

The coal seam (16) was cut only in the roof of the drive, and, had the level of the drive been a few feet lower, it would have been missed altogether. On the other hand, had the level been even a few inches higher, the true nature of the dolomite (14) would not have been ascertained, and it might have been taken for a dyke instead of a local variety in the stratified rock forming the cover of the coal.

The only fault of any importance is that occurring at 17, and its effect will be to shorten the length of the drive required to cut the main coal by about 50 feet, and also thereby avoid the cutting of some of the hardest rock that had to be excavated in the course of the work.

I have therefore to report that the work is progressing even more favourably than was anticipated. The rate at which the drive is advanced averages 2 feet per day, and the distance which still remains to be driven, in order to cut the main coal, is about 200 feet.

As I returned from Collingwood I took the opportunity of re-examining the deposit of brown ironstone at Parapara, and found that my former estimate of its extent is nearly correct.

The ore occurs as large patches in a stratum of gravel. The greatest thickness of the stratum is 100 feet, and the area of the patches of ironstone showing at the surface is about 100 acres.

The ironstone weathers to a dark colour, and covers the surface of the hills with blocks of all sizes up to many tons in weight. A rough estimate made on the spot gave the quantity of ore available by mere surface excavation as at least 15,000,000 tons.

The ironstone everywhere shows traces of its origin as a bog ore that was deposited as a cement among gravel, as it contains rolled pebbles of quartz—but much of it is free from such admixture—and by hand-picking, and a simple modification of the smelting process, much of the siliceous matter could be eliminated, and the ore profitably smelted.

All the varieties of iron ore occurring at this place, and also at the coal mine, were collected on this occasion, and will be reported on as soon as they have been analyzed.

The Hon. the Colonial Secretary.

I have, &c.,
JAMES HECTOR.

OWEN RIVER AND RICHMOND.

Dr. HECTOR to His Honor the SUPERINTENDENT of NELSON.

SIR,—

Geological Survey Office, Wellington, 21st July, 1873.

I have the honor to report the results of the analytical examination of the samples of coal from the Owen River and Richmond.

No. 1,427 | L., OWEN RIVER.

This is a semi-bituminous coal, resembling in external appearance the Collingwood coal, and also some of the coal from Mount Rochfort, but differing from them in not being a strong caking coal.

It is massive, homogeneous, hard, and lustrous. Colour—in mass, black; in powder, brown. Its structure is laminated with rhomboidal fracture.

It cokes very imperfectly, and does not puff up. From its ash being of a light brown colour, it may be inferred to contain but little iron or sulphur.

This coal is, from its composition, of average quality as a steam generator, and will be useful as a household coal. Its value is about the same as that formerly worked at Pakawau.

Composition.

Water	...	...	...	...	...	...	...	4.82
Fixed carbon	...	...	...	...	...	...	...	52.85
Gaseous	...	...	...	...	...	...	...	38.21
Ash	...	...	...	...	...	...	...	4.12
								100.00

Evaporates 6.87 times its weight of water.

No. 1410 | L., RICHMOND.

Brown coal, of very soft, friable nature; its very inferior appearance being due, I suspect, to the sample having been taken from an exposed outcrop. It burns freely, with a clear, voluminous flame, but does not yield any coke. Its ash is reddish.

Except in the lower percentage of water and fixed carbon, this coal resembles the common brown coals of New Zealand, and is different from the coal formerly worked at Jenkins' mine, which contained 62 per cent. of carbon.

It is very desirable that this deposit should be examined with the view of determining if the seam improves in quality, and whether it occurs under conditions favourable for working. I consider it quite equal to the brown coal that is largely mined in some parts of the Colony, but would not answer for raising steam.

Composition.

Water	...	...	...	...	...	...	...	16.67
Fixed carbon	...	...	...	...	...	...	...	29.16
Gaseous and oils	...	...	...	...	...	...	...	48.21
Ash	...	...	...	...	...	...	...	5.96
								100.00

It evaporates only 3.76 times its weight of water.

His Honor the Superintendent of Nelson.

I am, &c.,
JAMES HECTOR.