

(c.) PERMITTED EXPLOSIVES.

[Regulations 128 to 134 inclusive.]

Permitted explosives are now entirely used at the collieries of the Waikato, Buller, and Grey coal-fields, also at such brown-coal mines of Otago and Southland where safety-lamps are required to be used. During the year the quality of explosive has somewhat improved, but judging by the results obtained at the Taupiri Extended Colliery, where systematic and reliable records are kept, the explosive is often unsatisfactory. At that colliery, during 1920, 46,271 charges weighing 39,951 lb. were fired electrically, and 139,386 tons of brown coal, generally hard, was broken down; 364 charges misfired, chiefly owing to defective detonators; in addition to which 739 charges only partly detonated, this obviously being due to explosive in a defective condition. The explosive used was by makers of high repute. At the beginning of the current year the new "shot-firers' daily record" will begin to be kept at all collieries where permitted explosives are used. By these means tabulated totals of the number and weight of shots fired and the results therefrom will be obtainable for publication, as in the United Kingdom.

(d.) DANGEROUS OCCURRENCES.

[Regulation 81.]

The Inspectors of Mines received written notice from managers of the following occurrences:—

Northern Inspection District.

Taupiri Extended Colliery: On the 29th June a fire occurred at a fall between the two brown-coal seams in No. 4 level, west side; the fire was extinguished by water after some trouble. On the 1st July a small ignition of gas occurred in the dome above the fall; all men were temporarily withdrawn from the mine.

Pukemiro Colliery: A miner alleged that he ignited by a naked light on the 11th May about 200 ft. of gaseous mixture near the face of the main north section back heading. The district was put on safety-lamps forthwith.

Rotowaro Colliery: A miner ignited by a naked light on the 18th November a very small quantity of gaseous mixture in a hole at the face of the back dip heading. The headings were forthwith put on safety-lamps.

West Coast Inspection District.

At Millerton Colliery slight gas-ignitions were caused by miners with naked lights in the old dip section on the 10th February, 22nd June, and 5th July, also in No. 2 dip section on the 1st June. Both sections were put on safety-lamps forthwith.

Ironbridge Colliery: A slight ignition of gas occurred on the 7th July in No. 8 pillar section.

Coalbrookdale Colliery: On the 27th July in Wallace's section the stopped-off fire burnt through a bord end; it was with some difficulty revealed by brick stoppings.

Blackball Colliery: On the 1st August smoke issued from a concrete stopping in No. 11 incline. The stopping was reinforced.

Ferndale-Timaru (formerly Lockington's) Colliery: On the 16th November heating at a fall in the goaf occurred: it was overcome by water.

Southern Inspection District.

At Kaitangata No. 1 Colliery, on the 3rd August, an ignition of a small accumulation of inflammable gas was caused by a spontaneous fire at the corner of old No. 4 dip, McGhie's level. In this locality a fire has periodically broken out for some years past, and with a falling barometer small quantities of inflammable gas have at times accumulated in a hole above roof timber. On the date mentioned the place was reported clear by deputy A. Tripp immediately prior to the day shift entering the mine. At about 1.45 p.m. ignition of gas occurred, which was felt for a considerable distance outby against the ventilating-current, but was not observed in the workings inby except by horse-drivers the brothers Edwards, who were within 2 chains of the occurrence, and who state that they heard two "puffs," the first being the louder. They then thought it wise to get away. After the ignition some of the lighter material of the surrounding timber was found to be on fire, but this was quickly extinguished by the deputies. This must be regarded as a warning, and it behoves all officials to prevent the accumulation of gas at this colliery where spontaneous fires are constantly produced owing to abnormally rapid oxidation of the brown coal. Experiments by the Home Office at Eskmeals, in Cumberland, have proved that the quantity of inflammable gas required to produce, if ignited, sufficient flame and force to cause a disastrous coaldust explosion is comparatively small, so that all gas-ignitions where fine coaldust occurs must be regarded seriously.

At the same colliery, on the 14th October, all workmen in Mundy's dip section were withdrawn owing to a 2½-per-cent. firedamp mixture issuing from waste workings. On the 26th November, at the same colliery, the workmen in No. 7 dip were withdrawn from their place owing to smoke issuing from a fire stopping.

At Mount Torlesse Colliery, on the 8th June, an outbreak of fire occurred in No. 2 West workings (brown coal). This fire was sealed off.

At Waronui Colliery, on the 11th November, a small fire in old workings (lignite) occasioned the withdrawal of the men for one day.

At Taratu Colliery, on the 25th November, an outbreak of fire occurred in the lignite workings near the outcrop. The fire was smothered by falls of surface material.