

sufficient. It is easily available, in average weather, for vessels drawing 8 feet, and not over 120 feet in length. By clearing the channel of boulders, and using them for the construction of a pier-head to prevent the surf washing the beach shingle into the river, the bar could no doubt be improved. The existence of granite and good freestone in any quantity and size of blocks required for constructive works, and the circumstance that the only protection required to be provided is against the coastal drift, renders this place particularly favourable for harbour works. The river brings down no silt or shingle, although liable to good scouring freshets, which is proved by the existence of a 7-fathom hole below the granite gorge, 30 chains above the coal mine. If the coal can be traced from the present mine into the plateau, some harbour works should be undertaken, but even if this extension of coal is not proved, I am inclined to think that this would be a better place from which to work the high-level coal on the plateau than any other which has been suggested. A granite spur from the plateau extends from the east to the head of the reach above the coal mine, and there forms a conical bluff, about 600 feet high (Crane's Cliff), which is steep towards the water, and might be turned to account for lowering the coal to the vessels, from a level that could be reached by an easy tramway from the plateau above.

The arguments in favour of using this river to export the coal from the field under consideration, are,—

1. The low altitude of the plateau at this point—900 feet.
2. The strong probability that the coal will continue and may be worked from the sea level to that of the plateau, by an incline on the east side of Mine Creek.
3. That the coal can be brought along an easy spur from part of the plateau where the best seams exist, to the top of Crane's Cliff, and from there lowered with a self-acting apparatus.

The question then remains whether it would be better to improve the harbour at this place, or to construct a railway to Westport; which is a matter upon which an engineer's opinion should be obtained. It may be pointed out that the facilities for harbour improvements are such that they would probably not exceed the first cost of such a railway, and that, after reaching the Buller, to supply anything like a good large coal trade, very extensive wharfage works would still be required, for which there is no material readily available, the Buller being a large, erratic river, delivering its waters in a low sandy delta, intersected by lagoons and water channels, and liable to sudden and extensive changes at its mouth. The country is, however, very favourable for the construction of a line, if required, north of Westport, as, for most of the distance, it could follow along the foot of the hills to the Waimungaroa, and from there be constructed upon a very perfect shingle terrace, covered with light timber, that runs parallel with the beach. Four or five rivers will have to be crossed, but only one—the Waimungaroa, is of any importance.

The present lessees of the Ngakawau mine will, no doubt, for their own interest, ascertain if the coal can be traced across Mine Creek; and I recommend that, as soon as the season permits, this exploration should be continued for the purpose of tracing the coal into the plateau.

#### *Mokihinui River.*

A 6-foot seam of coal, together with some small subordinate seams, occurs about three miles up this river, associated with grits, shales, and sandstones, and dipping conformably under clay marles at a high angle in the same way as at the Ngakawau. At the time of my visit, the river was too much flooded to admit of my examining the section clearly, but Mr. Burnett reported that only a very small portion of this seam is available without sinking and pumping, and that, from its relative position to the bed of the river, very powerful machinery would be required for the latter purpose. The samples of coal I obtained from this place appeared to me of rather inferior quality, but Mr. Burnett states, from an inspection of several tons that were sent to Nelson in 1863, that it burns freely and is very bituminous.

The Mokihinui is a river of considerable size, generally with 10 or 12 feet on the bar, but is liable to excessive floods, which come down with great suddenness, while there is no sheltered place where even a small vessel can bring up within the river so as to be out of the full force of the current.

I have, &c.,

JAMES HECTOR.

Wellington, 22nd June, 1872.

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## WESTLAND.

### No. 7.

Dr. HAAST to the Hon. Mr. REEVES.

SIR,—

Canterbury Museum, Christchurch, 6th January, 1872.

When I explored the southern portion of Westland four years ago, I found on both sides of the mouth of the Piringa River, which has a good entrance, extensive beds belonging to the Grey and Buller coal formation; but owing to the want of provisions, to the almost impenetrable forest vegetation, and the very rugged nature of the coast, I was unable to find any coal seams. However, one of my companions, Mr. William Docherty, an intelligent miner and reliable man, living at Okarito, and who, ever since then has been collecting specimens of natural history for the Canterbury Museum, has informed me, a few weeks ago, that in cutting a track in that district for the Westland Government, he has come across what he thinks a large seam of excellent coal.

When Mr. Docherty was lately in Christchurch, I explained to him how to measure the seams, and to collect all necessary details, and he is quite willing to return to the locality to furnish us with all the necessary information, and send large specimens of coal, if he would receive on return a bonus for his trouble and loss of time.