

A report on the feeding test indicated that pigs disliked the material and did very poorly on it. It was considered to be quite unsuitable as a pig-food. A sample of meat meal that had been used in the feeding of pigs with injurious results was in a state of partial decomposition when received.

Bore-water which was intended for stock consumption from Awakino Point, Dargaville, but which had proved unpalatable to cattle, contained 0.6 per cent. common salt.

A sheep renal calculus from Kirikopuni consisted principally of calcium phosphate, silica, uric acid, and pigment. Renal calculi from a cow at Moerewa were composed chiefly of magnesium ammonium phosphate, fat, and pigment; another contained silica, calcium carbonate, cystine, and calcium phosphate.

A report by an English public Analyst that he had found copper in New Zealand lamb-livers to the extent of 100 parts per million was the cause of an inquiry referred through the High Commissioner's Office. Numerous authorities were consulted to determine the normal copper-content of lamb-livers, and work done in this laboratory thirty-five years ago in the course of the bush-sickness investigation, together with that done recently by a member of the staff (Dr. I. J. Cunningham) at the Rowett Institute, was quoted to show that the amount complained of lay within the limits of normal variation.

A sample of white gritty material from Waipapakauri proved to be a fairly pure aluminium silicate of similar composition to pyrophyllite.

THE SALE OF FERTILIZERS AND TECHNICAL ADVISORY WORK ON FERTILIZERS AND RELATED PRODUCTS.

The Fertilizers Act and its regulations were administered as in previous years, involving considerable correspondence with fertilizer manufacturers, merchants, retailers, farmers, and others. The following is a summary of the registration of fertilizers during the year: Registration certificates issued to manufacturers and brand owners, 163; manufacturers and brand-owners registered, 92, branches, 239; number of brands registered, 851; total amount of registration fees collected, £479 11s.; secondary vendors registered, 415, branches, 251.

Owing to practically no inspection of either imported or locally produced fertilizers being carried out in this country, as provided by the Fertilizers Act, the volume of work, especially as regards correspondence handled at this office, has been necessarily increased. Much of the correspondence and interviewing relates to payment of fees, branding, invoice certificates, and various technical matters in connection with fertilizers generally. Reports on the testing and methods of manufacture and quality of certain fertilizers have been furnished on several occasions, one such report was furnished to the Industries Board. The fertilizing-value of a number of miscellaneous substances and the mixing of fertilizers has been reported upon at various times. The bringing of lime within the scope of the Fertilizers Act was a matter which was considered and reported upon during the period under review. The advertising of fertilizers has again received a good deal of attention, and still remains a problem which would be best remedied by an amendment to the Fertilizers Act. The question of the sale of "special mixtures" of fertilizers in branded packages was taken up with several vendors, and this practice was stopped.

Certain soft, earthy, alkaline phosphates, commonly known as guanos, imported to New Zealand in increasingly large quantities, no doubt on account of the scarcity and high price of basic slag, have been a source of difficulty at times owing to their great variability in composition, consequent mainly upon their high moisture-content.

Owing to the variations in sources of supply of potash salts also, the question of the regular analyses of shipments of this commodity requires some attention. Potash consignments have, of late, been brought in from Russia, Poland, Spain, &c. Check analyses carried out this year indicated variability, but nothing was found to be prejudicial to the purchaser.

The question of the importation of fish manures from England was gone into, as it was considered that animal-bones in a country with certain infectious live-stock diseases might possibly be employed in their manufacture. Investigations, however, indicated that the products were derived from fish-waste without addition of any animal-matter.

From experience gained since the Fertilizers Act has been in operation, it appears that not until all fertilizers for which application for registration is made are analysed and the results published annually alongside the registered brand and analyses, will a really satisfactory control of the sale of fertilizers be achieved. This system is in vogue in most agricultural countries.

Three lectures, one to the Grassland Conference, one to the New Zealand Institute of Chemistry, and another to the Philosophical Society were given during the year.

Fertilizers analysed.—The following showed special points of interest. A sample of material (unregistered) being sold on the West Coast as bone-dust was submitted for analysis on account of its unfavourable effect on turnips and similar crops. It contained only 0.28 per cent. phosphoric acid and 1.04 per cent. nitrogen. Unfortunately it was found impossible to secure an official sample. Samples of destructor ash from Auckland contained about 18 per cent. calcium expressed as calcium oxide, of which about 9 per cent. was calcium carbonate, and a little over 1 per cent. each of water-soluble potash and of total phosphoric acid.

WEED-CONTROL EXPERIMENTS.

Larger-scale experiments with safer substances of promise in connection with the economic control of ragwort, primarily, and other highly pernicious weeds were actively continued throughout the summer and autumn months as opportunity and limited time allowed. The groups of chemicals showing most promise—namely, thiocyanates, chromates, bisulphites, and hypochlorites, in that order—were further submitted to a large number of trials under more varied conditions. Bisulphites were also