

In addition to the work for the Department of Health, a larger number of samples of milk was examined for the Prisons Department. Many samples of human milk were examined for the Plunket Society.

Water.—A total of 257 samples from existing and projected water-supplies were analysed in the main Laboratory and the three branches. This work is carried out regularly from year to year as a guide to Medical Officers of Health in maintaining purity of water-supplies.

At the Auckland branch Laboratory a special investigation was carried out on the water of Lake Pupuke from which Takapuna draws its supplies. The presence of the organism *Ceratium* had caused serious trouble in 1934, as it imparts a most objectionable odour and taste to water. Regular samples had been examined since 1934, and when the organism reappeared in 1937 a special study was made of its life-history. A very large number of samples of water were examined. It was found that in cool weather the cysts of the organism were very resistant to copper sulphate. The copper sulphate treatment of the lake was therefore carried out when a microscopic examination of samples from selected points showed no cysts. The treatment was completely successful, as it was in 1934.

The same species of *Ceratium* was found in the sea-water of Auckland Harbour, and as Lake Pupuke is separated from the sea by a very narrow strip of land it would appear that the cysts are carried over from the sea.

The results of this investigation are to be published as a separate report.

Sewage.—As in the previous year, a large number of samples were analysed in the Auckland Laboratory in connection with problems of sewage disposal. A few samples were examined in the other centres.

Miscellaneous.—A large number of various articles used as food and drink were examined. They included apple-juice, baking-powder, barley-water, beer, bicarbonate of soda, biscuits, butter, cinnamon, cocoa, coffee and chicory, cordials, cream, cream of tartar, figs, flour, gin, ginger beer, ground ginger, honey, ice-cream, icing-sugar, iodized salt, jam, lemons, lemon tea, malt extract, malted milk, marrow, meat-paste, mustard, pepper, prunes, raisins, canned raspberries, rum and ginger, sardines, sausages, savelys, tomato sauce, tinned peas, vinegar, whisky, wine, and wholemeal bread.

Of 375 samples of butter taken throughout the Dominion, 22 contained water in excess of the maximum allowed (16 per cent.).

All the brands of sardines which were procurable (forty in all) on the market, were examined for lead and tin. In four cases more tin was present than the maximum allowed by the regulations (2 grains per pound), and one contained an excessive amount of lead. The canners concerned were informed that such contamination must be avoided. On the whole the metallic contamination was negligible and goes to show that there is little risk of ingesting objectionable amounts of metals when eating canned food. It is intended to examine systematically other types of canned food for metallic impurities.

A most interesting investigation was made of various brands of tooth-paste on the market, thirty-four samples in all being analysed principally for the presence of abrasive and oxidizing agents. No abrasive was found in any of the samples, although in much of the advertising it is inferred that rival brands contain abrasives, as, for example, pumice-powder. In one case the paste contained a considerable proportion of potassium chlorate and would definitely be dangerous in continuous use. It was recommended that the sale of this paste be prohibited. Two other pastes contained undesirable amounts of iodides.

The most objectionable feature was the extravagant and misleading advertising matter that accompanied many of the samples. There appears to be no necessity for so many different brands, as, with one exception, the tooth-pastes appeared to provide simply an agreeable but somewhat expensive method of applying precipitated chalk to the teeth. Except that they are more attractive, they have no real advantage over simple cleaning-agents such as salt or precipitated chalk.

One of the pastes was acid in reaction, but this would have no advantage over a simple acid wash.

Drugs.—A number of drugs were examined to ascertain if they complied with the standard of the British Pharmacopœa. They included boric acid, camphorated oil, glycerine, hydrogen peroxide, linaments, malt extract, liquid paraffin, lysol, and tincture of iodine.

With the exception of some samples of camphorated oil, which were deficient in camphor content, the samples were of satisfactory quality.

“Cancer cures” on public sale by certain herbalists were examined. One of the cures consisted of lead plaster and another of camphor and “herbs.” Action was taken which led to a modification of the claims made for such remedies, but the legal provisions for safeguarding the public in this respect appear inadequate.

MINES DEPARTMENT.

The Dominion Laboratory has carried out investigations and analyses on mineral samples, mine gases, coal-samples, &c.

Prospectors' samples have been assayed for gold and silver and occasionally for other metals, notably tungsten.

During the year the physical and chemical Survey of the coal resources of the Dominion has been proceeded with. The Laboratory is now fitted up and is working in conjunction with a geological field staff.

A report on the Blackburn area with two maps has been included in the annual report of the Geological Survey.

The field staff has commenced work in the Greymouth area, with headquarters at Rewanui. Systematic and accurate sampling of the area is undertaken in conjunction with geological and survey work, and the sealed samples are forwarded to the Laboratory for complete analysis.

It is hoped to extend the activities of the work of the survey to assist the Mines Department in finding new areas for co-operative mining and in locating supplies of coal suitable for the proposed iron and steel industry.