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## **Rothamsted Report for 1938**



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## INTRODUCTION

The Rothamsted Experimental Station was founded in 1843 by the late Sir J. B. Lawes, with whom was associated Sir J. H. Gilbert for a period of nearly 60 years. Lawes died in 1900 and Gilbert in 1901; they were succeeded by Sir A. D. Hall from 1902 to 1912, when the present Director, Sir E. J. Russell, was appointed.

For many years the work was maintained entirely at the expense of Sir J. B. Lawes, at first by direct payment, and from 1889 onwards out of an annual income of £2,400 arising from the endowment fund of £100,000 given by him to the Lawes Agricultural Trust. In 1904, the Society for Extending the Rothamsted Experiments was instituted for the purpose of providing funds for expansion. In 1906, Mr. J. F. Mason built the Bacteriological Laboratory; in 1907, the Goldsmiths' Company generously provided a further endowment of £10,000, the income of which—since augmented by the Company—is devoted to the investigation of the soil. In 1911, the Development Commissioners made their first grant to the Station. Since then, Government grants have been made annually, and, for the year 1938-39, the Ministry of Agriculture has made a grant of £29,095 for the work of the Station. Lord Iveagh has generously borne the cost of a chemist and a special assistant for field experiments for studying farmyard manure, both natural and artificial; while other donors have, from time to time, generously provided funds for special apparatus and equipment. The Fertiliser Manufacturers' Association and the United Potash Company provide considerable funds for the rather expensive field work. Imperial Chemical Industries, and the Association of British Chemical Manufacturers, have provided a special assistant for the study of soil insecticides. In addition, British Sugar Corporation, British Basic Slag Companies, the Royal Agricultural Society, Dunlop Plantations, Ltd., the Institute of Brewing, United Africa Company, Trustees of the late Viscount Leverhulme, the Department of Scientific and Industrial Research and other bodies have made grants for specific purposes. In 1938 a grant was made jointly from the Colonial Development Fund and from the Ministry of Agriculture for the extension of the work on vegetable insecticides. The result is that the Station is able to deal with problems affecting modern farming in a far more complete manner than would otherwise be possible.

The main block of laboratories was opened in 1919, and is devoted to the study of soil and plant nutrition problems; another block was erected in 1924 for plant pathology at a cost of £21,135 provided by the Ministry of Agriculture out of the Development Fund; and Red Gables, the house adjoining the laboratories on the north side, has been converted into an Administration Building to hold the Imperial Soil Bureau, part of the Records and Statistical Department, Staff Common Room and Conference Room.

Large glasshouses, including special insect-proof houses for virus studies, were added in 1926, 1928, and 1931 by aid of generous grants from the Rockefeller Foundation, the Empire Marketing Board and the Ministry of Agriculture. A new large range of

houses, some of which are insect-proof, was erected in 1935 for Plant Pathology investigations at a total cost of £2,283, towards the cost of which the Ministry of Agriculture made a grant of £1,025.

From 1926 onwards great changes took place on the farm. New and greatly improved methods of field experimentation were adopted on all but the classical plots, which remain essentially unchanged; and the non-experimental part of the farm was reorganized in 1928, considerable numbers of live stock being introduced, and much of the land being laid down to grass. The farm buildings were considerably enlarged in 1930 with the aid of a grant of £1,700 given by the Ministry of Agriculture and a new block of buildings containing a demonstration room, work-rooms for the experimental staff, office and store-rooms was erected in 1931-32 at a cost of £1,300 collected by public subscription. In 1936 a pair of cottages for farm workers was erected at a cost of £1,050. A special building was also constructed in which both farmyard manure and "artificial" farmyard manure can be produced under standardised conditions; the cost was £275, towards which Lord Iveagh contributed £100.

During 1932, the farm was well equipped with electrical appliances, thanks to generous assistance by the General Electric Company and the North Metropolitan Electric Power Supply Company. The Dunlop Rubber Company also provided rubber equipment, including a rubber road, rubber flooring for cattle and pig pens, and rubber tyres for cart and tractor.

The Library is steadily growing, and now contains some 27,000 volumes dealing with agriculture and cognate subjects. The catalogue of the old printed books on agriculture was published in 1926, and every effort is made to obtain any that we do not possess. A collection is also being made of prints of farm animals, of old letters on agriculture, farm account books, and models of old farm wagons. Many of these lie in farmhouses, unused and inaccessible, not in themselves valuable, but often a great help to students of agricultural history and economics when brought together as we are doing. Gifts of books and documents to the Library will be greatly appreciated.

The extension of the experiments to various outside centres in Great Britain, begun in 1921, has proved so advantageous that it has been developed. Not only is useful information spread among farmers, but the Station itself gains considerably by this closer association with practical men. As part of this extension the Station took over in 1926 the Woburn Experimental Farm. We were thus able to make experiments simultaneously on the light land at Woburn and the heavy land at Rothamsted: a very advantageous arrangement. The Assistant Director in charge is Dr. H. H. Mann, with Mr. T. W. Barnes as chemist.

In May, 1934, the negotiations for the purchase of the farm and some adjoining parts of the Rothamsted estate were completed. This step was necessary owing to building developments in Harpenden that threatened to extend over the estate. We held the farm lands only on lease; some on a yearly tenancy, and some at shorter notice. Even the land on which the laboratories are built and the sites of the classical fields did not belong to us. The Rotham-

sted Trustees now own the site of the laboratories, the experimental and ordinary farm fields, Knott Wood, the Manor House and grounds, the farm manager's house and eight cottages. The total area is 527 acres, sufficient for carrying out field and farm experiments on a scale corresponding to the importance of the work. The purchase price was £35,000, all of which was raised by public subscription in eight weeks. Generous contributions were received from Sir Robert McDougall, the Sir Halley Stewart Trust, the Carnegie Trustees, Sir Bernard Greenwell, Bart., the Royal Agricultural Society, the National Farmers' Union, and Imperial Chemical Industries. A highly encouraging feature of the appeal was the number of subscriptions received from farmers, village school teachers, and from overseas sources.

The activities of Rothamsted, however, are not confined to the British Isles, but are gradually spreading out to the Empire and other countries abroad. The International Educational Board sends workers from all parts of the world to study in these laboratories. The Empire Cotton Growing Corporation has, since 1923, made a grant of £1,000 per annum for the development of investigations in Soil Physics. The Station regularly participates in work for the solution of certain agricultural problems of great importance to the Empire.

At the invitation of the proper authorities, the Director and other members of the staff have already visited the Sudan, Palestine, Australia, New Zealand, South Africa, West Africa, India, Malaya, Nyasaland, Tanganyika, and Canada to discuss agricultural problems and possibilities of co-operation; in addition, visits are paid to the United States and to European countries, including Russia, to discuss problems and methods with experts there, and generally to improve the equipment of the Institution and widen the knowledge and experience of the staff.

More and more workers are coming from the overseas Dominions to carry on their studies at Rothamsted. Only University graduates are eligible, and most are, or are about to be, on the staffs of Government or other Agricultural Departments: men who will become leaders in the agricultural communities of their respective countries. To our great regret, lack of accommodation has compelled us to refuse some who wished to come.

The most important of all these Empire developments was inaugurated in 1929. At the Imperial Agricultural Conference of 1927 it was decided to set up in this country a series of Bureaux to act as central clearing houses of information and to promote interchange of ideas and methods between the agricultural experts of the different parts of the Empire. The Soil Bureau is located at Rothamsted and began operations on May 1st, 1929. Dr. A. F. Joseph, late Chief Chemist to the Sudan Government, was appointed Deputy Director, with Miss H. Scherbatoff and Mr. A. J. L. Lawrence as Scientific Assistants. In 1931 Dr. A. F. Joseph resigned and his place was taken by Mr. G. V. Jacks.