

aware of the existence in their country of black brood or what is now known as European foul brood. Possibly this disease has been there all along; admitting which one would be compelled to apply the same statement to this continent. Here, however, it exists as an epidemic, whereas English bee-keepers maintain that in England it does **not** exist in the epidemic form. This may clear the ground somewhat.

As regards Mr. Root's assumption that the so-called European foul brood may possibly be "the common brood disease in Great Britain," I may, perhaps, be permitted to state that I am only too well acquainted with that disease, and look upon the American editor's assumption as grotesque. In fact, unless Mr. Root is in possession of some better and more precise information as to the origin of the common brood disease in Great Britain than is the English bee-keeper I fail to understand what has led him to making the statement I have quoted. For the symptoms of bee-diseases are detailed most clearly in the standard English apicultural works, and also in the British Bee Journal from time to time, and it is difficult to imagine how a mistake in diagnosis could be made by anybody having access to these works.

From the following extracts the reader will be able to judge as to whether the "common brood disease of Great Britain" is the American foul brood or European foul brood. Cheshire (I am quoting now from my note book and cannot give page) after describing the initial stages, describes the disease as follows: "The color strengthens to a pale brown, whilst the skin becomes flaccid and opaque; death soon occurs, when the body, shrunken by evaporation, lies on the lower side of the cell, becoming progressively darker, until it almost assumes the color of coffee; desiccation continuing, in a few days nothing more than a flattish, black scale remains. In an infested stock, these can be

seen in number by looking over the comb having its upper edge towards the face of the observer.

"Should the larva escape contamination until near the period of pupahood, it is sealed over in the normal way * * * and before very long the capping or sealing sinks, becoming concave, and in it punctures of an irregular character appear; which is nearly a conclusive sign of the diseased condition of the colony.

"A peculiar foul and extremely characteristic odor now escapes from the diseased comb. This is difficult to describe, but it reminds me of offensive glue * * *. Should any attempt be made at removing a dead larva which has assumed the coffee colored stage, the remains tenaciously adhering to the cell wall, will stretch out into long and thin strings, somewhat like half-dried glue * * *."

"Taking a speck of the tenacious, coffee colored matter and placing it upon a glass slip, adding water and then a cover-glass, and making an examination by a one-half inch objective, or any higher power, we find it to contain countless swarms of very minute bodies," etc., etc.

The foregoing passages correctly describe foul brood as it occurs in England.

Mr. Cowan in his "British Bee-keepers' Guide Book" mentions a "mild type of disease," in which there is no bad color, the other symptoms being similar, although more of the larvæ die still unsealed, while they are curled up at the bottom of the cell, rotting and drying up to a dark-greyish crust which is easily removed. Whether or not this is European foul brood, I am not prepared to say. Mr. Cowan when he wrote the account of this "mild form, was certainly acquainted with black brood, which in fact is subsequently described in the "Guide Book." He refers to it as follows: "This disease has only recently made its appearance in this country, and a casual observer might no doubt mistake

it for foul brood, its similar; but on close inspections are sufficiently recognized. The brood cappings, but the characteristic ropiness are absent"

Writing in the B. B. diseases of bees, the states: "The symptoms of American foul brood by Dr. Phillips correspond to foul brood as we have as we found in the United States when we first visited the apiculture in 1887. We have since had the opportunity of seeing several cases of foul brood in the States and every case, the symptoms are similar. Slight variations occur, always the distinct ropiness and odor, which can be detected by the glue. We have also seen specimens from different parts of Asia, always with the same symptoms."

"Our first acquaintance with foul brood or New York disease was at that time called, was made in California. This was in the New York State by Mr. J. H. S. inspector, from what was called "foul brood," for although the color of the comb was similar to the ropiness and odor were quite different. Withstanding that our experience with foul brood was pretty well dated back for more than twenty years, this was the first time we came in contact with black brood is of quite recent origin here."

Mr. D. M. Macdonald, who is so much appreciated on this continent, also testifies in the following: "The ripe experience of the junior editor (W. Broughton) in handling specimens from Great Britain and Ireland, has led him out in stating that we have