing with innumerable combs affected with foul brood, found to his astonishment that there was little or no sign of *Bacillus Alvei*, whereas other bacteria were plentiful. Out of 53 cases, when the disease had attacked larvæ before capping, 51 were found to contain *Bacillus Alvei*—just as had been done by Cheshire, and he was able to cultivate these at his pleasure, while he found spores of this disease exceedingly persistent. In specimens of the disease where the larvæ had been attacked after capping, a very large number of a new bacillus occurred, described by Dr. Burri as being difficult to cultivate. He and Dr. Maasen found a medium in the juices of bee larvæ, the resultant growths being identical with *Bacillus Larvæ* of White. Indeed, Dr. Maasen has identified it as the same to which he had given the name of *Brandenburgiensis*, and to which Dr. Burri gave his own name as the specific definition. Dr. White's is the happiest name of the three, and, as the most appropriate, it should be accepted in general. On the contrary, the newer names ("European" and "American") are wholly inappropriate, and ought to be suppressed.

The distinctive features are, I think, clearly established. The one species attacks larvæ generally before sealing, the other mainly after the larvæ in the cells are capped. The existence of two species of bacillus is acknowledged—*Alvei* and *Larvæ*. Both are new, and for long have been indefinitely known in this country, on the continent of Europe and in America. Now a more definite knowledge exists. Bacteria multiply by a process called fission, so that in a short space of time the one end may become two, and under favorable conditions of temperature, mois-

ture, food and the absence of light, that single rod in an hour's time may become sixteen. The process going on steadily, it will become apparent that in a very short period of time, millions and millions may be formed. When the food supply becomes exhausted, these germs or microbes change into spores. Scarcely any degree of either heat or cold can make any impression on these spores, wrapped as they are in a double casing of armor. Americans at times rail against the use of drugs in this country as a "cure" for foul brood. As one who does not use this preventive, I must acknowledge that they may work wonders in a strong hive by enabling the bees to resist the germ formation. Even in the spore stage, when favorable conditions enable the spores to become germs, the effect is, at least temporarily, most noticeable—but sooner or later the trouble develops. Removing the spores is, in my eyes, the one effective cure, and this can only be done in an advanced stage by making a holocaust of all internal fittings, and then thoroughly disinfecting the hive. Thus a cure is certain. All other schemes fall short of perfection. One single spore left, the hive is diseased.

The last Canadian Annual Report, pages 14 to 20, of the January issue of the C.B.J., shows that foul brood is still steadily spreading over wide areas. Where it is curbed, and its ravages are circumscribed, is where drastic measures of cure are resorted to. Section 3 of the Act enjoins what I have always advocated—"Destruction by fire of all hives and contents where the existence of the disease in its virulent or malignant type is discovered." Where there are "tainted appurtenances that cannot be disinfected," they, too, are to be burned. I feel very pleased to find that Canadians are thus resolved to go to the root of the matter.

We in this country are, unfortunately, at present suffering from a far

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more malignant and compared with which foul brood is a mere trifle. Isle of Wight disease is like the pestilence of darkness, as the evil before its presence is that trying to cure play.

STRONG COLONIES

Indexed By F. L. I.

In our northern climate for breeding up before is short. Seeing that a month to produce a the egg, and that cloverly begin to yield until of June, eggs laid late of May will be of little main honey-flow. Breeding begins to any extent part of April, and therefore, that there is a month in which to from its winter condition strength. This is really and the bees need all to be given them.

To get strong colonies it is necessary to be before and have strong fall. The more bees November, the more to March, and in the early a prolific queen is not as plenty of bees. A queen will lay more eggs can take care of in April.

At that time of year, of a comparatively small having to keep a large brood warm, and nothing will help the colony warmly-protected hive. wintered in the cellar, I will help, but nothing is as a well-packed chaff