

to the thermal centres of Wairakei, Taupo, Orakeikorako, and Tokaanu. A hurried trip was made to the volcanic cones of Ruapehu and Ngauruhoe, but the heavy snow which covered their summits and the plain between the two mountains prevented an adequate examination being made.

In my annual statement for 1905 attention was drawn to the remarkable occurrence of gold and silver in appreciable quantities in the siliceous sinters at Whakarewarewa, in the Hot Lakes District. In that statement the hope was expressed that a detailed survey of this wonderful thermal region would soon be undertaken. The necessity for such a survey becomes more and more apparent as our information concerning the area increases.

Samples of sinter collected this season from a number of widely separated localities on analysis yielded, like those from Whakarewarewa, results of great interest in the science of economic geology, owing to the illuminating evidence they afford as to the origin of metals in quartz veins. A detailed study of all the springs in the Taupo volcanic zone should be of great advantage, as bearing on aurogenesis in New Zealand as well as in other parts of the world.

Visit to Poverty Bay Petroleum-field.—Before returning to Wellington from Taupo I paid a very short visit to the petroleum-bearing country near Gisborne, and made a preliminary investigation of the valleys of the Waihuka and Waipaoa Rivers, in both of which indications of petroleum have been known to exist for some time. Boring operations have been carried out in the past along the Waipaoa and its tributary, the Waingaromia, but with little success. Apparently much the best indications are to be observed on Waitangi Hill, which forms a prominent point on the ridge between these two streams. Here a number of springs ooze out along the banks of a small stream and form pools, which are heavily coated with crude petroleum.

Parapara Subdivision.—About the middle of October I left Wellington in order to undertake the detailed survey of the Parapara Subdivision, Karamea, Nelson. After spending a few days in the Town of Nelson, and obtaining from the Lands and Survey Department some data necessary for the conduct of the work, I left for Parapara, reaching that place on the 20th October.

Operations in the Parapara Subdivision are now proceeding, and it is expected that the field-work will be completed in about three months' time. In this area assistance on the geological side of the work has been afforded me by Messrs. E. J. H. Webb and E. de C. Clarke, who have joined the Department this year as assistant geologists, while the topographical work was for some time under the supervision of Mr. R. P. Greville. After Mr. Greville's departure to attend to other duties, Mr. K. M. Graham, assistant topographer, continued the topographical survey under my direction. As a bulletin dealing with the geology of the subdivision will be prepared for publication as soon as possible after the completion of the field-work, a full report is not required here, but it may be desirable to give a brief account of the various economic features being investigated, omitting for the present any reference to the general geology.

Of the greatest economic and scientific interest are the enormous deposits of iron-ore, which appear on the surface near Parapara Inlet, and extend southward for seven miles and a half, with a maximum width of about 26 chains. Though the outcrops are not continuous for this distance, there is undoubtedly a genetic connection between the whole of them. The exact nature and extent of these huge ore-bodies is too large a problem to enter into here, but it will be discussed in great detail in the forthcoming bulletin on the Parapara Subdivision.

Quartz veins occur throughout the Palæozoic strata (Ordovician and so-called Devonian). Most of these are apparently of low grade, but at the time of writing by far the greatest number have not been fully tested. The Golden Blocks and the Golden Ridge Mines, both of which will be described in the bulletin on the Parapara Subdivision, are being worked on auriferous-quartz veins occurring in argillaceous strata of undoubted Ordovician age.

Gold-bearing gravels have been worked for more than half a century in the Parapara Subdivision, but the richest portions were long ago exhausted. Gold, however, is still being obtained, mainly by means of hydraulic sluicing.

The coal-seams of the subdivision are apparently not of great extent, but have not yet been fully investigated.

The subdivision abounds in granites, serpentines, and marbles of various colours, many of which are often of great beauty and high quality. Clay, said to be capable of use in the manufacture of fine pottery, occurs in Motupipi, whilst more ordinary clays, suitable for rough pottery and for brickmaking, are widely scattered throughout the subdivision. Impure talcs and soap-stones, capable of commercial use, occur on the Waikoromumu and on the Parapara River.

It will be seen from this brief *résumé* that the economic mineral resources of the area represent a great variety. Each phase of the mineral wealth will be elaborated in full detail in the forthcoming bulletin on the Parapara Subdivision.

WORK OF SENIOR FIELD OFFICERS.

Mr. P. G. Morgan.—Mr. P. G. Morgan, General Geologist, has been engaged almost continuously throughout the year at work in Westland, being absent therefrom for only a few months during the middle of winter, when he was engaged at headquarters in preliminary work in connection with his maps and other office-work.