

IRRIGATION

Development work on the Winchmore Irrigation Station has continued. Cottages for the senior workmen are now almost completed, and when the men are in residence farm-work should improve in efficiency. The dairy-farm has now all the necessary buildings, and full-scale irrigation has been carried out during the year. Steps are being taken to improve the dairy herd through the introduction of cattle from the Ruakura Animal Research Station. The first batch of heifer calves from Ruakura was carried by air, and this method of transport proved highly satisfactory. Good progress has been made with the mixed farm, and development work on this area, which should be completed shortly, should supply important data on the economics of irrigation farming during the coming season. Field-work on the research area has progressed satisfactorily, but fundamental work on irrigation problems has been held up on account of lack of buildings. The research area covers both an irrigation and a dry-land area, and pasture and annual crop, fertilizer, and lime trials are being conducted in both areas.

DEMONSTRATION FARMS

The Division has continued to be associated with the work of the Northern Wairoa (Dargaville), Stratford, and Waimate West Demonstration Farms, and experimental work on these farms is being revived. The Winton Experimental Farm has been used for pasture, fertilizer, and annual crop trials. The need of the Division for further demonstration areas, particularly in relation to hill-country improvement and marginal land development, is now being investigated.

LAND-UTILIZATION AND LAND-IMPROVEMENT

The Division has given increased attention to the problems of land utilization and improvement. Its officers are represented on Catchment Boards and have devoted considerable time to the problems of soil conservation. The Division has also been associated with land-settlement work through representation on the Land Settlement Board (Lands Department) and Farm Advisory Committee (Rehabilitation Board). The Division itself has been mainly concerned with the problems of hill-country pasture-land improvement, land-utilization studies, and the improvement of the over-all volume of primary production.

For many years only spasmodic interest has been taken in the improvement of the 13,000,000 acres of tussock grassland in the South Island. In general the investigations carried out have been done by Instructors who have been able to devote only a small part of their time to the work. Three officers have now been appointed whose main work will be centred on tussock-grassland improvement: the officers are stationed in Central Otago, Mackenzie country, and the upper Waimakariri basin.

The main work in North Island surface-sown hill-country pasture-improvement has been in the demonstration of the efficiency of over-sowing clovers and phosphatic top-dressing. During the year some work on seed pelleting—surrounding the seeds with fertilizer—has been carried out. It is expected that this pelleting will greatly increase the efficiency of both the seed and fertilizer used at the first introduction of clovers to surface-sown pastures. The Division has also been associated with the trials in aerial top-dressing and has investigated the spread of the fertilizers.

A start was made during the year to collect data on farm-management practices and the manner in which land is used in selected counties. The soil maps compiled by the Soil Survey Bureau of the Department of Scientific and Industrial Research were used as the basis of the surveys, and a study was made of the systems of farming carried out in each soil type. So far three counties in Canterbury have been surveyed and a start made in one Otago county and two Auckland counties.