

DIRECTOR'S REPORT.

SUMMARY OF FIELD OPERATIONS.

DURING the field season of 1923-24 detailed topographical and geological surveys have been carried out in the following areas :—

- (1.) Motueka Subdivision, Nelson, by J. Henderson, M.A., D.Sc., B.E., A.O.S.M., Mining Geologist; L. I. Grange, M.Sc., A.O.S.M.; and E. O. Macpherson, Assistant Geologists.
- (2.) Rodney Subdivision, North Auckland, under the charge of H. T. Ferrar, M.A., F.G.S., Geologist.
- (3.) Kaitangata Subdivision, East Otago, under the charge of M. Ongley, M.A., B.Sc., Assistant Geologist.

Field-work in the Kaitangata Subdivision as originally planned has been completed, but, in order to enable a comprehensive report to be written, two adjoining areas need to be surveyed. Next season it is proposed to examine these areas, and to continue work in the Motueka and Rodney subdivisions.

Brief visits for various purposes were made by me to Lake Takapuna (near Auckland), Maratoto, Kairuru Marble-quarry (Nelson), Greymouth, Kumara, &c. Waihi was twice visited in order to obtain additional data for the report on the Waihi Goldfield now in course of publication. As one of the official representatives of the New Zealand Government I also attended the second Pan-Pacific Science Congress, held last August and September in Melbourne and Sydney. In connection with this Congress I visited many places of geological interest, including the Maitland section of the Hunter River Coalfield, and the famous Broken Hill district.

Dr. J. Henderson, Mining Geologist, made special visits to Ponui Island, Ongarue, and Tahunanui (near Nelson), and the Colossus Gold-mine (near Wangapeka). During the latter part of 1923, at the request of the Government of Fiji, an arrangement was made in terms of which Dr. Henderson spent six weeks in Fiji examining a reputed goldfield in the Island of Vanua Levu. The results of this examination were disappointing.

Dr. J. Marwick, Palæontologist, accompanied Dr. T. Wayland Vaughan, a distinguished American geologist, on visits to fossil localities in the North Otago, North Canterbury, Wanganui, and Kaipara districts. During most of January and the early part of February, with other members of the scientific expedition organized by the Otago Philosophical Institute, he was in the Chatham Islands, where he collected fossils and geologically explored the largest island.

PROGRESS OF AREAL SURVEY.

During the twelve months ended 31st May, 1924, approximately 1,471 square miles was geologically surveyed in detail. Of this area about 450 square miles is in the Nelson District, 478 square miles in North Auckland, and 543 square miles in South Otago.

The present state of the detailed geological survey is given in the following table :—

	Square Miles.	Square Kilometres.
Surveys completed and work published on the scale of 1 mile to the inch	9,674	25,054·6
Surveys completed and work published on the scale of $\frac{1}{2}$ mile to the inch	325	841·7
Field surveys completed, but work not yet published	7,819	20,250·4
Surveys in progress—area actually surveyed	1,030	2,667·6
Total area surveyed	18,848	48,814·3
Area in which work is suspended (Heaphy district)	293	758·8
Area resurveyed (Whatatutu and Waihi)	352	911·6

MOTUEKA SUBDIVISION.

Messrs. Grange and Macpherson carried on field-work in this subdivision from the latter part of September till the end of March, when Dr. Henderson joined them. This subdivision includes the greater part of the lowlands south-west of Nelson as well as a wide strip of mountainous country to the west. In the early days alluvial gold was obtained from the mountain-streams in important amount, but the payably auriferous gravels are now almost exhausted. Gold-bearing quartz veins occur, but none has been worked at a profit. Large deposits of chrysotile-asbestos and talc occur in connection with ultra-basic rocks in the north-western portion of the subdivision, but similar rocks in the south-eastern corner carry only trifling amounts of these minerals. Though the rock-series that contains the valuable marbles of the Takaka district extends through the western part of the district, the area so far examined does not contain workable marble-deposits.

RODNEY SUBDIVISION.

Mr. H. T. Ferrar, Geologist, having finished the field survey of the Dargaville Subdivision, this season turned his attention to a strip of the North Auckland Peninsula lying to the south of that area. His progress in this survey is stated in the special report on the Rodney Subdivision. The principal benefits of this survey will be (1) the production of a better topographical map than that now available,