spreading rapidly. Good yields of cereal crops are generally obtained and wheat thrives particularly well, especially the Dreadnought variety. The following table shows the yields from the three main varieties for the harvests of 1942-44:

YIELDS OF WHEAT IN NORTH OTAGO: BUSHELS AN ACRE

	1942	1943	1944
WAITAKI RIVERSIDE			
Dreadnought	47.0	39.2	44.4
Hunters	40.5	39.0	39.4
Cross 7	38.5	35.6	36.0
WAITAKI DOWNS			
Dreadnought	54.1	44.8	52.9
Hunters	48.1	37.1	43.3
Cross 7	42.5	39.4	41.9

Cross 7 and, to a smaller extent, Hunters are used on the lighter land, while Dreadnought often secures the richest land. Yet there is no doubt that Cross 7, in spite of its lower yield, is encroaching on the area where Dreadnought used to prevail, largely because Cross 7 can be headed, whereas the other two varieties usually have to be binder cut.

More Market Gardening Likely

Near the coast to the south of Oamaru is a belt of black soil locally referred to as "tar." Though difficult to cultivate under certain conditions, this soil is extremely fertile. As it overlies limestone escarpments sloping to the sun, the soil retains the heat and is well drained, so that it is eminently suited to the production of early vegetables. The higher levels of these escarpments are fairly free from severe frosts and early potatoes are grown there successfully, seed of the Jersey Bennes variety being planted about July and dug about late November or early December.

Market gardening is likely to increase on this rich, black soil, and the Totara district is likely to become one of the main early vegetable districts in the South Island.

Further south an important poultry farming industry is established round Maheno and Herbert, no doubt because of the sunny, dry conditions as well as the ease with which poultry food, both greenstuff and grain, can be grown in the district.

Lime Production

With numerous outcrops of high-grade limestone, large quantities of agricultural lime are produced from the three limeworks in North Otago, and a good deal of it goes to Canterbury, where liming is becoming increasingly important. In contrast to most other lime-bearing country in New Zealand, which generally has a high lime requirement in the topsoil, the black soil of North Otago is not very deficient in lime, but south of Maheno, away from the limestone, the soil becomes more acid and liming should be more extensively practised.

Large quantities of agricultural lime are produced from the numerous outcrops of high-grade limestone in North Otago.

The production of vegetables, poultry products, and small seeds under a congenial climate offers considerable scope for closer settlement in the coastal portion of North Otago.

North Otago may be said to end at Palmerston, but the type of farming practised is more or less continued on the rolling country round Palmerston and Waikouaiti. There a well-established seed-growing industry specialises in Montgomery red clover production; the clay soil appears to suit the seeding of that species.

CENTRAL OTAGO

One of the most interesting regions in New Zealand is the large inland territory known as Central Otago, which lies to the east of Lakes Wanaka and Wakatipu and is almost totally surrounded by high mountains. The mountains rob the inblowing moisture-laden winds of the greater part of their moisture, so that generally the region is very arid, though in the neighbourhood of the lakes the rainfall becomes greater further west. The climate is hot in summer but in winter frosts are severe. The soil, mainly derived from mica schist, is generally well supplied with plant food and lime, though humus is often deficient and water is the main limiting factor.

Central Otago is dominated by the Clutha River and its tributaries the Kawarau and the Manuherikia, and settlement has been more concentrated along these rivers. Under the dry, sunny conditions fruit growing flourishes along these river valleys where irrigation water is available. On the uplands which constitute the greater part of the region only range farming is possible on the tussocks or on the meagre herbage which now remains. This tussock grassland is, however, a very important feature of Otago.

Tussock-land Farming

The tussock country is divided into large areas known as runs or sheep stations, which vary in size, some being many thousands of acres in extent. They include little flat land capable of cultivation and little fencing subdivision has been done. Most of the high country is subject to winter snowfalls, and the management and carrying capacities of the runs depend mainly on the area available for winter grazing. The sunny faces at lower altitudes are particularly valuable, as snow rarely lies on these slopes for more than short periods. The main object in the utilisation of the tussocks is the production of wool, and for that purpose Merino and Corriedale sheep are grazed on the high country. On the easier ranges near the eastern margin of Central Otago, where the climate is less severe, Merino half-breds and Corriedales are dominant; they are preferred to the Merinos because their carcasses are more saleable and on this country the disposal of store stock is possible as well as the sale of wool.

The tussock grassland today is very different from the tussock of primitive times. When Europeans arrived they found tall, dense tussock with a close filling of other species between and in places patches of dense scrub

Photographs on opposite page by V. C. Browne.