

GOVERNMENT STORES.

The various Government Departments concerned with the purchase and use of materials are making increased use of the Laboratory for checking the quality of their supplies.

Most of the tests are now made with a view to ascertaining if the supplies conform with specifications. This phase of the work will expand with the modern tendency to order goods to comply with specifications. The activities of the Standards Institute are having a marked effect in encouraging this tendency.

The materials examined included aluminium solder, various lubricating-oils, copper cable, carbon tetrachloride, roofing-tiles, galvanized-iron wire, ammunition components, bronze, galvanized iron, enamelled goods, paints, porcelain, cast metal, steel, detergents, battery acids, rope-coverings, dust-preventatives, dusts, beeswax, sulphur, plaster board, petrol, electric cells, ropes, type metals, and soldering materials.

The investigations on the effectiveness of methods for reconditioning motor-lubricating oil were continued.

The various brands of petrol on sale were examined.

A number of corrosion problems were investigated.

A number of investigations were made where difficulties had occurred in the use of various materials by the Departments concerned.

ROADING-MATERIALS.

As in previous years a large number of roading-materials were examined for the Main Highways Board to ascertain if they complied with specifications. In addition, investigations were made on methods of preparation of mixtures for special purposes.

GAS-INSPECTION.

The gas-supplies of the four main centres and of the other principal towns of the Dominion are examined regularly for calorific value, purity, and pressure.

With a few exceptions, they were satisfactory in all respects throughout the year, and where trouble did occur the gas undertaking concerned took steps to rectify matters.

The systematic testing of gas-meters for accuracy was carried out as in previous years.

SPECIAL INVESTIGATIONS.

Tests for the Housing Department.—The Laboratory was called upon by the Director of Housing Construction to assist in the examination of a wide range of building materials. Concrete and clay roofing-tiles from makers all over New Zealand have been systematically tested, and useful information placed on record. Comparative examinations of sanitary ware from two New Zealand manufacturers were made and a report upon one works was drawn up for the Department of Industries and Commerce.

Regular analyses of paints used on various housing contracts have been made, and the necessity for such a systematic check-up on the composition of the ingredients has again been amply demonstrated.

Bentonites.—The examination of many samples of bentonite from the Whatatutu and Porangahau districts was continued during the year. The results having shown some promise, parcels of the best material have been distributed to various users overseas and in New Zealand and also to the Imperial Institute, London. Favourable comments upon the samples have in some cases been received, but it is not yet certain that the supply of high-grade material is sufficiently great or accessible to warrant commercial development. The position is, however, being closely watched and a search is being made for accessible deposits.

Diatomaceous Earths.—During the year a revival of interest in the diatomite deposits of New Zealand was evident and typical deposits from various localities were re-examined with a view to determining possible commercial uses.

A deposit from Kingsland proved to be of exceptional purity, but, unfortunately, is not likely to become available for commercial use, as it occurs in a public park.

Earths of good quality were examined from Ngongotaha, from Hemo Gorge, from near the Rotorua-Taupo Road, and from Kamo, but their commercial utilization would be dependent, in the first place, upon estimation of the amount available by means of accurate geological surveys.

The investigation of diatomites is being continued and advice in connection with their development is being sought from authorities overseas.

Investigations on New Zealand Clays.—In view of the known value of some of the white-burning clays of the North Auckland district, such as are used for the making of refractories at the Kamo Potteries, the necessity arose during the year of examining in detail the distribution and quality of the white-burning clays from Kauri, which occur as a low terrace at the foot of Mount Manganui. The clay is derived from the weathered dacite of this mountain.

The deposits were sampled by Mr. N. H. Taylor, of the Soil Survey Division, and subjected to chemical analyses and burning tests. As a result of this work it has been possible to put on record a fairly complete account of the properties of the clays and to sort out those most suitable for the making of refractories. None of the clays proved to be bauxitic.

It is to be regretted that in the past detailed and lengthy laboratory investigations upon our clay deposits have not always been preceded by accurate sampling and survey by expert geologists, although it is obvious that in every case this should be done.