

which has scoured channels in it in the same direction as the Mataura now flows. The present operations are close to some old underground mining, where the tunnels are more or less filled with water. I do not think Smith can get very much coal here.

108. *Maslin's Pit, Wendon*.—(21/10/93): There were two men working at the lower seam at the time of my visit. The coal (vertical seam) has been followed from a gully into the side of the hill by an open cutting some little distance, where they have 20ft. of coal and 7ft. of stripping on top of the outcrop. Unfortunately for them, they neglected to secure the open cutting with timber to keep the sides up, so they were coming in very much to a natural slope, showing the absolute necessity for strong timbering in such places when all the coal is being taken out. When the seam is vertical, it is a mistake to take out all the coal. A strong wall of it should be left on each side where the formation is little better than clay. The top of the seam, in this case, should have been left to keep the surface intact. It would have been much better to have driven a tunnel in the centre of the seam, of a perfectly safe width—which could always be ascertained by testing the thickness of coal in the sides at short intervals as the work went on. In this way the seam can be driven on any distance and much coal won, with comfort and safety to the men. In this way the seam can be worked on many levels, and to any depth. I have recommended the timbering of the open cutting for some safe distance into the hill, and then half the coal to be taken out by following it through the hill in the way above suggested. In a second seam, at a higher level, not far off, a 10ft. tunnel was driven some years ago in the centre of the seam till soft coal was reached. Maslin has lately started at the far end to take out 5ft. of coal from the floor, working back to the mouth of the tunnel. The present height of the tunnel is nearly 6ft.

109. *Vial's Perseverance Mine*.—(21/10/93): The part of the terrace now operated on shows 11ft. of coal, and from 5ft. to 15ft. of stripping. The water-race carrying the water to do the stripping is from 90ft. to 100ft. above the coal, but the quantity of water generally available is not more than one head. Lying on the top of the coal is a petrified seam of shale, from 1ft. to 3ft. thick, which is very difficult to break up and remove. It will, however, be a valuable assistance to a coal roof when the coal is being mined, instead of doing the very deep stripping a very little distance ahead of the present face.

The coal dips from the river, and the drainage is at present lifted by a hand-pump, but the water available naturally suggests itself as being more convenient and economical to do the work. It is to be utilised as the motive-power.

110. *McIvor's Cambrian Mine, Waikaia*.—(21/10/93): The coal is about 15ft. above the river, 5 chains off, which allows a fair fall to sluice off from 30ft. to 60ft. of fine gravel lying on it. The sluicing the top off is a part of the work in connection with the gold-mining, which is carried on at the same time, and the best gold-bearing wash is found on the coal. The quantity of water available is said to be four or five heads, which is a very useful quantity to do the work. The thickness of coal is from 7ft. to 12ft. Several tunnels have been driven in from the face of the terrace, close to McIvor's claim and pit, and they are all getting fairly payable wash on the coal. When, as a gold-mine, this ground is worked out by underground mining, the coal can be removed in the same way by leaving a coal roof, and at less cost per ton than it now costs to strip it. There is a sufficient thickness of coal to leave a strong coal roof.

111. *Northcote's Mine, Waikaia*.—(21/10/93): The working-faces are about 1½ chains in from the old sluiced face of gravel. The work in the mine shows a want of system, or knowledge of this kind of mining. Fortunately there is a well-defined roof-parting at about 7ft. or 8ft. from the floor, following the coal throughout to the present faces, and is a remarkably good roof. The output from this mine is not large, and, notwithstanding the dip from the river not far off, the floor so far is dry. There was no one in the mine on the day of my visit.

113. *Sleeman's Pit, Mataura*.—(7/11/93): To the north-west the seam begins to dip slightly, but the surface keeps nearly level, so that to follow the seam in that direction, the stripping now being as much as 21ft., will very soon be beyond a paying depth. A short distance to the south of this the stripping is from 17ft. to 18ft., and the coal thickens from south to north from 16ft. to an 18ft. seam. The little water-wheel is still equal to the amount of work it has to do, notwithstanding two additional pumps having been added since my previous visit, eleven months ago. There are now four pumps, lifting the water about 25ft. Most of the stripping is now carted and dumped into the worked-out ground. Some harrows are also used to do the stripping and skim the poor coal off the top. The bank is fairly well sloped.

114. *Beattie and Coster's Pit*.—(7/11/93): This is a very old pit, abandoned fourteen years ago, and since then filled up by the sides caving in. It is again taken up to work two acres adjoining, belonging to H. Cameron. Preparations were being made to do some stripping on the east side of the old workings at the time of my visit. A portable engine of five-horse power is to be placed on the ground to do the pumping, which is likely to be heavy in consequence of a small creek passing through the ground, which is very open, and the standing level of the water is flush with the top of the coal. The seam is supposed to be 13ft. thick, and nearly horizontal. Beattie expects to have the pit opened and ready for a large output before the end of the year.

115. *C. Town's Pit*.—(7/11/93): The open face of coal is now fully 3 chains in length and 14ft. deep. The stripping consists of fine gravel, and will average about 18ft., well sloped back. A little water-wheel of 8ft. diameter does all the pumping with two small pumps, and the quantity of water lifted is considered heavy. The output of coal lately is small.

116. *McGowan's Pit*.—(8/11/93): No work appears to have been done since my previous visit, twelve months ago. I did not find any one there.

117. *Townshend's Pit*.—(8/11/93): As nearly as can be judged, there are 14ft. of coal, and 9ft. of clay stripping, which appears to be continually slipping into the open face in larger quantities at a great slope. There is a sufficient thickness of coal to admit of it being mined out and leave a good coal roof, which would be more economical than working in mud foot-deep all round the face of the pit.