

during my first inspection, and owing to the destruction of air-stopping preventing ventilation fire-damp and black-damp were found throughout the rising bords. About 9 acres of these workings appear to be affected, in addition to which the approach to about twenty bord-faces is cut off; a valuable and extensive area of unworked coal is thus rendered temporarily inaccessible. Since the occurrence of pillar-crushing and subsidence became evident I have inspected portions of the mine on twelve occasions, and on the 14th February and the 13th December, 1918, and the 2nd May, 23rd August, and 13th October, 1919, and the 22nd March and 9th April, 1920, I inspected the crushing areas as far as accessible underground and on the surface.

(f.) INSPECTION OF OLD WORKINGS.

[Section 40 (48).]

On or about the 27th May, 1919, the workmen's inspectors at Pukemiro Colliery were, by the manager, Mr. Burt, refused admittance into the old workings, consisting of standing pillars of coal, which are separated from the working-mine by several brick and two wooden stoppings and by a wooden locked door. The workmen's inspectors claimed the right given in section 8 of the Coal-mines Amendment Act, 1914, to have full liberty to make an inspection of every part of the mine, and of its machinery and workings, once in every fortnight. The manager based his refusal to permit this inspection on the decision of the Supreme Court in the case of *Penman v. Bennie* (1915), that Special Rule 8 of the Coal-mines Act requiring a daily inspection of every part of the mine by an underviewer did not extend to disused workings. The manager also believed that under section 40 (42) of the Coal-mines Act, 1908, no person could enter the old workings until a fireman-deputy within two hours prior thereto had inspected with a safety-lamp such old workings and reported them to be safe. In consequence of the refusal by the manager the miners ceased work on the 5th June, 1919. Unsuccessful endeavours were then made by Mr. Harle Giles, Conciliation Commissioner, to settle the dispute. Thereon, in pursuance of instructions from the Minister of Mines, I proceeded to the colliery and inspected the old workings on the 19th June, accompanied by the Government Inspector, the workmen's inspectors (by special permission of the manager), the mine-manager, and underviewer. Prior to entering the mine all of those who accompanied me stated that they had no knowledge of the existence of noxious gas therein. On the 31st March Mr. Bennie, Government Inspector of Mines for the district, had taken two samples of mine-air from sections 2 and 3 of these old workings, which upon analysis had been found to be comparatively pure, containing—oxygen, 18.54 and 19.50 per cent. respectively, and carbon dioxide 0.58 and 0.51 per cent. respectively. During our inspection, however, eight weeks later, we found that oxidation or absorption of oxygen by the coal-surfaces had been rapidly proceeding within the old closed-off workings. In section 1 (left) I took a sample which upon analysis was proved to contain 16.67 per cent. black-damp ( $\text{CO}_2 = 0.67$  per cent.,  $\text{N}_2 = 16.00$  per cent.). Sections 2 and 3 (left) were found to be practically full of black-damp mixture; samples taken contained from 19.62 to 26.19 per cent. of that damp, mostly nitrogen. The lights carried by our party were several times extinguished owing to lack of oxygen. The party was thus stopped from advancing far into the old workings. As a result of this inspection Inspector Bennie, who rightly considered the area unsafe for any person to enter, immediately instructed the manager to entirely close it off by substituting brick stoppings for the wooden stoppings and door. By this action the question of inspection in dispute was settled, and the old standing pillars secured against heating by lack of oxygen within the stopped-off area.

The miners resumed work on the 20th June after a stoppage of two weeks. As a result of this stoppage legal opinions were obtained from Sir John Salmond, Solicitor-General, and Sir J. G. Findlay, K.C., on the question of this disagreement. The Solicitor-General was of the opinion that the workmen's inspectors had the right of inspection under section 8 of the 1914 Act. Sir John Findlay came to the conclusion, though not without some doubt, that the workmen's inspectors were entitled to inspect the old workings.

The point raised by the management regarding inspection by a deputy being necessary before any workmen's inspector might enter the old workings was, unfortunately, not presented to these legal authorities for an opinion. Personally I do not consider that there should be any objection to workmen's inspectors satisfying themselves as to the state of any part of the mine which may be accessible without danger to themselves or others. Old workings, however, are generally unventilated, and contain, as in this case, accumulations of noxious or inflammable gas, and are therefore dangerous, and if closed off by substantial stoppings should not be visited until ventilated.

(g.) MINE RESCUE WORK.

[1914 Act, Section 22 (h).]

For the guidance of the Mines Department preparatory to making regulations providing for the supply and maintenance of appliances for use in rescue work, and for the formation and training of rescue brigades, it has been decided by the Minister of Mines to establish at Runanga in connection with the State coal-mines a cottage rescue-station for training at one time two non-resident brigades (of five men each). Prior to the design and equipment of this station being undertaken complete information regarding the plan of the station and the type of most suitable apparatus is being obtained from the highest British authorities, through the office of the High Commissioner. In addition to serving the requirements of the State coal-mines, and enabling State employees to have this special and necessary training, the trained brigades will be available in case of emergency at any of the collieries and gold-quartz mines within reasonable distance; the township of Runanga being centrally situated as regards the gaseous collieries of the Grey Coalfield and the deep mines of the Inangahua Goldfield, it is also within four hours' journey by motor from the Buller collieries.

The subject of mine rescue work is at present being actively considered by both the Mine Rescue Apparatus and the Oxygen Research Committees under the Home Office Research Department, and the second report of such Committees will be shortly forthcoming. The delay in establishing rescue-stations in this Dominion will thus enable more up-to-date information regarding improvements in design to be gained.