

Coal-cutting machines of the arc-wall type are in use in the solid workings in four of the Northern District collieries, and, for a few months, they were used for pillar-extraction also at one mine. Their use in Southern and West Coast mines has not extended, there being two in Southern mines and one only in a West Coast colliery.

Protector helmets, or "hard hats," as they are called, are now fairly extensively used in the Ohai Coalfield, but, although there are a few in use at Kaitangata and in some of the Grey and Waikato mines, I regret to state that most of our underground workmen still refrain from wearing them. Several of the head injuries which occurred during the year would, I am sure, have been avoided had the injured men been wearing hard hats.

Beside the American-made hats, which have been on the market for some years, at least two English firms make hats of several shapes and designs, which can now be obtained in New Zealand. Those with soft rubber pads between the hat-band and the hard shell of the hat are the most comfortable to wear, but in some cases early deterioration of the rubber pads has been reported, thus rendering the hats unserviceable.

Some 50,000 hard hats were manufactured in Great Britain in 1934 and supplied for use. To facilitate the introduction of protective equipment in Great Britain one of H.M. Junior Inspectors of Mines is undertaking that work for three years from 1st March, 1935. The cheaper hats available early in 1934 failed to give entire satisfaction, particularly in the warmer mines, but now that lighter and better-ventilated hats are available their use should become more general.

For many years American miners have worn boots with specially strengthened toes and heels, gloves or mitts, and shin-guards, and the use of such protective equipment has made progress in Great Britain lately. Except for the rare case of a miner who in former years worked in American mines using gloves when at work, the use of hand and foot protection is practically unheard of in our New Zealand coal-mines.

At the Denniston, Millerton, and Linton Collieries several sets of "Proto" self-contained breathing-apparatus are kept. There is a small testing and practice chamber at Denniston near the brake-head, but no central rescue-station has been provided in any of our coal-mining districts. The need for one in the Grey District is again being considered. In the meantime, and owing to its isolated position, the Liverpool Colliery is being provided with five sets of "Proto" apparatus, with sufficient spares and accessories, and a Bullard-Davis inhalator.

In Great Britain the electric cap safety-lamps used by the miners employed at the working-faces must, after nine hours' continuous burning, now emit a light of not less than 0.4 mean spherical candle-power. To comply with that requirement higher candle-power lamps have recently been designed by manufacturers, and lamps of that type have been ordered for use in New Zealand mines, and should arrive shortly. It is certain they will prove very popular with our miners, particularly those working in top-coal and pillar places in thick seams.

As in other coal-producing countries, the hydrogenation of coal into fuel oil and motor-spirit is receiving much attention here. An able officer of the Dominion Laboratory was sent to England, and spent some months investigating the processes of hydrogenation and low-temperature carbonization. On his return to New Zealand the Committee on Coal Research and Utilization met and reported that the Billingham hydrogenation plant was still regarded as an experiment, and that it would be inadvisable to consider the erection of a similar plant in New Zealand for the present. They recommended, though, as the quantity of suitable coal in New Zealand is not yet definitely known, that an immediate survey of the coal resources of the Dominion be undertaken.

The production from and the number of persons employed at the collieries of the Dominion are shown in the following table:—

Name of Colliery.	Locality.	Class of Coal.	Output for 1935.	Total Output to 31st December, 1935.	Total Number of Persons ordinarily employed.
<i>Northern District.</i>					
Waro	Hikurangi ..	Sub-bituminous	22,859	22,859	80
Rotowaro	Huntly ..	Brown ..	156,698	2,147,157	265
Pukemiro	" ..	" ..	119,600	2,372,039	188
Wilton	Glen Massey ..	" ..	93,391	397,718	161
Glen Afton	Glen Afton ..	" ..	77,697	1,610,020	154
MacDonald	Waikokowai ..	" ..	156,825	566,373	217
Regnon	" ..	" ..	113,591	651,958	133
Egmont	Tatu ..	" ..	20,760	27,460	40
<i>West Coast District.</i>					
Westport-Stoekton	Ngakawau ..	Bituminous ..	94,671	3,309,691	244
Charming Creek	" ..	" ..	24,639	77,563	32
Millerton	Millerton ..	" ..	51,458	8,337,823	82
Denniston	Denniston ..	" ..	115,352	10,557,245	291
Cascade	Cascade Creek ..	" ..	20,011	129,677	23
Paparoa	Roa ..	Semi-bituminous	28,537	792,471	49
Blackball	Blackball ..	Bituminous ..	27,082	4,047,463	61
Blackball Creek	" ..	" ..	19,205	80,418	31
Liverpool (State)	Rewanui ..	" ..	124,015	2,698,068	304
James (State)	Rapahoe ..	Sub-bituminous	30,224	428,610	87
Dobson	Dobson ..	Bituminous ..	44,092	719,487	123
Brunner	Wallsend ..	" ..	42,541	570,660	99
<i>Southern District.</i>					
Kaitangata (2 collieries)	Kaitangata ..	Brown ..	108,542	5,323,748	265
Linton (2 collieries)	Ohai ..	" ..	92,714	1,110,454	132
Wairaki (2 collieries)	" ..	" ..	19,104	454,883	34
Mossbank (2 collieries)	" ..	" ..	48,512	508,974	78
174 other collieries	All coalfields ..	Various ..	463,064	9,862,955	1,058
Collieries abandoned or suspended, &c.	Various ..	"	27,031,552	..
Totals	2,115,184	83,837,326	4,231