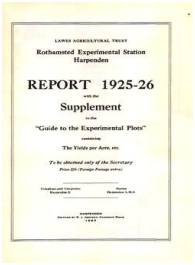
Report 1925-26 With the Supplement to the Guide to the Experimental Plots



Full Table of Content

Bee Investigations

Rothamsted Research

Rothamsted Research (1926) *Bee Investigations ;* Report 1925-26 With The Supplement To The Guide To The Experimental Plots, pp 50 - 51 **- DOI: https://doi.org/10.23637/ERADOC-1-84**

As this problem of fungus-strains seems of great importance, much attention has been devoted to it.

Dr. Chodat investigated from this point of view a saprophytic fungus, *Aspergillus ochraceus,* and a tomato parasite, *Phoma alternariacearum,* and observed remarkable genetic changes in pedigree strains. His results are set out on p. 76.

Mr. Dickinson has studied the covered smuts of Oats and Barley, both very destructive fungi. The black bunt or dust of these fungi consists of microscopic spores, about 1/2600 inch diameter, and each of these gives rise to four very much smaller sporidia. By means of his "Isolator," Mr. Dickinson can, with certainty and at will, isolate single sporidia, which are then grown in pure culture, until they form colonies an inch or more in diameter. The sporidia and their subsequent colonies are of one or other of two genders ("sex"), and fusion has been found to occur between them. The microscopic structure and physiology of the pure strains derived from single sporidia of both *Ustilago hordei* and *U. levis,* and of the fusion products when different genders of the one fungus or one gender of one fungus and the other gender of the other fungus combine, have been studied in detail. Neither gender by itself appears to cause disease: only when both genders are present is the plant attacked. The parasitic qualities of these strains will be further investigated and special attention paid to genetic changes.

VIRUS DISEASES OF PLANTS.

Perhaps the most obscure of all plant diseases are those studied by Dr. Henderson Smith, grouped under the name, Virus diseases, including Mosaic, leaf curl, etc. They are spreading, and they cannot as yet be prevented or cured. They are very easily transmitted from one plant to another, not only of the same kind, but, in some instances, of different kinds. They can be transmitted by contact, by insects, and in other simple ways. Their cause is unknown. Many organisms have been isolated from diseased plants, but, so far, none that produces the disease, nor can any casual agent yet be cultivated outside the plant.

There is reason to believe that several distinct types of these diseases, due presumably to different viruses, occur in nature. They may exist singly, or in combination in one plant, either producing symptoms or not; thus potato mosaic and tomato aucuba mosaic both affect tomatoes, giving characteristic symptoms, but the two together produce the harmful stripe disease. Owing to much preliminary work done by Dr. Henderson Smith on these problems, more searching investigation has become possible.

BEE INVESTIGATIONS.

Bees are studied at Rothamsted as honey producers; their diseases are investigated at Aberdeen.

Mr. Morland has been engaged on two problems of importance to beekeepers in this country: the possibility of using metal combs and the best way of arranging the frames in the hives.

https://doi.org/10.23637/ERADOC-1-84

The first of these problems has been solved. Metal combs are unsuited in English conditions for the W. B. C. type of hive* owing to the bees overwintering badly. Their use also necessitated a considerably heavier insulation of the hives than is customary.

The second problem is more difficult and has not yet been solved. The frames may be arranged parallel with the front of the hive, the so-called " warm way," or at right angles to it, the " cold way "; it is not yet decided which is the better.

Mr. Morland visited Eastern Canada and the United States during the months March to June, 1926, in order to study the methods of bee management successfully adopted there; he spent considerable time with the staff of the Bee Culture Laboratory at Washington, D.C., and with Professor Phillips, of Cornell University, to all of whom we owe a debt of gratitude for their courtesy to him.

* The hive designed by Mr. W. Broughton Carr.

https://doi.org/10.23637/ERADOC-1-84