

## HUNTLY SCHOOL OF MINES.

The average number of students for the year attending night classes held at Glen Massey, Pukemiro, Glen Afton, Waikokowai, and Huntly respectively was fifty-eight. The facilities for teaching the branch schools have been found inefficient for coaching students for Mine Managers' Examinations. An effort is being made for the ensuing year to establish a properly equipped central school at Huntly with the view, now that train arrangements are suitable, of satisfying a number of students who desire to secure a more technical knowledge of mining subjects.

## WEST COAST INSPECTION DISTRICT (C. J. STRONGMAN and JOB HUGHES, Inspectors of Mines).

During the year the coal-output for the combined Nelson, Buller, Reefton, and Grey districts was 1,286,071 tons, a decrease of 3,937 tons compared with returns of the previous year. In the Nelson district the output fell by 1,818 tons, due to the closing of the North Cape Mine. The output for the Buller district showed a decline of 40,852 tons, whilst the Reefton and Grey districts showed increases of 5,997 and 32,736 tons respectively. The number of men employed on the surface and underground during the year was 3,120, an increase of eighty-eight over the previous year. Towards the end of the year a general slackness of trade was experienced over the whole district. This accounts for the decrease in the yearly production.

*Methods of Working.*—The general tendency is now towards the adoption of the panel system with larger pillars and winning-places 10 ft. to 14 ft. in width and 9 ft. in height. In the Westport district, more especially in the older mines, the problem of roof-control and pillar-extraction is now being given careful consideration. Pillars are being uniformly extracted in a straight line, which is made as long as practicable. Experiments in the use of heavier props (8 in. to 10 in. in diameter) have proved them to be of primary importance to the safety of the men, the control of the roof, and the more complete extraction of the coal; pillars are now being recovered that have previously been abandoned as unworkable. Under the new system the cost of upkeep of the roadways has been considerably reduced, due to the absence of crush on the adjoining pillars.

## BULLER DISTRICT.

*Denniston Colliery: Coalbrookdale Mine.*—Development: Very little development work was done during the year. Two headings in McIlwain's section were advanced a further distance of 4 chains in a north-westerly direction and four panels are now ready for development when required. The main headings in Waterloo section were driven a distance of 9 chains and parallel to McIlwain's headings. The coal in the headings is still somewhat thin, with a friable shaly roof. In old Waterloo section the development of a new panel has been commenced, the headings having been driven 4 chains in a south-westerly direction. This area was assumed to be adjacent to a large fault, but apparently this has run out to small dimensions, and present indications are that a reasonable amount of good-quality coal exists here. In Openshaw's section a dip is being driven in a south-westerly direction, and at present is in 8 ft. of good-quality coal. Solid workings: One panel has been completed in Waterloo section, and a few men only are employed in McIlwain's section. The operation of forming panels in the stone-drive section of Whareatea Extended has been continued in excellent coal. Pillar workings: This phase of mining has been continued in McIlwain's, Openshaw's, and Whareatea Extended sections respectively. The coal in the first-named section is at least 20 ft. thick, with a friable roof. Three pairs of miners only are employed in Cascade Nos. 8 and 9, these being engaged in pillar-extraction. Extensions to the haulage systems were added in the Waterloo and Extended sections.

*Ironbridge and Deep Creek Mines.*—Development: In Deep Creek section a dip stone-drive was put down a distance of 4 chains from Kiel's flat to tap the bottom seam, which varies from 5 ft. to 16 ft. in thickness and which is of good quality. Garing's dip section: The headings in this section are being driven in the bottom seam under Port Arthur section. A small downthrow fault was encountered, and progress retarded. The coal was proved beyond the fault, and preparations are being made to tap same. The driving of main headings, preparatory to forming the panels, is being continued, and panels are also being formed in Young's drive section. Arrangements are now being made to extract the pillars from Young's drive underlying the Kiwi section. Pillar workings: The Bluff section was restarted during the year and pillar-extraction commenced. The coal is hard and thin, but thickens towards the main rope-road. Shaft section: Strata vibration brought on by the earthquake assisted in providing access for surface-water percolation, and the threatened creep caused some anxiety at Gentle Annie steep until same was eventually retimbered. A new auto-synchronous motor was installed at Coalbrookdale fan, and a chain drive replaced the rope drive. The whole of the mining plant is now electrically operated, and the majority of underground plant enclosed by masonry walls. Stone-dusting is carried out efficiently throughout the colliery. During the latter half of the year several boreholes were put down by means of the Government's diamond drill on the new prospecting lease. The results have been encouraging, and the work is still proceeding.

*Millerton Colliery.*—During the year the major portion of the output was won from pillar-extraction. A considerable amount of idle time has been experienced owing to slackness of trade. North-east section: Operations consist of pillar-extraction and the winning of a small area of bottom coal 7 ft. thick, left behind in the first working. The second working in the bottom coal has proved more successful than was at first anticipated. Encouraged by the results obtained, it is proposed to extend the method to other portions of the mine where the coal is too thick to be extracted in one operation. Mangatina section: The reopening of this old pillar section has now been successfully accomplished, an alteration in the method of pillar-extraction having caused the roof to break more evenly, thus taking the excessive weight off the remaining pillars. Generally speaking, the alteration has tended to more economical and safer working. In the sixth west and second Mangatina sections the work of pillar-extraction adjacent to the barren area continues. In the fourth west section the development of the top seam to the south of the Mangatina fault has been continued. The coal is 6 ft. in thickness, but thins to the south and west. The solid work in the bottom seam having been completed, pillar-extraction will shortly commence. Concrete stoppings are being erected to form panels, so that any heating that may occur can be localized. In the third west dip section the work of pillar-extraction has been continued through the year. The coal in this section is probably 35 ft. thick, and a considerable wastage takes place when the tops are dropped. It is now proposed to work the pillars in two lifts, and, with this object in view, headings 6 ft. wide and 8 ft. high are being driven next to the roof. The old fire in the adjacent workings continues to be troublesome, and has several times broken through the stoppings. Fresh stoppings were erected, and the fire controlled. In the middle section the artificial panel having been completed, pillar-extraction, combined with surface-stripping, is in progress. The work of extraction is difficult owing to the excessive height and width of the first workings, and it is probable that heating will occur. In the second west section operations are confined to working the upper portion of the seam to facilitate the filling of the roadway adjacent to the fire with incombustible material to act as a barrier against the fire in Evan's section. In No. 2 dip section extraction of pillars, with a view to breaking the roof and forming a barrier between the dip workings and the fire in Evan's section, has been successfully continued to a point where the coal outcrops in the creek-bed, the fire having worked downhill. With a view to preventing it spreading, the creek-bed was stripped and the coal removed in two operations. The cavity thus made has been filled in with the debris from the strippings. In No. 3 extended section to the dip the seam thinned to an unworkable thickness, and pillar-extraction has been commenced. The conditions around the fire areas are somewhat similar to last year. A staff of workmen are kept busily engaged filling in surface breaks and building concrete stoppings underground.

*Stockton Colliery.*—During the year the main levels in the new east area were extended a distance of 7 chains, 1 chain beyond the south branch of the Ngakawau River, in coal of good quality. The area is very wet, and the roof friable, necessitating narrow bords and carefully timbering. Four boreholes were put down in this area beyond the line of the south fault, proving an extensive area of hard coal of an average thickness of 16 ft. under shallow cover. A new 50 h.p. main and tail electric hauler has been installed to deal with a larger output from the district. In the south-east dip area the main levels have been extended a distance of 6 chains in good-quality coal, allowing the