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Rothamsted Report for 1938

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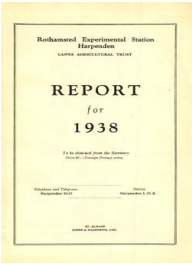

General

Rothamsted Research

Rothamsted Research (1939) *General ;* Rothamsted Report For 1938, pp 89 - 89 **- DOI: https://doi.org/10.23637/ERADOC-1-86**

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germination. Concentrations of reducing sugars up to 12.5 per cent. caused no apparent reduction in the germination of *B. larvae* spores on the chick embryo media. This is of interest because of previous suggestions that the reducing sugar content of bee larvae at various stages in their development might be connected with the age-incidence of American foul brood.

LXII. H. L. A. TARR. "*Studies on American Foul Brood of Bees. III. The Resistance of Individual Larvae to Inoculation with the Endospores of* Bacillus larvae." Annals of Applied Biology, 1938, Vol. XXV, pp. 807-814.

Experiments are described in which attempts were made to produce American foul brood by the direct inoculation of eggs, or of larvae from the time of hatching up to that just subsequent to sealing, by placing aqueous suspensions of the washed spores of *Bacillus larvae* in the cells. In no case did the disease develop in the colony into which the inoculated larvae were introduced. Positive results were, however, obtained by spraying a comb containing eggs and young larvae with an aqueous suspension of the spores of *B. larvae*, the disease becoming evident seven days after spraying. Since in this case the adult bees had access to the spore suspension it can be inferred that the adult bee plays an important part in the inoculation of the brood. Experiments designed to test the possibility that *B. larvae* undergoes some change during its carriage by the adult bee yielded negative results.

LXIII. H. L. A. TARR. "*Studies on European Foul Brood of Bees. IV. On the Attempted Cultivation of* Bacillus pluton, *the Susceptibility of Individual Larvae to Inoculation with this Organism and its Localisation within its Host.*" Annals of Applied Biology, 1938, Vol. XXV, pp. 815-821.

Attempts to grow *Bacillus pluton*, the causal organism of European foul brood in bees, on the minced tissues of the chick embryo, or on its chorio-allantoic membrane were unsuccessful, in contrast to *B. larvae*, which grows well on these media. Small doses of *B. pluton* which were unable to produce growth on chick embryo medium or on beef digest brood filtrate medium were instrumental in causing European foul brood in young bee larvae when placed in the cells along with the normal brood food. Stained sections cut from larvae of all ages and showing all stages of the disease showed that *B. pluton* is localised in the food mass within the peritrophic membrane. The disease is shown to be a purely intestinal infection of the bee larva. The organism responsible is a strict parasite.

TECHNICAL AND OTHER PAPERS

GENERAL

LXIV. E. J. RUSSELL. "*Science and the Indian Peasant.*" Journal of the Royal Society of Arts, 1939, Vol. LXXXVII, pp. 662-674.

LXV. E. J. RUSSELL. "*National Planning in Agriculture: its Possibilities and its Limits.*" Nineteenth Century and After, 1938, Vol. CXXIV, pp. 187-199.

LXVI. E. J. RUSSELL. "*Poland To-day.*" Journal of the Royal Society of Arts, 1938, Vol. LXXXVII, pp. 125-128.

LXVII. B. A. KEEN. "*What Happens to Rain.*" The Listener, 1939, Vol. XXI, pp. 319-320.

LXVIII. J. MEIKLEJOHN. "*The Starling—Friend or Enemy?*" Journal of the Royal Agricultural Society of England, 1938, Vol. XCIX, pp. 37-53.

This paper contains a review of the present knowledge of the status and habits of the starling, especially those which are of agricultural importance. It also contains an estimate of the density of the starling population in several parts of England, taken from comparative counts of nests, and an account of an experiment on the recovery of plants bitten off by birds.