purpose, but alternative sources of supply are now being examined. The District Manager of this mine has recently, during his trip to Australia, had opportunities to observe this method of stowage as practised in Australia.

## INVESTIGATION OF COAL RESOURCES OF NEW ZEALAND

As in past years, the investigation of coal resources was continued by three organizations working in close co-operation. These organizations are (1) The Coal Survey, whose activities are 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.

While considerable progress was made by all of these organizations, information is not yet available to warrant any re-estimate of the coal resources of New Zealand, and the position accordingly remains as set out in the Mines Statement for the year 1945.

An interesting feature of the year's operations was the reconnaissance surveys carried out in two entirely new areas—namely, Flat Creek, in the Maruia River Valley, and Newton River, near Murchison. Preliminary surveys show that in both areas the quantity of coal is limited and access is difficult, while in the case of the Newton River occurrence the sulphur content is very high indeed. Accordingly, neither field can be regarded as of immediate importance and detailed investigation may well be deferred.

Particulars of the operations of the Coal Survey and of drilling-operations of the Mines Department are set out elsewhere in this Statement. The work carried out by the Mines Department survey parties has been as follows:—

*Garrey Creek Coalfield.*—Five men have been engaged on prospecting work in Blocks A, B, C, and D in this field.

Block A: Work on this block, which includes the vertical seam, has now been completed. This seam has been traced and trenched along the outcrop and proved over a distance of 60 chains. The thickness of this seam varies from 10 ft. to 50 ft., with an average in excess of 30 ft.

Block B, Island Block: Prospecting-work was continued on the A, B, C, and D seams. The A seam varies in thickness up to 50 ft., inclusive of stone and dirt bands from 1 in. to 4 ft. in thickness. In one portion the stone bands are so numerous that it is probable an east-west belt, 6 chains wide, may contain very little workable coal. From data now available it is estimated this seam in this block contains 3,000,000 tons of coal. The proportion of extractable coal will depend upon the system of extraction and mining conditions.

B Seam: This seam occurs 40 ft. to 60 ft. vertically above A seam. It varies from 1 ft. to 7 ft. in thickness and has been traced and trenched for the full extent of the block. It varies in quality and in thickness, and except in minor portions is not suitable for mining.

C Seam: This seam is 140 ft. vertically above the A seam. From the southern end of the block, where it is 10 ft. in thickness, it has been traced to the north for 27 chains. It gradually thins on both the east and west side of the Island Block, and prospecting was discontinued when the thickness was less than 2 ft.

D Seam: Little work was done on the D seam, which does not exceed 2 ft. in thickness.

Block C: This block extends from the southern end of the Island Block around the Wellman Creek Basin. The prospecting and trenching of the upper seams in this block is now completed. Other than the A seam, no workable coal has been proved to exist in this block.

Block D: The A seam was traced and trenched around the basin of Jones Creek and over the ridge into the watershed of McConnachie Creek. The structure in this block is complex and, although an appreciable quantity of workable coal exists in the area, it is impossible to form any estimate until survey work is completed.