

MINERALS EXAMINED BY DOMINION LABORATORY

Cement Industry Investigations.—In view of possible expansion of cement-production, a survey of raw materials was put in hand by Geological Survey. Particular attention was given to the Huntly - Te Kuiti, Canterbury, Cape Foulwind, and Oamaru districts. The completion of the analyses of the many samples collected will provide the data necessary for deciding upon the most suitable location for a new works.

Blacksand Investigations.—In connection with the experimental trials at Onekaka for the production of iron from Taranaki ironsand by an electric furnace process, the preparation of a large quantity of ironsand concentrate became necessary. Analyses were made of these concentrates and also of raw materials proposed as fluxes, including limestones, sands, quartzites, and dolomites, while during the trials numerous analyses of sinters, slags, and irons had to be made. The Dominion Laboratory fitted out a chemical laboratory at Onekaka to enable urgent analyses to be done on the spot.

Preliminary surveys were also made of the ilmenite-bearing sands of the West Coast of the South Island, which are of interest as a possible source of titanium dioxide for white pigment production.

A reconnaissance survey of blacksands of the North Island from Taranaki northwards was also carried out. Analyses of blacksand from several other sources, including Stewart Island and George Sound, were also made.

Glass-sand.—The possibility of obtaining from Parengarenga sand, by high-intensity magnetic separation, a grade of sand suitable for the manufacture of optical glass was investigated. Sands from Whitecliffs and Sheffield (North Canterbury) were also tested. The latter may be of value as a moulding sand.

Pozzolanas.—The addition of finely ground siliceous materials of a suitable type to cement for the production of pozzolanic cement, is becoming common practice, particularly for dam-construction in the United States. The investigation of certain local volcanic tuffs for suitability for this purpose has reached the stage where the more promising materials have been sorted out for practical strength trials. Volcanic tuffs from Oamaru, Gisborne, and Waikato (ignimbrite) are now being specially studied.

Clays.—Examination of a number of clays, including fireclays associated with coal-seams, was made during the year. An information circular on North Auckland refractory clays was prepared.

Miscellaneous.—Among the many samples examined, mention may be made of diatomite, limonite for gas-purification, bentonite for export, limestones for agricultural use, and minerals for identification. A number of assays for gold and silver were made. Ores from Te Aroha were examined for lead, zinc, and silver content, and an ore from Reefton for antimony. A preliminary study of the use of greensand as a flux in the preparation of a phosphatic fertilizer by a fusion process was made, and experiments on a larger scale are being put in hand.

Coal.—The Coal Research Section of the Dominion Laboratory has analysed 1,427 samples, consisting mainly of drill cores, run-of-mine, and face samples. This work is detailed under the report of the Coal Research Committee.

SCHOOLS OF MINES

The expenditure on Schools of Mines for the year ended 31st March, 1950, was £13,708, as against £4,069 for the year ended 31st March, 1949. The marked increase in expenditure is entirely due to a grant of £9,893 made to the Otago University School of Mines for the purchase of equipment for the metallurgical and mineral dressing laboratories which came to charge during the period.

Two candidates, both from Otago University School of Mines, sat the annual examination for Government mining scholarships. Both candidates were successful, one having already secured a partial pass in the previous year. However, only one scholarship was awarded, seeing that the other candidate had previously been awarded