

The physical properties, particularly soil moisture relationships, of the various classes of Taupo pumice soils available for development are being investigated.

Soil Mechanics.—Standard tests have been carried out for airfield construction at Invercargill, Harewood, Milson, Auckland, and Suva Point, Fiji, and methods of solving difficulties encountered have been investigated.

Comprehensive tests have been made on volcanic soil available for earth-dam construction at Atiamuri. Problems similar to those at Whakamaru were encountered. At Lake Wanaka, investigations into "electrical drainage" of earth-dam foundation soil have led to the method being tried on a field scale by the Ministry of Works. Soils from the site of the proposed dam at Port Chalmers Reservoir were shown to be suitable for core material.

Reports have also been made on foundation sites at the request of various bodies.

Research Projects.—Problems encountered in the Rotorua-Taupo area have led to research into the unusual compaction properties of volcanic-ash soils. Following anomalous results from tests at Rotorua and New Plymouth, the relation of clay mineral composition and the physical properties of soils is being investigated.

WHEAT RESEARCH INSTITUTE

Chief Executive Officer: Dr. O. H. FRANKEL

From 1st April, 1950, the wheat-breeding section of the Institute will be amalgamated with the former Agronomy Division, under the name Crop Research Division. The cereal chemistry, milling, and baking laboratories at Christchurch will retain the name Wheat Research Institute and will continue with their former functions, including the testing of wheats bred at the Crop Research Division.

The functions of the Wheat Research Committee, which has supported the change, will be unaltered, and it will retain the same measure of control over the breeding-work as it had before.

WHEAT-BREEDING AND WHEATGROWING

New Varieties.—Eleven new varieties—built up over a number of years from several crosses the parents of which included Cross Seven, Tainui, Dreadnought, Holdfast, and some unnamed hybrids produced by the Institute in earlier years—were tested in extensive trials by the Department of Agriculture, and in two trials on the Institute's own areas at Lincoln and Springston. It was found that all of them performed in the majority of these twelve experiments distinctly better than the standard variety, Cross Seven. The performance was so good that a choice of the best four lines, which will now be taken into even more searching tests, proved difficult. These varieties have been giving very substantial yield increases over the older standard variety, Cross Seven, while retaining its valuable agronomic characteristics of a first-class header wheat. In baking quality they are closely akin to the standard. The especially promising line 202,01 has continued to excel; this year, however, having passed through several seasons of trials, it was found to contain a number of impurities, and has to be withdrawn temporarily for purification. Another six new lines, not yet tested beyond the Institute's own areas, have given good promise, and will now be tested elsewhere.