

OTHER DEPARTMENTS.

Several boiler-waters were examined for the Railway Department, and a few samples of miscellaneous character for the Public Works and Marine Departments, and for the Lands and Survey.

RESEARCH.

The process for the cleaning of kauri-gum recovered from swamp peat has been tried on a commercial scale in Auckland, with excellent results. The gum, which is admixed with large amounts of peaty material, is agitated in a closed cylinder with a strong solution of common salt, and a vacuum applied. The impurities sink and are drawn off, the salt solution being recovered by means of a vacuum filter, while the cleaned gum is washed with water and dried.

Some preliminary work was done on the distillation of oil from kauri-swamp peat.

REPORT ON THE ADMINISTRATION OF THE EXPLOSIVES AND DANGEROUS GOODS ACT, 1908, FROM 1st JULY, 1918, TO 30th JUNE, 1919.

Authorization of New Explosive.—The following new explosive was authorized for importation into, and for manufacture, storage, and sale in New Zealand during the year: Ligdynite.

Manufacture.—The undermentioned factories were licensed for the manufacture of explosives:—

- (1.) Sabulite (N.Z.) (Limited), at Waikumete, for the manufacture of sabulite.
- (2.) H. F. Bickerton, at Wainoni Park, Christchurch, for the manufacture of fireworks.
- (3.) Colonial Ammunition Company, at Mount Eden, Auckland, for the manufacture of small-arms and ammunition.

<i>Importation.</i> —The following explosives were imported during the year:—							lb.
Gelignite	..	..	..	..	..	..	820,000
Gelatine dynamite	..	..	..	..	..	..	56,600
Monobel powder	..	..	..	..	..	..	31,650
Viking powder	..	..	..	..	..	..	340,000
Stomonal powder	..	..	..	..	..	..	10,000
Super-cliffite	..	..	..	..	..	..	500
Ligdynite	..	..	..	..	..	..	48,500
Blasting-powder (grain)	..	..	..	..	..	..	152,500
„ (pellets)	..	..	..	..	..	..	152,500
„ (sporting)	..	..	..	..	..	..	3,150
Total							1,615,400
Detonators	..	..	..	..	..	..	2,045,000
Fog-signals and fireworks (packages)	..	..	..	..	..	..	1,559

Storage.—The total number of magazine licenses issued for the year was 153. Of these, forty were for quantities up to 300 lb., fifty-two for quantities between 300 lb. and 2,000 lb., and sixty-one for quantities between 2,000 lb. and 20 tons.

Government magazines available for public use remain the same as last year—viz., three, at Wellington, Greymouth, and Dunedin. At Greymouth the new magazines are completed, and will be occupied within the next month or two.

Packing and Conveyance.—The number of licenses issued during the year to carry explosives was 302, being a slight decrease on the number issued during the previous period.

Condemned Explosives.—On the 9th October, at Auckland, the following explosives were condemned for use on account of damage caused by sea-water: Gelignite, 600 lb.; gelatine dynamite, 50 lb.; blasting-powder, 1,425 lb.; blasting-pellets, 1,825 lb.; total, 3,900 lb. They were subsequently destroyed by burning the gelatinous compounds and dumping the powder in deep water outside harbour-limit.

Licensed Premises.—560 licenses were issued during the year in respect of premises licensed to sell explosives and to keep explosives under modes 1–3 of the regulations. This is a decrease of 112 on the number issued during the previous period, and is explained by the curtailment of many works during the latter period of the war.

Accidents.—No accident by fire or explosion occurred during the year in the manufacture, storage, or transport of explosives.

Legal Proceedings.—Probably owing to the War Regulations making it necessary for all dealers in explosives to obtain a permit from the Police Department, no irregularities came under the notice of the Department during the year.

Inspection and Testing.—Inspections have been made during the year of public magazines, licensed factories, licensed magazines, and premises. Explosives liable to become dangerous by deterioration have been examined as to their condition, and condemned explosives have been destroyed under the supervision of Inspectors.

About 120 samples of commercial explosives and 130 samples of cordite and exploders for the Defence authorities have been tested for stability by the heat and other tests.

Owing to shortage of staff, inspection and other branches of the work have had to be considerably curtailed.

General.—During the period under review a number of complaints have been received in regard to the quality of explosives and detonators in the mines. In consequence of these we have examined the explosives and detonators complained of, and have to report that there has been a considerable falling-off in the quality during the last year or two. Some classes of explosives are now very sluggish, and many of the detonators are defective. The investigation is being continued, and more complete details should be available for the next report. There is every probability of a better class of explosives being imported in the near future.

J. S. MACLAURIN,

Dominion Analyst and Chief Inspector of Explosives.

The Under-Secretary, Department of Internal Affairs, Wellington.