

time the mineral was supposed to be of such value as to make it worth while to search for it *in situ*, the blocks on the surface indicating a massive lode. The Manawatu Railway Company induced prospectors to endeavour to trace the source of the blocks on the surface, but this they failed to do, and it was not until the hillsides in the neighbourhood were deforested that the lode was found.

For a number of years no interest was manifested as to the development of this find, and not till last winter did I pay a second visit to the district, which I did for the purpose of tracing the lode and ascertaining its size, which could not easily be done when the mineral was first found. The original sample was found on the lower slope of the range, on to the east side of the valley running south from Paraparaumu, and drained by the small stream that passes on to the coastal plain at Paraparaumu Railway-station. When and where first found the locality of the discovery was either a tangle of fallen timber or heavily covered with standing bush, and it was not easy to make out the probable direction of the outcrop. Ore as large blocks was plentiful on the surface, and from such loose blocks it was that the first samples were taken. These assayed 82 per cent. carbonate of manganese, and the price then quoted for the mineral induced the proprietor and the Wellington-Manawatu Railway Company to search for the lode at greater heights, and to the north-east on the western slope of the range. As a result of this prospecting, further samples were forwarded to the Colonial Laboratory, but these proved much inferior to the original, and, there being some difficulty in locating the lode, interest in the discovery ceased, and not till some time after was the lode found. Ten or twelve years having elapsed since the discovery, during the interval most of the timber has been cleared off the range, and there is now a fair opportunity for tracing and following the lode.

At the date of my last visit I found that further prospecting had been carried on in the meantime. Four or five pits had been sunk on the outcrop, but apparently the workmen did not apprehend that they had to do with the actual lode. The first of these openings is situated about half a mile to the north-east of where the first specimens were found, and the outcrop of ore shows on the right bank of a small creek, and at an elevation of 500 ft. above the sea. The ore appears at the surface a deep black: this, however, is due to the formation of a hydrous oxide, a result of the decomposition of the carbonate of manganese forming the great bulk of the lode. The carbonate, being a pale-grey or slightly flesh-coloured mineral, was rejected by the prospectors as quartz, and, as the dark oxidized part was soon passed through in this first opening, it was abandoned, and another commenced on the line of the lode more to the north-east, and higher on the spur on that side of the creek. The results here were the same as at the creek-level, the black manganese soon being passed through, and the grey or flesh-coloured mineral entered upon. Two other holes on the line of outcrop were made farther to the north-east, and in all the change from the black to the grey or flesh-coloured ore was only the matter of a foot or so; but, so long as dark joints and partings appeared, the prospectors had seemingly hope of coming on a deposit of pyrolusite or manganite. In this way the lode was proved through a vertical depth of 200 ft., and over a distance of from 5 to 7 chains along the lode. The thickness of the ore-band varies from 3 ft. to 10 ft., and the ore itself is a compound of carbonate and silicate of manganese, with about 14 per cent. of carbonate of lime, 4 per cent. of carbonate of iron, and traces of magnesia and water.

Manganese-carbonate is quoted as bringing at the present time 16 to 20 cents per pound. The deposit at Paraparaumu should therefore pay to work, provided there be a sufficient demand for the mineral to enable the working of the deposit on a large scale and continuously. There is, however, no ready means of information as to the requirements of the market, and to what special uses the ore is at the present time being applied. The following copy of Mr Skey's analysis of a sample of the ore recently collected is appended:—

	Per Cent.
Carbonate of manganese	63·03
Silicate of manganese	18·23
Carbonate of iron	4·00
Carbonate of lime	14·48
Carbonate of magnesia	Trace
Water	0·26
	100·00

July 28th, 1899.

ALEXR. MCKAY.

REPORT ON PETROLEUM AT NEW PLYMOUTH, TARANAKI.

By ALEXANDER MCKAY, F.G.S., Government Geologist.

THE occurrence of petroleum at Moturoa, Taranaki, was known to the Maoris before the settlement of the district by Europeans, and though known to the settlers at an earlier date, not till 1865 was any attempt made to sink wells and collect the oil for commercial purposes. In 1866 (Dr.) Sir James Hector, as Director of the New Zealand Geological Survey, made an examination of the Taranaki District, and reported on the prospects of the district near New Plymouth as a field for the occurrence of petroleum in quantity. At that time boring for oil was in progress, and the belief was general that an oil-field had been discovered. Three wells were bored to a maximum depth of 650 ft., but the results not being what were anticipated the works were discontinued, nor again resumed until 1888. In 1888, Mr. Samuel, solicitor, of New Plymouth, became interested in the matter of the discovery of oil in paying quantities, and since that date until the present has been the leading spirit in all matters connected with and relating to that object.