

Horticulture Division.—A number of sprays and spraying-oils have been analysed to ascertain their composition. ¶ Samples of beeswax and limejuice have also been tested. Advice on and results of the analyses of acid wines have been given to the division's wine expert.

Fields Division.—A large amount of testing of miscellaneous samples and advisory work has been done for this division.

NATIVE TANS AND DYES.

Investigations arising out of a resolution passed by the Farmers' Union conference, 1916, have been set on foot to determine the value of native tan barks and dye plants, and considerable progress has been made. Most interesting results have been obtained in the analysis of some hundred of samples collected personally from the trees and plants themselves. An effort was made to have the barks collected by correspondence, but this met with one response only, and owing to the uncertainty of the identification it is doubtful if that method could be relied upon. The trivial or common names of the native trees are in such confusion in the bushman's mind that no reliance can be placed on any name he gives a bark. It is, of course, most essential that each sample should be rightly identified, or the results of analysis would have no value. Two articles under the heading "Indigenous Tans and Vegetable Dyestuffs of New Zealand" were published in the *Journal* for August and September, 1917,* summarizing the extent of our knowledge to that date.

WORK FOR DEFENCE DEPARTMENT.

The examination of fresh-water supplies on troopships has been continued, 261 samples having been tested during the year.

The use of light tar-oil as an anti-vermin dressing for shirts for our troops on active service has, I understand, proved efficacious. Commendatory letters from soldiers have been published in the public Press, and the issue of treated butter-cloth singlets is being continued by the Ladies' Patriotic Society.

UTILIZATION OF LOCAL PRODUCTS.

Talc.—The possibility of utilizing the talc-deposits of Nelson were inquired into, but on reference to manufacturers who deal in this commodity it was found that the quantity used in New Zealand is so small that there would not be any saving effected by obtaining it from Nelson. Supplies are usually obtained from Australia.

Cream of Tartar.—The production of cream of tartar from New-Zealand-wine refuse was also, at the request of the National Efficiency Board, inquired into, but it did not appear that the raw material existed in sufficient quantities to work up into the finished article in New Zealand. Probably the best method would be to export the raw material to Australia.

GENERAL CORRESPONDENCE.

A large amount of correspondence has been conducted with the public on questions with reference to chemical points which crop up in connection with agriculture, industries, and commerce.

BIOLOGY SECTION.

REPORT OF THE BIOLOGIST.

Central Development Farm, Weraroa, 15th July, 1918.

The Secretary of Agriculture, Industries, and Commerce.

HEREWITH I transmit my annual report for the year ended 31st March, 1918.

A. H. COCKAYNE, Biologist.

PLANT IDENTIFICATION.

As in past years, a very large number of specimens of plants were submitted for identification. In this work an effort is made to supply a good deal of information other than the mere naming of the specimen. In all cases the agricultural significance of the plants sent is of more importance than the actual names themselves, and those submitting weed specimens should, wherever possible, supply information regarding the distribution of the plants concerned in their districts and in what crops they are found. Information on grasses and pasture plants is more commonly demanded than with any other type of plant. This is as it should be, when the predominating position of pasture in New Zealand agriculture is considered.

INSECT AND ANIMAL IDENTIFICATION.

Work of this character is now undertaken mainly by Mr. David Miller, who has been appointed Entomologist to the Section. Practical entomological advice is much more difficult to provide than is botanical advice, owing to the fact that knowledge of the agricultural significance of many of our

* Although not strictly within the compass of this report, it may here be stated that the June, 1918, *Journal* contains a third article embodying the experimental results obtained in the investigation during the year.