

Enclosure in No. 9.

Copy of a RESOLUTION passed unanimously by the PROVINCIAL COUNCIL of NELSON on the 19th May, 1873.

"THAT, in the opinion of this Council, the late discoveries of coal of high quality and in large quantities at the Ngakawau and Waimangaroa render the construction of a railway suitable for coal traffic, from the Ngakawau to Westport, a matter of urgent importance, and the Council trust that the Colonial Government will proceed with the work without delay, under the authority of 'The Railways Act, 1872,' from funds therein appropriated for Mount Rochfort Coal Railway."

No. 10.

Dr. HECTOR to the Hon. the MINISTER for PUBLIC WORKS.

MR. FISHER, of Westport, telegraphs that the contractors who are putting in the drift to cut the coal seam on the north side of the Waimangaroa River have struck the crossing at 113 feet. This is 13 feet further than I expected, and proves that the coal is not dipping so steeply, or the strike has changed in direction. The contract was only for 15s. a foot, so that the authority for £100 will cover expenses up to 130 feet. I have therefore telegraphed to go on cutting through the coal seam to determine its thickness.

24th May, 1873.

JAMES HECTOR.

No. 11.

MEMORANDUM by Dr. HECTOR relative to MOUNT ROCHFORD DISTRICT.

THIS coal field, the general features of which were explained in my report of last year, includes a large area extending parallel with the coast from the Buller to West Wanganui, and is about eight miles in breadth. It is probably the most important coal field in New Zealand, on account of the large extent of coal of fine quality which it contains, in addition to which many seams of coal of inferior quality are found in the district. As a general rule, which applies not only to this field but to all others on the West Coast of the South Island, the coal that is at a high level above the sea or which lies at a steeply inclined angle is of the best quality, the low lying coal being usually of the inferior varieties.

It must not be thought, however, that the coal is continuous throughout the above area, as it occupies detached basins and trough-like depressions on the undulating surface of older rocks. Computations of the amount of coal available are therefore not to be depended upon, unless the extension of the seam can be absolutely traced, particularly in the more broken parts of the district, where large areas of the coal formation have been removed by the denudation of the valleys, which generally are cut right through the coal-bearing strata into the underlying rock.

During the past year additional information has been obtained—(1.) By the works in progress at the Ngakawau Mine; (2.) by exploration undertaken by the Department; and (3.) by chance discoveries.

1. *The Ngakawau Mine.*

As no facilities exist for shipping the coal at the Ngakawau River at the present time, nor for conveying it to the Buller River, the workings are still restricted to supply small shipments by the little steamer "Result," which plies to the Buller when the weather and bar are favourable. So far they completely bear out my former estimate of the value of this coal seam. The main drive has been carried forward 230 feet with a height of 18 feet, and the coal has decidedly improved in quality; only one small drop of 4 feet has been encountered in the roof, and the seam is less steeply inclined than it was at the face where first opened. The thickness has also increased to 20 feet.

Besides the main drive, an air shaft has been carried up at an angle of 40 degrees to the outcrop of the seam, and it has been proposed to work the mine by a horse-whim from this incline.

The present level of the mine, if carried forward, would cut out into Mine Creek, so that it would be necessary to sink to a lower level to enable the coal to be followed under the creek, and from there rise into the block of coal formation that has now been proved to rise on the east side of the valley, as I shall afterwards describe. To reach the lower level thus required, it has been suggested that the steep incline from the outcrop should be carried down in the coal to the necessary depth, and a level drift then set off under the creek. This will, however, involve much handling and hauling of the coal, and I would recommend that instead of this method of working, a gentle incline be carried from the mouth of the present drive at such an angle that horses will be able to drag the waggons out to the shoots direct from the face. This drive, when it passes under the creek, should be made as small as possible, with a good coal roof; and as Mine Creek, where the coal crosses it, is considerably above the level of the main river, this deep drive will be easily drained by a water level carried out also in the coal to the river below the shoots, as shown in plan and section.

The only other work that has been done by the Company towards proving the extent of the mine has been the tracing of the outcrop of the seam on the east side of Mine Creek, at the height of about 200 feet; and the direction obtained shows that the coal measures are remarkably steady for at least that distance.

As observations of the changes which take place at the outlet of a river may be useful in considering the erection of improvements, I may state that, at the time of my last visit on 11th April, the width of the channel at high water was considerably decreased from that shown on the plan attached to my report of last year; and at low water, where it crosses the beach, the channel of the stream was turned more to the north than formerly.