

showing at the face coal of the same crushed and bruised character as at the entrance, with a steady dip N. W. from 1 in 1 to 1 in 2.

The coal is 18 feet thick, with an irregular and broken roof, which has necessitated close timbering with props and caps, and close lathing overhead and at the sides, the dimensions of the main drive being 6 feet by 7 feet in the centre of the coal. From this drive eleven short headings have been driven, 6 feet by 6 feet, connecting with an upper level 6 feet by 7 feet, leaving pillars 40 feet by 30 feet to 50 feet, the workings being set off on an ordinary system of square work. This upper level is driven about the same distance as the main level, and still shows soft coal in the face.

The intake-air is led by the main drive to the face, being confined by screens placed across the headings, the return air being discharged by what is known as Hector's tunnel, a little to the rise of the main working tunnel.

The natural temperature of the mine when visited was 66°, the same as the outside atmosphere, the day being close, and thus no ventilating current was obtained. Even under these circumstances, however, no foul air was found in the workings, and under ordinary circumstances there ought to be a good current of air.

In the main drive sets of timber are used, consisting of uprights and cap-pieces 4 feet 6 inches apart, close lathed overhead and at the sides, whilst in the headings soldiers only are used in a few places, and in the upper level but very slight timbering is undertaken. In no case does the use of timber appear to be stinted where requisite, and what is used is sufficiently strong for the requirements of the mine.

The coal at present worked is found to be too soft to stand transit, and has necessarily not proved a marketable commodity, in consequence of which six coke ovens have been erected, and coke of a superior quality is now being made.

*The Parapara Colliery, Collingwood.*—This mine is situated about 800 feet above sea level, and is entered upon by a tunnel driven westward across the measures for a distance of 588 feet, cutting in its course four thin seams of coal, mixed with shale, the general dip being W. 1 in 4 to 1 in 5.

Three of these seams have been opened upon, upon a system of longwall, with levels driven north and south, the full thickness of the coal being taken out, as well as from 2 feet to 3 feet of the roof, thus allowing roadways from 5 feet to 6 feet in height, the coal being wrought to the rise (eastward). The roof is a hard, compact rock, and in all instances where required, has been used for walling.

The system of working adopted suits admirably the requirements of the mine, the worked-out area standing well, with the use of very little timber.

The cost of working this coal has been from 8s. to 9s. per ton for hewing, and if any other system of work had been adopted this cost would probably have been doubled.

The ventilation of this mine is perfect, the downcast air being taken by the lower drive, led along the working-faces in one division, and discharged through some old upper workings with which connection has been made by a shaft, thus giving a good current of air at all times. No timbering has yet been required, the compact nature of the roof rendering it a simple matter to tear down sufficient stone to build walls, when occasion requires, along the line of roadway.

For the past two years these workings have been stopped, mainly in consequence of the cost of hewing the coal, the company being unable to compete with other districts, but also on account of the bands of blaze which occur with the coal, and have been found, from their hard partings, to be very difficult to separate, necessarily depreciating its market value.

*The Green Island Collieries* were fully reported on last year by Mr. Denniston (Geological Reports, 1876-77, pages 143 to 153); but I have since visited them myself, and Mr. Denniston is now engaged on the extended surveys of these mines.

*The Otago Colliery*, where the ventilation was reported last year as being very defective, has been closed for seven months during the past year in consequence of the workings taking fire. The fire is now, to all appearance, nearly out, the ignited area having been built off with stoppings puddled with clay, and mining operations have been recommenced, the workings now being confined to the south side of the shaft, the main heading being extended to the rise for a distance of 50 feet beyond what had been reached when the survey of the mine was made last year. It is not considered safe as yet to break into the old workings, and it will be well to make quite sure that the fire is out and the temperature reduced before this is done, as any extension of the fire now would be as disastrous here as at Shag Point, and would entail a great expense to get it under.

*The Saddlehill Colliery.*—Little has been done during the past year towards extending the workings to rise, the principal work which has been undertaken being the sinking of a new shaft (about 6 chains from shaft No. 1) to the dip, coal being cut at a depth of 120 feet. Roadways have been commenced from the bottom of this shaft to the rise, and it is proposed to work the coal upon the same system as heretofore adopted, viz., room-and-rance.

*The Walton Park Colliery.*—Nothing new of any importance has been done underground since this mine was surveyed by Mr. Denniston last year. At the shaft the bords running parallel with the north level have been worked continuously, no coal having been wrought from those south of the shaft, and at the tunnel or dip drive, the bords running parallel with the south level have been worked continuously.

A new shaft has been sunk near the loading stage to a depth of 90 feet, the engine in use being a 25 horse-power single-cylinder horizontal engine, with suitable winding-gear, both built on strong foundations of brick and cement. The pithead frame is of Oregon pine, 45 feet high. The stroke of pumps is 4 feet 6 inches, and size of pipes 10½ inches.