Agricultural Botany.—A great many specimens of weeds, useful grasses, and other plants have been received for identification from farmers and educational institutions in all parts of New Zealand. Particulars are usually sought as to the agricultural status of such plants, and information regarding their local peculiarities is often secured for incorporation into the book on "The Weeds of New Zealand," now in hand. Work in connection with the preparation of this book is being carried out in two directions—the collection of specimens for descriptive purposes and the preparation of drawings from the living plants. The drawings are being made to show the natural size of each weed, but any features likely to be specially useful in indentifying it are shown enlarged.

Blackberry Investigation.—Our investigations into biological, chemical, and ecological methods of control or eradication of blackberry have been continued, numerous field experiments having been laid down on the area of blackberry-infested land leased for experimental purposes in Wairoa County. Tests are also being made of top-dressing and sowing and the use of goats for the control of this weed. In Poverty Bay experiments in methods of control have been initiated on a larger scale. Here the co-operation of the owners of the land has been secured, and the practicability of employing various sprays is being demonstrated. One of these spray fluids, which is being made up according to improved methods devised in the laboratory, will no doubt prove of use for certain types of blackberry-infested land.

Entomology.—Cryptolaemus ladybird: Several large colonies of this ladybird were kept in cool storage over last winter with the idea of having sufficient material available in the spring for immediate distribution and for the rearing of this season's stock. They kept in good condition for most of the winter, but just before spring a high percentage died from some unknown cause, so that there was very little material left to work on during the spring and summer, when we were again handicapped by having to give almost constant attention to the pear-midge parasites. Reports from Hawke's Bay and Whangarei, however, show that the Cryptolaemus is now established there. Calcium cyanide: A great deal of work has been carried out with calcium-cyanide dust, and good controls have been secured against bronze-beetle, apple-leaf hopper, rose-aphis, and woolly aphis, but not red mite. Pear-midge parasites: The greater part of the summer was occupied with the rearing and establishing of shipments of parasites from Europe, the species of *Platygaster* being the one concentrated on. Routine work: An entomological exhibit showing some of the major destructive insects and also groups of typical insects was prepared for the New Zealand and South Seas Exhibition. A monograph was prepared on the biology of the genus *Odontria* in New Zealand, and deals with the adult and pre-adult stages of these insects. An illustrated bulletin on Forest and Timber Insects in New Zealand has also been published.

Mycology.—During the year investigations into the cause and control of the following diseases have been undertaken:—Diseases of cereals: A large number of experiments have been carried out in the field for the control or elimination of these diseases—some 250,000 individual seeds having been sown singly, besides several areas treated on a practical scale. The experiments carried out last year on the relative efficiency of sixteen of the most promising seed-treatments for the control of stinking-smut of wheat were repeated this year. The results in the main were confirmatory of those obtained last year, and indicate that it would be advisable to replace the formalin and bluestone methods at present in use by copper-carbonate dust. A large series of experiments was carried out in the endeavour to ascertain the factors concerned in the hot-water seed-disinfection method, which last year's work showed to be the only means for combating loose-smut of wheat. Much further investigation is required before this method can be generally applied. Experiments in the control of naked and covered smuts of barley, both under controlled and practical conditions, have been carried out. The results form a valuable starting-point for the coming season's work. Comparative trials of seed-disinfection methods for the control of the oat-smuts showed consistent and instructive results. The formalin steep method, if generally applied, would reduce to very small proportions the present severe losses from these diseases, and the hot-water method gives promise of eliminating them altogether. The life-history of the organism causing dry-rot of swedes has now been worked out in the laboratory. Cultural comparisons have been made with this organism and numerous others obtained from abroad causing similar diseases of Brassicas. A treatment, based on this life-history, has been evolved, and it is now under trial on nine farms in Southland, four in Wellington, and eight in Taranaki. Laboratory and glasshouse investigations into the life-history of take-all of wheat are nearing completion. It has been proved that the pathogen is disseminated by seed taken from infected areas, and a treatment based on this knowledge is being evolved. Field experiments on the control of corticium-disease of potatoes, with a method which proved satisfactory under laboratory conditions, were undertaken in Canterbury, Southland, Central Otago, and Wellington. The treated areas (with one exception) showed a considerable increase in growth of haulms, but yields have not yet been ascertained. White-head of barley and wheat is now under investigation in the laboratory. Field experiments in the control of another disease (loose-smut) by the hot-water method showed that control of white-head could be readily obtained by this treatment. A detailed disease survey of the cereal-growing regions of Canterbury, Otago, Southland, and Wellington was undertaken during the past summer. This survey showed that the major diseases of these crops are smuts (*Ustilago avenae, U. levis, U. Jensenii, U. Tritici, Tilletia Tritici*, and *T. levis*); rusts (*Puccinia graminis, P. Elymi, P. coronata*, and *P. anomala*), take-all of wheat, white-head of wheat and oats, *Septoria graminum* on wheat, and cereal mildew. The economic importance of each was ascertained, and particulars as to varietal susceptibility were obtained. The following diseases—hitherto unrecorded for New Zealand—were sent in for examination and report during the year: Rust (*Melampsora Lini*) on linseed found in one area in Canterbury; *Ustilago hypodytes*, found to be prevalent on *Agropyron repens* in Canterbury and North Otago; a leaf-spot of lucerne (*Pleosphaerulina Briosiana*), found to be prevalent on the Ashburton Experimental Farm. Diseases of fruit-trees: A book dealing with the life-history and control of all diseases of fruit-trees present in New Zealand was published during the year.