The output of 2,805,970 tons was a record for the Dominion and is an increase of 18,102 tons, or 0·649 per cent., on the 1943 production.

Compared with 1939, when war broke out, the production for 1944 shows an increase of 463,331 tons.

The output per miner employed underground during the year was 709 tons, a increase of 12 tons as compared with 1943. The production per man on the pay-roll—*i.e.*, both underground and surface workers—was 502 tons, a decrease of 17 tons on the previous year.

The production of the new mechanized opencast pits has a substantial effect on the man-output, and for the purposes of a proper comparison with previous years it is necessary to exclude the personnel and output of these concerns.

When this is done, the output per miner employed underground becomes 676 tons and the output per man on the pay roll 494 tons, giving respective decreases of 19 tons and 25 tons, which are doubtless due to the high percentage of inexperienced labour now employed.

While there was a record production of coal in 1944, the supply position has still remained critical owing to increased demand. Crucial to this situation has been the progressive decline in importations of coal from Australia, which reached bottom in 1944 with no import whatsoever. The demands of various industries, in particular the gas industry, have, in consequence, to be met from New Zealand production, and this has strained the bituminous coal section of the industry, which was unprepared to meet such heavy demands.

Even though in certain industries it has been possible to substitute lower-grade coals for bituminous coal, this has naturally resulted in greater quantities of the lower-grade coal being required to give the same effect as the bituminous coal formerly used. For this reason, together with the increased demands occasioned by the war, we have the paradoxical situation that even increased output of coal has failed to meet the demands of the country. It is apparent that under the present conditions no permanent relief to the coal supply position can be expected until such time as it has been possible to increase the production of bituminous coal.

The opening-up of new coal-mines or even increased production from old mines unfortunately cannot be speedily effected, but must await first exploration by drilling and then a lengthy development programme before the production stage can be reached. To this end an intensive drilling programme has been undertaken by the Mines Department and has been in operation for some time, but much work yet remains to be done before the position can be materially improved.

Every effort has, however, been made to increase the production of coal from areas where coal-seams are overlain by relatively shallow overburden and from which extraction of coal can be effected by opencast mining methods by the use of mechanical earth-moving equipment, where the period of preparation for the production stage is short compared with that of underground mines.

During the past two years, fifteen entirely new opencast mines have come into production, which were responsible, during 1944, for the production of 131,375 tons of coal. Of these, the two most important were the State-controlled mines at Kimihia and Stockton, which together contributed some 40 per cent. of the total output from mines of this description. The production from the Stockton Mine is of particular value because the coal is of the bituminous type.

The greatest difficulty that has been met in the development of opencast mining has been that of securing the necessary mechanical equipment. In this connection a visit to America was recently made on behalf of the Mines Department by Mr. A. F. Downer, who has taken a leading part in the developing and operating of opencast mines, and it is gratifying that Mr. Downer, with the assistance of the New Zealand Supply Mission in Washington, was successful in obtaining two large capacity dragline shovels. This equipment is now in short supply owing to urgent demands from every part of the world. With the installation of this equipment a considerable increase in production should be forthcoming from both Kimihia and Stockton, and in the latter case of the type of coal that is most urgently required.

The search for potential opencast coal-mines and their survey in detail is being continued by an organization set up by the Mines Department, particular attention having been paid to areas on the West Coast of the South Island. Wherever possible, every effort is being made to produce coal by opencast methods so that the total production of coal can be increased as speedily as possible.

It is, however, recognized that many of these areas only possess limited tonnages of coal, and that in the future the greater amount of coal must still, as in the past, be produced from underground mines.

Accordingly, it is important that New Zealand should keep abreast of developments in mechanized mining and in the handling and transport of coal underground.

Last year the Electrical Inspector of Mines, while visiting Australia to observe electrical engineering practice underground there, was also able to obtain details of the development of mechanized mining in Australia, while recently we have been fortunate enough to arrange for the visit to New Zealand of a representative of one of the leading coal-mining-equipment firms in Australia to report and advise upon the introduction of modern machinery into New Zealand mines.

Unfortunately, mining conditions in New Zealand, in particular regularity of seams over large areas, are not as favourable as in such countries as America and Australia, and the scope for mechanized mining is limited thereby. However, it has now been possible to lay out a tentative programme for the mechanization of the State coal-mine in the Waikato field. Results of this programme will be awaited with interest, as the adaption of mechanized mining to New Zealand conditions in this mine will give valuable information as to its possibilities in other mines.

Any method whereby the production of coal can be economically increased and the tedium and unpleasantness of hand methods obviated, but at the same time allowing due attention to the conservation of what cannot be regarded as an inexhaustive national resource, must command attention.