

I would therefore recommend that a bonus of say £30 be offered to him in case the seam he speaks of is sufficient thickness to be workable, and in such an accessible position that the coal in due time could be shipped at the Piringa Harbour.

The Hon. W. Reeves, Resident Minister  
for South Island, Christchurch.

I have, &c.,  
JULIUS HAAST.

No. 8.

Mr. MAUDE to Dr. HAAST.

SIR,—

5th April, 1872.

I am directed by Mr. Reeves to acknowledge the receipt of your letter of the 6th January, 1872, and to state that the expenditure of £30 for further investigation of the coal seam discovered by Mr. Docherty in Westland is authorized; but it is to be distinctly understood that, before any money can be paid, the existence of the coal seam must be proved to the satisfaction of a surveyor from the department under the control of Dr. Hector.

I have, &c.,  
THOMAS W. MAUDE,  
Secretary.

Dr. Haast, &c., &c., Christchurch.

## CANTERBURY.

No. 9.

Dr. HECTOR to the UNDER SECRETARY for PUBLIC WORKS.

SIR,—

Geological Survey Office, Wellington, 10th May, 1872.

As forming part of the information respecting the practical opening up of the Coal Fields in this Colony, I have the honor to enclose an extract from a report to this Department by Dr. Haast, on the geology of the Malvern Hills, which refers to the opening of coal mines, and the construction of branch railways to them. Dr. Haast's further reports on the subject relate only to geology, and appear in the publications of this Department.

I have, &c.,  
JAMES HECTOR.

The Under Secretary, Public Works.

### Enclosure in No. 9.

EXTRACT from REPORT by Dr. HAAST, F.R.S.

#### *Practical Suggestions.*

The geological examination of the Malvern Hills was undertaken principally with the object of deciding the question whether there was sufficient coal to warrant its extraction on a large scale, and procure the means of supplying part of the New Zealand, or at least the Canterbury market with the produce of our own mines.

In my report I have shown that in the district under review, there exists two principal series of coal, which, generally, may be described as containing *unaltered* and *altered* brown coals. The former strata begin on the southern banks of the Hawkins, where Mr. Jebson's Coal Mine is situated, and continue without interruption, except where broken through by the Selwyn and its tributaries, to the left bank of the Hororata River.

In many localities the brown-coal beds have suffered considerable denudation, so that only a small portion of the coal seams is situated above the principal drainage line of the country; in others the beds have been preserved by more favourable circumstances, and rise several hundred feet above the watercourses near which they are situated.

There are three principal considerations, of which, in judging of the practical value of these coal-bearing strata, we ought not to lose sight, viz.: (1.) Quality of coal; (2.) Thickness of seams; and (3.) Extent of beds from which the coal can be obtained level free.

#### *Quality of Coal.*

Of the three main localities where the coal seams are easily accessible, we must at once put the Hororata aside, as there the beds are only of small extent, and contain coal of inferior quality. Of the two remaining localities, the Hawkins and the Selwyn, the brown-coal beds on the right bank of the first-named river have been worked for years to a limited extent, through which we have become well acquainted with the character of the ground. Of the three sets of seams occurring there, those at present worked by Mr. John Jebson are the thickest, consisting of two seams of about two feet each, with the same thickness of shale between them. They consist of a brown coal of very fair quality, which is at least equal to that obtained from the principal beds of brown coal of Bohemia, which is so extensively worked and used all over that country, not only for household purposes, but also for stationary and locomotive engines. I may here observe that although coal of the carboniferous period is largely imported to Berlin from Silesia, Bohemian brown coal is nevertheless extensively used there also, as proved by German statistics.