

CHEMISTRY SECTION.

REPORT OF B. C. ASTON, F.I.C., CHEMIST.

Wellington, 12th May, 1916.

The Secretary of Agriculture, Industries, and Commerce.

HEREWITH I forward the annual report of the Chemistry Section for the year ended 31st March, 1916.

B. C. ASTON, Chemist.

THE WORK GENERALLY.

During the past year the work has much increased. A large amount of my time has been taken up in consultation with the other officers of this Department and other Departments, and with the public generally. I have attended conferences of the Board of Agriculture, of the Council of Agriculture, and of the Farmers' Union, and given advice when desired.

I may here reiterate that the policy always followed in regard to the analysis of samples for the public is that in ordinary circumstances no work is undertaken that is likely to benefit the individual only. Hence, for instance, analysis of fertilizers for farmers and of soils for land agents are not undertaken. The testing of limestones and suspected phosphates is undertaken when opportunity offers, but is not allowed to take precedence of the other more important work of the Laboratory.

The consideration of the fertilizers best suited for different lands has engaged a large share of attention. From letters from time to time received from farmers the advice given appears to be valued by the farming community.

PHOSPHATE-SUPPLY.

As early as 1913 I had pointed out the importance of the Red Sea deposits of phosphate to New Zealand, and my visit to England in 1914 led to the acquisition of further information and to my acquaintance with the owners of the field, before whom I placed the figures relating to the consumption of phosphatic fertilizers in New Zealand. On my return to the Dominion in November, 1914, I advised obtaining a trial supply of Red Sea phosphate to test its suitability for New Zealand soils, the supply of basic slag being practically cut off. Nothing having been done, a representative of the owners visited New Zealand in June, 1915, and appointed agents. Returning troopships were used (freight being paid) to import the phosphate from Egypt, and this was misconstrued by some to mean that the Government were importing and selling the fertilizer—an entirely erroneous conception.

The owners of this phosphate, with the imprimatur of an eminent English agricultural chemist, claim that their product is a substitute for basic slag, than which it is more efficient. The fertilizer imported has been thoroughly well distributed over the Dominion, and public opinion, fortified by field trials, is likely to give a more authoritative pronouncement than any academic statements of laboratory experiments. The statement which has been circulated, that the fertilizer which was imported into New Zealand only contains 1 per cent. of phosphoric acid soluble by the English 2-per-cent. citric-acid official method, is thoroughly misleading and untrue. The statements concerning the composition of the fertilizer issued by the owning company have been verified by at least three analytical chemists in New Zealand, one of whom is the author of this report, the other two being independent professional men.

I would point out that there are other African phosphate deposits, and it should be possible for any co-operative farmers' association to become owners of one.

The search for phosphate in New Zealand is still being continued by the Geological Survey, by the Dominion Museum Director (a skilled geologist), and by sundry amateur and professional prospectors in the country, to whom specimens of phosphate rock and pamphlets have been sent as in previous years. A large number of reputed phosphate rocks have been received during the year from various sources, but only one, collected by Dr. Thomson in the Clarence Valley, proved to be phosphate. This contained 23.94 per cent. of tricalcic phosphate.

I have arranged with the Director of the Dominion Museum to show a collection of phosphates from all parts of the world in a glass case, in which they can be seen on application. To these have been added the specimens received from the Panama Pacific Exhibition.

Analyses of several samples of phosphate have been made in connection with an offer to sell to the Government certain phosphate islands, and a report has been submitted on the composition and market value of the phosphate.