

APPENDIX I.

REPORT ON THE BULLER COAL FIELD BY THE ASSISTANT GEOLOGIST.

The ASSISTANT GEOLOGIST to the DIRECTOR of GEOLOGICAL SURVEY.

SIR,— Museum, Wellington, 1st July, 1875.

I have the honor, in pursuance of your instructions dated 13th May, quoted in the margin, to make the following report:—

I have been over the area which had been surveyed up to the end of May, extending from the River Ngakawau, on the north, to Coalbrookdale, bounded by the Cascade Break, on the south; the Mount William Range and the sea face forming the boundaries to the east and west respectively.

From Mr. Cooper's maps, on which the coal outcrops and probable areas over which the coal exists have been shown, supplemented by my own observations, I have been enabled to draw out a geological map with sections of the coal field.

The sequence of the strata is as follows:—

Black Marls.—Pecten Zittelli, Pecten fischeri, Echinoderms, Scalaria, &c.

Upper Grits.—Fine in character.

Coal.—Two seams of coal occur, the sections in connection with which cannot well be shown on the map, but various detailed sections at different points, will be given in this report.

Lower Grits.—Coarse.

Triassic Slates.—Lying at all angles, and forming the base of the coal field.

Granite.—Not appearing at the surface except in the sea face, in Crane's Cliff at the Ngakawau, and in the bed of Granity Creek.

Parts of two basins exist in this area—the dividing watershed of the Ngakawau and Cypress Creek, which is one of the main branches of the Waimangaroa, forming their point of junction. I shall speak of these as the "Waimangaroa Basin" and the "Ngakawau Basin," and make allusion to them separately.

A third basin commences from the outcrop of the slates in Coalbrookdale, in which the Whareatea is the principal river, and which includes Mount Rochfort and that country to the westward of it; but, as this is not yet surveyed thoroughly, I shall reserve any further mention of it for a future report.

The Waimangaroa Basin.—This includes Coalbrookdale, Mount William, Mount Frederick, and the intermediate country, extending northward to the before-mentioned watershed, and bounded by dotted lines on the map.

Mounts William and Frederick are the highest points of this basin, and it trends away to Coalbrookdale, its continuity being there arrested by the Cascade Break, a fall of over 1,000 feet.

In the face of the Cascade Break the lower seam shows a thickness of 18 feet, the upper one being 5 feet thick at this point. The following is a section of the strata here:—

						Ft. in.	Ft. in.
(1.)	Fine grits	...	...	...	...	8	0
	Fine sandstone with coaly partings	...	...	...	...	4	0
	Coal, upper seam	...	...	...	...	5	0
	Dark sandstone	...	...	...	...	20	0
	Fine white sandstone	...	...	...	...	14	0
					Ft. in.		
	Coal	...	...	...	...	6	0
	Shale	...	...	...	...	0	3
	Coal	...	...	...	...	12	0
					—	18	3
							69 3

Both these seams thin out on approaching the outcrops of slate to the westward, and the whole of the strata appear to be much contorted, the lower grits appearing at places lying at a high angle, and denoting the vicinity of the slate, which makes its appearance in many of the beds of the creeks. The following section is taken from the vicinity of the Coalbrookdale drive:—

						Ft. in.	Ft. in.
(2.)	Fine red grits	...	...	...	...	20	0
	Soft sandstone	...	...	...	...	5	0
	Coal (upper seam)	...	...	...	...	0	6
					Ft. in.		
	Fine grits	...	...	...	...	10	0
	Soft sandstone, with coaly partings	...	...	...	...	10	0
					—	20	0
	Coal	...	...	...	...	8	6
	Shale	...	...	...	...	1	6
	Coal	...	...	...	...	2	0
					—	1	0
	Dark grey sandstone	...	...	...	...	20	0
					—		77 6