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 . NEW ZEALAND.

# GEOLOGICAL EXPLORATIONS

(GENERAL REPORT FOR THE YEAR 1900-1).

*Presented to both Houses of the General Assembly by Command of His Excellency.*

Mr. ALEXANDER MCKAY, Government Geologist, to the UNDER-SECRETARY for MINES.

SIR,—

Mines Department, Wellington, 10th June, 1901.

I have the honour to submit a summary of the work done, and the different examinations and reports made during the season of 1900-1.

The work of the latter part of the winter of 1900 was chiefly in connection with preparation and despatch to Professor Sollas, of the rock-samples of the Cape Colville Peninsula, the petrographical description of which should now be approaching completion. It is to be hoped that the results of Professor Sollas's work will come to hand shortly, as till then the various duplicate collections of the rocks of the Hauraki Goldfields cannot be distributed to the different Schools of Mines and other institutions as contemplated.

The work of Professor Sollas will be of great value as definitely fixing the nomenclature of the volcanic rocks of the district whence the greater part of the collections forwarded have been taken. The descriptions will probably be illustrated by micrographic drawings or photographs of the more important rock-preparations, and these will be of great value to the students to whom the duplicate set of rock-slices may be available. These preparations and the original rock-samples from which they were taken must be carefully preserved and retained in the possession of the department, as they constitute means for determining differences of opinion that, respecting these rocks, may arise in the future.

To make the petrography of the district of greater value to those engaged in mining on the Hauraki Goldfields, the ordinary illustrations accompanying a report of this kind should be supplemented by a series of photographs showing the rock-sample natural size, and various enlargements of the prepared rock-slice. By such means would be made clear, even to those who do not make a special study of the subject, the differences of rocks scarcely to be distinguished as hand specimens. For years I have been engaged in perfecting an instrument peculiarly adapted to this kind of work, and recent improvements made leave little or nothing more necessary for executing what is required in this respect. Not until the receipt of the results of Professor Sollas's examinations can the final report of the geology of Cape Colville Peninsula be written, and though some sections of this might in the meantime be written, it were better that from the first the whole of the material were available.

Since the 31st March, 1900, the following reports, memoranda, and notes have been written on the different subjects to which they apply :—

- (1.) On Bradshaw's Reef, Preservation Inlet.
- (2.) On Glass-sands in New Zealand, for Bottle-making.
- (3.) On New Zealand Iron-ores.
- (4.) On the Possible Occurrence of Coal at Dunback, Otago.
- (5.) On Pungong and Pakawau Coalfield, Nelson.
- (6.) On Boring for Coal at and near Dobson, Grey Valley.
- (7.) On Coal at Mount Hamilton, Otago.
- (8.) On Chrome at Croixelles Harbour, Nelson.
- (9.) On the Probabilities of Coal near Hampden, Otago.
- (10.) Remarks on the Character of the Main Mountain-chain of the North Island with reference to its Ore-bearing Character.
- (11.) On Copper at Maharahara, Ruahine, Hawke's Bay.
- (12.) On Deep Sinking for Coal at Waimangaroa, Westport.
- (13.) On the Occurrence of Petroleum at Deep Creek, Kotuku, South-west Nelson.
- (14.) On supposed Coal-seams in the Kaiata Range, Greymouth.