

On the 7th April, 1884, examined part of the dip, and on the 8th finished my inspection. The coal in the dip lies at an angle of 45° ; the levels are carried next to the roof, and the bords worked about level to the floor: the head coal is then taken down. At this point the problem arises, how to work the pillars. The seam is 30ft. thick (at right angles to the dip), and exceedingly prone to spontaneous combustion. The roof is a conglomerate 70ft. thick. If the pillars were injudiciously worked the weight might be thrown over, and creep induced over the whole district. To avoid this, it would appear advisable to work at the extreme rise and break the roof, thus keeping the weight well back: at any rate, it is a subject requiring much consideration. A new dip is being driven, and for hauling purposes a 30ft. by 6ft. Cornish boiler was placed underground. There appeared to be some doubt as to the feasibility of carrying steam 800ft., so the boiler was placed below, in the old stone drive. This actuated a 28 horse-power hauling engine. The boiler was not judiciously placed, for it would naturally tend to vitiate the main intake, and the engine would increase the damage done to the air. The boiler flue was carried up through the old workings, and crossed the levels in 3ft. wrought-iron pipes, which were, however, not quite tightly fixed, so some smoke escaped. At this date the furnace chimney was again burnt down, and Mr. Samson proposed to sink a new shaft and erect a proper brick chimney. On the 10th May, 1884, at the request of the company, I made an inspection, with a view to forming an opinion on the advisability or otherwise of keeping the boiler below ground. On the 2nd of that month a fire had broken out in a little heading leading from the bottom of the furnace shaft (into which the underground upper hauling-engine exhausts) to the old stable level. It seemed that the exhaust from the engine must have carried some incandescent material into this shaft 20ft. horizontally, and set the coal on fire. The conflagration was soon suppressed. On examining the boiler to the dip I came to the conclusion expressed in the following letter: "Dunedin, 12th May, 1884.—W. P. Watson, Esq., General Manager, Kaitangata Railway and Coal Company (Limited).—Sir,—At the request of Mr. Brydone, chairman of your company, I have the honour to give you my opinion on the safety or otherwise of the arrangements connected with the underground boiler at your mine. It is quite possible that the present state of things might continue for a long time—as, indeed, it has continued—without an ignition of the coal in the flue; but, at the same time, I consider that a constant danger exists of a conflagration so disastrous in its effects that it is extremely inadvisable to prolong the risk. Regretting that pressure of time prevents my entering more fully into the subject, which has, however, been fully discussed between yourself, Mr. Brydone, and myself,—I have, &c., GEORGE J. BINNS, Inspector of Mines." On the 19th ultimo, between 2 and 3 a.m., the flue took fire, and the place has been closed since. I may mention that the flue is 700ft. long, and has a vertical height of 400ft. I have been unable to visit the mine since the fire broke out: I was at Greymouth at the time. [The following has since been telegraphed: I visited this colliery on the 10th instant for the purpose of attending the reopening of the workings. The air, having been excluded for thirteen days, was admitted about 8 a.m., and, as the carbonic acid drained off very well, everything appeared to be going on satisfactorily, till 5 a.m. on the 11th instant, when Mr. Watson told me the flames again broke out in the flue. The outlets are now closed. This is the third unsuccessful attempt to open up, the two former having been made soon after the fire broke out.]

79. *Adams's Lignite Mine, Lovell's Flat.*—An openwork mine; visited the 2nd February, 1884.

80. *Wangaroa Coal Mine, Kaitangata.*—Visited the 20th November, 1883. Mine in good order; only one man employed.

81 to 90.—All openwork; all visited recently, except Chatton.

91. *Pukerau Coal Mine, Pukerau.*—This mine is now worked by a tunnel, and is in good order. Introduced Act.

92. *Pukerau Coal Mine, Pukerau.*—Openwork. Visited.

SOUTHLAND DISTRICT.

93, 94, and 95.—All openwork lignite mines, the first two of which have been recently visited.

96. *Nightcaps Coal Mine, Invercargill.*—On the 7th June, 1883, this mine was examined. Roof good, and timber used where required; also brattice on the levels. Furnace well built. Pumps actuated by a 15ft. by 3ft. water-wheel. Mine examined in the morning with a safety-lamp before men enter. Plan at office; only a rough, undated tracing. No special rules established, but since then a very good set has been gazetted.

97 and 98. Openwork lignite mines. The former has been lately visited.

99. *Orepuki Coal and Shale Company's Mine, Orepuki.*—I visited this ground on the 6th June, 1883, and saw some prospecting works which have been carried on in anticipation of the speedy completion of the railway.

NEW MINES IN 1884.

There are several new mines at work, which have been commenced during the current year. These will appear on the next list.

PROSPECTING.

Prospecting has been carried on in various localities, notably near Hokitika and Kaniere, where a number of known seams have been examined. I was there for a few hours on the 21st January, 1884, and was of opinion that the drive was on a fault. Whether there is a good seam in the immediate vicinity I was unable to say; but, though crushed, the coal analyzes well, and the importance of a good coal field in this district would be very great.

Boring operations have been carried on at Wangaloa, near Kaitangata, on the sea-beach, and it is proposed to open up another mine near the Kaitangata Company's lease.