

## LABORATORY INVESTIGATIONS

A large number of examinations and analyses of samples of minerals and ores forwarded by prospectors and other members of the public was carried out during the year.

Since discontinuance of purchase of tungsten-ores by the Imperial Government, the number of analyses of scheelite has greatly decreased.

Work on the systematic survey of the clay resources, including brickmaking clays in the Wellington district, was continued in conjunction with the Geological Survey.

A special feature of the year's work was the large number of samples of marls, limestones, and cementstones examined as raw materials for Portland cement manufacture, as well as cements examined more especially for alkali content.

Other samples included mine airs and gases, serpentine for the manufacture of serpentine-superphosphate, phosphate rock, feldspar, chalk, limestone, bentonite, flints, glass sand, and diatomaceous earth.

## DRILLING OPERATIONS

An extensive drilling programme has been carried out during the year, active drilling operations being conducted at Kawakawa, Kimihia, Rewanui, Brunner, Dunollie, Strongman Mine, and the Morley Block, Ohai. In all, sixty-six holes, the total depth of which amounted to 16,556 ft. were drilled during 1946 by the Department's drills, while an additional nineteen holes, totalling 1,097 ft. in depth, were drilled by the Scientific and Industrial Research Department's drill on behalf of the Mines Department. Despite the acquisition of many new drills during the past few years, drilling-equipment has proved inadequate to the many demands of the Department. A new Sullivan 37 drill and a new Longyear-Porta drill have recently arrived from America, and the Sullivan drill is already in commission at Wangaloa, while consideration is at present being given to further increasing the number of drills to cope with the heavy programme facing the Department.

Details of the drilling programme are as under:—

*Rewanui.*—Hole No. 262, which had reached 681 ft. at the end of 1945, was bottomed at 1,210 ft., while Hole No. 265 was drilled to 1,121 ft. This completed the programme in this section, which indicated that the area contained 1,500,000 tons of recoverable coal. The drill from this area was then dismantled preliminary to shifting to the Mount Davey area, but, owing to difficulties in access, all the time so far has been spent in installing aerial ropeways and constructing camps, and drilling has not yet commenced.

*Brunner.*—Hole No. 266, which was drilled in 1945 to a depth of 2,020 ft., was successful in proving seams of coal under the overlying Brunner series, and accordingly hole No. 273 was commenced a mile distant to establish continuity of the seams. This hole was drilled to 2,413 ft. during the early part of 1946, but was unsuccessful in disclosing coal, and the remainder of the year was spent in providing access to a new borehole site where drilling commenced early this year. By the end of May this hole had attained a depth of 1,300 ft. and drilling was still proceeding.

*Fisher and Party, Dunollie.*—Drilling was commenced on this area in order to locate a seam for a co-operative party, and during 1946 five holes were drilled with a total depth of 1,979 ft. Results have been generally disappointing in not proving a sufficiently large block of coal to justify development, and after additional drilling during the present year the area was abandoned.

*Ohai.*—Drilling operations were continued during the year at the Morley Block, and seven holes, with a total depth of 5,169 ft., were drilled. Sufficient tonnage of coal has now been established to justify the opening-up of a large-scale colliery, and drilling has been meantime suspended to allow of drilling at Mossbank and later at the Star Mine.