

same period last year, but owing to uneven distribution it was not nearly so effective from an agricultural point of view.

*Pastures.*—Considerable discussion has taken place regarding the condition of pastures in Canterbury. The majority of farmers still adhere to rye-grass as the dominant pasture constituent, with the result that in about two years this grass is gone and weeds have full possession. These remarks apply to North Otago as well as to Canterbury. Pasture conditions can be improved by the use of grasses suitable to Canterbury conditions, and by rational treatment during establishment and afterwards while being grazed. The farming in this district is largely of a type which necessitates the land being broken up for wheat after a short term in grass. Unfortunately, many of the lands intended for a short-rotation pasture remain in grass for many years, and in consequence the temporary pasture gives way to weeds.

*Cereals.*—Cereals: Wheat crops yielded well, the average for this district being 33 bushels per acre, and the harvest was gathered in good time. Some take-all disease was present in South Canterbury. Bunt was prevalent where farmers did not attend to seed-dressing. North Otago crops were good and free from disease, and the milling-quality is reported to be exceptionally good. In North Canterbury sprouted wheat, caused by the January rains, was plentiful. Oat yields, with only a few exceptions, were light. The hot north-westerns caused a premature ripening on the lighter lands, and in these districts the sample is poor. Many crops of barley were in stook during the January rains, and these were damaged; the later crops, however, escaped damage. Yields in almost all cases were fairly good.

Potatoes: There was a decreased area under potatoes, and in most districts the yield will be below last year's. Blight appeared in some of the damper districts, but the attack was too late to materially affect the yield.

Roots and forages: The early sown crops met disaster during dry weather in November and December. Many crops were sown after the January rains, but these also were almost ruined by the dry conditions that followed. At time of writing green feed is very scarce, and even the districts along the foothills within the western rain-belt have only very meagre turnip crops this season.

*Lucerne Experimental Areas.*—At Darfield two crops of hay of a total weight of 4 tons were secured; at Templeton three crops of hay of a total weight of 7 tons; and at Ashburton one crop of hay of a total weight of about 4 tons. The long-continued dry weather seriously interfered with growth on the latter plot. At Bankside one crop of hay was secured on the 4-acre block, which also carried 2.94 sheep per acre per annum. The irrigation area was a decided success, giving three cuts of hay equal to a total of about 3.25 tons per acre. This plot has been visited by quite a number of farmers. The Bankside plots have demonstrated that hay is an uncertain quantity on this class of light land, which, however, shows much promise for grazing.

*Co-operative Experiments.*—A co-operative experiment was undertaken on the Waimakariri scrub country, on the property of Mr. H. Luers, Oxford. The portion selected is representative of an area of 60,000 to 70,000 acres of land that is virtually producing nothing. A 5-acre block was chosen and the following crops sown: Cow-grass, sweet clover, lucerne, rape, kale, and turnips and grass. All plots except the sweet clover, which did not germinate, are showing much promise. The area is so situated that irrigation can be applied, and it is intended to experiment with this factor next season.

*Ashburton Experimental Farm.*—The work carried out on this farm is supervised by the Instructor in charge of the Canterbury District. A comprehensive programme of work was arranged, and, with the exception of the areas put down in grass, useful results are expected. Dry-weather conditions militated against the success of the pasture experiments. A comprehensive report on the season's operations is being prepared for publication in the Department's *Journal* [since published in the September, 1921, issue].

*Improved Seed-wheat.*—From pedigree strains of wheat raised by the Canterbury Agricultural College and a few reliable farmers the Department purchased 10,111 bushels of the varieties Solid-straw Tuscan, White-straw Tuscan, College Hunters, College Pearl, and Velvet. These were placed on sale to farmers as seed-wheat, and it is anticipated that their high-yielding properties will play an important part in bringing about increased production.

*General.*—Many farms have been visited in various parts of the district to advise owners seeking information on agricultural matters, but there is still a large number on the waiting-list.

Sugar-beet seed was distributed to a number of farmers during October and November for the purpose of ascertaining the suitability of the plant for Canterbury conditions. Although this was late sown, the results have exceeded all expectations, and a high tonnage rate per acre is expected.

Mr. A. Macpherson, who for a number of years had been in charge of the fields work in Canterbury, retired in September (1920), having reached the retiring-age. Mr. R. McGillivray, Fields Instructor, was in charge until my arrival (on transfer from Wellington) in the middle of January, 1921.

*Middle and South Otago and Southland: R. B. Tennent, Instructor in Agriculture, Dunedin.*

Since my appointment in November last a considerable amount of time has been employed in becoming acquainted with the various problems presenting themselves in this district. The main part of this report deals briefly with some of the more salient features which have come under my notice.

*Winton and Gore Experimental Areas.*—The work being carried out at the Winton and Gore areas is being closely watched and appreciated by the farmers in those districts, and many useful data are being collected from the operations.

At Gore an area of approximately 30 acres is devoted to investigational work, chief among this being the sections set apart for the investigation of various plant-diseases, such as swede dry-rot, club-root, and powdery scab of potatoes. These particular experiments have been carried out under