

DOMINION LABORATORY.

The work of the year consisted almost entirely of chemical analyses and investigations undertaken for various Government Departments.

The numbers of samples received from the various Departments were—

Wellington (Main Laboratory): Customs, 181; Police, 104; Geological Survey, 159; Main Highways Board, 304; Mines, 177; Health, 2,806; Post and Telegraph, 52; Research, 61; Public Works, 50; Railways, 51; Stores Control Board, 14; Agriculture, 188; Defence, 14; Prisons, 258; Government Printing Office, 48; External Affairs, 23; other Departments, 33.

In addition to these, 21 samples were received from municipal and other local bodies, and 572 from miscellaneous sources, a total of 5,116.

Auckland (Branch Laboratory): Health, 3,442; Police, 248; Public Works, 100: total, 3,790.

Christchurch (Branch Laboratory): Health, 2,260; Police, 190; other Government Departments, 41; miscellaneous, 23: total, 2,514.

Dunedin (Branch Laboratory): Health, 1,081; Police, 231; other Government Departments, 43; miscellaneous, 18: total, 1,373.

A total of 12,793 samples was received in the main Laboratory and the three branches.

CUSTOMS.

The majority of the reports made to this Department were for use for tariff purposes. In addition, a number of materials, including flour, fats, iodized salt, tea, cream of tartar, and liquid paraffin, were examined to ascertain if they complied with the regulations under the Sale of Food and Drugs Act. In cases of non-compliance with the regulations importation and sale would not be allowed.

POLICE.

As in the previous year, a large number of diverse materials were examined for the police in connection with criminal and other investigations, and various members of the staff have been consulted from time to time when it was considered that their special knowledge might be of assistance.

Wellington.—In one case of poisoning arsenic was found, in another, strychnine, and in a third, heroin. Two samples of chocolates seized by the police were found to contain poison.

A number of wines and "home brew" were examined in connection with alleged illegal sale of liquor.

Samples of whisky and schnapps were analysed to ascertain if they were true to label.

Medicines employed for attempted abortion, preparations suspected to contain dangerous drugs, and opium prepared for smoking were examined in connection with various police cases.

Certain stains on a bank-note were shown to be due to mineral oil.

In one case it was important to decide whether some human hair was from a European or a Maori. Some American workers had reported that hair from different races reacted differently to ultra-violet light, and that this provided a method of distinguishing hair according to race. Investigation showed that such was not the case, and that the proposed method was valueless for the purpose.

An interesting investigation was made in connection with the identification of glass fragments found on the clothing of a suspect. It was shown that they corresponded in specific gravity, reaction to ultra-violet light, and refractive index to glass from a broken motor-car wind-screen, but differed in these respects from a hundred other samples of glass from various sources.

Auckland.—During this year a very considerable amount of analytical work in connection with poisoning and other investigations was carried out for the police.

Lysol was found in three cases of death by poison, and prussic acid in another case.

In one case of poisoning, large amounts of barbitone (veronal) were found in various exhibits, and a charge of murder resulted, in which the accused was convicted.

A case of death by quinine poisoning was investigated. The deceased had taken at least $\frac{1}{2}$ oz. of quinine for the purpose of procuring abortion, and died in three hours.

A number of exhibits submitted by the police were articles of clothing and dust from the pockets of suspects. Gold filings were found in the dust from one pocket, and the owner was convicted of receiving the proceeds of a burglary.

In a case of arson it was possible to identify by chemical means the wood of the matches found at the fire.

In an investigation as to the identity of an unknown body it was found that the characteristic fluorescence of hair under ultra-violet light was destroyed by putrefaction in salt water.

Liquor samples examined were chiefly from the proclaimed area in the King-country.

Christchurch.—The following substances were present in exhibits submitted for toxicological examination: Nicotine, potassium cyanide, chloroform, phenobarbitone, ether, alcohol, zinc, and carbon monoxide.

A number of samples of "home brew" were examined, also cider sold illegally, which was found to contain 15 per cent. to 23 per cent. of proof spirit.

Four samples of ground grain for animal-feeding were submitted by the police as the result of complaints from a number of farmers. It was found that the grain had been mixed with 20 per cent. to 30 per cent. of ground limestone.

A number of preparations used for the purpose of procuring abortion were examined.

Bullets were submitted for examination of markings, and a pair of socks for the presence of wax derived from a waxed floor on which footmarks were observed.