

could be promptly closed on the outbreak of fire, stoppings being immediately afterwards built behind them. This same system will, of course, apply throughout, and its value is apparent. By keeping each panel isolated (so far as goaf is concerned) an outbreak of fire may be confined to itself and more readily extinguished owing to its limited area. On the other hand, if the pillars in the panel are all exhausted and no outbreak of fire has taken place, a rise heading can be quickly driven in the middle of the barrier pillar and the coal extracted. In this way no coal is lost, and the only coal lost in the event of fire is the barrier and the balance of unworked pillars in any panel; but even in this latter instance it might be possible to work the coal so left (after it has been satisfactorily proved that the fire has been extinguished) from the headings connected with a lower level. It will be noticed that the headings of No. 4 panel are not connected with the intermediate levels. In this case a barrier pillar is left until No. 1 panel is exhausted. If fire exists in No. 1 panel, the safety of No. 4 panel from fire in the neighbouring panel is assured; but should No. 1 be exhausted without any sign of fire, then No. 4 panel workings can command the coal right up to the low side of No. 1 panel.

At collieries where there is a liability to fires the adoption of some such system as that outlined would do much to keep fires under control and save the loss of valuable coal. It may be urged that the initial expense of developing the mine would be more than some owners or lessees could afford, but in many instances this could be met by setting apart a convenient block of coal for complete exhaustion (such block being sealed off after being worked out), which would provide funds for the general adoption of the system, and that this would pay best in the end admits of no question.

Examination for Managers' Certificates.

The papers used at the examination held early in the present year are appended.

The list of persons holding certificates as managers of mines, and the schedule of statistics of output, persons employed, &c., are also appended. I have, &c.,

The Under-Secretary for Mines, Wellington.

JOHN HAYES,
Inspecting Engineer.

No. 2.

Mr. J. COURTTS, Inspector of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.
Sir,—

Inspector of Mines' Office, Thames, February, 1902.

I have the honour to transmit the following report on the coal-mines in the Auckland District for the year ended the 31st December, 1901, in compliance with section 67 of "The Coal-mines Act, 1891":—

Kawakawa.—This mine is still being steadily worked by Mr. John Culley, who has six men employed. The operations in the early part of the year were directed to taking out a small patch of coal on what is termed "Moody's Outcrop," and some pillars of coal adjacent that were left in by the old company. The seam varied from 2 ft. to 4 ft. in thickness. As the coal here was getting exhausted, the manager directed prospecting-work to be done on Caraway's Hill for the purpose of finding pillars of coal said to have been left in at this particular place, and for this work he applied to the Hon. the Minister of Mines for assistance. A grant of £1 for £1 to the extent of £75 was made, and, as it proved to be a larger undertaking than was at first anticipated, the pillars were not reached by an adit incline until £183 had been expended. To all appearance the work will prove a success, and will pay for the outlay, as coal is now being obtained from here in payable quantities, and the prospects of getting coal to keep the present number of men employed for some time to come is assured. This mine was inspected twice during the year. The ventilation was good, and the mine was safe. Abundance of props, &c., were kept on hand to be put in as required.

Hikurangi Coal Company.—The following is an abstract from Mr. Moody's (manager's) report on this company's mine which may be of interest: "During the year several openings have been made by tunnels in which patches of coal have been found, but on the north side of the main workings faults are frequently met with, and in consequence the areas of coal between those faults are limited. One of the principal works has been the construction of a ground-tramway 28 chains in length to connect No. 6 tunnel with the place where the trucks from the mine are tipped into the railway-wagons. This tunnel is northerly from the main workings, and is near the self-acting incline of the Hikurangi Collieries Company. In this section a fine belt of coal has been opened up, averaging nearly 11 ft. in thickness, and as it is above water-level the coal can be put in the wagons at a very small cost. In the headings above the south level of the main workings the system of haulage has been altered where the grades are steep, self-acting inclines having been adopted, with dummies running up to counter-balance the loaded trucks as they are lowered down to the main level, and the bords, instead of being driven as formerly straight up on the rise of the coal, are now driven nearly parallel with the main level. The company has been successful in being able to supply the demand for the coal, and with highly payable results, and to all appearance will be able to do this for some time to come. 39,593 tons was raised during the year, this being the largest output since the company commenced operations. They now contemplate opening up the western area of the property, adjoining the West Bryan's Mine, and intend to drive a level from near the railway-siding for the purpose of unwatering this portion of their property."

The following report and analysis on five samples of coal from this mine were made by Sir James Hector in 1896: "Nos. 1 and 2, top and bottom of new dip seam (thickness, 9 ft. to 14 ft.); No. 3, from near dip fault; No. 4, from splint seam; No. 5, from the fault (iridescent coal).