Suggestions regarding Amendments to the Fertilizers Act.—It is well recognized that the buying of fertilizer involves risk to the purchaser unless he can be quite sure of the analysis, for in no case can fertilizer be bought solely by weight, taste, colour, or smell. Therefore it is suggested that, as in other parts of the Empire, fertilizer sales of quantities under 5 cwt. be brought within the scope of the Act.

Further suggestions in regard to amending the Act are as follows: (1) Provision should be made for a statement in a fertilizer advertisement or circular to be in the form of a warranty to agree with the warranty in the invoice certificate. (2) Provision should be made for the incorporation of a schedule of fertilizer definitions in order to standardize fertilizer terminology. (3) A scale of licensing or brand registration fees should be charged vendors. Alternatively a fertilizer-tonnage tax could be levied. These recommended amendments are included in practically all recently amended fertilizer laws of other countries of the Empire. The foregoing do not exhaust all the amendments that are desirable under the present Act, but are only a few of the more urgently important ones.

Miscellaneous Work.

A sample of dried and ground seaweed, probably derived from the "bull kelp" *d'Urvillea Antarctica*, was submitted to determine its value as fertilizer. The analysis showed it to contain 26·8 per cent. of protein, 26·5 per cent. of crude carbo-hydrate, 19·3 per cent. of ash, of which only 1·7 was potassium chloride, 0·003 per cent. of iodine, and only 2·7 per cent. of crude fibre. If palatable and non-poisonous, it would therefore be much more valuable as a stock-food than as a fertilizer, and experiments are contemplated to elucidate this point.

Several samples of toetoe (*Arundo conspicua*) and pampas-grass (*Gynerium argenteum*) were analysed to determine their suitability as stock-fodder. They were found to compare favourably with oaten chaff in this respect, containing from 5 per cent. to over 7 per cent. of protein, and as they grow strongly in winter, being indicated as a substitute for oaten chaff in winter feeding. Toetoe is sometimes browsed by stock, but on account of its saw-toothed leaves, requires chaffing before it is readily consumed. Pampas-grass may be grazed directly. It is so grazed in the Hauraki Plains, one farmer growing no other winter feed and being so favourably impressed with the value of pampas-grass that he is planting fresh areas. The caution must, however, be made that the same grass varies largely in its appeal to stock in different types of soil, and that what is good food in the fertile Hauraki Plains may not necessarily be as suitable on drier soil containing less nitrogen.

An investigation was made of the processes of manufacture of meat-meals, together with analyses of several of the products on the market. The information was incorporated in a report in connection with suggestions which had been made for the standardizing of meat-meals for feeding to various classes of live-stock.

Other special reports were concerned with the analysis of whale-bone for conversion into manure, a suggested new process for the manufacture of superphosphate, the utilization of sewage as a fertilizer, of di-calcium phosphate as a stock lick, and of pipi-shells for fowl-grit.

Some samples of imported pineapple bran were analysed and found to be of good value for stock-food.

Several soils from the Solomon Islands were reported on for the Melanesian Mission.

Two samples of slag from the mercury works in North Auckland have been sent in for analysis, accompanied by favourable reports of its action as a top-dressing to pasture. Although the slag contains small quantities of alkali sulphates and sulphides, and carbon, owing to their being only traces present of those substances recognized as fertilizers under the Fertilizers Act, such as phosphate and potash, it cannot be registered or sold as a fertilizer. There is, however, nothing to prevent its being sold as a soil amendment, though its value in this direction would be limited to nearby farms owing to the cost of transport.

A series of experiments was carried out by Mr. C. R. Taylor at Rotorua during the spring of 1931 with the object of determining the best method of rendering sodium chlorate free from danger in causing combustion of clothing, &c., when used for spraying ragwort. It was found that the addition of small quantities of calcium chlorate to a solution of sodium chlorate did not affect its efficacy in exterminating ragwort, while materially reducing its inflammability. For general use when growth is not very far advanced a solution of 4 oz. sodium chlorate and 8 oz. calcium chlorate in 2 gallons of water is recommended, while for more advanced growth 6 oz. sodium chlorate and 8 oz. calcium chlorate in 2 gallons of water is preferable.

Work for the Departmental Divisions.

This has followed the same lines as in previous years and includes:—

For the Live-stock Division: Periodical analyses of public cattle-dips, analyses of licks, toxicological specimens, drinking-waters, &c.

For the Fields Division: Soils, limestones, spraying materials, &c. One sample of soil from Greys Hills Station, Mackenzie Country, was analysed to determine its suitability for an irrigation scheme. The results showed the soil to be a stony sandy silt very rich in available phosphoric acid and with high amounts of potash, lime, and magnesia. Chemically this soil should be well suited for irrigation purposes.

For the Dairy Division: Proprietary materials, discoloured cheese, parchment-papers, &c. One sample of discoloured parchment-paper was found to be contaminated with potassium permanganate. A rapid method for the estimation of salt in cheese was tested with satisfactory results.

For the Horticulture Division: Another case of suspected poisoning of bees by arsenical spray from fruit-trees was investigated. Arsenic was found to be present, but as a good deal of dirt had been scraped up with the dead bees, it was uncertain which contained the arsenic.