

Taking the average output per person employed, a slight increase is to be noted—viz., 450·1 tons, as against 444·71 tons in 1900. This is doubtless due in a great measure to the use of coal-cutting machinery at the collieries of the Westport Coal Company (Limited), and the amount of pillar-working at other collieries in various parts of the colony, as well as to the amount of lignite obtained in open-face workings.

During the year there were three persons killed whilst engaged in coal-mines. This gives one fatality for every 918 persons employed and 413,228·6 tons raised. Such results as these are proof of the care exercised in the management of the mines, the larger places especially. A number of minor accidents, such as are incidental to the work of coal-mining, have occurred in the various districts, and at many small collieries the demands on the Coal-miners' Relief Fund have been out of all proportion to the local contributions. It is to be feared that this fund is sometimes abused, and medical officers should co-operate with managers and Inspectors to check any attempts at imposition.

Since the services of an assistant were granted to Mr. Green, Inspector of Mines for the Southern District, it has been possible to inspect the mines more frequently than hitherto, and quite as often as is necessary or desirable.

Prosecution.

Only one prosecution was instituted by the Department during the year. In this instance proceedings were taken against a mine-manager for defective ventilation, and a fine was imposed by the presiding Magistrate.

Westport-Cardiff Colliery, Seddonville.

As intimated in my last annual report, the fire in the old workings is confined to a small strip of coal where the seam is exposed in the cliffs above Chasm Creek and to the rise of the water with which the mine is flooded to as high a level as conditions allow.

This colliery being in the hands of the Government, prospecting operations were commenced in the latter part of the year to determine the extent of coal in a hitherto unworked portion of the property known as "The Cave Area," with a view to the opening-up of the same for the requirements of the Government service. It gives me pleasure to state that these prospecting operations have been very satisfactory. As the existing railway-sidings, loading-bins, and plant can be utilised in conjunction with the working of this area, the Government will be able to commence coal-mining operations here at a very much less capital cost than would be the case with an entirely new colliery undertaking. It is intended that in future the property shall be known as the "Seddonville Colliery."

Shale-oil and Briquette Manufacture.

The New Zealand Coal and Oil Company (Limited) have got their shale-mine and oil distilling and refining plant at Orepuki into the productive stage, and experiments have been made in the direction of utilising the slack from the company's collieries at Kaitangata for the manufacture of briquettes. It has been found that one of the products from the shale-oil makes an excellent agglomerant, the resultant briquette being very compact and hard. I understand that it is the intention of the company to go into the matter on a commercial scale.

Mechanical Ventilation.

A new fan has been installed at Ralph's Mine, Huntly (Taupiri Coal-mines Company, Limited), and since the commencement of the present year a fan built on the lines of that designed by myself to meet the requirements of colonial mines, and described in the report of last year (gold-fields division), has been set to work at the Orepuki Shale-mine. This is 9 ft. in diameter, and at a speed of 180 revolutions circulated a volume of air amounting to 33,120 cubic feet of air per minute, with a water-gauge reading of $1\frac{1}{10}$ in. It is to be noted that prior to the fan being put to work the air was travelling in the opposite direction, a long line of uncovered steam-pipes in the main incline causing that to be the upcast. The fan had therefore to overcome and reverse this, and results would naturally have been somewhat better under more favourable conditions. A photograph of this fan (which is fitted with sides of steel plate) is reproduced. It is to be regretted that wood instead of concrete was adopted for the base, also that the connection with the engine has been made by spur-gearing instead of belting. This latter feature was adopted so as to adapt an existing engine to the work. Similar fans, varied in proportions to suit the actual requirements of work, are being constructed for other collieries.

Examination of Coalfields.

In accordance with instructions received, an examination of several properties on the West Coast coalfields, with the object of obtaining information and data for the guidance of the Government in the consideration of the proposal to establish one or more collieries for the requirements of the public service, was made by Messrs. H. A. Gordon (formerly Inspecting Engineer to this Department), A. Jamieson (late of the Westport Coal Company, Limited), A. McKay (Government Geologist), and myself. These properties were duly reported upon.

Fires in Coal-mines.

The liability to the spontaneous ignition of worked-out (or partially worked) ground in our coal-mines has led me to give some consideration to the subject, and in connection with this matter I trust that the combination of an extensive Home as well as colonial experience may be considered sufficient to justify my present remarks.