

made in the world. You can cover it well up and keep all the heat in, and it keeps the bees all right until the spring. I would rather have my bees in the cellar than anywhere else.

Mr. Taylor—A neighbor of mine had 25 colonies two years ago and kept them in his cellar. In one corner of it

there is a spring of water. He had eight-frame hives, and he left them the whole winter without a cover on; that is, he just pulled back the covers they had on, and he gave them granulated sugar syrup, and they went the whole winter with nothing else, and they were the finest bees I ever saw.

The Cause of American Foul Brood.

(By F. G. White, Ph.D., Expert in Bacteriology, Bureau of Entomology, U. S. Department of Agriculture.)

For several reasons much confusion exists as to the present status of our knowledge of bee diseases. It is hoped that this circular will give information and which will to some extent clear up the subject of American foul brood from a bacteriological point of view. The symptoms of this disease are given in Circular No. 79 of the Bureau of Entomology, entitled "The Brood Diseases of Bees." American foul brood is the but now prevalent disease in America, and, judging from reports received from Europe and from descriptions in European bee journals and books, it is the that is prevalent one there. There is another diseased condition, which Cheyne examined, and to which we now refer as European foul brood.

When the author began his work on bee diseases in the summer of 1902 he observed, in combs containing American foul brood, in the dried remains of the dead larvae, known as the scales, a very large number of spores which failed to grow when inoculated into the media ordinarily used in the laboratory. It was clear, then, that these spores

are not *Bacillus alvei*, and that this disease is not the "foul brood" of Cheshire and Cheyne. The following year the study was continued and a medium was devised in which the spores found in this disease will germinate. This medium consists of an agar made by following the directions ordinarily used in the laboratory, with the exception that bee larvae are substituted for meat. By the use of this medium were obtained pure cultures of the micro-organism which is found so abundantly, in the form of spores, in the dried scales of American foul brood.

In reporting these findings the author referred to this organism as "*Bacillus X*." Further study was subsequently made, and the species was given the permanent name, *Bacillus larvae*. The description of this species may be found in Technical Series No. 14 of this Bureau. In his publications the author has made no claim that *Bacillus larvae* is the cause of American foul brood, but has made the statement that it is found to be present in all the samples of this disease which have been examined