

testing the value of subsoiling. Much local interest in now being taken in both these areas by bodies of farmers and others. The Whangarei High School students taking agricultural courses are conducted over the Puwera plots periodically and shown what is being done.

Other than the areas at Puwera, Albany, Motuihi Island, and the co-operative experiments at Dargaville (the latter carried out in conjunction with the Auckland Education Board), no further investigational work has been attempted, as the present staff could not cope with it. The need for an extension of field experiments, covering the great diversity of soils and other conditions in the province, is, however, very great.

*Advice and Instruction.*—This is given either on the farm personally or in the office to callers, or over the telephone to inquirers, or by letter. The advantages of giving advice in regard to soils, pastures, and crops personally on the farm are obvious, though it entails much more time and expense in travelling. The farmers thoroughly appreciate this method, which has proved the most satisfactory. Callers at the office average two or three a day, and are increasing. The small herbarium of economic plant-specimens that I am setting up, as also a reference library and other instructional aids, will be of practical value in this connection. A range of soil-samples from typical areas in the province, with analyses attached, as also a range of manurial samples set up similarly, should prove useful for reference.

Lectures and practical demonstrations have been delivered to the branches of the Farmers' Union in the Northern Wairoa and Kaipara districts; to members of the settlers' associations at Waihi and Aria respectively; and to dairy-association members at Piopio; also series of lectures to soldier trainees at Ruakura Farm and Motuihi Island, and cadets, teachers, and farmers at the schools held at Ruakura. The subjects covered have been chiefly soils, manures, crops and cropping, and lime and liming—all dealt with, particularly to farmers, in a practical rather than an academic way. Several ensilage-stack-building demonstrations have been given, Mr. Dibble's special knowledge in this proving of great value.

On selected farms neighbouring farmers have met the Instructor, and, while being conducted over the farm, pastures and crops were examined, unknown plants identified, and their useful and other characters discussed. Instruction of a very practical nature has been accomplished in this way. Farmers appreciate this more than instruction within the four walls of a room.

*Fertilizer Control.*—Regularly samples of fertilizers on the market are taken under the Fertilizers Act, and sent for analysis to the Chemist at Wellington. The greatest menace to high production at present is the scarcity of fertilizers, especially phosphates, and the very high prices charged.

*Lime and Limestone.*—Since analyses have shown that lime is very necessary in most of the soils of this province, and deposits of limestone rock being well distributed, farmers are sending samples of stone from various parts for analysis. We have sent many samples forward to the Chemist. His reports show that deposits are found varying in carbonate-of-lime content within the limits of 40 to about 90 per cent. Some farmers are considering installing small crushing plants on their farms where deposits are found, to supply their own agricultural lime. Liming as a regular farming practice is growing in favour, and shows, as one would expect, good results.

*Seed-control.*—There is, unfortunately, no Pure Seeds Act on the statute-book, and the necessity for one is indicated by the fact that tests have shown in some cases recently no germination whatever or entirely low percentages. We collect samples and send them on to the Biologist for testing. Advantage is taken of this free service by farmers and others.

*Control of Plant-diseases and Insect Pests.*—I have noted flag-smut in oats, rust in various cereals, and other fungoid diseases in field crops when on my usual itinerant duties. We advise farmers, as also when insect pests are noticed, and give information on preventive or remedial treatment, or both, when and where necessary. If it is a matter of some unknown trouble, affected specimens of plants (or, in the case of insects, specimens of the insect itself) are sent to the Biologist for investigation and report. On the whole, the province is fairly free from disease of a serious nature in regard to field crops and pasture. Ergot, particularly in tall fescue and rye-grass, and rust in cereals and some of the grasses such as meadow-fescue, are the only outstanding cases of plant-disease we have noted in this province. Rhizoctonia I have noted in one lucerne crop, also in a crop of Early Puritan potatoes.

*Weather.*—The spring was unusually dry, and crops and pasture suffered in many parts. Late frosts in the first week of December caused much damage and consequent loss, with potato and maize crops chiefly. However, some farmers who put in millets, sorghums, and similar crops for green feed had fodder for dairy stock, and were not so badly affected by the dry spring and summer. In the New Year copious rains fell, and the autumn proved a good one, with the consequence that abundant pasture and stock feed was assured for the oncoming winter.

*North-west Wellington, Taranaki, Hawke's Bay, and Poverty Bay: J. W. Deem, Fields Instructor, Wanganui.*

*Weather.*—The year has been a peculiar one as regards weather. The winter and spring were cold with incessant high winds, and nothing like the normal rainfall. The six months ending 31st December, 1919, showed a shortage of from 30 to 50 per cent. according to locality, and in parts of Hawke's Bay and Gisborne it was even greater. With the New Year the weather broke and the rainfall for the last quarter was considerably above normal, and has to a great extent made up for the deficiency in the spring. The exceptions are the low country about Gisborne and central Hawke's Bay. In these latter localities there was very little rain until the last week in March, when a fairly good downfall was experienced. From a dairying point of view the spring was bad, but the autumn has been one of the best on record.

*Crops.*—The area in wheat was less than last year. The yield was much about the same, but considerable difficulty was experienced in saving it, consequently some of the grain was not of the best quality. The oat crops are much about average on the west coast, but very light in Hawke's Bay. Very little barley was grown, but the yield was fair.

The area under soft turnips was greater than last year, and on the whole the crop has been much better. The swede area is about normal this year, and the crops on the whole are good and in many cases very fine. Considerable difficulty was experienced in getting a strike, and many settlers had to