

## FIELDS INSTRUCTION AND EXPERIMENTAL FARMS BRANCH.

### INSTRUCTIONAL WORK, AND THE LESSER EXPERIMENTAL AREAS.

Notwithstanding various handicaps, including the labour shortage, a considerable amount of useful experimental and demonstrational work was carried out in the various districts under the Fields Instructors. Much of the activities of these officers also consisted in advising farmers in field operations either by personal visit or correspondence, the calls on their services for this purpose being numerous, and in this special attention has been given to soldier settlers. A subject, for instance, on which much information was sought and given was that of catch-crops, rendered necessary by the general failure or poorness of the turnip crop, especially in the South Island. With this and other special duties the Instructors had a strenuous year. A brief summary of the work is here given; special accounts or reports concerning much of the experimental work have been published in the Department's *Journal*.

In the Auckland District the newly established plots on the Puwera gum land experimental area were further developed with grasses and forage plants, and a larger adjoining piece of land is being broken in. The Albany area maintained its function as an excellent demonstration of the capabilities of gum land. The Department also joined co-operatively with the Auckland Education Board and the local Farmers' Union in a scheme of experiments in pasture-formation on another class of gum land near Dargaville, these tests being still in progress. Sand-drift-control work was continued at Rangi Point, Hokianga, and at Orewa, near Waiwera. At Orewa a new nursery has been stocked with young marram-grass plants and lupins—the latter for seed-growing purposes—and the general results so far have been successful. Among lucerne-growing tests may be mentioned a very promising one at Te Teko, Bay of Plenty, on land typical of a large area covered by pumice or wind-borne ash from the Tarawera eruption.

In Hawke's Bay various experimental work was continued in conjunction with the Hawke's Bay Farming Development Association, and further experience gained in relation to several local problems.

In the Poverty Bay district a variety test of wheats was carried out in co-operation with the Hon. W. D. S. MacDonald and son, at their farm near Gisborne. Heavy yields of high-quality grain were obtained, and useful data secured for wheat-growing, which is ordinarily very little practised in this district.

Experimental work in the Taranaki District chiefly centred round the Stratford Model Farm, subsidized and supervised by the Department. The tests consisted of variety and manurial trials with root and fodder crops, also top-dressing of pasture. The demonstration afforded by this farm is already proving of distinct value to settlers in the district, the up-to-date methods adopted being followed by many. The cropping reports submitted at the executive committee's monthly meetings and published in the local Press keep farmers in touch with the institution, while the annual meeting gives an opportunity for the exchange of ideas and the making of suggestions. Another farm area which is to be operated and subsidized on similar lines to those of Stratford has been organized at Manaia and taken over by the Waimate West County Council. The principle under which these farms are conducted is a sound one, and it should be adopted elsewhere.

The important problem of how best to deal with the regrassing of unploughable bush-burn country that has reverted to fern and second growth generally is being studied in connection with the necessity for dealing with this question in the Whangamomona district of Taranaki and elsewhere. It is hoped to take definite practical steps in this direction before long.

Operations at the Marton Experimental Area during the 1918-19 season consisted chiefly in the testing of varieties of wheat and oats, and feeding-tests with fodder crops. A lucerne stand was also laid down and some turnip-seed raised.

In Canterbury lucerne-growing continued to be a leading feature of the field activities, and a number of farmers made a commencement with the crop. The question of pastures has also received some attention, and needs more. At the Ashburton Experimental Area, worked in co-operation with the local High School Board, cereal tests were a prominent feature, the season being favourable for these crops. Root- and forage-crop trials were also continued. Considerable attention was devoted to various methods of lucerne-cultivation, manuring, &c., and some useful data secured.

Ensilage-making with specially grown crops—various cereals and tares—was the most noticeable item at the Gore Experimental Area in Southland, and new pasture-formation also received attention. During the year the Department took over an area of about 60 acres at Winton for experimental and demonstrational purposes, mainly in connection with the investigation of dry-rot in swedes and its control. Other special areas of swedes were sown at Gore, Fairfax, and Brydone, and these are also being kept under close observation with a view to elucidating this serious trouble.

Experiments and demonstrations on the forest and pakihi lands of the west coast of the South Island have been followed up, and further observations made on local agricultural problems. The pastoral development of this part of the Dominion demands more attention. A continuous service has been given to this district by the resident Fields Instructor with headquarters at Hokitika.

An important economic investigation commenced during the year is that of the montane tussock-grassland—mainly in the South Island—with a view to steps being taken for the improvement of the