

RUAKURA STATE FARM AND FARM TRAINING COLLEGE.

At Ruakura State Farm, following the winter, grass-growth started well and continued so up to the middle of November. Then a long dry summer spell had the effect of severely checking the pastures and adversely influencing crops generally. One result was a slight reduction in comparison with the previous year in the output of butterfat. The position in regard to the sheep at Ruakura continues satisfactory. The reserves of fodder built up during the summer are estimated as 160 tons of silage and 179 tons of hay. As has been the case in recent years, no annual sale of stock was held on Ruakura, but surplus stock were sold at the Hamilton combined breeders' sale. A fairly good demand was experienced for Berkshire and Tamworth pigs, but there was little inquiry for the Large Whites.

The Ruakura Farm Training College continues to be popular, the average enrolment during the year being thirty-five students, whose general health was good. At Ruakura, as at six other smaller farms which operate more or less under the direction of the Fields Division, important investigational work has been carried out. The research work on all these farms is essentially of a type which is too intricate to be dealt with satisfactorily in the trials which are carried out extensively in co-operation with farmers on their farms and which prove of much value as a means of solving suitable problems under specific local conditions.

TE KAUWHATA HORTICULTURAL STATION.

The main activities at Te Kauwhata Horticultural Station have related to the vineyard and to the manufacture of wine, as has been the case over a series of recent years. The financial position is satisfactory, receipts exceeding expenditure by nearly £3,000. The grape crop was satisfactory, and produced approximately 14,500 gallons of wine: against this 15,304 gallons of wine were sold during the year.

Increased interest is being taken in both table and wine grapes, and there was a considerable demand for vines.

THE PLANT RESEARCH STATION.

As has been the case in former years some of the activities of the Plant Research Station were carried out in co-operation with the Department of Scientific and Industrial Research. Both at Palmerston North (in laboratories and in field trials) and at Marton (on the experimental area) much work relative to pastures which was previously in progress has been continued. The search through both breeding and selection for improved types of pasture plants has been continued, and initial steps have been taken in the production of pedigree pasture seed, which it is hoped will lead eventually to strains of pasture plants superior to those available under certification being produced on a commercial scale and made available to farming through official certification of the seed. Attention has also been given to research relative to pasture establishment and utilization. One important aspect of utilization that is being probed relates to the possibility of correlation between pasture characteristics and feed flavours in dairy-products. This work is being done in collaboration with the Dairy Research Institute. Investigations relative to a wide range of arable crops are in progress at Palmerston North, Marton, and at the Government Pure-seed Station at Lincoln on land leased from Canterbury Agricultural College. In trials relative to certification of seeds 1,179 plots were sown, and in seed-testing 8,104 purity analyses, 13,306 germination tests, and 1,361 ultra-violet-light examinations were made. Work of particular potential value in view of the national importance of the crops is being done in regard to lucerne and the brassica crops (turnips, rape, &c.). The extensive work in progress in the sphere of plant-protection has yielded some significant results. One of these relates to the control of the white butterfly (*Pieris rapæ*) by parasitization. Field surveys indicate that the pupal parasite (*Pteromalus puparum*) is spreading and multiplying very rapidly, as to up 90 per cent. of the chrysalids were found to be parasitized. In Hawke's Bay, where the pupal parasite was first liberated, the menace of the white butterfly has been removed, though the butterfly persists in insignificant numbers. The latest observations point to the effective control of the white butterfly throughout New Zealand within two years.

In general, the work of the Plant Research Station and associated activities continues, and extends that of recent years. A considerable amount of detailed information about the work is contained in the appended statements relative to the activities of the various sections.

WALLACEVILLE VETERINARY LABORATORY.

The Wallaceville Veterinary Laboratory deals with two phases of veterinary work—diagnostic and investigational—and it is supplemented by a subsidiary laboratory at Hamilton. The