

REPORT.

LETTER OF TRANSMITTAL.

SIR,—

I have the honour to forward you the fourth annual report (new series) of the New Zealand Geological Survey.

Hon. R. McKenzie, Minister of Mines, Wellington.

Geological Survey Office, Wellington, August, 1910.

I have, &c.,

J. M. BELL,
Director Geological Survey.

INTRODUCTION.

The present report deals with the year commencing on the 1st June, 1908, and ending on the 31st May, 1910. During this period the work of the Geological Survey has been conducted on the same plan as in former years.

SUMMARY OF OPERATIONS.

During the past twelve months detailed geological surveys have been carried out in the Mount Radiant, Dun Mountain, Greymouth, New Plymouth, and Tairua-Waihi subdivisions. In addition to these investigations, visits of inspection were paid to Orepuki, Otaio, Annan, Waikakaho (Marlborough), New Plymouth, Mokau, and Retaruke.

The survey of the Mount Radiant Subdivision, commenced in the beginning of 1908 by Mr. E. J. H. Webb, was completed last June. Mr. Webb's detailed report, which will be ready for presentation to Parliament very shortly, contains a full and accurate account of the Mount Radiant copper prospects as at present developed.

The systematic investigation of the Dun Mountain Subdivision, which was begun in October, 1908, was completed in September, 1909. A full report upon the area, written by Dr. P. Marshall, Mr. E. de C. Clarke, and myself, is now being finally revised. Besides describing the copper and chrome deposits of Dun Mountain, this report gives attention to the Tertiary coal-measures of the Waimea Valley, where there is a likelihood of workable coal-seams occurring.

PUBLICATIONS.

During the past twelve months, besides the third annual report, containing an account of the operations of the survey during the season 1908-9, Bulletin No. 8 was issued. This bulletin, entitled "The Geology of the Whangaroa Subdivision, Hokianga Division," was written by Mr. E. de C. Clarke and myself. It describes the geology and mineral resources of an area of about four hundred square miles that contains several metalliferous deposits.

Geological surveys and scientific societies in many foreign countries continue to send us their publications. In this connection the reports of the United States Geological Survey may be mentioned as being especially valuable to students of economic geology.

FIELD AND OFFICE WORK OF THE DIRECTOR.

From the beginning of June, 1909, until the end of August I was engaged in office-work in Wellington. From the 1st to the 3rd September I was at Orepuki, Southland, examining the oil-shale deposits of that district. Some attention also was given to the ironsands. From the 7th to the 11th September coal-occurrences near the Otaio River, South Canterbury, and at Annan, North Canterbury, were investigated. On the 15th September a visit was paid to Waikakaho, Marlborough, in order to inspect Thomas's Quartz Reef, a new discovery which was stated to be of some potentiality, but proved to be of little value.* During the latter part of October I made an inspection of the New Plymouth oilfield. The results of this inspection have already been published.† From the 3rd to the 10th November a reconnaissance of the little-known Mokau Coalfield was made. After the Mokau inspection I proceeded to Tairua, on the east coast of the Hauraki Peninsula, in order to inaugurate a detailed geological survey of the Tairua-Waihi Subdivision. Early in December I made a hasty visit to the scene of the coal-discovery at Retaruke, near Waimarino. Again in February and March, 1910, somewhat more detailed examinations of the same locality were made.

Except during my visits to Retaruke and one or two minor inspections, I was continuously engaged in organizing and conducting field-work in the Tairua-Waihi Subdivision from November, 1909, as already mentioned, until the middle of May, 1910. In this work I was assisted throughout by Mr. Colin Fraser, who had joined me at the beginning of December, 1909. On the 17th May I returned to Wellington, where departmental business claimed attention for some days. I then left for Australia, where I attended the Mount Morgan meeting of the Australasian Institute of Mining Engineers.

WORK IN THE TAIRUA-WAIHI SUBDIVISION.

The Tairua-Waihi Subdivision comprises the survey districts of Whitianga, Tairua, Ohinemuri, and Waihi North. On account of the importance of the area as a mining-field it was necessary to add very considerably to the topographical information available, so that the geology could be mapped with sufficient accuracy and detail. As noted in last year's report, a topographical survey of the northern part of the area was begun by Mr. K. M. Graham in October, 1908. At the end of May, 1909,

* Assay: Gold, 3 dwt. 3 gr.; silver, 7 gr.; value, 12s. 6d., per ton.

† Parliamentary Paper C.—14, 1909.