LABORATORY INVESTIGATIONS.

The Mines Department is concerned, directly or indirectly, with all the mineral work carried out in the Dominion Laboratory during the year, particularly with that relating to the Iron and Steel Department, and to the commercial development of such non-metallic minerals as clay, diatomaceous earth, and bentonite.

Prospectors' samples for the year were again few in number, and of comparatively little value. Those sent in for assay for gold and silver were mostly from well-known mining localities, and were almost without exception of low grade. A sample of scheelite was received from Wakamarina, where its occurrence is well known, and specimens of osmiridium from Takaka and magnetic iron-ore from D'Urville Island. Antimony-ore of good quality was forwarded from Waikare Basin, near Russell, probably from the old workings which exist there. Definite interest continues to be shown in manganese, the best samples coming from Waikare Basin, where it was formerly worked, and from Otaua, in the Lower Waikato. The possibility of the development of deposits of non-metallic minerals is being more generally recognized. Bentonite occurrences in Hawke's Bay have been examined by the Geological Survey, and numerous analyses made. Feldspar, at present a waste product at the Charleston Mica-mine, was examined for its potash content, which was found to be 12·4 per cent. The possible use of serpentine as a desirable addition to superphosphate has been investigated. Numerous clays have been analysed, one from Kaka, near Glenhope, of low fusibility being particularly promising as a stoneware clay.

The most outstanding work on the mineral side has been the regular analyses for the Iron and Steel Department of iron-ore, following the systematic exploration of the Onekaka deposit, and of iron-sands from the Patea deposits, which it is proposed to use in conjunction with the Onekaka ore. Iron was determined in 1,142 samples and fuller analyses made when required. Twenty-six samples of limestone adjacent to Onekaka were also analysed, and one sample of dolomite from Mount Burnett.

The most important work of the coal survey during the year had relation to the proposed iron and steel industry, and indicated that to provide sufficient suitable coke from local sources, drastic conservation of the Dominion's low-sulphur coals would be necessary.

Other analyses were carried out as required, especially with regard to the fuller use of local coals in the gas industry, and cases of complaint investigated. An analysis was made of water from the State Coal-mine to enable a suitable resistant metal to be selected for the mine-pump. Forty-six samples of mine-air from Glen Afton, Ironbridge, Kamo, and Linton Collieries were analysed.

PERSONS EMPLOYED IN OR ABOUT MINES AND STONE-QUARRIES.

The following table shows the number of persons employed in each inspection district during 1939 and 1938:—

Classification.	Inspection District.			Totals.		
	Northern (North Island).	West Coast (of South Island).	Southern (rest of South Island).	1939.	1938.	Increase or Decrease.
Gold, silver, and tungsten ore	797	1,338	659	2,794	2,998	Dec. 204
Coal	1,585	2,247	930	4,762	4,563	Inc. 199
Stone-quarries under the Stone-quarries Act	1,583	102	398	2,083	2,667	Dec. 584
Silica	5	..	..	5	..	Inc. 5
Cinnabar	2	..	..	2	2	..
Iron ore	6	1	..	7	4	Inc. 3
Manganese	13	..	..	13	8	Inc. 5
Pumice	1	..	..	1	..	Inc. 1
Fullers earth	1	..	..	1	..	Inc. 1
Diatomaceous earth ..	1	..	..	1	..	Inc. 1
Totals	3,994	3,688	1,987	9,669	10,242	Dec. 573