

A full programme of work, involving investigation into every phase of the wheat industry, has been prepared; but first efforts will be directed towards establishing and equipping a testing laboratory in Christchurch. At the same time, provision has been made for continuance and extension of the wheat-breeding and selection work carried out at Lincoln College, for the manurial and varietal tests of the Department of Agriculture, and for crop-certification. In addition, attention will also be given to the problems occurring in the flour-mill and in the bakehouse, with the ultimate object of assisting in the economic production of bread of the highest possible nutritional value.

Steps have been taken to arrange for co-ordination of effort with the British Flour-millers' Research Association.

#### *Plant-breeding and Seed Research.*

Advisory Committee: Mr. W. D. Hunt (Chairman), Dr. C. J. Reakes, Mr. W. Perry, Hon. George Fowlds, Professor C. W. Peren, Mr. T. Rigg, Mr. Q. Donald, Mr. C. H. Hewlett. Director of Research: Mr. A. H. Cockayne.

Representations were made to the Empire Marketing Board and to the Right Hon. L. S. Amery for a grant to assist a programme of seed and plant research work which had been prepared on lines which would extend and permit of co-ordination with similar work in progress at Aberystwyth. Accordingly, in December last, advice was received that the Empire Marketing Board was prepared to make grants of £2,500 towards the capital costs of establishment, and £2,500 annually for five years for running-expenses.

Negotiations have been completed and satisfactory arrangements made by the various interests concerned for the establishment of a plant-breeding and seed research station at Palmerston North in proximity to the Massey Agricultural College, and preliminary work has been commenced.

Under the arrangement agreed upon, it has been decided that the plant-breeding and seed research station and the research activities of the Fields Division of the Department of Agriculture will be operated together in close association with Massey College.

#### *Noxious-weeds-control Research.*

Advisory Committee: Professor H. B. Kirk (Chairman), Mr. Q. Donald, Dr. F. W. Hilgendorf, and Mr. A. H. Cockayne. Director of Research: Dr. R. J. Tillyard, succeeded by Dr. David Miller on 1st May, 1928.

The funds for this research have been provided by grants from the Empire Marketing Board and the New Zealand Government, while the Cawthron Trust Board has made portion of its resources available to facilitate the research. The Empire Marketing Board's grant is available for a period of five years from the 31st March, 1927. The grants are as follows:—

|                              | Annual<br>Grant,<br>1927.<br>£ | Capital<br>Grant,<br>1927.<br>£ | Annual<br>Grant,<br>1928.<br>£ |
|------------------------------|--------------------------------|---------------------------------|--------------------------------|
| Empire Marketing Board .. .. | 2,000                          | 1,333                           | 2,000                          |
| New Zealand Government .. .. | 1,000                          | 667                             | 1,000                          |
| Cawthron Trust Board .. ..   | 1,000                          | 200                             | 1,000                          |
|                              | <u>£4,000</u>                  | <u>£2,200</u>                   | <u>£4,000</u>                  |

The capital grant made in 1927 was utilized for the purpose of erecting a large insectary (found to be necessary to deal satisfactorily with blackberry insects) and adjoining laboratory. These were completed, and were in use during the latter months of 1927, the official opening ceremony being performed by the Right Hon. L. S. Amery during his tour of the Dominion. The biological station now established at Cawthron Institute is one of the most complete of its kind in the Empire, and eminently fitted for the purpose for which it was designed.

The Director of the research, Dr. R. J. Tillyard, severed his connection with the Cawthron Institute on the 31st January, 1928, in order to accept an appointment as Director of the Commonwealth Entomological Research Service.

Further tests have been completed with the ragwort-moth, *Tyria jacobææ*, and these proved sufficiently successful to warrant the issue of a permit which allowed of provisional release in a restricted area. This step has been deemed a necessary precaution preliminary to the granting of an open permit, which it is hoped will be granted during the coming year, when colonies of this ragwort-attacking moth will be established in the weed-infested areas of the Dominion.

Trials of the gorse-parasite, *Apion ulicis*, are still proceeding, but more difficulty has been experienced in establishing this insect owing to the seasonal change from the Northern Hemisphere.

Owing to the unusually bad summers experienced in the North Hemisphere, unforeseen difficulties have been experienced in the direction of securing adequate supplies of many of the insect species required. In particular, this has adversely affected work on the blackberry-control research, and the tests carried out have been made with limited supplies of insects. Steps are being taken to avoid a recurrence of this shortage by arranging for further supplies to come from southern Europe, where climatic conditions are more equable.

As a result of contacts made with South American investigators, it is hoped that an attack upon piripiri (bidibidi) will be commenced during the coming year.

The work at Cawthron Institute has been carried out in co-ordination with that under the direction of Dr. Imms, of Rothamsted, and with the assistance of Dr. Heslop Harrison, of Durham. These workers have arranged for the collection and transport of the consignments of insects which have been received from overseas.