

1878.

NEW ZEALAND.

D'URVILLE ISLAND COPPER ORE DEPOSITS

(REPORT ON THE).

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

Dr. HECTOR to the HON. COLONIAL SECRETARY.

SIR,

Wellington, 29th August, 1878.

I have the honor to forward the report of the Assistant Geologist on the deposits of copper ore, which are now being worked in D'Urville Island.

Specimens of this ore were sent to this department for analysis in June last, but at the request of the prospectors the inspection of the locality was deferred until some work had been done towards the exploration of the lodes.

Copper ore occurring in serpentine rock, as is the case in this instance, is usually found only in irregular patches and not in defined lodes, so that Mr. Cox was specially instructed to note the extent and relative arrangement of the various outcrops. From his report, it appears evident that the ore follows the usual rule and is distributed in "bunches" or lenticular masses, but in this case the bunches seem to have a very massive development and are likely to afford ore in remunerative quantity.

The chief ore of copper found is the red oxide or cuprite, which if pure would yield on reduction 89 per cent. of the metal; but the ore is largely mixed with gangue or lode rock, chiefly hypersthene, so that the average yield will be much lower than for picked samples.

The samples formerly submitted and those now brought by Mr. Cox, are fair average samples, and their analysis is tabulated as follows, together with the result of analysis of samples of ore of the same class and from the same formation, discovered in May last by Mr. Newport in the upper part of the Maitai Valley at the base of the Dun Mountain.

1. D'URVILLE ISLAND.

Samples received from Prospectors.

	Per Centage of Copper.
1. Ore and gangue ...	17.46
2. Ore finely dressed ...	25.15
3. Ore picked, free from rocky gangue	40.25

Samples collected by Mr. Cox.

1. Ore from outcrop No. 2 ...	24.86
2. Ore from No. 1 shaft ..	16.49

2. Dun Mountain.

Samples received from Mr. Newport.

1.	18.20
2.	13.10
3.	17.60
4.	25.40

The general average of the above would give a yield of about 22 tons of copper to the 100 tons of ore as mined.

Similar copper ores are now smelted in New South Wales, the latest official notice available showing the produce for 1876 to have been 3,106 tons of copper, valued at £243,142, or at the rate of £78 per ton.

Taking this and the foregoing estimate, the average value of the D'Urville Island, ore would be about £17 per ton, less the expense of mining, shipping, and smelting.

The Hon. the Colonial Secretary,
Wellington.

I have &c.,
JAMES HECTOR.