

Hikurangi Coal Company (Limited).—Hikurangi (P.W.) Mine: A party of miners working on co-operative principles continue to extract the available coal pillars in the company's old mine. Several short dips have been driven in order to win out blocks of coal lying against the fault. Operations were proceeding in the direction of an area worked about thirty years ago, and as there were no plans or records kept to show the extent and position of the old workings I had to ask the management, in view of the likelihood of these abandoned workings containing a dangerous accumulation of water, to discontinue driving development headings and to confine operations to the extraction of the remaining pillars. The mine-workings and plant have been maintained in good repair, and a high extraction of pillar coal has been obtained by the party.

Hikurangi Coal Company (Limited).—No. 2 Mine (Shafts): During the year two separate sections, known as the East and West sections respectively, have been developed to the full rise of the coal-seam. The seam is moderately inclined, having a gradient of one in six. The bords of the East section reached the 60 ft. downthrow fault, and the standing pillars of the first workings were extracted from the fault outwards to the shaft. The coal-seam being one subject to spontaneous combustion, a fire commenced in the goaf in November, and stoppings were erected in order to suppress the outbreak. Owing to inadequate pillars being left in the first workings, a crushing movement extended over the whole section, with the result that the 30 ft. pillars between the respective bords were crushed to such an extent that stoppings could not be maintained in close proximity to the fire area. In order to effectively seal off the fire-disturbed section the safety stoppings had to be erected on a position-line which included a considerable area of coal pillars, and that coal is now irretrievably lost. The headings in the West section have also reached the proved 60 ft. downthrow fault, and preparations are being made in this section to pierce the displacement. The pillars in this section are also of small dimensions, and considerable trouble will be encountered (due to crushing and creeping) when the pillars are being extracted. Owing to the broken character of the roof, due to an intervening band of 2 ft. of jointed fireclay between the limestone roof and the coal-seam, the bords in the mine do not exceed 9 ft. in width by 7 ft. in height, and sets of timber are systematically erected to support the roof in all places. Prospecting to the south-west is being continued, but the seam is very undulating, necessitating much grading of the roadway. Brick stoppings are being erected in the disused cut-throughs between the intake and return airways. This work should assist in directing the available air-currents to the working-faces, but in order to secure full compliance with the statutory provisions of the Act a modern fan capable of producing 50,000 cubic feet of air per minute at a 2 in. W.G. is urgently required at this colliery. Endless-rope haulage on the surface has been installed in order to move the output from the shaft to the railway-sidings, a distance of 75 chains. The dust on the roadways in the mine was collected and analysed during the year.

Wilson's Colliery.—The stone drive dip section of the mine has been advanced 14 chains in the coal-seam, and the bords to the north have not as yet encountered any faults or displacements of the seam. 50 ft. pillars were formed in this section in the first workings, but a number of the bords have since been widened out from 9 ft. to 20 ft., so that the pillars are not now more than 40 ft. in width. Preparations are being made to install endless-rope haulage in the stone drive section connecting with the direct haulage in the main dip. In No. 7 pillar section the coal is being rapidly removed by the extraction of the pillars. A crushing movement "weighted" over this section; in consequence the working-places were temporarily abandoned, and new roads had to be driven through the pillars and bords in order to restore roadways into the section.

Following the cessation of pillar-extraction, while the roads were being repaired, a marked increase in the temperature of the atmosphere was experienced, due possibly to oxidation and heating of the coal in the crushed pillars. The heat produced could not be dissipated by the air-currents, owing to the lack of proper airways around the working-faces. With the view of ascertaining the existing health conditions consequent to the abnormal temperatures, numerous tests were made with the kata thermometer in order to determine the existing cooling-power of the available air-currents at the affected faces. The observations with the wet "Kata" were useful in showing that a high rate of cooling-power (as indicated by the "Kata") could be maintained in warm places by moderate air-currents conducted to within short distances of the working-faces. Work is proceeding in connection with the erection of brick separation stoppings between the intake and return airways and the enlargement of the main return airway to the shaft. An ambulance-room, to be used exclusively for first-aid treatment, has been provided during this year. Fixed electric lights have been installed along the railway-sidings, rendering better facilities for shunting railway-wagons at night. During the year samples of mine-dust were collected and analysed, and the results showed a small percentage of dust passing the 30-mesh sieve, and none, owing to dampness, passing through the 200-mesh sieve.

Kerr and Co. (The Rocks Mine).—The Rocks section of the mine has been closed, and operations are confined to the West Byron section of the property. Six chains of a stone dip have been driven to reach the coal-seam, which is lying very steep, and troubled with faults. Several crosscuts were set out to work the seam and connect with the stone dip. The inclination of the seam does not permit of satisfactory haulage, and the coal has to be shovelled long distances to the crosscuts. The main road has been maintained in good order, and the ventilation is ample for the number employed.

Silverdale Colliery (Foot and Doel's).—During the latter portion of the year mining was resumed on this Crown lease. A new drive was commenced from the outcrop following the coal-seam to the road boundary, and bords are now being set away from the main heading. An intervening bord of fireclay is mined with the coal, and the clay finds a ready market in Auckland. The output is conveyed by motor-lorries to Hikurangi, a road distance of three miles.

Northern Co-operative Mine (Cunningham Crown Lease).—Operations were confined to the extraction of a few outcrop pillars. The coal-seam was thin, and the mine closed down early in the year owing to unfavourable mining-conditions. A license to prospect for coal was granted to Mr. Cunningham over an adjoining area formerly worked by Kerr and party, and the mining plant was removed to the prospecting-area.

Christie's Colliery (Freehold).—The dip pillars are almost worked out, and a level drive from the surface has been driven for the purpose of winning the pillar coal in the rise section. A dip drive is in course of being driven to connect with an area of coal proved by boring to exist in a direction south of the present workings. The mine is operated by a party of miners working on co-operative principles, and the Act and regulations are generally well observed by the workmen. The output of 20 tons per day is carted to Hikurangi Railway-station.

Ruatangata Colliery (Freehold).—The mine has been maintained in good order. The output is used for brick-burning, and only a limited quantity is required. A level drive at a lower level is being driven in order to tap standing pillars left by a former working. The drive is strongly supported with timber, and great care is taken in driving towards the old workings.

Waro Colliery, Whangarei (Freehold).—The main dip has been extended 2 chains, and the coal has improved in quality at the lower level. Pillars are being extracted from the north section. The electrical machinery underground is under the supervision of a competent engineer connected with the Whangarei Power Board. The shaft poppet-legs carrying the winding-pulleys showed indications of decay, and repairs were effected by the erection of two additional timber standards.

Waikato (including Mokau).

Rotowaro Colliery.—The output is derived from three mines—namely, No. 1 Mine, No. 2 Mine, and Taupiri Mine section (bottom seam). In No. 1 Mine the pillars are being removed in the top seam. Emergency stoppings are erected ahead of actual requirements, and the finished districts are sealed off quickly at the few openings to the sections immediately after the presence of fire-stink is detected. Development in the West section is proceeding to connect with the proved seam beyond the fault. The seam at the face of the headings in the Main Jig section has attained a thickness of 25 ft. of clean, hard coal.

In No. 2 Mine the pillars have been extracted from the top seam, and a few bords have been worked in an upper top seam. During the year a stone drive was driven into the proved bottom seam, 14 ft. in thickness, and the drive is conveniently placed to connect the bottom seam with the existing haulage-roads.