

- No. 1 sample—6dwt. 12gr. gold per ton ;
 31oz. 7dwt. 4gr. silver per ton.
 No. 2 sample—3dwt. 6gr. gold per ton ;
 13oz. 7dwt. 4gr. silver per ton.

The ore was crushed wet and was then concentrated, but only 46 per cent. of the bullion was saved by this process, which gave the Champion Company £16 net after the expense of treatment, which was not sufficient to justify them forwarding any more for similar treatment at the Waiorongomai Works. The manager, Mr. Cornes, informed me that the English directors of the company had given instruction for 500 tons of ore, assaying to the value of £9 per ton, to be forwarded to England for treatment, in order to see if a process can be got to deal satisfactorily with this class of ore, which is very refractory and complex, owing to the large quantity of zinc-blende it contains.

The company have erected an aerial tramway one and a half miles in length to convey the ore from the mine to the flat. This will cheapen the cost of transit of the ore considerably. They estimate the expense of working the tramway, including wear-and-tear, to be equal to about 9d. per ton. This tramway was constructed by Mr. R. J. Johnstone, who was for some years at Reefton, where these tramways have been used, and it works very satisfactorily; the cost of erection and material being about £1,500. The same gentleman is now engaged in superintending the erection of two similar tramways at Tararu Creek; and no doubt, when once introduced at the Thames, the mine-proprietors will find them more economical for conveying the ore from the mines to the battery than by using horses and drays as they do at present.

In concluding my report on the quartz-mines in the North Island, they are gradually getting more developed year by year, and, although the rich finds of auriferous ore are not so generally met with as in the early days of the fields, the improvements in mining appliances, as well as the knowledge gained in regard to the occurrence of auriferous and argentiferous lodes, and also the special attention that is now being given to the treatment of the different ores, are tending to place mining on a better basis, and this will ultimately result in being able to make poorer lode-stuff pay for working. Many of the lodes that are now considered of too low grade to work will be taken up and made remunerative ventures, and in developing them other discoveries will be made. The whole of the Hauraki Peninsula is full of auriferous and argentiferous lodes, many of which may not prove payable for working; but a great many of them will be made remunerative with improved appliances. The time will come when there will be large reduction-works on the different fields where ores will be purchased according to their assay-value; and, instead of each company spending its capital in the erection of small inefficient plants, the money will go towards developing the mines and prospecting the ground. The system of each company having a crushing plant of their own is fraught with many difficulties. There is no one system that is suitable for the treatment of all the ores found in the North Island, and small companies have not the capital to erect expensive works to treat the ore properly, neither does the extent of their mines warrant a large expenditure on plants of this description. If the present companies on such a field as the Thames were to combine together and erect a central reduction plant for the field, where experienced metallurgists were employed, and to get from 90 to 95 per cent. of the value of the bullion in the ore, less the cost of treatment, there is many a claim that would pay for working that does not at present.

The total quantity of material crushed last year in the North Island districts, according to the returns from the several crushing-batteries, was 42,513 tons of quartz, 2½ tons of picked specimens, 29,595 tons of mullock, and 7,856 tons of tailings; which yielded 67,323oz., representing a value of £130,961. This value includes £3,000 for ore exported from Karangahake, and, as the value of the bullion last year from this field was £1 7s. 6d. per ounce, it would be equal to 2,182oz. This is not added to the above total of gold obtained, but it is added in the following table.

The following table shows the number of tons of stone and mullock crushed and the yield of gold from the northern goldfields since the returns have been supplied to the Mines Department. The Thames returns include the Ohinemuri district up to 1886-87:—

District.		Number of Tons of Quartz and Mullock crushed.	Yield of Gold.	Average Yield of Gold per Ton.		
			Oz.	Oz.	dwt.	gr.
<i>Coromandel</i> —						
1st April, 1880, to 31st March, 1881	...	720	4,960	6	18	0
" 1881, "	1882	3,358	7,351	2	4	0
" 1882, "	1883	2,907	7,577	2	12	0
" 1883, "	1884	1,043	4,018	3	17	0
" 1884, "	1885	456	3,201	7	0	0
" 1885, "	1886	550	3,382	6	3	0
" 1886, "	1887	305	4,170	13	13	0
" 1887, "	1888	1,923	6,774	3	10	5
" 1888, "	1889	2,149	8,090	3	15	7
" 1889, "	1890	1,690	6,708	3	19	9
Totals	...	15,101	56,231	3	14	11