

1899.

NEW ZEALAND.

GEOLOGICAL EXPLORATIONS

MADE DURING 1898-99.

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,—

29th April, 1899.

During the winter and spring months of the year just expired I was in part engaged with the preparing and printing of reports relating to the work of the previous year; also, in preparing rock and mineral specimens for exhibit at the then forthcoming Auckland Exhibition.

Towards the end of August I was sent to New Plymouth to examine the various borings obtained by the New Zealand Petroleum Company, and to ascertain if possible the source of the oil hitherto obtained and the likelihood of oil being found in the wells then in progress. The result of this work will form the subject of a special report, and here only the conclusion arrived at need be stated.

I was led to consider that the oil is derived from rocks at a very considerable depth from the surface, and that such oils as have been found exist as secondary deposits in strata and fissures of a formation of younger date; that such storage is of a limited amount, and exists at two horizons—first, at about 900 ft.; and second, at between 1,900 ft. and 2,000 ft. from the surface—and that, despite the many escapes of inflammable gas between Inglewood and the Sugar Loaves at New Plymouth Breakwater, the probability of finding oil is confined to a narrow belt of country, the greater part of which is deeply covered by ejecta from Mount Egmont or other volcanic vents along the line.

While in the Taranaki District I paid a visit to the Patua Range, forming the outer hills flanking Mount Egmont on the west side. In this range there exist considerable bodies of thermal quartz, which appear as terrace accumulations at the surface or as bodies of greater or lesser magnitude, disposed as reefs confined between walls of volcanic rock.

For a long period of years prospecting for gold and other minerals has been carried on in these rocks, and I was induced to visit two localities where such prospecting is being carried on at the present time. The prospects were said to be favourable, and I selected samples of quartz from one locality at the base of the range and from another mine at an elevation of 1,200 ft., but on having these tested at the Colonial Laboratory only traces of gold were found.

During the later part of December I made an examination of a lode of rhodochrosite (carbonate of manganese) that for some years past has been known to exist in the vicinity of Paraparaumu, at a convenient distance from the Manawatu Railway. When first discovered, owing to the dense forest clothing this part of the district, the tracing of the lode was a matter of difficulty. This has now been done, and the determination of a regular lode 6 ft.—10 ft. thick is the result. This ore at the time of the discovery was supposed to be valuable, but recent information states the price of good ore as not more than £2 per ton. This low price is said to be due to recent discoveries in Spain, from which country it appears large quantities are being shipped to England. The present value of the ore would not enable the profitable working of the lode at Paraparaumu, and therefore interest in it is for the present lessened.

From the middle of November till the 15th December I was engaged at Auckland in connection with the display of rocks and minerals constituting the exhibit of the department at the Auckland Industrial Exhibition, 1898-99.

On the 3rd January, 1899, I left Wellington for the purpose of examining the country east of the Ruapehu and Tongariro ranges and on the east and west shores of Lake Taupo, and thence along the course of the Waikato River on the route of travel to Rotorua and the Hot Lakes district, with the object of collecting siliceous deposits, possibly containing gold.

At Taupo I was instructed to examine certain deposits to the east of Lake Taupo that, located on Native lands, have for the past two or three years been prospected by Mr. A. Campbell. At first the Natives were averse to my seeing the reported discovery, and it was only after a considerable delay that finally I was permitted to examine the ground. The event showed that no payable prospect had been found, but indicated the existence of gold in some way associated with the extensive field of acidic rocks developed to the eastward of Lake Taupo, and forming the western slopes of the northern part of the Kaimanawa Range.