

Availability of suitable stowing material is a main prerequisite to the introduction of this practice, and at the Mangapehi State Coal-mine pumice deposits, which are very suitable, occur close to the mine. Early this year a visit to this mine was arranged of an Australian authority on hydraulic stowage, Mr. Arnold Black, underground manager of the Broken Hill South Mine. Mr. Black has reported that the pumice material available is ideal in his opinion for hydraulic stowage, and that there should be no difficulty in introducing this practice at the mine in question. Accordingly, experiments with this form of mining are to be made at the Mangapehi Mine.

### INVESTIGATION OF COAL RESOURCES OF NEW ZEALAND

The investigation of coal resources was continued during the year by --

- (1) The Coal Survey, whose activities were mainly geological and chemical.
- (2) An organization set up by the Mines Department to follow up the Coal Survey with detailed topographical surveys and shallow prospecting by means of cuts, pits, and hand-drilling.
- (3) The drilling section of the Mines Department carrying out investigations by deep-core drilling, all of these organizations working in close co-operation.

While much useful information was obtained as a result of these activities it has not been sufficient in any case to modify the estimates of the coal resources of New Zealand as set out in last year's Mines Statement.

Particulars of the operations of the Coal Survey are set out elsewhere in this Statement. The most interesting feature was the preliminary survey of the Pike River area in the Grey coalfield, where there are promising indications that a field containing good-grade bituminous coal in some quantity exists. Although access to the field is at present difficult, the problem is not insuperable, and the evidence already obtained warrants a thorough investigation of this field.

The efforts of the Mines Department survey organization were in great part concentrated upon prospecting, surveying, and mapping the coal-bearing areas on the Stockton-Denniston Plateau, adjacent to the Stockton State mine. Approximately 5,000 acres have been prospected and part surveyed, and of this total, 500 acres have been completed and the final report prepared. Estimates of the coal resources and preparation of the final structural contour maps of other sections await the completion of a drilling programme, which has been recently commenced. Prospecting in the Garvey Creek area comprised the completion of trenching the lower (main) seam, and tracing and trenching this seam south. The country is rough, heavily wooded, and difficult of access. The coal-seams are seldom exposed, and in places the outcrops are heavily masked with slip debris. Consequently, prospecting and the subsequent trenching is slow and irksome. Recent prospecting indicates an extensive coal-bearing block south of the areas previously prospected.

At Iron Creek Blackball an area of shallow coal north from the northern limits of the old Blackball mine workings was prospected and trenched, but, owing to broken ground, prospecting operations failed to locate any appreciable area of good-quality coal. Shallow drilling has now been commenced upon this area. The Elliotvale Block, situated at the northern end of the Kaitangata Survey District, has been systematically prospected by trenching and shallow drilling, but prospecting work did not prove the existence of an area of workable coal sufficiently large to warrant provision of suitable access and development.

At Wangaloa drilling in Johnston Creek in the vicinity of the opencast mine has determined the limits of the area suitable for opencast mining, while scout drilling at Pivot Creek has proved the existence of an area of 15 acres, containing a coal-seam up to 20 ft. in thickness, suitable for opencast mining.