

the largest size, has already been urged in a former report; and since the discovery of ironstone bands along with the coal, under circumstances that favour their being economically worked, there is still further reason for the expenditure in this district.

8. *Mount Rochfort*.—The sum of £300 was authorized for the further exploration of this district, and the following work performed:—The coal seam at the Ngakawau River has been traced on to the high level plateau, and outcrops found on various points, so as to indicate its extension over a very large area; one block, containing at least 7,000,000 tons, being proved by the natural sections observed in the gullies. The main seam, which has a greatest thickness of 25 feet, is a trough-shaped deposit, extending in a north and south direction for many miles, with a lateral extent of about one mile and a half, but it thins towards the margins to 3 feet. This trough of coal is broken by transverse faults, which reduce it from an average altitude of 2,000 feet on the plateau to the sea level at Ngakawau Mine. As the coal is all above the water level, a very large proportion of it can be profitably extracted. The discovery of coal in the bed of the Waimangaroa Stream, near the level of the sea, raised an expectation that the seam described in a former report as occurring on the seaward face of Mount Rochfort, might be found under circumstances favourable for its being worked. A drive put into the spur for 130 feet, with the view of cutting the seam, has not, however, resulted in the discovery of valuable coal; but I recommend that further explorations should be made, either by continuing the drive already commenced or by excavating in a fresh locality.

9. *Grey River*.—No change has been experienced in the character of the Brunner Mine; the rumour that was circulated to the effect that the fault had changed its direction, and that the extent of coal available was thereby diminished, being without foundation, as no fresh levels have been driven on the fault, nor have the workings been extended in that direction during the past year. Several areas of coal that can be worked by shafts have been marked out on the south side of the river, in that portion of the reserve leased to the Greymouth Coal Company; and though no active operations have been commenced, there is every reason to expect that by the time the railway to that place is completed, a sufficient supply of coal will be available to keep it fully employed.

10. *Kanieri*.—The explorations in this district during the year have not led to any important discovery. The area occupied by the coal formation is very limited, and the strata, which are highly inclined, do not appear to contain seams of sufficient thickness to enable their being profitably worked. Only a small portion of the field has not been explored; but works are in progress to set at rest the question of whether any workable seam of coal exists in the district, the total expenditure on the exploration of which has been £400.

#### OTAGO.

11. *Preservation Inlet*.—The works which have been executed towards the development of the coal seams at this locality by a private company, were inspected in January last. Coal of two distinct qualities has been found here. At Gulche's Head and on Coal Island, glance coal, in thin, much-disturbed seams, that have not proved on trial to extend over a sufficiently large area to be of importance; and on the mainland, south of Coal Island, a seam of brown coal 4 feet thick, on the opening up of which the chief part of the Company's funds have been expended. The extent of this coal seam is however too limited, even if the quality were better, to warrant the large expenditure on tramways and wharfage that would be necessary to work the coal successfully. My attention was directed to a supposed extension of this coal field, with available seams towards the south-east; but the examination of the section afforded by the sea cliffs convinced me that the strata are too much disturbed to justify exploration by boring as has been proposed, and that there is no surface indication of the existence of available seams.

12. *Southland*.—A sum of £100 has been spent in tracing the coal from the west to the east side of the Nightcap Hill, as recommended by Captain Hutton. The seam has been ascertained to be 10 feet thick, and in a very accessible position; but the samples obtained show that it is a common brown coal, and very inferior in quality to the pitch coal that is supposed to be the continuation of the same seam at Moreley Creek. Under these circumstances, before recommending the construction of a line of railway to connect this place with the Bluff and Wakatipu line at Winton, it has been thought better to explore more carefully for seams of brown coal in the Seaward Bush, and at other points nearer to the existing railway line, as this was only set on one side owing to the supposed superior quality of the coal at Nightcap Hill. The works for this purpose are now in progress under the supervision of a local committee subsidized by Government.

13. *Waikava and South-east of Otago*.—The large area of carbonaceous strata belonging to the upper secondary period in this district, has naturally led to a keen search for coal seams by those who are locally interested, but no indication has yet been found of any valuable seam. The reported discovery of such a seam led me to re-examine the coast north of Waikava, where a fine section of the strata is exposed. The coal there seen occurs only as masses of driftwood converted into coal, which are imbedded in coarse sandstone. The shale beds with fossil plants, which at Waikava contain thin seams of coal, were traced in these sections, but without any coal being found.

14. *Clutha: Green Island and Shag Point*.—The coal deposits at these places are waiting only for the extension of the railway system to be fully developed. The prejudice against the use of these coals will no doubt be overcome whenever the price is reduced and the supply is sufficiently steady to bring them into general consumption for household purposes.

#### CANTERBURY.

15. *Malvern Hills*.—The extensive area of brown coal in this district is now well established, together with the existence of local patches, where the seams have been altered to glance coal, and have thereby acquired a higher value as fuel. These coals are in very accessible positions, and will be brought within reach of consumers at Christchurch by the branch railway that is in course of construction.