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ROTHAMSTED  
RESEARCH

## Report for 1934

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### The Purchase of the Farm : Further Developments

#### Rothamsted Research

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## REPORT FOR 1934

### THE PURCHASE OF THE FARM: FURTHER DEVELOPMENTS

The outstanding event of 1934 was the purchase of the farm and a further part of the estate by the Rothamsted Trustees. Up till the spring of this year the estate has been in the hands of the Wittewronge family and their descendants, the Lawes, since 1623. When Lawes laid down his experiments in the period 1843 to 1856 he put them into whichever field best suited the purpose: in consequence the experimental area was not in one piece but in three, widely separated; further, the laboratory was built away from all these. So long as the estate remained in the family as an agricultural enterprise this did not matter: whatever additional land was needed could easily be taken over, and in practice it was retained as long as necessary. But with the letting of the house and the dispersal of the family it was no longer possible to work in this way, and the builders were eating into the neighbouring fields at an alarming rate so that our farm was rapidly acquiring building value. Rothamsted is well known all over the world and very few people realised that the Station did not own the land it cultivated, nor even the land on which the laboratories were built. All was in the hands of the Lawes-Wittewronge family: some was held on a monthly tenancy, some was subject to six months, and some to one year's notice; the classical fields and certain others were on a long lease; but this would inevitably terminate.

It was recognised by all concerned that the importance of the Rothamsted work demanded the safeguarding of the Rothamsted fields for all time, which could be secured only if the Rothamsted Trustees became the owners. Negotiations for purchase were begun in May, 1931; they were necessarily very protracted, but the contract for purchase was signed on March 16th, 1934, and the purchase was completed eight weeks thereafter, on May 18th. The estate thus transferred to us consists of the Manor House, the farm manager's house, eight cottages (three of them large enough to be let on yearly tenancies), Knott Wood, the site of the laboratories, the experimental and ordinary farm fields and sufficient land in addition to preserve the amenities of the house and so keep it as an asset of value rather than a burden, and, even more important, sufficient land to enable us to carry out field and farm experiments on a scale corresponding to the importance of the work. The total area of land acquired is 527 acres. The basal price agreed was £30,000 without timber and subject to adjustments in regard to tithe; also there were certain obligations as to fencing: the total cost including legal and surveyor's expenses, timber, tithe adjustment and all incidental charges including also certain reparations, amounted to £35,000.

Three possible means of raising the necessary purchase money had been considered: a loan; sale of Trust securities; and public subscription. The two former were dismissed as being completely



crippling to the work of the Institution : there would be no point in owning the land if nothing could be done with it. It was therefore decided to appeal to the public for the full amount so as to enable the Station to start on its new career free of debt.

On March 19th the letter of appeal, signed by the Duke of Devonshire, President of the Society for Extending the Rothamsted Experiments ; the Earl of Stradbroke, President of the Royal Agricultural Society ; Sir Gowland Hopkins, President of the Royal Society ; Mr. Stanley O. Ratchiff, President of the National Farmers' Union ; Sir Daniel Hall ; and Lord Clinton, Chairman of the Lawes Agricultural Trust Committee, was published in *The Times* newspaper, and shortly after in all the leading papers of the country. Rothamsted owes a great debt of gratitude to the Press for the amount of publicity given to the appeal. Sir Bernard Greenwell started the fund with £1,000 ; when it appeared to be hanging fire Mr. Robert McDougall, who had seen the appeal and the editor's commendation in the *Manchester Guardian*, offered £15,000, and the Sir Halley Stewart Trust £5,000, on condition that the full amount was collected in time. These noble gifts stimulated all the friends of Rothamsted to their fullest activity, and it was not uncommon to receive £500 or more in a single day. Handsome contributions of £500 each were received from the Royal Agricultural Society, the National Farmers' Union, and Imperial Chemical Industries. T. H. Riches, Esq., gave £350, the Chartered Surveyors' Institution gave 250 guineas, the Beet Sugar Factories Anglo-Dutch Group, Messrs. J. Bibby & Sons, Ltd., British Oil & Cake Mills, Ltd., Bury Group of Sugar Beet Factories, Sir Wm. Waters Butler, Rt. Hon. Lord Clinton, Dunlop Rubber Company, Ltd., J. G. McDougall, Esq., I. D. Margary, Esq., Messrs. R. Silcock & Sons, Ltd., Owen H. Smith, Esq., each gave £250 ; the Institute of Brewing, Simon Marks, Esq., I. M. Sieff, Esq., £200 each ; and the Highland and Agricultural Society of Scotland £150. Many other societies and individuals contributed £100 or more, and the Brewers' Society encouraged its members to give handsomely. Some of the small donations were accompanied by most charming letters. Collections were made by village school teachers, by farmers and others on market days and at branch meetings, while many working farmers sent direct to us. Finally the Carnegie Trustees made success certain with a noble grant of £2,000. The whole sum of £35,000 was raised several days before the appointed time and the total cost of the appeal was only £40.

On June 20th, 1934, the Minister of Agriculture, Mr. Walter Elliot, accompanied by Sir C. J. Howell Thomas, Permanent Secretary of the Ministry of Agriculture, attended the Annual Summer Gathering at Rothamsted and formally handed over the deeds to Lord Clinton, who accepted them on behalf of the Trustees.

The various obligations and reparations were at once undertaken and the station is now in full possession of an ample area of land with its boundaries so arranged that it will suffer little or no damage from the activities of the local builders. Messrs. Alfred Savill & Sons acted as surveyors, and Messrs. Raymond Nix & Barker as solicitors on our behalf.

Some further developments are being at once put in hand. The glass houses are to be extended so as to give ample accommodation



to the Mycologist, Mr. Geoffrey Samuel, who is studying plant diseases caused by soil fungi. Advantage is being taken of our new position as owners to plan out the land behind the laboratories for future development so as to avoid the congestion and inefficiency that always follows when development proceeds haphazard. A new wing is to be added so as to relieve the congestion in the older departments by setting up new biochemical and bacteriological laboratories. The James Mason bacteriological laboratory erected in 1906 has proved a remarkably fertile source of agricultural and scientific discovery, and its success has necessitated considerable enlargement. It is further proposed to extend the farm buildings and replace the present wooden piggeries and stores—erected in 1921 and 1922 from old Army huts—by modern brick buildings better suited for their purpose. Finally, it is intended to lay out the forecourt in front of the laboratories in accordance with the very dignified design of Mr. Walter Tapper, R.A. A sundial is being made by Sir Charles Vernon Boys. It is expected that these various developments will cost some £25,000 towards which we hope for substantial Government grants: a considerable sum, however, will still have to be raised from private donors and others.

#### THE PRODUCTION OF CROPS

The practical purpose of the experiments on crop production is to discover how crops may be raised in larger quantity per acre, at lower cost, and of better quality. In view of the great variety of conditions of soil and climate in Great Britain it would be of little use for us merely to achieve these ends on our own farm: the work has to be put on a much wider basis and it resolves itself into a series of investigations to discover the influence of soil, climate, manuring and cultivation on the yield, composition and quality of crops. Thanks to the generous collaboration of farmers in all parts of the country, and to the enlightened co-operation of some of the larger commercial and agricultural organisations, it has been possible to repeat typical experiments at a large number of outside centres: Mr. Garner has been, as before, in charge of this work. The new methods of field experiment designed at Rothamsted have proved exceedingly valuable and have given to the results a degree of trustworthiness that would otherwise have been quite unattainable. The investigation of the composition of the crops grown under these various conditions has thrown a vast amount of work on Dr. Crowther and the staff of the Chemical Department and explains the need for laboratory extensions. The study of crop quality, however, necessitates special procedure, as "quality" is an exceedingly elusive property which can in no case be defined with accuracy. The method adopted at Rothamsted is to produce a series of samples of known agricultural history, then submit them to expert buyers or users of the crop who grade them in classes. Efforts are then made to relate the grading to the chemical composition.

"Quality" is thus defined as "commercial desirability": it has no necessary connection with nutritive value. So far we have failed to find any method whereby the nutritive value of the different grades of produce can be discovered, short of very elaborate and exceedingly difficult feeding tests on human beings which would be