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The Diseases of Bees

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THE DISEASES OF BEES

The researches of the Bee Department fall into three categories—(1) work on the physiology, behaviour and morphology of the healthy bee; (2) investigations on the pollination of fruit and seed crops; (3) researches on the diseases of adult bees and their brood. An advisory service is also maintained and some 4,000 to 5,000 samples of bees and combs suspected of disease are examined every year free of charge.

The spread of the disease known as foul brood had been viewed with some concern during the years preceding 1939. On the outbreak of war it was feared that the spread might be accelerated by the call-up of beekeepers and the consequent neglect of their colonies. The Rothamsted Bee Research Advisory Committee therefore drew up a plan for the control of foul brood by means of legislation which eventually became law as the Foul Brood Disease of Bees Order, 1942. It provides for the inspection of any premises on which bees are kept, within three miles of a suspected outbreak of foul brood, and for the compulsory destruction of all infected colonies in the area. The application of the Order has shown that in many areas the incidence of foul brood was in fact much higher than had been suspected and that the introduction of legislation was necessary. The returns for 1945 justify the hope that the cumulative effects of widespread neglect of the foul-brood problem prior to 1942 are now being overcome and that continued vigilance will result in a steady decrease in the incidence of disease in future years.

The use of sulphonamides fed in sugar syrup to colonies infected with American foul brood, first reported to the Department by Mr. C. A. Ekins of Surrey, has given highly promising results, and further work is in progress with a view to obtaining a method of treatment as an alternative to destruction of colonies infected with either American or European foul brood.

Another activity of the department is a survey of adult-bee diseases. During the 1914-18 war Isle of Wight disease caused losses estimated at 90 per cent. of the bee population of Britain. The situation was restored by a re-stocking scheme, by the discovery of the causal agent of the disease and by the subsequent development of control measures, though the trouble, better known now as Acarine disease, continued to occur in many districts. Surveys carried out in 1941-42 and 1943-44 were designed to determine the incidence and distribution of Acarine and other adult-bee diseases and to reveal, in time to prevent the possibility of disaster on the 1914-18 scale, any tendency for a disease or diseases to assume epidemic proportions. Fortunately there was no evidence of any serious situation arising and, as regards Acarine disease, the position showed some signs of improvement in the interval between the surveys.

THE APPLICATION OF STATISTICAL METHODS

On account of the great demand for statistical assistance in connection with a wide variety of war-time activities including military operations, new researches in statistical theory and method had necessarily to be curtailed. Apart from the war, however, the trend was in the direction of the fuller development of already