

1943
NEW ZEALAND

MINES STATEMENT

BY THE HON. P. C. WEBB, MINISTER OF MINES

MR. SPEAKER,—

I have the honour to present to Parliament the annual statement on the mining industry of the Dominion for the year ended 31st December, 1942.

MINERAL PRODUCTION

The following statement shows the quantity and value of the production of metalliferous mines, stone-quarries under the Stone-quarries Act, and of coal-mines during 1942 and 1941 :—

Mineral.	1942.		1941.	
	Quantity.	Value.	Quantity.	Value.
Gold and silver	*	£ *	*	£ *
Platinum	21 oz.	189	35 oz.	286
Iron-ore	2,433 tons	6,576	1,544 tons	3,894
Stone .. .. .	..	539,904	..	528,313
Pumice	3,085 "	11,673	3,160 "	11,226
Coal	2,680,041 "	2,680,041	2,639,507 "	2,639,507
Tungsten-ore	67 "	32,309	67 $\frac{7}{20}$ "	13,463
Manganese-ore	321 "	1,694	752 $\frac{6}{20}$ "	2,995
Silica sand	1,875 "	2,367	2,034 "	2,756
Fuller's earth	138 "	434	109 $\frac{2}{20}$ "	382
Diatomaceous earth	418 $\frac{10}{20}$ "	585	124 $\frac{2}{20}$ "	508
Serpentine	31,248 "	26,038	7,861 "	6,780
Antimony .. .. .	..	..	17 "	249
Bentonite	500 "	2,134	136 "	578
Quicksilver	5 $\frac{2}{20}$ "	11,110	2 $\frac{10}{20}$ "	5,043
Asbestos	42 $\frac{13}{20}$ "	1,035	53 $\frac{7}{20}$ "	240
Clays	2,337 "	2,376	1,272 "	1,273
Dolomite	3,361 "	1,260	2,672 "	1,336
Quartzite	95 "	370	..	..
Totals .. .. .	..	3,320,095	..	3,218,829

* Not available for publication.

NOTE.—The values shown in the above and subsequent tables are expressed in New Zealand currency.

GOLD AND SILVER MINING

No statistical data is being published in relation to the production and exportation of gold, although it may be mentioned that there was a slight decline in output, due to problems of man-power and equipment difficulties.

Sixteen dredges operated in the West Coast District and five in the Southern District. During the year three new dredges were put in service and one suspended operations.

MINING PRIVILEGES

A total of 224 licenses for mining privileges was granted under the provisions of the Mining Act, a decrease of 163 on the previous year. Of the licenses granted in 1942, 44 were licenses entitling the holders to mine for gold.

Altogether 63 mining privileges, including 19 claim licenses and 7 water-race licenses, were struck off the registers under section 188 of the Mining Act.

PETROLEUM OIL

The outstanding feature in connection with the search for oil during the year was the great activity in deep drilling operations. In every case the results were negative, but, notwithstanding this, further exploratory work is still being carried out on certain areas. The following wells have been sunk since the passing of the Petroleum Act, 1937: Totangi, 5,700 ft.; Morere, 6,643 ft.; Midhurst, 10,925 ft.; Devon No. 1, 9,412 ft.; Devon No. 2, 6,300 ft.; Kumara S.F.L. No. 1, 5,450 ft.; Kumara S.F.L. No. 2, 2,980 ft.; Marton, 6,877 ft.; Mount Stewart, 3,395 ft.; Kawhaka No. 1 (West Coast), 2,795 ft. It is a disappointment that the energy and skill displayed by the operators have not been rewarded with some measure of success. Very large sums of money have been expended by the three principal licensees, and the most modern equipment in the world has been utilized.

From the wells at Moturoa on Petroleum Prospecting License No. 7 held by New Zealand Petroleum Co., Ltd., 86,173 gallons of crude petroleum oil were obtained during 1942.

The Dominion's total production of crude petroleum oil to 31st December, 1942, is estimated at 3,264,090 gallons.

COAL-MINING

There were 137 coal-mines operating in the Dominion in 1942. Fifty-six of these mines are situated on freehold property and produced 1,061,961 tons, or 40 per cent. of the total output. The remaining 81 mines are situated on Crown lands and produced 1,618,080, or 60 per cent. of the total output of 2,680,041 tons.

The annual production of coal since 1938 has been as follows:—

Year.		Tons.	Year.		Tons.
1938	..	2,222,088	1941	..	2,639,507
1939	..	2,342,639	1942	..	2,680,041
1940	..	2,516,099			

During 1942 the quantity of coal imported was 90,865 tons, or 12,694 tons more than in the previous year, whereas exports (54,700 tons) were 3,479 tons less than in 1941.

The output for the year under review of 2,680,041 tons is a new record for the Dominion, and represents an increase of 40,534 tons, or 1.5 per cent. on the 1941 production. During 1942 production was severely retarded by serious floods on the west coast of the South Island and by the strike which occurred in the Waikato coal-fields in the month of September.

For the first five months of the current year (January to May inclusive) production is 55,000 tons higher than for the corresponding period in the year 1942.

Since the outbreak of war, coal-production has increased by 337,401 tons per annum, or 14.40 per cent. It is specially worth noting that whereas in pre-war years a substantial proportion of annual production was dumped and wasted, there has been virtually no waste for some years; in fact, some of the old dumps have been opened up and any remaining serviceable slack lifted and utilized by consuming units.

The output per miner employed underground last year was 732 tons, an increase of 6 tons over the 1941 production, and the second highest output ever attained in the history of coal-mining in the Dominion. Similarly, the production per man on the pay-roll—*i.e.*, both underground and surface workers—was 536 tons, an increase of 8 tons over the previous year. This is also the second highest figure ever attained—the record being 566 tons in 1916.

The productive capacity of the coal-mines which are developed or in process of development is sufficient to satisfy the reasonable needs of consumers, although it is recognized that the progressive rise in consumption is steadily reducing the margin. The chief factor operating adversely against higher production is that of transport—*i.e.*, the problem of getting the coal from the colliery itself to the consumers' bins. Bad harbour conditions at the west coast ports and inadequate shipping and railway wagons cause, both directly and indirectly, great losses in potential production. The loss of over five hundred fit and experienced miners to the Armed Forces in the early stages of the war, and their replacement by less fit and inexperienced men, has had its effect on colliery efficiency, the proportion of unskilled to skilled workmen at present being much higher than ever before.

The difficulties experienced recently by certain gasworks have not been wholly due to shortage of New Zealand coals, as some people might imagine. These difficulties have been occasioned by the abnormal demand for gas for military institutions and for industries overtaking the productive capacity of the gasmaking plant. Furthermore, these gasworks have always relied upon a proportion of Newcastle coal for efficient operation, and coal from this source is not coming forward as regularly as in past years. There is no coal in the Dominion which is as efficient in gasworks equipped with continuous vertical retorts as certain classes of Newcastle coal.

Notwithstanding the difficulties which have arisen since the outbreak of war, it is at least heartening to know that in this Dominion, which has made very great contributions in man-power to the Armed Forces in proportion to the population, and which relies almost wholly on overseas sources for the supply of colliery equipment, a far greater measure of success has been attained in the handling of problems associated with coal-mining and in meeting coal consumers' needs than in any other part of the British Commonwealth of Nations.

Arising out of the strike, the Government decided in October, 1942, to take control of the Waikato Collieries for the duration of the war, and a Control Board was set up consisting of representatives of the Government, the colliery owners, and of the workers. The functions of the Control Board are defined in the regulations, and its activities are steadily increasing as the organization develops. For the first eight months under control, compared with a similar period prior to control, the output of coal has increased by 42,125 tons, or 8.37 per cent.

Although much criticism was levelled at the Government for taking this step, it is of interest to learn that the procedure is being followed in other countries of the United Nations and reflects the determination of democratic peoples to organize the operation of critical war production on a basis which is not only fair and just, but also most likely to achieve maximum output.

The following is a table showing the output of coal from the various coalfields, and the comparative increase and decrease, for the years 1942 and 1941, together with the total approximate quantity of coal produced since the mines were opened :—

Name of Coalfield.	Output.		Increase.	Decrease.	Approximate Total Output up to 31st December, 1942.
	1942.	1941.			
North Auckland	Tons. 75,123	Tons. 80,367	Tons. ..	Tons. 5,244	Tons. 6,207,436
Waikato (including Taranaki) ..	855,511	837,629	17,882	..	20,151,897
Nelson	12,266	14,360	..	2,094	726,937
Buller	518,484	519,095	..	611	27,479,374
Reefton	88,197	72,030	16,167	..	1,343,741
Grey	572,382	570,610	1,772	..	19,917,028
Canterbury	31,667	27,898	3,769	..	1,231,271
Otago	180,046	184,646	..	4,600	14,526,289
Southland	346,365	332,872	13,493	..	9,071,743
Totals	2,680,041*	2,639,507	53,083	12,549	100,655,716

* Increase, 40,534 tons.

The output of the several classes of coal mined in each inspection district is summarized as follows :—

Class of Coal.	Output of Coal during 1942.				Total Output to the End of 1942.
	Northern District (North Island).	West Coast District (South Island).	Southern District (South Island).	Total.	
Bituminous and sub-bituminous	Tons. 75,123	Tons. 1,099,602	Tons. ..	Tons. 1,174,725	Tons. 56,327,892
Brown	855,511	91,116	282,644	1,229,271	38,239,247
Lignite .. ..	..	611	275,434	276,045	6,088,577
Totals for 1942 ..	930,634	1,191,329	558,078	2,680,041	100,655,716
Totals for 1941 ..	917,996	1,176,095	545,416	2,639,507	97,975,675

TABLE SHOWING THE INCREASE OR DECREASE IN THE ANNUAL PRODUCTION OF COAL AND OIL SHALE IN THE DOMINION, AND THE QUANTITY OF COAL IMPORTED SINCE 1878.

Year.	Coal and Shale raised in the Dominion.		Coal imported.		
	Tons.	Yearly Increase or Decrease.	Tons.	Increase over Preceding Year.	Decrease below Preceding Year.
Prior to 1938 ..	88,255,342	..	13,699,695	..	..
1938	2,222,088	Dec. 55,711	109,206	..	7,293
1939	2,342,639	Inc. 120,551	111,537	2,331	..
1940	2,516,099	Inc. 173,460	64,860.	..	46,677
1941	2,639,507	Inc. 123,408	78,171	13,311	..
1942	2,680,041	Inc. 40,534	90,865*	12,694	..

* From Australia; value, £122,035.

TABLE SHOWING QUANTITY OF COAL EXPORTED ANNUALLY FROM NEW ZEALAND FROM 1938 TO 1942.

Year.	Quantity. Tons.	Year.	Quantity. Tons.
1938	55,711	1941	58,179
1939	43,990	1942	54,700*
1940	81,287		

* Includes 54,694 tons bunkers, value £120,677, and 6 tons cargo, value £35.

STATE COAL-MINES

The output from the State coal-mines for the financial year 1942-43 was 419,708 tons, which is a new record for the Department, and represents 15.66 per cent. of the total Dominion production. All collieries contributed to the increase, as shown in the table appearing below.

Two new collieries, Dobson and Wallsend, were acquired as State coal-mines on 22nd February, 1943. Considerable dip development work is required at the Dobson Colliery to ensure the maximum possible extraction of coal, and at Wallsend certain additional dip development is essential for similar reasons. On this account, neither of the collieries is likely to show a profit for a few years, although the operating losses should not be considerable during this period and should eventually be recouped when pillar-extraction commences.

The development work at the Blackball Colliery was continued, but failed to locate an area of hard coal similar to that worked in the old colliery. A severe financial loss on operations has been inevitable because of the friable nature of the coal, heavy costs of pumping the large volume of water in the mine, and very heavy timbering costs. Financial results were also adversely affected by substantial periods of idleness caused by lack of shipping and the urgent need in the national interest of giving priority in available shipping-space to gas and railway coals required in the North Island. The Paparoa Colliery (privately owned) was similarly affected by the shipping difficulty.

Boring operations on a coalfield fairly close to Blackball have commenced, following a geological examination of the area. Consideration will be given to the possibilities of this new field when the boring data is available. Experiments with the briquetting of Blackball coal have given encouraging results, and further trials are being conducted and data gathered concerning the latest developments overseas in the technique of briquetting. Altogether 30,542 tons of Blackball coal was disposed of during the financial year to such essential users as the Railways, cement-works, and electric-power stations. The coal from the Blackball Mine has accordingly been of some national importance in maintaining the services supplied by these industries.

The completion of development at the Tatu Colliery was unexpectedly delayed by the occurrence of a fault or "want" which was not detected in the earlier geological exploration work. The need for maintaining the highest possible coal-production to satisfy urgent and immediate requirements of consumers, together with lack of power, limited the number of workmen who could be concentrated on actual development, and has retarded this work to some extent. Arrangements have been made for the installation of electric power, and it is hoped that the major portion of this installation will be completed before the end of the present year. Over 50,000 tons of coal has been produced since the colliery was opened by the Government in 1940.

Full details in respect of the operations and financial results of the collieries appear in the annual report of the State coal-mines (C-2A).

A comparative statement for the last two financial years is shown hereunder:—

Mine.	Output in Tons, 1942-43.		Output, in Tons, 1941-42.		Percentage Increase in Gross Output.	Percentage Increase in Net Output.
	Gross.	Net.	Gross.	Net.		
Liverpool	165,837	160,260	163,799	157,170	1.2	1.9
Strongman	94,170	92,180	87,402	85,381	7.2	7.3
James	29,529	28,770	26,549	25,809	10.1	10.2
Blackball	34,527	34,294	25,950	25,773	24.8	24.8
Mangapehi	52,062	50,915	40,849	38,920	21.5	23.5
Tatu	29,620	24,440	10,159	8,875	65.7	63.6
Wallsend	6,883	6,441	..	..	..	..
Dobson	7,081	6,913	..	..	..	..
Totals	419,709	404,213	354,708	341,928	12.5	12.5

NOTE.—The difference between the gross and the net output is the allowance for mine consumption and waste. In addition to the above, 21,639 tons of coal was purchased for resale.

The disposals, inclusive of stock on hand at the beginning of the year, were as follows:—

Supplied to	1942-43.	1941-42.	Percentage Increase.
	Tons.	Tons.	
Depots	132,990	118,430	10.9
Railways	96,328	72,506	24.7
Other Government Departments	23,758	18,309	22.9
Shipping	10,289	8,131	20.9
Gasworks	107,667	107,522	..
Other consumers	26,235	13,519	48.4
Totals	397,267	338,417	14.8

The following table shows the total sales of State coal from the State mines as compared with the previous year, and the average f.o.r. price realized by each mine, *exclusive of subsidy* :—

Mine.	Total Sales, 1942-43.	Total Sales, 1941-42.	Percentage Increase.	Average Price f.o.r. realized.	
	Tons.	Tons.		s.	d.
Liverpool	159,900	155,349	2·8	18	3·22
Strongman	92,240	80,754	12·4	22	0·40
James	27,927	26,190	6·2	20	0·41
Blackball	30,542	22,415	26·6	16	2·53
Mangapehi	50,862	38,851	23·6	20	1·82
Tatu	24,321	14,858	38·9	21	1·24
Wallsend	5,910	..	..	21	4·20
Dobson	5,565	..	..	20	10·20
Totals	397,267*	338,417	14·8	..	..

* Increase, 58,850.

The sales of coal, &c., through the medium of the depots totalled 290,036 tons, value £499,010, as against 263,800 tons, value £441,337 for the previous year.

HOUSING

The employment of more labour in the coalfields of the Dominion has been rendered difficult by the lack of housing accommodation in the mining townships. In the State coal-mines vigorous steps have been taken to overcome this difficulty, and since the outbreak of war 186 houses have been built, at a cost of £177,788. In addition, 55 houses have been erected in the Waikato since the collieries were placed under control in October, 1942, and contracts for the erection of a further 30 have been let.

Altogether 370 homes, at a cost of £270,000, have been erected in mining townships since the present Government came into office, and of this sum £245,000 has been spent at State or State-controlled mines.

Last year the Government approved of a plan whereby special advances could be made by the Mines Department to the proprietors of privately-owned collieries to assist with home building. The obligation on colliery owners to provide adequate housing accommodation for their workmen is a statutory one (section 151 of the Coal-mines Act, 1925), and in view of the financial assistance which has been made available, there is no excuse for failure to build homes where necessary as speedily as possible under existing conditions.

CO-OPERATIVE MINING, STATE COAL RESERVE

Eighteen co-operative parties working portions of the State Coal Reserve near Greymouth produced during the year 1942, 87,591 tons, the number of men employed being 139. During the previous year nineteen parties produced 85,333 tons.

Up to the end of 1942 co-operative parties have produced a grand total of 1,713,194 tons of coal and have in the same period paid royalties to the State amounting to £82,636.

RESCUE-STATIONS

During the year the Rotowaro Rescue-station commenced training classes, and this station is now in full swing.

Delay in the shipment of rescue equipment from overseas held up the opening of the Ohai Station, but it is satisfactory to know that sufficient equipment has now arrived to enable training classes to commence in this area.

All three stations, Dobson, Rotowaro, and Ohai, will be fully effective before the end of 1943, and although it is to be hoped that no serious call will ever be made on the stations, it is good to know that the latest equipment and well-trained crews are at hand for rescue work.

SOCIAL AMENITIES

The Government's policy of improving social amenities and living-conditions in the mining townships has been fully implemented, as illustrated by the following amenities which have been brought into being since 1935 : Eight swimming-baths ; seven public halls ; eleven sports areas ; eleven bowling-greens ; fifteen tennis clubs ; twelve libraries ; 6 croquet-greens. Since the outbreak of war a definite limitation on the carrying into effect of this policy has been inevitable on account of the difficulties associated with labour and materials, as well as the need for according priority to defence works.

CARBONIZING AND BRIQUETTING

The following figures show the production of the low-temperature coal-carbonizing and briquetting plant of Waikato Carbonization, Ltd., at Rotowaro, during 1942 :—

Raw coal carbonized	35,964 tons.
Carbonized coal produced	17,622 tons.
Average percentage of carbonized coal to raw coal	49 per cent.
Carbonettes manufactured	10,890 tons.
Tar and oil treated	343,001 gals.
Pitch produced	732 tons.
Light and heavy oils produced	1,715 gals.
Creosote produced	169,192 gals.
“ Char ” sold for producer-gas plants	8,751 tons.
“ Char ” sold for other purposes	189 tons.

For the twelve months ended 31st December, 1942, Smokeless Fuel and Briquettes (Canterbury), Ltd., produced 1,956 tons of briquettes at its works at Sockburn. The production of tar was 28,891 gallons.

SUBSIDY ON COAL-PRODUCTION

For the financial year ended 31st March, 1943, the amount paid by way of subsidy on coal-production was £370,395. The total sum paid out in this way since the subsidy was first introduced in May, 1940, amounts to £713,388. These figures include subsidies on account of coastal shipping freights on coal and for additional cost of mining stores, as well as for increased rates of wages. The amount paid out in respect of wages alone was £302,240 for the financial year, the total to date being £549,456.

The trend of coal-mining costs is definitely upwards, and this is due to the high proportion of unskilled labour employed, the persistent and heavy increase in price of mining stores overseas, together with the implementing of the policy of adopting mining methods aimed to obtain the maximum extraction of coal. Again, heavy increases in consumption by many large coal-users operating under favourable price contracts prior to price control have operated adversely in respect of many collieries, which have been obliged to appropriate a much higher proportion of total production to the low-price market, thus seriously reducing the average selling-price and capacity to earn profits.

These matters are now under review by the Mines Department, and it is not unlikely that in many instances it will be found that increased subsidy will be essential to enable the industry to function efficiently.

COAL-MINES COUNCIL

Important work was carried out by the Coal-mines Council during the year, mainly in the sphere of adjudicating on coal-mining disputes and in the settlement of terms and conditions of employment generally.

MINING CONTROL

The task of surmounting immediate problems of production, including man-power and housing, and of distribution, with its attendant difficulties of transport, as well as the supply of materials vital to continuity of production, most of which come from overseas, has been no light one, but it has been accomplished with some measure of success. A policy of planning ahead of immediate needs and thus anticipating reasonable future requirements, and of seeking and maintaining the good will of all sections of the industry rather than the arbitrary imposition of control directions, has been the keynote of the Mining Controller's work, and the results are reflected in the measure of achievement which has been attained in dealing with a problem which has taxed the capacity of the authorities in all parts of the world.

COAL-MINERS' RELIEF FUND

The Coal-miners' Sick and Accident Funds having been abolished as from the 1st April, 1926, and incorporated in the Coal-miners' Relief Fund, all accident-relief payments are now made from the latter fund, which is administered by the Public Trustee.

The rate of interest allowed on the fund was decreased from 4 per cent. to 3½ per cent. as from the 1st April, 1933.

The interest earned for the twelve months ended 31st March, 1943, was £571, as against £679 for the previous year, while for the same periods the receipts from the ½d. per ton contributions were £5,346 and £5,544 respectively.

The total expenditure for the year ended 31st March, 1943, amounted to £9,284, as against £9,386 for the previous year.

The amount standing to the credit of the fund at the 31st March, 1943, was £14,410, as against £17,777 at the 31st March, 1942.

PERSONS EMPLOYED IN OR ABOUT MINES AND STONE-QUARRIES AND IN OIL-PROSPECTING OPERATIONS

The following table shows the number of persons employed in each inspection district during 1942 and 1941:—

Classification.	Inspection District.			Totals.		
	Northern (North Island).	West Coast (of South Island).	Southern (Rest of South Island).	1942.	1941.	Increase or Decrease.
Gold, silver, and tungsten ore	565	659	337	1,561	2,325	Dec. 764
Coal	1,826	2,298	873	4,997	4,991	Inc. 6
Stone - quarries under the Stone-quarries Act	1,110	80	369	1,559	1,972	Dec. 413
Silica	2	..	4	6	8	.. 2
Cinnabar	20	..	..	20	22	.. 2
Iron ore	12	3	..	15	21	.. 6
Manganese	3	..	..	3	9	.. 6
Pumice .. .. .	..	..	..	..	1	.. 1
Fuller's earth	1	..	..	1	1	.. ..
Diatomaceous earth	1	..	..	1	2	Dec. 1
Bentonite	2	..	..	2	2	.. ..
Serpentine	16	..	..	16	6	Inc. 10
Asbestos .. .. .	..	12	..	12	10	.. 2
Dolomite .. .. .	..	3	..	3	4	Dec. 1
Clay .. .. .	..	2	3	5	6	.. 1
Antimony .. .. .	..	..	..	..	3	.. 3
Oil prospecting	198	64	..	262	174	Inc. 88
Totals	3,756	3,121	1,586	8,463	9,557	Dec. 1,094

MINING AND QUARRY ACCIDENTS

In metalliferous mines, at which 1,645 men were ordinarily employed, no person was killed and five persons seriously injured.

At stone-quarries under the Stone-quarries Act, employing 1,559 men, seven persons were seriously injured. There were three fatal accidents.

In coal-mines, where 4,997 persons were ordinarily employed, six persons were killed and twenty-five persons seriously injured.

MINERALS OTHER THAN GOLD

These minerals continue to be of increased importance, and interest in the prospecting, development, and exploitation of any mineral of value in the United Nations' war effort has been maintained during the year despite difficulties due to shortage of skilled man-power and of mining equipment.

Scheelite.—This mineral still occupies pride of place in the list of critical minerals of strategic importance contained in New Zealand, and accordingly every effort has been made to maintain and stimulate production. To this end the Mines Department itself took over two of the principal mines in the Glenorchy district, the main producing field. The occurrence of scheelite here, as elsewhere in New Zealand, is notoriously erratic, and the attempt has been made by the Department to pursue an energetic prospecting and development programme to open up fresh reserves of ore and thereby allow of an increased and balanced production of scheelite. This, the first attempt to carry out a systematic and comprehensive development programme in the field for a considerable number of years, is due entirely to the exigencies of war, and was not warranted in pre-war years owing to the patchy nature of the ore and the widely fluctuating price for scheelite.

Many difficulties inseparable from mining operations in a relatively isolated district with lack of housing accommodation have been encountered, but a satisfactory development programme has been commenced and is being continued. It is to be regretted that the results of development to date have not been as satisfactory as could be wished for in disclosing fresh ore reserves, but some progress has been made in this direction, and development is still continuing. During 1942 a total of 16 tons of scheelite concentrates was won from what must be regarded as purely development work. In the present year attention has also been directed to stopping out portions of the pillars left in the old workings, and production for the first five months of 1943 amounts to 16 tons of concentrates, and it appears reasonable to anticipate that production can be maintained at this rate during the remaining portion of the year.

In addition to the Department's activities, there has been an increase in the number of small independent parties in the district, from whose operations it is reasonable to expect some increase in the production of scheelite.

Some production of scheelite is also reported from Macrae's Flat, but Glenorchy still continues to be the most important producer. Prospecting operations at the Golden Bar Mine, in the Wakamarina district, were continued by the Department, but results have been disappointing and operations have now ceased. The Mines Department has now completed a thorough investigation of the Marlborough field and proved that no production of any consequence can be expected from this field. In all, the equivalent of 70½ tons of 65 per cent. tungstic acid content concentrates were produced in 1942, as against a production of 71 tons of similar grade in 1941. Mainly as a result of operations by the State, production for 1943 should show a marked increase.

Mercury.—A further 5 tons of mercury were produced by Mercury Mines, Ltd., from the Puhipuhi deposits, but active production was suspended for many months owing to a huge landslip at the mine. Despite difficulties in securing the necessary equipment, progress in removing the landslip has been made, and production of mercury has now recommenced.

Development work at the Department's Ascot Mine at Karangahake has been suspended and all the available ore is being stopped out. It is expected that a small tonnage of ore will result from these operations, which will make a slight contribution to the production of an essential metal.

Mica.—While the examination of the mica deposits in South Westland by an organized party was disappointing in not revealing an extensive field, work has been continued at the discovery claim with encouraging results.

It is interesting to note that owing to war conditions specifications of mica have been drastically reduced, and in the United States of America the heaviest demand at present is for 1½ in. by 2 in., 2 in. by 2 in., and 2 in. by 3 in. Mica of this grade is regarded as critical or strategic. Accordingly, in addition to New Zealand demands, there would appear to be also an overseas market in America. A thorough investigation of the deposits has been as yet impossible because of difficult access and climatic conditions, but it is hoped to improve access by construction of a track which will allow of the transport of material so that adequate accommodation for prospectors may be provided.

Phosphate.—During the year the Clarendon phosphate deposits were investigated in some detail by officers of the Geological Survey, and as a result of their examination a low-grade phosphate deposit previously unknown and entirely separate from deposits worked prior to the last war was located. This deposit may be extensive, and drilling operations are at present being conducted by the Mines Department on behalf of the Department of Agriculture to determine the available tonnage. At the same time testing-work is being carried out at the Thames School of Mines to determine the best method of beneficiating this material and producing a concentrate whose phosphatic content is of commercial grade. The results both of the drilling programme and of the testing-work have not been without promise and are certainly sufficiently encouraging to justify further investigation. In addition, the Mines Department is also drilling in the vicinity of the old workings on behalf of the British Phosphate Commission.

Serpentine.—Owing to the value of this mineral to the fertilizer industry, the production of serpentine is now of some importance. During 1942 some 31,000 tons were obtained from quarries in

the Auckland Province, while prospecting-work was undertaken at Mossburn, in Southland, in order to produce serpentine for use in the southern districts.

Asbestos.—During the year considerable progress was made by the Hume Pipe Co. in preparing their mine at Upper Takaka for production. Their efforts have been concentrated mainly on the completion of the motor access road, the provision of housing accommodation, and the reconstruction of the treatment plant. It is hoped that in the near future this mine will be able to make a substantial contribution of asbestos fibre required in the manufacture of asbestos-cement products.

Copper.—Owing to the demand for diamond drills for urgent work in the exploration of more important mineral deposits, such as the Clarendon phosphate deposits, it has been impossible to commence drilling operations at Kawau Island.

Manganese.—A small production of manganese-ores, both of metallurgical grade and of chemical grade, was made from the Cloudesley Mine at Moumoukai. Another company is endeavouring to produce ore for shipment to America, while prospecting operations are also being undertaken on a manganese occurrence in the North Auckland district.

Non-metallic Minerals.—Increased interest was shown during the year in the prospecting and development of these minerals. In particular, 500 tons of bentonite were produced, and there are indications that overseas markets will absorb more of the New Zealand material after the war. A small production of magnesite used in finely ground form as a fertilizer in the tobacco industry in place of dolomite is also to be noted.

In connection with the development of non-metallics, it is of interest that a firm in the Nelson district has been for some time producing with modern equipment a range of finely ground products. In particular, the firm has been able to supply the requirements of the glass industry for pure calcium carbonate, which was previously imported from Australia.

Ore-dressing Tests.—Recently considerable additions have been made to the Thames School of Mines equipment in respect of ore-dressing apparatus, and the laboratory is now equipped with miniature ball-mill, classifier, jig, concentrating-table, and flotation plant, which allows of reasonably complete investigation being made into the dressing of various ores. Already this equipment has been placed in active use investigating problems in connection with the phosphate deposits of Clarendon and the scheelite deposits of Glenorchy.

LABORATORY INVESTIGATIONS

Laboratory work connected with the mining industry has been undertaken by the Dominion Laboratory along similar lines to that reported in previous years.

Samples examined included scheelite concentrates for export, gold and silver assays, mine airs and gases, stone-dusts, and brattice cloths. Analyses of coal and other fuel samples and a large amount of investigational work in connection with fuel problems were carried out by the Coal Survey Division of the Laboratory, in addition to further systematic work on the physical and chemical survey of the coal resources of the Dominion.

GEOLOGICAL SURVEY

During the year 1942-43 officers of the Geological Survey were chiefly engaged in examining and sampling deposits of possible economic value. These included phosphate at Clarendon, serpentine in North Auckland and near Mossburn, limestone in the Waimumu and Lumsden districts, diatomite at Akaroa, mica in South Westland, and clay in the Whangarei and Wyndham districts. Subsurface water-supplies are being increasingly used, and many bore-sites have been selected for the military authorities and others.

The possibility of utilizing volcanic steam was considered, and the Tokaanu and Whakatane districts were explored. Geophysical work was carried out and trial bores sunk. Geophysical examinations were also made in the Clarendon and Whakamaru districts.

The only new regional survey undertaken was that of D'Urville Island. The detailed mapping of the Grey Coalfield is nearly completed, and that of the Nightcaps-Ohai Coalfield was begun this field season.

The oil companies freely used the services of the palæontological experts of the staff, and the petrologist made many determinations for the Railways, Dominion Laboratory, and Public Works.

No bulletins or lengthy reports were issued, publications for the most part being short papers of economic interest.

SCHOOLS OF MINES

The value of the scholarships offered annually by the Department for competition among students attending Schools of Mines within the Dominion has been increased to £65 per annum in the case of students who have to reside away from home while attending the University of Otago, and to £45 in the case of students who are able to reside at home while attending the University.

At the annual examination held in November, 1942, seven scholarship candidates presented themselves for examination. Scholarships were awarded to three candidates from the Dunedin School, and one from the Reefton School. Two candidates from the Thames School completed the examination.

The expenditure in the Schools of Mines for the year ended 31st March, 1943, was £3,695, as compared with £3,390 for the previous year.

MINERS' BENEFITS

The provision for payment of a miner's benefit is contained in the Social Security Act, which has been operative since the 1st April, 1939. One of the necessary conditions precedent to payment of the benefit is that the applicant should be seriously and permanently incapacitated by miners' phthisis or totally incapacitated by heart or other occupational disease associated with the mining service in New Zealand.

The rate of benefit for the miner is 30s. a week, and this may be increased by 10s. a week in respect of his wife. There is provision for the payment of a grant of 10s. a week for each dependent child under the age of sixteen years, with a maximum grant in any particular case of £4 10s. weekly, but the benefit in respect of the children is reducible by all income of the family, other than the miner's benefit, in excess of £2 a week. During the past year the benefit was supplemented by a grant of cost-of-living bonus of 5 per cent. as from the 1st May, 1942, and since that date the rates of payment, inclusive of the cost-of-living bonus, have been 31s. 6d. a week in respect of the miner, increased by 10s. 6d. in respect of his wife and, where applicable, 10s. 6d. a week on account of each dependent child. The maximum amount of £4 10s. a week referred to has been correspondingly increased by the amount of the cost-of-living bonus.

The widow of a miner who died while in receipt of a benefit may be granted a benefit of 17s. 6d. a week during widowhood, and supplementation by way of cost-of-living bonus at the rate of 5 per cent. applies also in this case.

This scheme, which originated in the Miners' Phthisis Act, 1915, is administered by the Social Security Commission, and the following summary of the operations for the year ended 31st March, 1943, has been supplied by the Social Security Department:—

	£
Payments from 1st November, 1915 to 31st March, 1942	1,343,420
Payments, 1942-43	80,228
	<hr/>
	£1,423,648
	<hr/>
Number of new grants for year 1942-43—	
Male	12
Female	2
	<hr/>
	14
Number of benefits in force; 31st March, 1943 (including one emergency)—	
Male	720
Female	118
	<hr/>
	838
Annual value of benefits in force at 31st March, 1943	£76,284
Average benefit per annum	£90 16s. 7d.
Dissection of benefits	
Single miners	223
Married miners	497
Miners' widows	118
	<hr/>
	838

ASSISTANCE TO MINING

During the financial year ended 31st March, 1943, assistance has been extended to the mining industry on a basis similar to past years. A sum of £22,069 was advanced to promote and maintain coal-production, £3,659 to scheelite-mining, £3,630 to gold-mining, £856 towards the production of manganese, and £4,168 for the production of mercury. In addition, assistance to individual prospectors seeking gold and scheelite absorbed £2,689, and the Department itself expended £4,562 in prospecting and development work on strategic minerals.

The subsidized gold-mining scheme was terminated on the 30th June, 1942.

APPENDICES TO THE MINES STATEMENT

APPENDIX A

REPORTS RELATING TO METALLIFEROUS MINES AND STONE-QUARRIES

THE INSPECTING ENGINEER OF MINES TO THE UNDER-SECRETARY OF MINES

Wellington, 25th May, 1943.

SIR,—

I have the honour to present my report on metalliferous mines and stone-quarries for the year ended 31st December, 1942.

Owing to the necessity to conserve space, and other circumstances, no details are given on gold-mining, nor, as in former years, are any statistics included regarding the production from quartz-mining, dredge mining, or alluvial mining.

ACCIDENTS

In 1942 no fatal and five serious non-fatal accidents occurred in or about metalliferous mines, at which 1,645 persons were ordinarily employed.

Cause.	Fatal Accidents.		Serious Non-fatal Accidents.	
	Number of Separate Accidents.	Number of Deaths.	Number of Separate Accidents.	Number of Persons Injured.
Falls of ground	2	2
Explosives
Miscellaneous, on surface	3	3
Miscellaneous, underground
Totals	5	5

Four serious non-fatal accidents occurred in the West Coast District—two in the Blackwater Mine, one on the Barrytown dredge, and the fourth at an old crushing battery. The serious non-fatal accident which occurred in the Northern District was at the Sylvia Mine.

GOLD-MINING

No new quartz mines were opened up during the year.

Twelve of the thirteen dredges working in the West Coast District at the end of 1941 continued operating during 1942. In May the Argo dredge suspended operations, and three new dredges, the Slab Hut, Marsden, and Atarau, commenced operating.

In the Southern District four dredges continued to operate, and a fifth, the Clutha, was reconstructed and refitted to be worked as a paddock dredge.

PROSECUTIONS

No informations were laid during 1942 by the Inspectors of Mines.

MINERALS OTHER THAN GOLD AND SILVER

Asbestos.—From 534 cubic yards of serpentine 42½ tons of asbestos fibre, valued at £1,035, was produced from the Upper Takaka field.

Bentonite and Fuller's Earth.—At Porangahau 500 tons of bentonite, worth £2,134, was mined. At Kamo, 138 tons of Fuller's earth, worth £434, was produced.

Diatomite.—At Kamo about 321 tons of diatomaceous earth, worth £361, and at Ngongotaha about 23 tons, worth £112, were produced.

In Otago 74 tons of diatomaceous earth, valued at £112, was mined during 1942.

Iron.—From near Whangarei 300 tons of limonite, valued at £1,060, was mined, and at Okaihau, North Auckland, 1,725 tons of limonite, worth £4,802, was won. In the Takaka district 408 tons of limonite, valued at £714, was quarried.

Feldspar.—Twenty-four tons of feldspar was produced from the Takaka district.

Manganese.—At Moumoukai 280 tons of manganese-ore was mined from Cloudesley's Mine, and from the Mirandite Products, Ltd.'s mine at Clevedon 41 tons was hand-sorted.

Mercury.—From the Puhipuhi opencast workings 2,500 tons of material was treated early in 1942 and over 5 tons of mercury was recovered. A fall of 40,000 cubic yards of overburden buried the available ore, and production is not expected to recommence before July. A small quantity of good cinnabar-ore is being won at Karangahake.

Mica.—From outcrops in South Westland a 2 cwt. sample of fairly-good mica was brought out. Further prospecting of the field is being done.

Petroleum.—Two bores were put down in the North Island by the Superior Oil Co. of New Zealand, Ltd. during 1942—one at Marton to 6,877 ft. and the other near Palmerston North to 3,361 ft. Both proved unproductive.

In the Taranaki District the New Zealand Petroleum Co. put down the Devon bore to 9,420 ft. without success.

From the three producing wells owned by Motorua Oilfields, Ltd., Nos. 1, 2, and 4, a total of 86,173 gallons of petroleum was obtained, all of which was treated by New Zealand Oil Refineries, Ltd., New Plymouth.

In the Kumara district the Superior Oil Co. of New Zealand, Ltd., put down a bore which at 5,450 ft. was abandoned. Near Marsden the site for another bore was then prepared.

In 1942, 793 ft. of structural drilling was done by New Zealand Oil Exploration, Ltd.

Platinum.—Together with the gold recovered, two Southland sluicing claims produced 21 oz. 8 dwt. of platinum during 1942.

Pottery Clay.—Near Kaka, in the Nelson district, 690 tons of pottery clay, worth £914, was mined. From Kakahu and Mount Somers 1,647 tons of high-grade clays were produced.

Serpentine.—To augment the supply of fertilizer, 31,248 tons of serpentine, valued at £26,037, was won from Warkworth, Wayby, and Kaukapakapa quarries.

Talc.—From the Takaka district 15 tons of tale was mined.

Silica.—From the Wanganui and North Auckland districts 463 tons of silica, valued at £939, was produced. In the Southern District 1,412 tons of silica sand was mined.

Sulphur.—No work was done on any sulphur deposit during the year.

Tungsten.—From the Glenorehy and Macrae's districts of Otago 67 tons of scheelite concentrates, valued at £32,309, were produced.

At a Wakamarina mine about 1,000 ft. of driving and rising was done, but the results were very disappointing.

STONE-QUARRY INSPECTION AND STATISTICS

By section 2 of the Stone-quarries Amendment Act, 1920, the application of the Stone-quarries Act, 1910, was extended to include every place, not being a mine, in which persons work in quarrying stone and any part of which has a face more than 15 ft. deep. The Act also applies to any tunnel in the construction of which explosives are used, but it does not apply to any Government operations or any road or railway cutting, or excavations for buildings.

The following is a table showing the number of quarries under the Stone-quarries Act, also the number of persons ordinarily employed thereat, and the annual output and value of crude stone during 1942:—

Provincial District.	Name and Address of Government Inspector of Stone-quarries.	Number of Working Quarries under the Act.	Number of Persons ordinarily employed.	Output of Stone.								Value at Quarry.
				Stone or Gravel for Macadamizing or Ballast.	Stone for Harbour-works.	Building or Monumental Stone.	Limestone for Agriculture.	Limestone for Cement or Mortar.	Phosphate for Agriculture.	Miscellaneous.		
Auckland ..	R. T. H. Dale, Mines Dept., Huntly	156	790	1,058,506	..	..	210,413	278,389	..	..	36,142	283,051
	E. J. Scoble, Mines Dept., Waibi (Hauraki Mining District only)	22	86	61,880	..	273	..	..	..	..	..	21,928
Hawke's Bay	R. T. H. Dale, Mines Dept., Huntly	21	66	17,482	..	..	36,049	..	..	..	..	14,160
Taranaki ..	Ditto	24	58	26,991	..	..	..	..	..	..	..	6,105
Wellington	"	36	110	73,303	720	..	74,889	..	..	..	22,500	42,645
Nelson ..	G. W. Lowes and	24	80	14,869	4,344	..	13,801	61,410	..	..	4,770	16,434
Westland ..	R. C. Ruffin,											
Buller ..	Mines Dept., Grey-											
Marlborough	mouth											
Canterbury	T. McMillan, Mines Dept., Dunedin	51	369	77,146	45,886	2,651	278,016	42,071	..	..	..	155,581
Otago ..												
Southland ..												
Totals, 1942	..	334	1,559	1,330,177	50,950	2,924	613,168	381,870	..	..	63,412	539,904
Totals, 1941	..	395	1,972	1,223,141	47,255	7,892	728,474	362,921	..	..	57,708	528,313

QUARRY ACCIDENTS

The following is a summary of serious accidents during 1942 at quarries under the Stone-quarries Act:—

Cause.	Number of Accidents.		Number of Sufferers.	
	Fatal.	Serious.	Killed.	Seriously injured.
Haulage .. .. .	..	1	..	1
Machinery	1	2	1	2
Explosives .. .. .	..	1	..	1
Falls of ground	2	2	2	2
Miscellaneous .. .. .	..	1	..	1
Totals	3	7	3	7

Two fatal accidents occurred in North Island quarries and one in a South Island quarry during 1942.

Of the seven serious but non-fatal accidents, all were in North Island quarries.

PROSECUTIONS

Six convictions were obtained during 1942 against four quarry foremen in the North Island for breaches of the Stone-quarries Act and regulations.

STATE AID TO MINING

(1) SUBSIDIZED PROSPECTING

During the year ended 31st March, 1943, individual gold prospectors were assisted from the Mines Department vote to the extent of £2,689. This sum includes all payments made in respect of subsidies, wages, and equipment connected with the Department's subsidized gold-mining scheme, but does not include salaries and allowances paid to mining engineers and supervisors. The average number of men employed under the scheme was 62, but this scheme was discontinued on the 30th June, 1942, except for a very few men in the Marlborough District, where the scheme was continued until the 27th February, 1943.

In addition, a total sum of £34,382 was advanced by way of subsidy, loan, or other form of financial assistance to companies and individuals engaged in prospecting and/or mining for gold, coal, and other minerals.

The Department has also undertaken surveys, prospecting, mining and development work in selected areas at a cost of £4,562.

(2) GOVERNMENT PROSPECTING DRILLS

During the year the Department's drills were hired out on seven occasions to various companies and parties. Forty-one holes were drilled for a footage of 4,762 ft.

(3) SUBSIDIZED ROADS TO MINING AREAS

The expenditure in the form of subsidies and direct grants upon roads and tracks to mining areas amounted to £3,968, as compared with £1,283 during the previous year.

LEGISLATION AFFECTING METALLIFEROUS MINES

There were no amendments to the Mining Act, 1926, during 1942, nor were any of the regulations under that Act amended.

I have, &c.,
 GEORGE DUGGAN,
 Inspecting Engineer of Mines.

ANNEXURE A.

SUMMARY OF REPORTS BY INSPECTORS OF MINES.

NORTHERN INSPECTION DISTRICT (E. J. SCOBLE, Inspector of Mines).

QUARTZ-MINING.

Martha Gold-mining Co. (Waihi), Ltd.—Including 862 tons of battery tailings from the old Waihi mill, 154,010 long tons of ore were treated, the principal producers being the Martha and Royal lodes. Compared with the previous year, this yield shows a decrease of 12,374 tons. There was a corresponding drop in the amount of silver won, but a slight increase of gold. The total driving, rising, &c., carried out amounted to 7,528 ft., as compared with 8,042 ft. for 1941. No shaft-sinking was undertaken, and development work generally was much curtailed owing to a shortage of labour. The number of men employed fell from 566 for last year to 511 for this. A total of 164,870,000 gallons of water was pumped for the period.

Golden Dawn Gold-mines, Ltd., Owharua.—Work suspended and plant being sold for removal.

Tabisman-Dubbo Gold-mines, Ltd., Karangahake.—The company has been dissolved, and all privileges struck off the register.

New Maoriland Mine, Waitekauri.—The material won at this mine comprised 200 tons of ore and country rock, all of which was treated at the owner's mill.

Golden Spur Co., Ltd., Maratoto.—Very little work has been done on this property apart from the treatment of some parcels of ore for experimental purposes.

New Maratoto Mine, Maratoto.—This was formerly known as the "Tasman United Mine," and the new owners have cleaned out and repaired the old levels, &c., and erected timber for stoping. A small ball-mill has been installed, and it is proposed to put down an oil flotation plant, wherein the ore will be treated. Labour is a problem here, as at other mines.

Kernick's Freehold, Tapu.—Driving and stoping has continued on the reef in the Gully level, and old workings were holed in a southerly direction. The reef is inclined to pinch in the north, and values won from this source have so far not come up to expectations. Prospecting has given favourable results for possible low-grade developments in some portions of the property.

Una Hill Consolidated Gold-mines, Ltd., Thames.—Work was continuous, and resulted in the employment of nine men at the mine and two in the battery for the year. The good ore which was being mined up to the end of 1941 cut out early in the new year. The drive north was carried to 185 ft., and stoping was done above the intermediate level, but without success. Half-way through the year a new plan of development was started, consisting of the driving of a level south and the sinking of a winze below the low level. By the end of the year the southerly development had been carried to 170 ft. and crosscuts put out, but nothing was located. Gold was found scattered through the reef and stringers met in sinking, and a new level is being opened up at 250 ft., or approximately sea-level, where the appearance of both quartz and country promises an early location of favourable values. A total of 472 tons of ore was won and treated for the period.

Sylvia Mines Consolidated, Ltd., Thames.—The sinking of this company's shaft was resumed in June or thereabouts, and reached a depth of 162 ft. at the end of the year. Fourteen men were employed on an average.

Green Hill Gold-mines, Ltd., Coromandel.—The crosscut from No. 2 winze was advanced to 55 ft., where it encountered blue pug containing a few isolated pieces of quartz. Crosscutting was suspended, and the sinking of a second winze was then undertaken and carried down on ore to 26 ft., but the results were unsatisfactory. Driving north was also put in hand, but this likewise proved valueless, and did not proceed beyond 8 ft. Five men were employed for the period. The mine is now shut down, and will continue so for the duration of the war.

Kuaotuna Gold Recoveries Syndicate, Kuaotuna.—Operations suspended, and the plant is open for sale.

Hardy's Mines, Waiorongomai.—The ore won for the year amounted to 5 tons 3 cwt. 2 qr. It was picked or reduced in bulk, and then shipped for treatment to the Electrolytic Refining and Smelting Co.'s plant at Port Kembla, New South Wales. The ore is complex and was obtained from the Hero level, which is situated at an elevation of 1,400 ft. One man was employed.

BORING OPERATIONS.

Drilling Prospectors, Ltd., Thames.—No holes were sunk for the year.

GOLD PROSPECTING.

Six men are engaged at independent work on their own claims, but nothing is now being done under the Department's scheme, which ceased to operate in June.

MISCELLANEOUS.

Mercury Mines, Puhipuhi.—Some 2,500 tons of material were won and processed during the first half of the year, when a fall of ground occurred and buried the whole of the workings. A small bulldozer and $\frac{3}{4}$ yard excavator have since been employed at removing the fallen ground (estimated at 40,000 cubic yards), but it is evident that the production stage will not be again reached until May or June of this year. An average of eighteen men was employed.

Ascot Cinnabar Mine, Karangahake.—Development is proceeding and a small quantity of good ore has been proved, and this will be concentrated for shipment and subsequent treatment. Two men were continuously employed for the period.

Serpentine.—This is got in the Waiwera and Mahurangi Survey Districts, North Auckland, and amounted to 31,248 tons.

Manganese.—Cloudesley Mines, Moumoukai Valley, South Auckland: Production amounted to 246 tons of metallic and 34 tons of dioxide ore, and this was sold for £984 and £546 respectively.

Mirandite Products, Ltd., from its area near the Ness Valley, Clevedon, produced 41 tons, which was hand-sorted and is worth £164. None was sold.

Silica.—The following was produced: Chemical and Colour Industries (N.Z.), Ltd., from its area near Totara North, 62 tons 17 cwt., worth £251 8s.; A. C. Tucker, 4 tons, worth £12; and Messrs. Gilbert and Sons, 396 tons, valued at £675 10s. Messrs. Tucker's and Gilbert's mines are situated at Aramoho, Wanganui.

Pumice.—None was obtained.

Fuller's Earth.—The quantity obtained was 138 tons, worth £434. It was all got from the estate of the late A. Crawford, Kamo, Whangarei.

Diatomaceous Earth.—Some 321 tons, valued at £361, were produced by Mr. S. C. Crawford, of Kamo, and 23½ tons, worth £111 12s. 6d., by Mr. W. Brake, of Ngongotaha.

Bentonite.—Mr. H. F. Stoddart, Porongahau, produced 500 tons, which were sold for £2,134.

Sulphur.—No deposits were worked.

Limonite.—Okaihau Quarries, Ltd., Okaihau, and Reyburn's Lime Co., Whangarei, produced 1,725 tons, valued at £4,802, and 300 tons, valued at £1,060, respectively. Ten men were employed in one case, and two in the other.

Petroleum.—The Superior Oil Co. sunk two holes—namely, the Stantiall, at Marton, and the Young, at Mount Stewart, near Palmerston North. The former was carried down to 6,877 ft. (though basement rock was reached at 6,842 ft.), and the latter to 3,395 ft., the basement being met at 3,361 ft. No results were obtained from either hole.

The New Zealand Petroleum Co. sunk its Devon bore, at Taranaki, to 9,420 ft., but so far has met with no success, though work continues in the testing of sand horizons. Basement rocks were encountered at 9,388 ft.

Moturoa Oilfields, Ltd., got the following from its three producing wells: No. 1, 4,348 gallons; No. 2, 60,568 gallons; and No. 4, 21,257 gallons; or a total of 86,173 gallons. The oil was all treated by N.Z. Oil Refineries, Ltd., New Plymouth.

ACCIDENTS.

One fatality occurred, the victim being Mr. W. Sinclair, foreman, Grant's serpentine-mine, Wayby. Mr. Sinclair was asphyxiated by and suffered other injuries from a large fall which came away from the face of an open cut in an unexpected manner. There was one serious non-fatal accident, the victim of which was Mr. M. Brown, of the Sylvia Mine, Thames. Mr. Brown was engaged in mucking work after blasting in the shaft (which is now being sunk) and apparently overloaded the bucket, for a stone fell from same when being hoisted and struck him on the back, with the result that he suffered four broken ribs and a punctured lung.

PROSECUTIONS.

There were no prosecutions.

WEST COAST INSPECTION DISTRICT (G. W. LOWES AND R. C. RUFFIN, INSPECTORS OF MINES).

QUARTZ-MINING.

Marlborough County.

Golden Bar Mine (Mines Department), Wakamarina.—This mine was prospected by the Mines Department during the year. No. 2 level was extended to the end of the ore-body and subsequently broke through to daylight to facilitate ventilation. At a selected point a rise was put up, to a height of 60 ft. above rail-level, and driven north and south to form an intermediate level. All the development work carried out was done on an ore-body varying from 3 ft. to 6 ft. in width; consequently a considerable tonnage of ore was broken and developed, but gold and scheelite values are yet to be determined.

Buller, Grey, Westland, and Murchison Counties.

Lode prospecting in the above counties has practically ceased, there being no activity of importance during the year.

Inangahua County.

Blackwater Mine, Waiata.—The development programme for the year had to be somewhat curtailed, due to the shortage of labour, nevertheless a total advance of 2,438 ft. was accomplished, being considerably in excess of the footage advanced during the previous year.

Of the total advance, driving contributed 1,462 ft., of which 1,023 ft., or 70 per cent., exposed reef averaging 12.23 dwt. over a width of 26 in.

The results obtained from the main development points were as follows:—

No. 13 Level Drive North: This drive was advanced with the object of locating and proving the low-grade ore exposed in the north end of the No. 11 level beyond the so-called "Prohibition Block." However, after driving a distance of 49 ft. in country, the drive was stopped in order to release the men employed there for more productive work.

No. 14 Level Drive South: This drive was advanced 273 ft., all of which exposed reef, 189 ft. averaging 11.83 dwt. over 42 in. wide, and the remaining 84 ft. being on unpayable reef averaging 3.76 dwt. over 44 in. wide. The latter stretch corresponds with an unpayable stretch encountered on the level above.

No. 15 Level Drive North: This drive advanced 708 ft., of which 510 ft. exposed reef averaging 14.21 dwt. over a width of 19 in.

No. 15 Level Drive South: This drive was advanced 432 ft., of which 237 ft. exposed reef averaging 14.89 dwt. over a width of 24 in.

The proportion of driving through country on the No. 15 level might appear unduly high, but owing to the proximity of the reef to the shaft on this level, and in order to make a shaft crosscut of sufficient length to deal with trucking, the drives north and south were started in country rock at the required distance from the shaft, and 243 ft. of driving was done in country rock before intercepting the reef and the driving on reef commenced.

On comparing the reef exposed on the bottom level, No. 15, with the same stretch of reef on No. 14 level, the value has increased by 1.38 dwt., although the width has decreased by 3½ in.

Future development will depend entirely on the labour available, but the work of opening up the reef north and south on No. 15 level will definitely be continued.

No shaft-sinking was carried out during the year.

Alexander Mine.—Stoping was confined to two blocks above No. 6 level from a reef averaging 3 ft. in width. Very flat dips were met during exploitation of the lode, making mining more difficult and expensive. Owing to the shortage of labour, only a small amount of development work was carried out in No. 6 level; consequently the mine has had to draw upon reserves for a considerable time and cannot hope to supplement them until conditions become more favourable.

Big River Mine.—Considerable difficulty was experienced in retimbering the main shaft from No. 7 to No. 8 level, but it was eventually accomplished, and No. 8 chamber was repaired by August. When the low level was reached it was found that the long crosscut was in first-class order, thereby considerably reducing the expense in driving to cut the lode, on which a winze was sunk from No. 7 level and a block of ore proved to a depth of 80 ft. Lack of skilled labour, especially winding-engine drivers, compelled the directors to close down the mine early in September.

Golden Treasure Mine.—This mining claim, operated by the Mines Department, was closed down early in the year and the plant removed to Glenorehy. The last work carried out in the mine was the sinking of a winze between two intermediate levels, and the discovery of a small amount of high-grade ore was reported.

DREDGE MINING.

Inangahua County.

Slab Hut Dredge, Mawheraiti.—This dredge commenced to operate in June. The dredge is equipped with 6 cubic feet close-coupled buckets and utilizes a total of 370 h.p. supplied by the Grey Electric-power Board. The dredge handled 463,162 cubic yards at a cost comparable with other dredges operating in this district. The shallow dredging depth of 20 ft. in fairly loose creek gravels is a factor favourable to the company at a time when replacement parts are costly and difficult to obtain.

Snowy River Dredge, Ikamatua.—This dredge had another successful year and dug slightly over 1,000,000 yards of high-grade ground. The dredge is favourably situated for low-cost production, having to handle easy-dug gravels up to an average depth of 12 ft.

Grey River Dredge, Ikamatua.—This dredge operated for 5,932 hours and dug an area of 121 acres, equivalent to 4,164,613 cubic yards of wash, for a recovery of 8.03d. per cubic yard.

Grey County.

Redjacks Dredge (Associated Gold Dredges, Ltd.), Redjacks Creek, Ngahere.—This dredge worked 6,959 hours, dredged 26.7 acres on an average depth of 27 ft., the resulting yardage being 1,165,785 cubic yards.

Atarau Dredge (Associated Gold Dredges, Ltd.), Moonlight Creek, Atarau.—This dredge was put into commission in March, and at the end of the year had dredged 18 acres of ground of an average depth of 22.5 ft. and treated 661,250 yards. The returns for several months were low, but improved as the dredge worked from the construction site on to the area proved payable during the prospecting campaign.

Marsden Dredge (Associated Gold Dredges, Ltd.), New River, Marsden.—This dredge commenced operations in January and dredged 28.4 acres of an average depth of 24 ft. The yardage treated was 1,099,700 yards.

The three foregoing dredges owned by Associated Gold Dredges (N.Z.), Ltd., are of similar design with all parts interchangeable and operate 6-cubic-foot buckets at a speed of 31 buckets per minute and each dredge utilizes 420 horse power.

Ngahere Dredge, Ngahere.—This dredge operated nearly 6,000 hours, being 82 per cent. of the total running-time available. An area of 22.75 acres was dredged averaging 80.8 ft. in depth with an average height of face above water-level of 26 ft. The total wash treated from this area was nearly 3,000,000 cubic yards, with a bucket efficiency of 55.62 per cent.

Argo Dredge, Blackball.—After dredging for the first five months of the year, the company directors were faced with the alternative of either suspending operations or expending a large amount of money on repairs and renewals. The former course was decided upon on account of heavy ground, marginal values, and the decayed state of the timber pontoons. For the period worked 214,000 cubic yards of ground were dredged which yielded at the rate of 1.3 grains per cubic yard, which for this class of ground was below paying-point.

Blackball Creek Dredge, Blackball.—This dredge worked fairly continuously during the year in ground averaging 40 ft. deep, except in periods when repairs were carried out chiefly on timber pontoons on the dredge. Values and yardage were maintained over the period and are likely to continue.

Barrytown Dredge (Gold Mines of New Zealand, Ltd.), Barrytown.—This dredge worked 37.112 acres, including 3.895 acres of tailings. During running-time 4,982 hours were worked, being 68.29 per cent. of the total working-time available. The average depth of ground dredged was 33.5 ft. and 2,003,000 cubic yards were treated, including 170,453 cubic yards of tailings, and the recovery of 1.94 grains per cubic yard was effected.

Westland County.

Maori Gold-dredge, Callaghans.—The digging and treatment of 479,000 cubic yards of ground was accomplished during the year despite the tight ground and extensive loss of time due to repairs.

Rimu Dredge, Rimu.—This dredge operated for 5,209 hours, this being 71 per cent. of the total digging-time. A total of 31.74 acres was dredged of an average depth of 31.5 ft., and 1,611,173 cubic yards of ground were handled, equal to 5,265 cubic yards per day and 309 cubic yards per hour. The value of the ground treated was 9.23d. per cubic yard, but higher operating-costs, due partially to heavy ground, equalled 7.92d. per cubic yard.

Kanieri Dredge (Gold Mines of New Zealand, Ltd.), Kanieri.—During the year this plant dredged 27.67 acres of ground, including 6.77 acres of tailings, in 5,523 hours, being equivalent to 75.7 per cent. of the possible dredging-time. The average depth of ground was 58 ft., and 2,592,000 cubic yards, including 501,218 cubic yards of tailings, were treated for a recovery of 2.53 grains per cubic yard.

Arakura Dredge (Gold Mines of New Zealand, Ltd.), Arakura Valley.—A total of 21.31 acres of ground were dredged in 6,275 hours, resulting in 2,571,000 cubic yards of ground being treated for an average recovery of 3.22 grains per cubic yard. The total digging-time was 86 per cent. of the possible time, and the average depth of ground was 74.75 ft.

Okarito Dredge, Five-mile Beach, Okarito.—A total of 50,882 cubic yards blacksand was dredged by the Company during the year, the gold yield per cubic yard being substantially the same as in previous years. The small yardage was due primarily to the shortage of labour making it impossible to work the full three shifts daily. At the end of the year the dredge sank owing to the pontoon being holed by a submerged log, but damage was comparatively light and operations were resumed after about three weeks' stoppage.

Gillespie's Beach Dredge, Weheka.—This dredge during the year worked 5,842 hours, being 78 per cent. of the possible dredging-time, 1,646 hours being lost through essential stoppages, holidays, general overhaul, and repairs. A total of 701,475 cubic yards of ground was dredged of an average value of 4.8d. per cubic yard.

DREDGE-CONSTRUCTION.

Construction of two large dredges on the Taramakau and Mikonui Rivers is still held in abeyance. The Waipuna Dredge (formerly White's electric dredge at Barrytown) is in an advanced stage of reconstruction and should commence operations in the first quarter of 1943.

ALLUVIAL MINING.

Buller County.

Addison's Flat Gold-mining Co., Ltd., Addison's Flat.—During the early part of the year the company worked out the remaining portion of the existing claim, and three months were occupied in shifting to another base approximately half a mile away. The ground in the new claim is very stony, and in consequence there is a considerable reduction in the yardage compared with previous years. During the year 12 acres of ground were worked and the average depth of ground of alluvial wash was 12 ft. A total of 188,760 cubic yards of ground was mined by hydraulic elevating for a return of 1.22 grains per cubic yard.

Inangahua County.

Waitahu Gold-mining Co., Waitahu River.—After working for half the year with a skeleton crew, the directors decided to close down until after the war on account of the impossibility of working the claim, except at a loss, with the labour available.

Mount David Sluicing Claim, Blackwater.—Water-race repairs occupied the company's staff for the whole year, and full-scale production will not be attained until the early part of 1943.

Grey County.

Moonlight Sluicing Claim, Blackball.—This company, operating on a 45 ft. face of fairly tight and stony ground, handled 145,880 cubic yards of gravel of a value of 1.3 grains per cubic yard.

Golden Sands Claim, Barrytown.—Operations at this claim were fairly continuous, but the amount of ground sluiced and gold recovered was seriously affected by the labour shortage, which has affected all alluvial mining.

Westland County.

Kumara Alluvials, Kumara.—At the completion of rehabilitation work (connected with the claim) of race and pipe-line construction late in the year, a small yardage was sluiced. Operations were then suspended, it being considered that further capital expenditure was not warranted in view of the present situation.

SUBSIDIZED MINING AND SMALL-SCALE SLUICING OPERATIONS.

In June all subsidized mining operations ceased. This decision resulted in the abandonment of a considerable number of small claims, from Collingwood in the north to Bruce Bay in the South.

MISCELLANEOUS MINERALS.

Asbestos.—The Hume Pipe Co. (Australia), Ltd., from a mineral license situated in Block I, Flora Survey District, Takaka, crushed 534 cubic yards of serpentine rock for a yield of 42 tons 13 cwt. of asbestos fibre. Of this quantity, 39 tons 9 cwt. were sold, and 1 ton 1 cwt. used for experimental purposes and samples. The total value of the product was £1,035.

Mica.—Further attention was paid to outcrops of mica on the Mataketake Range, South Westland, and the work of the prospectors disclosed some promising outcrops. A 2 cwt. sample of rough mineral was brought out, and after examination by experts the quality of part of the sample was considered to be suitable for factory use, consequently further investigation of the deposits will be undertaken.

Petroleum.—New Zealand Exploration, Ltd., completed 793 ft. of structural drilling by rotary rig carried out on license No. 27 in addition to extensive geological survey work on their area. For New Zealand Oil Concessions, Ltd., holding license No. 20 in Kumara district, the Superior Oil Co. carried out extensive structural drilling operations before deciding on the site of the hole. The bridging of Greenstone River, road construction to the site, and erection of plant were completed in time to allow of No. 1 hole being spudded in on 22nd September. The well was abandoned on 10th December, and preparations were made to drill No. 2 hole on a site chosen in the Marsden district.

Tungsten.—Operations were confined to prospecting at the Golden Bar Mine, Wakamarina. No treatment plant has yet been installed.

Pottery Clay.—K. A. Polglase, of Kaka, produced from underground workings 690 tons of clay, which realized £914 5s. The demand for this material is increasing, and manufacturers have placed orders that will enable the clay-pit proprietor to double his output.

E. Cobbletick, Tadmor Saddle, produced 50 tons of clay, valued at £37 10s. This material was used in the manufacture of fire-bricks.

Iron-ore.—In the Takaka district 408 tons were quarried and reduced by ball mill in readiness for use by gas companies, the value of the product being £714.

In addition to the foregoing, 24 tons of feldspar and 15 tons of talc were obtained by Lime and Marble Co. from the Takaka Valley for experimental purposes, and subsequent reports indicate that the material was found satisfactory after being reduced to the necessary fineness at the company's plant at Mapua, Motueka.

GENERAL REMARKS: MINING AND PROSPECTING.

With the exception of the search for oil in this district, prospecting has diminished to a negligible quantity. Only seventy holes were bored in alluvial areas. The only prospecting of lodes was small-scale operations on the mica outcrop.

Gold returns from all branches of the industry have seriously diminished, dredges being affected to the greatest extent. The amount of gravel treated during the year was considerably less than when new buckets, pins, and other wearing parts were readily obtainable. The shortage of skilled and unskilled labour had a detrimental effect on the gold yield, and it can be reasonably claimed that the year under review has been one of the most difficult that all branches of the gold-mining industry have ever experienced in New Zealand.

FATAL ACCIDENTS.

No fatal accidents occurred in the district during the year.

SERIOUS NON-FATAL ACCIDENTS.

On 6th March, 1942, David White, miner, Blackwater Mine, while cleaning out a sump was hit by a sharp piece of mullock which fell off the wall and severed the first finger of the left hand between the first and second joint. Later the finger was amputated.

On 8th April, 1942, Luigi Iada, at Deep Creek, when engaged dismantling an old crushing battery broke his leg while using chain tongs to unscrew a pipe. The tongs slipped off the pipe and struck his leg.

On 3rd July, 1942, R. Smith, miner, Blackwater Mine, lost the little finger of the left hand, which was severed by an axe when he was engaged on timbering.

On 22nd July, 1942, J. H. Wearne, greaser, Barrytown Dredge, received concussion when a handle of a hand-winch struck his head during an attempt to operate a trap-door in the tailings chute.

PROSECUTIONS UNDER THE MINING ACT.

Nil.

SOUTHERN INSPECTION DISTRICT (T. McMILLAN, INSPECTOR OF MINES).

QUARTZ AND ALLUVIAL MINING.

Waitaki County.

Sluicing operations have been carried out in the Livingston and Macrewhenua Minefield in the Waitaki County.

Waihemo County.

Macrae's Flat Gold and Scheelite Mining Co., Ltd., Golden Point, Deep Dell Mine.—Six men were employed on prospecting work in the 80 ft. section of the Home reef, but nothing of importance was located, and the company ceased to operate in September. A co-operative party then took over the mine and carried out some further work in the 20 ft. dip reef section, but results were poor, and operations underground ceased altogether at the end of October. Since then surface prospecting and driving in alluvial material has been carried out.

Callery Party, Deep Dell, Macrae's.—Driving, rising, and stoping operations have been carried out on both sides of Round Hill, and 138 tons of ore have been treated at the Deep Dell battery during the year.

The *Innes Freehold Mine* has also operated steadily, and sinking, driving, rising, and stoping operations have been carried out near the Golden Point Road gate.

Macrae's Flat Gold-mining Co.—The No. 2 plant has continued to operate steadily during the year, and the depth of the alluvials elevated by the electrically-operated gravel-pump was from 8 ft. to 20 ft. A total of 75,200 cubic yards of previously hand-worked alluvial gravels were elevated.

Maniototo County.

The alluvial mines at Naseby, Kyeburn, St. Bathans, Cambrians, Vinegar Hill, and Patearoa operated steadily whenever sluicing-water was available. Very little work was done at Earl's quartz-mine, Ophir.

Tuapeka County.

Mining operations were carried on steadily when sluicing-water was available in the Sailor's Gully tribute mine, also at Blue Spur, near the head of Gabriel's Gully, and at Tuapeka Mouth.

In the Southland and Wallace Counties the Nokonui, Waikāia, Round Hill, and Orepuke alluvial mines have operated steadily.

Lake County.

Glenorchy Scheelite Mining Co., Ltd., Western Slope, Mount Judah.—This company operated until the end of January only, when the mine and the Paradise Mine were taken over by the State.

Heather Jock Scheelite Syndicate (Wylie Bros.), Western Slope, Mount Larkin.—No scheelite-bearing quartz was located at the southern end of the reef, so the water-race was extended and the sluicing plant installed to command "Frobes" reef. After sluicing off a large quantity of overburden from several sections of the reef, a scheelite-bearing section of the lode was located at the end of the summer season. On the resumption of operations in the spring this section was stripped, and ore is now being won.

Elliot Bros. and Tripp, Bonnie Jean Mine, South-western Slope, Mount Larkin.—During the early portion of the year the reef which had been stripped was lifted, and yielded nearly 17 tons of concentrates. Stripping operations were then resumed until the winter weather caused a cessation. Stripping operations were again resumed in the spring, and good use has been made of the flush water in the removal of a large quantity of overburden.

Sharp, Harris, and Wetherston.—Driving and stoping operations were carried out at the extension of the Boozer reef until the scheelite-bearing ore cut out. Driving and stoping operations were carried out in the Bonnie Jean Gorge Mine in very heavy and faulted reef. A new entrance tunnel was driven and considerable driving and crosscutting has been carried out in faulted ground.

Groves Mine, on the Southern Side of the Bonnie Jean Creek.—The installation of the five-head battery, concentrating-table, and other treatment plant has been completed. Development work in the nature of driving, rising, and sinking has been carried out, and this mine is now producing.

Bonnie Jean Crossing Mine. Sluicing operations were continued on the outcrop of this reef whenever water was available until the stripping became too heavy. Driving operations were then carried out near the battery gully.

Eureka Reef, near the Glenorchy Terminus of the Buckleburn Aerial Ropeway.—Driving and stoping operations have been carried out in the northern section. Ground sluicing, trenching, and driving operations have also been carried out on the southern end of the outcrop.

The *Valpy Buckleburn Alluvial Mine* has been damaged by frequent floods.

Ross Mine.—Driving, rising, and stoping operations have been carried out, and the mine has been a steady producer.

Driving operations have been carried out at the Thompson reef, and sluicing operations on an extension of this reef near Long Gully.

Long Gully Mine.—Water-races and a dam were constructed, a sluicing plant was installed, and the Long Gully reef, covered by slip material, has been exposed. A small plant has been erected for the treatment of the crushed ore.

Mount McIntosh Mine.—Driving, sinking, and stoping operations have been continued and good ore has been won.

Black Peak Mine.—Prospecting and mining work has been carried out and good ore won. Weather conditions, however, were extreme during part of the working season.

The *Paulin Tribute Party* continued to operate the Paradise Mine until the beginning of February, when this mine was acquired by the State. The party later began to prospect the reef on the hill slopes of the Rees Valley between the twelve-mile and Precipice Creeks, by gravel sluicing, and also the reef in the Broadleaf section of the Buckleburn Gorge, by driving.

State Scheelite Mine.—The State acquired all the holdings of the Glenorchy Scheelite Mining Co. and commenced operations in February. A Resident Manager was appointed, and a programme for prospecting the Glenorchy Mine and prospecting and developing the Paradise Mine was instituted. In order to carry out this programme it was necessary to equip both mines with extra power plant and new drilling and other equipment. Housing accommodation in the Glenorchy and Paradise areas was provided by the State for the staff and employees, and offices, store-rooms, change-houses, blacksmiths' shops, and machinery sheds have been built.

In the Glenorchy Mine, prospecting work has been carried out in the No. 7 or main trucking level, which has been extended to 1,055 ft. Nothing of importance has yet been located, but the level is being extended in order to ascertain if scheelite-bearing ore exists at depth. In the low or No. 8 level a considerable amount of rising and driving has been carried out, but the reef was small and nothing of importance was located, therefore operations have been suspended. The Nos. 6, 4, 3, and 2 levels have been cleaned up and reconditioned, and prospecting work is being carried out in No. 3 level. In the mine the large pillars are being split by means of four rise headings. Some stoping has also been carried out in the pillars between Nos. 6 and 7 levels. In order to provide increased water-supply for the treatment plant and the mine, the water-race and fluming from Stoney Creek to the battery has been cleaned out and reconditioned, and a dam has been constructed in the old abandoned workings in the upper levels of the mine. Access to the mine and the hill mines in the Bonnie Jean Basin has been improved.

At the Paradise Mine a road has been formed, and the section from the Paradise-Glenorchy Road to the sheepyards has been metalled and made suitable for heavy traffic. In addition, repair work has been carried out to the hill tracks.

At the Paradise Mine prospecting work was carried out in the main low level in order to pick up the downward extension of the Small or Hanging Wall reef, and since locating this reef it has been driven on, and the face was 547 ft. from the portal at the end of the year. From 250 ft. to 520 ft. this reef has yielded good ore; this ore was again encountered at 536 ft. At 333 ft. a crosscut was driven to the north to intersect the big reef—when intersected this reef was small. It has been driven on for 100 ft. in mixed formation and reef-track; small lenses of good ore have been won from the reef-track. At 353 ft., No. 2 rise was risen 69 ft. to the intermediate level. The reef in this rise yielded good ore; No. 3 rise has been commenced at 453 ft. During the latter part of the year the intermediate level was cleaned out and driving operations were commenced on both the Small and Big reefs. In order to provide a water-supply for the mine and the residents, a water-storage dam has been constructed.

During the process of development at Paradise, the ore suitable for treatment is selected and transported to the treatment plant at the Glenorchy Mine. This plant has been improved, and another crusher has been installed. An average of twenty-five men have been employed in or about the Glenorchy Mine and treatment plant. The concentrates produced amounted to 9 tons 3 cwt. An average of fourteen men have been employed in or about the Paradise Mine, and the concentrates produced from development work amounted to 6 tons 14 cwt.

Sluicing operations were continued in the Moonlight Valley, Skippers, Shotover River, and Mountain Terrace. Operations ceased at Sandhills, and very little work was done in the Arrow River claims.

Vincent County.

Scottlands Lead, Ltd.—Further prospecting operations were carried out on the deep lead under difficult conditions, and as the company did not decide to sink a new shaft, operations had to be suspended.

Scott and Wells Mine, Kararau Gorge.—Prospecting operations were carried on by driving, cross-cutting, and sinking. Nothing of value was located, and the balance of the auriferous section of this deep lead was stoped out, this proved to be of very small dimensions. Further prospecting was then carried out by extending the main crosscut in order to ascertain if a second lead existed. Nothing of importance was located.

Long Drive Syndicate.—The stone drive was continued for a short period. Operations were then suspended, as suitable labour for hand steel-mining could not be obtained.

Homer Mine, Gee's Flat, and the *McCormack-Austin Mine*, Upper Gee's Flat, operated for a short period only, and then ceased operations.

W. Thomas and Son, Lower Cairnmuir.—Opening-out operations have been continued. Water-race and flumings have been kept in good order, and repair and virgin gravels are now being opened up by sluicing methods.

Shine Again Gold-mining Co., Ltd.—Driving operations were carried out in what is known as the "big lode," from the foot of the main shaft. A distance of 73 ft. was driven to the east. Operations ceased at the beginning of the winter, and had not been resumed at the end of the year.

In the Nevis the *Williamson Mine* is operating in the Upper Nevis near the stone huts on a section of the Nevis deep lead.

The *McLean Bros.* are operating by sluicing and elevating at the upper end of the old township workings.

Sluicing operations have been carried out at Blackmans, Matakauui, and Gorge Creek.

DREDGING.

Lake County.

The dredge owned by the Goldfield Dredging Co., at the Big Beach, Arthur's Point, was sold to Australian buyers, who were dismantling the dredge when a heavy flood occurred in the Shotover River and silted up the pontoons. Dismantling operations ceased, and what remains of the dredge is now the property of the underwriters.

Vincent County.

Nevis Crossing Dredge, Lower Nevis.—This dredge has been purchased by a small company, who have been unable to commence operations owing to the shortage of labour.

Bendigo Goldlight Dredge.—This dredge is still beached near the Bendigo Township.

Austral New Zealand Mining, Ltd.—The large dredge operated by this company has continued dredging the area known as the "Athenaeum Reserve," Lowburn, near Cromwell, and during the year 2,983,000 cubic yards of alluvials have been dug.

During the company's annual period, 4th October, 1941, to 4th October, 1942, this dredge operated for 5,734 hours and dredged an area of 42½ acres, digging 3,267,000 cubic yards. The area worked was, in the main, low grade, and recovery was consequently lower than the previous year.

This dredge is electrically operated, and power is supplied by the Otago Central Electric-power Board, who have now acquired the Wye Creek hydro-electric power plant, and are also constructing another hydro-electric plant in the Mid Roaring Meg Basin to enable them to supply this and the electrically-operated dredge of the Clutha Gold-dredging Co. at Alexandra with an adequate supply of electric power.

Molyneux Gold-dredging Co., Ltd.—This dredge has operated for 4,919 hours in the Kawarau River upstream from Richard's Beach for a distance of 245 chains, and the dredging depth has varied from 28 ft. to 18 ft. The river bottom was soft pug during the first half-year, and then soft sandstone. Many large boulders have been located, and some have had to be blasted in order to enable the dredge to negotiate the river under the Bannockburn Bridge in the winter low river-level period.

Approximately 550,500 cubic yards have been dug, but no virgin gravels were met with, on account of the comparatively shallow depth the previous dredges had been able to work this river-bed effectively. This dredge is electrically operated, and also has a Diesel-operated stand-by set for use in cases of emergency.

Clutha River Gold-dredging Co., Ltd.—During the year the work of reconstructing and refitting the dredge as a paddock dredge has been carried out as rapidly as possible, but the shortage of skilled labour has slowed up the work and it will be some time yet before the dredge is operating in the Alexandra Flats.

Southland.

Aitken's Dredge, Chatton District.—This steam-driven sluice-box paddock dredge continued to operate on freehold land in a shallow valley on the eastern Mataura River flats near Chatton until the dredgeable ground was exhausted, and has since been sold and dismantled.

Rainbow Dredging Co., Maitland, Waikaka Valley, Southland.—Dredging operations have been continued in a narrow valley at Maitland west of the Gore-Wikaka Road and Railway. The ground is shallow, and this small dredge is operated by a 38 h.p. Gardner Diesel engine.

MINERALS OTHER THAN GOLD.

Platinum.—The Round Hill Gold-mining Co. produced 15 oz. at their Round Hill Mine, and H. Sorenson, of Orepuki, produced 6 oz. 8 dwt. from the old township workings at Orepuki, Southland, valued at £189.

Silver.—Valued at £30 1s. 3d., 287½ oz. of silver was recovered by the Austral New Zealand dredge at Lowburn.

Silica Sand.—Valued at £1,428, 1,412 tons of silica sand have been mined in the Hyde district, Central Otago, and Mount Somers and Pleasant Valley, in Canterbury.

Diatomite.—Valued at £112, 74 tons of diatomaceous earth suitable for insulating purposes was mined at Foulden Hill, in the Strath-Taieri district, near Middlemarch, Otago.

Valuable Clays (other than for Brickmaking).—Valued at £1,462, 1,647 tons of clay have been mined at Kakahu and Mount Somers, in Canterbury.

Tungsten.—During the year, 1,304 tons of scheelite-bearing ores have been treated or crushed for a yield of 67 tons of scheelite concentrates (56½ tons from the Glenorchy district and 10½ tons from the Macrae's district), with an approximate value of £32,309.

ACCIDENTS.

There were no fatal or serious accidents at the mines in the Southern District during the year.

STONE-QUARRIES ACCIDENTS.

One accident which proved to be fatal occurred during the year in the stone-quarries. A quarry worker suffered severe injuries to his back and chest through being hit by a fall of clay when employed on stripping operations at the New Snowdrift Lime-quarry at Milburn on the 16th April. He died in the Dunedin Hospital on the 21st September.

SUBSIDIZED MINING SCHEME.

On account of the small number of men remaining on the gold-mining scheme, the store at Cromwell was closed.

Some of the Glenorchy scheelite-mines are now self-supporting, and others are in receipt of a repayable wages subsidy.

ANNEXURE B.

STONE-QUARRIES.

SUMMARY OF REPORT BY INSPECTOR OF QUARRIES FOR THE NORTH ISLAND.

(R. T. H. DALE.)

The following is the report for the year ending 31st December, 1942, for stone-quarries and tunnels worked in the North Island district under the Stone-quarries Act, 1910.

STONE-QUARRIES.

A total of 237 quarries was worked during 1942, a decrease of 65 when compared with the number worked the previous year, while the number of men employed, which was 1,292 in 1941, decreased to 1,024 in 1942.

The reduction in the number of quarries worked was caused by the curtailment of maintenance work in many of the county districts, the falling-off in the number of workmen employed, the mechanization of the larger quarries, and the increased use of earth-moving machinery for the removal of overburden.

OUTPUT OF STONE.

Though there is a marked falling-off in the numbers of quarries worked and workmen employed, the tonnages of stone of all classes has increased. The output of hard stone used for roading, aerodrome construction, and concrete work was 1,176,390 tons, an increase of 166,409 tons over the tonnage of 1,009,873 produced in 1941.

During 1942, 321,351 tons of limestone were used for agricultural purposes and 278,389 tons for cement, making a slight increase on the 1941 tonnages of 319,814 and 266,353 respectively.

In 1942, 58,642 tons of soft stone were produced for the manufacture of bricks, pipes, and tiles, 55,320 tons being used in 1941 for this purpose.

A total of 1,835,384 tons of stone, valued at £345,962, was produced during 1942. The 1941 tonnage was 1,655,494, valued at £314,455.

TUNNELS.

Twelve shafts, the combined depth of which is 800 ft., were sunk, and tunnels of a total length of 14,152 ft. driven, during 1942.

Four hundred and forty-three workmen were employed on this work, the cost of which was approximately £203,360.

ACCIDENTS.

One serious accident occurred in a tunnel, and one fatal and six serious accidents occurred in quarries, during 1942.

Fatality.

On 24th April, Jas. Reay McPherson, plant attendant at the Arapohue Lime-works, received fatal injuries when he was drawn into and crushed by a set of toothed rollers.

Serious Accidents.

On 16th January, G. Irwin, crusher attendant at the Waitomo Lime Co.'s No. 2 plant, received severe lacerations from a projecting stud in a revolving coupling.

On 6th April, J. A. Staff, tunneller, while engaged in firing a round of shots in No. 8 tunnel, Albert Park shelters, received injuries to his abdomen and chest from flying debris when some shots exploded before he was able to take shelter.

On 12th June, V. Quarterman, quarry foreman at the Wanganui Harbour Board's Quarry, Kaiwaikē, was crushed by a large stone which fell on him from the top of a truck. He received severe internal injuries and both his legs were broken.

On 24th August, Robert C. Branch, engineer, Mills' Quarry, Runciman, while erecting machinery received injury to his spine through falling off a platform.

On 4th August, Joseph Job, quarryman, had a leg broken when he was crushed by a sliding stone while engaged in stripping operations at the Kaitiaki Lime Co.'s Quarry, Kaitiaki.

On 9th September, W. F. Dunbar, engineer at the Gorge Lime-works, Woodville, had a leg broken through being caught by a belt.

On 16th November, J. Hodge, quarryman employed at the Mountain Quarry, Ngongotaha, received concussion when he was struck by a stone falling off the face.

PROSECUTIONS UNDER THE STONE-QUARRIES ACT, 1910.

Six informations were laid during the year and convictions obtained in each case.

On 26th March a quarry foreman and contractor was proceeded against on one charge of breach of section 9 of the Stone-quarries Act and one charge of breach of Regulation 51. He was convicted on both charges, fined £8, and ordered to pay Court costs.

On 4th April two quarry foremen were proceeded against for breaches of Regulation 51 under the Stone-quarries Act, 1910. Both foremen were convicted, one being fined £5 and the other £7 10s. An order to pay Court costs was made in each case.

On 26th June a tunnel foreman was proceeded against, convicted, fined £5, and ordered to pay Court costs for a breach under Regulation 29 of the Stone-quarries Act.

On 13th August a tunnel foreman was proceeded against by the police and fined 5s. for a breach under Regulation 29 of the Stone-quarries Act.

APPENDIX B

REPORTS RELATING TO THE INSPECTION OF COAL-MINES

THE INSPECTING ENGINEER AND CHIEF INSPECTOR OF COAL-MINES TO THE UNDER-SECRETARY
OF MINES

Wellington, 25th May, 1943.

SIR,—

I have the honour to present my annual report, together with statistical information, in regard to coal-mines of the Dominion for the year ended 31st December, 1942, in accordance with section 42 of the Coal-mines Act, 1925.

OUTPUT

The output from New Zealand collieries for 1942 was 2,680,041 tons, being 40,534 tons greater than the 1941 output.

There were increases of 12,638 tons from the Northern District, 15,234 tons from the West Coast District, and 12,662 tons from the Southern District.

In the Northern District, 59 more men were employed, and the output per man, 509.6 tons, was 9.9 tons less than during 1941.

In the West Coast District the output per man, 518.4 tons, was 7.8 tons more than for 1941.

In the Southern District, 639.3 tons per man were produced, an increase of 47.1 tons as compared with the previous year.

The following statement shows the tons of coal raised, persons employed, lives lost by accidents in or about collieries, &c., to 1942:—

Year.	Output, in Statute Tons.	Persons ordinarily employed.			Tons raised per each Person employed below Ground.	Lives lost by Accidents in or about Collieries.		
		Above Ground.	Below Ground.	Total.		Per Million Tons produced.	Per Thousand Persons employed.	Number of Lives lost.
Prior to 1938	88,255,342	*	*	*	*	*	*	490
1938 ..	2,222,088	1,195	3,368	4,563	659	4.86	2.41	11
1939 ..	2,342,639	1,220	3,542	4,762	661	7.26	3.57	17
1940 ..	2,516,099	1,277	3,769	5,046	668	3.18	1.58	8
1941 ..	2,639,507	1,358	3,633	4,991	726	1.51	0.80	4
1942 ..	2,680,041	1,338	3,659	4,997	732	2.24	1.20	6
Totals ..	100,655,716	..	..	..	..	..	..	536

* For returns for previous years see page 53, Mines Statement, 1940.

ACCIDENTS

The following is a summary of accidents in and about coal-mines during 1942, with their causes:—

	Fatal Accidents.		Serious Non-fatal Accidents.	
	Number of Separate Fatal Accidents.	Number of Deaths.	Number of Separate Non-fatal Accidents.	Number of Persons injured, including those injured by Accidents which proved Fatal to their Companions.
Carbon-monoxide poisoning .. ..	..	..	..	..
Explosions of fire-damp or coal-dust .. ..	..	..	..	..
Falls of ground	4	4	10	10
Explosives .. ..	..	..	2	2
Haulage .. ..	..	..	8	8
Miscellaneous—Underground	1	1	2	2
On surface	1	1	3	3
Totals	6	6	25	25

During 1942 three fatalities occurred in the West Coast District, two in the Southern District, and one in the Northern District.

Twenty-five serious non-fatal accidents were reported to the district Inspectors—fourteen in the West Coast District, seven in the Southern District, and four in the Northern District.

Seven of the serious accidents in the West Coast District and three in the Southern District were caused by falls of coal or stone. Two men were seriously injured by being struck by pieces of coal from shots and three by being crushed between mine-tubs.

DANGEROUS OCCURRENCES REPORTED

Of the twenty-five dangerous occurrences reported to the Inspectors during 1942, nineteen were related to fires or heating in underground workings. There were three reports of firedamp accumulations and one of an accumulation of blackdamp.

Inrushes of water were reported in the Pukemiro South Mine and the Blackball Mine.

PROSECUTIONS

Twenty informations were laid during 1942 by Inspectors of Coal-mines for breaches of the Coal-mines Act and the regulations thereunder. Nineteen convictions were obtained, and the twentieth case was withdrawn. Brief details are given in the Inspectors' reports.

LEGISLATION AFFECTING COAL-MINES

No amendment to the Coal-mines Act was passed in 1942, but in March an amendment to the regulations under this Act of thirty-three clauses was gazetted.

I have, &c.,
GEORGE DUGGAN,
Inspecting Engineer and Chief Inspector
of Coal-mines.

ANNEXURE A.

SUMMARY OF REPORTS BY INSPECTORS OF COAL-MINES.

NORTHERN INSPECTION DISTRICT (R. H. SCHÖEN, INSPECTOR OF COAL-MINES).

The following is my report on the working of coal-mines in the Northern Inspection District for the year ended 31st December, 1942:—

SUMMARY OF OPERATIONS OF EACH COLLIERY FOR THE YEAR 1942.

North Auckland District.

Kamo Colliery.—Slant Heading Section, No. 3 Mine: The main drive was not extended during the year, but development of the coal area to the north-east was continued by advancing the face of the slant heading 10 chains to a distance of 28 chains from the main dip. With the exception of about 40 ft. of faulty country, this extension was in coal which is of good quality and 8 ft. thick at the face. The connection of this heading to the main drive early in the year allowed a considerable shortening of haulage and the release of two winches for other work.

Panel development to right and left of the main slant headings has been continued, no large faults being met with. Ventilation has been maintained by the erection of concrete stoppings between intake and return as the main slant heading proceeds.

No. 2 West Heading Section: A sub lease has been arranged with British Standard Portland Cement, Ltd., and development headings have been driven some eight chains over their boundary in a south-west direction in good quality coal 7 ft. to 12 ft. thick. The headings are now nearing the Railway Reserve, and application has been made to drive two headings across it to work the area to the west of the railway. The coal is dipping slightly towards the west, and several small intrusions have been met with in workings to the north-west of these headings.

No. 4 Mine: Work has been confined to cutting up into pillars a small area of coal under residential property adjacent to Hall and Meldrum Streets and also the area abandoned in May by the Whangarei Collieries, this area being much faulted and the coal patchy. Good-quality coal amounting to 13,520 tons was won from this mine section during the year.

Waro Colliery.—The main heading is standing at a distance of 57 chains from the mine entrance, the cover at this point being 475 ft. Here a 5 ft. upthrow fault was crossed and the seam followed for 2 chains. The coal is 4 ft. 3 in. thick at the face and dipping at 1 in 5.

To the east of the main drive the seam rises sharply and is much interrupted by rolls and small faults. Within 5 chains to 6 chains it thins in this direction to 3 ft. 6 in. or less.

Nos. 1 and 2 slope dips, to the west of the main drive, both had inrushes of water from fissures in the limestone roof at about 8 chains and 6 chains respectively from the main drive. No. 3 slope dip has also struck faulty ground at about 5½ chains, but with, so far, no extra water. The seam on this side of the main drive is 5 ft. thick.

The strip of workable coal being followed in the mine is therefore little more than 12 chains wide, and thin, and there seems no prospect of economic development either west or east of the main drive.

The country is heavily watered and pumping and power costs are considerable. A large turbine pump installed in December of this year has not proved successful, and has had to be combined with another pump in order to handle the inflow to the surface in one stage. This pump is operated twenty hours daily.

Owing to the long strip of coal being worked, haulage is slow and expensive, while ventilation difficulties due to the low seam and long airways are increased by high humidity, bad roof, and the fact that fully one-third of the air inflow short-circuits through fissures in the limestone cover before reaching the workings.

Orr and Party (Tauranga Block).—This party were working pillars left by the Northern Co. in the upper seam. All available coal was extracted by the end of March and the mine abandoned.

Ruatangata Colliery (Whangarei Collieries, Ltd.).—Pillar-extraction to the east of the main drive was completed early in May. As development to the west was not possible owing to the thin seam and faulty conditions, the mine was sealed and abandoned as from 15th May.

Whareora Colliery (Pollock and Party).—The small area of coal developed by this party was worked out and the mine was abandoned as from 13th April.

Avoca Opencast Coal-mine (S. G. Foot).—Work ceased at this mine in January, the owner having joined the military forces.

Ketenikau Mine (Pollock and Party).—Three men are employed reopening old workings of the original Whangarei Coal-mining Co. at Three-mile Bush, Kamo. An access road has been formed, and portion of the old workings dewatered and ventilated. The seam is 4 ft. thick and of fair quality.

Kiripuka Fireclay-mine (Ngunguru Fireclay and Coal Co., Ltd.).—Early in the year operations were resumed at this mine, which had previously been worked intermittently as a quarry. A seam of good fireclay 10 ft. thick is now mined owing to the increase in thickness of the overburden, and good results have been obtained. Four men are employed, and the product is shipped to Auckland.

Waikato District.

Rotowaro Collieries (Taupiri Coal-mines, Ltd.).—No. 1 Mine: Pillar-extraction has continued throughout the year in the New Haulage No. 4 main rope section (top seam).

In Callaghan's Dip section (bottom seam) the main headings have been advanced some 12 chains in a southerly direction. A rising grade, in this direction, of 1 in 12 greatly assists the endless-rope haulage, which throughout the year has been kept up to the main heading face.

Owing to shortage of miners, No. 2 panel east was temporarily sealed in October, while development of No. 3 panel has continued throughout the year, and development of No. 4 panel is well forward. Late in the year two panel headings were started to the west.

Coal-cutting machines were reintroduced into the section in August. As this is a gassy section, special conditions as regards the periodic examination by means of a CH₄ detector of the places to be cut were imposed by the Mines Department.

Provision for future pumping from this section has been made by the construction of a large sump. A turbine pump has been ordered for this task, and two bores have been completed to carry electric cables and pump column from the surface.

No. 3 Mine (Bottom Seam): Pillar-extraction has continued throughout the year in Brown's section, Green's Jig, and Wilkie's Dip, while in B section pillar-extraction was commenced early in the year.

No. 4 Mine: Only a few pillars remain in this mine on either side of the dip. At the end of the year only two pairs of miners were working.

Alison No. 1 Mine: Pillar-extraction has continued throughout the year in No. 1 panel and in Nos. 1 and 2 dips. In No. 2 dip a large quantity of coal is being won from the top seam by regrading the roads over the fallen stone band between the seams after extraction of the bottom seam. The top seam varies between 12 ft. and 15 ft. thick, and a good percentage is being obtained.

Development of 1A panel has continued steadily and also of an area to the north-east of 1A. The area to the west of No. 2 panel, which was commenced early in the year, is being developed on the rise side of fault met with in No. 2 panel.

Alison No. 2 Mine: The stone drive commenced in February reached the coal-seam in May, and development was commenced. Two headings have been advanced 7 chains to the north-west towards the Alison No. 1 Mine and are stopped, leaving a 2-chain barrier against the No. 1 dip workings.

Two more headings have been started on a dip grade of 1 in 5 to the north-east under Rotowaro Township to open up the main coal area.

A bore 24 chains distant and in a direct line with the main heading has recently proved 20 ft. of coal. *Wilton Colliery*.—No. 1 Mine: Throughout the year pillar-extraction was continued in all sections. As the seam is not a thick one and the width of working-face has narrowed considerably, it is expected that this mine will be completely worked out during the current year.

No. 2 Mine: At 24 chains from the mine-mouth an upthrow fault of 33 ft. displacement was met. It is proposed to retreat from this line with pillar-extraction. The coal on the other side can readily be got from an outcrop by extending the surface haulage, and this would save maintenance of the underground roads.

No. 3 Mine: This mine commenced work in April, 1942, from an outcrop 8 chains east of the main entrance. The seam at the main entrance is thin, and a stone drive of 4 chains will be required to connect with workings developed from the outcrop. The quality of the coal is good, the thickness being from 5 ft. to 7 ft. 6 in.

The surface endless-rope haulage to the mine-mouth is working satisfactorily, and an access road has been completed to within a few chains of the mine-mouth to allow miners to be brought to work by bus. A large and well-designed bathhouse is nearing completion at the mine.

Renown Colliery.—No. 1 Mine: During the year further development of No. 3 south haulage was stopped when a 30 ft. downthrow fault was met. As the coal on the southern side of this can be more easily won from the new No. 2 mine workings, pillar-extraction was commenced immediately the fault was encountered.

Pillar-extraction in the No. 5 west panel is now completed, while No. 4 east levels are being pushed ahead to connect with No. 2 mine and simplify haulage. The face is now 13 chains from the No. 3 south headings.

Off No. 4 south headings the No. 2 panel is being developed rapidly, but the seam here appears to be thinning.

In the No. 2 north section pillar-extraction has been continued steadily. Work has been retarded somewhat owing to considerable floor movement, which affects the haulage.

No. 2 Mine: The new drive has now been advanced a total distance of 21 chains from the mine entrance. The coal is approximately 10 ft. thick and the quality good. A 60 ft. airshaft has now been constructed for the ventilation of this mine, and the work of lining it with concrete is half completed.

Considerable repair work has recently been done to No. 1 tunnel on the surface haulage to the screens. Due to the hillside slipping, the tunnel sides were being pushed out of alignment. To prevent this the tunnel has been lined with a concrete retaining-wall for some 30 ft. from the south entrance.

During the year a start was made to use the coal-cutting machines, with which the mine was already equipped, in the splitting of pillars as well as development in the first working. Use in pillars has allowed of full-time use of the six machines and has had a definite effect in increasing output and speeding up pillar-extraction.

Pukemiro Colliery.—North mine: Pillar-extraction was continued in the straight heading section and in the remaining pillars at the head of the stone drive. Good results were obtained considering the conditions, which require the splitting and extraction of long narrow pillars which have been formed for many years.

South Mine: In the Taupiri section the dip panel to the west of the main headings has been developed and the endless-rope haulage has been extended down the main heading. A pair of headings is being advanced parallel to the main Taupiri headings in order to test the seam in this direction. By June the main Taupiri headings had been driven a distance of 12 chains beyond the turn into the west dip section. At this distance they were stopped as the faces were in dirty coal obviously near the outcrop. A small panel to the east of these headings has been completed. Pillar-extraction has continued in the southern part of the Taupiri section.

Pillar-extraction of the new panel section was completed in June, and was continued in the Nelson's Jig area and in the Rope End section.

By the end of the year development of the small panel to the south of No. 1 right haulage had been completed. The clearing and retimbering of this road had been carried out for some 31 chains from the main haulage. From this point a drive is being pushed forward, parallel with the No. 1 right haulage, to reach the next pair of development roads to the south, a distance of 9 chains.

Glen Afton No. 1.—An attempt was made in February to re-enter the area sealed off in November, 1941. However, further heating developed, and the stoppings were replaced. The stoppings were again broken in June, and by mid-July a road had been spiled through a large fall of stone at E1 overcast and concrete stoppings erected, the haulage being once again continued past this point.

Pillar-extraction was continued in E3 and E1 sections, and E1 section was worked out and sealed off in October. Development of E2 section was proceeded with, and another panel was started to the north-east off the main E2 headings on the MacDonald area.

The pillar-extraction of K1 panel was completed late in August.

The stone drive in L section has been continued, but has not yet reached the coal-seam.

Glen Afton No. 2 (MacDonald Colliery).—Korfmán Section: II main headings reached the barrier at the north-west boundary at a distance of 31 chains from the main drive, and have been continued for 8 chains in a north-east direction along the boundary, leaving a 1½-chain barrier. Panels II3 and II4 left were further developed, while development was also continued in II1, II2, and II3 right panels.

E headings have almost reached the barrier against the north-east boundary at 41 chains from the main drive. The splitting of pillars in E2 right section under a surface stream has been continued, and development of E4 and E5 right panels has proceeded.

No. 4 Mine: In the No. 1 left section pillar-extraction has proceeded steadily, while the main rope has been extended along the old tail-rope haulage to the north-east. The face of these levels is now only some 6 chains from the north-east boundary of the lease.

Development of the second and third dip panels is proceeding, while to the rise three panels are being developed.

Coal-cutting machines are used throughout the MacDonald Colliery.

Graham Colliery, Glen Afton.—The last of the roadside pillars were extracted near the mouth of the main haulage, and work at this mine ceased on 3rd March, 1942.

Taupiri East Colliery, Kimihia.—Work continued until October in pillar-extraction east of the main haulage, and has since been confined to splitting pillars and taking some top coal in a small area of Crown lease to the south-west.

Whatawhata Campbell Colliery, Whatawhata.—Early in the year a dip drive was put down in continuation of the surface haulage and 14 chains south-west of the previous mine entrance.

After going 10 chains to the dip and clearing old workings, three headings have been driven 11 chains slightly east of south in good-quality coal 10 ft. thick.

Waikato Extended Colliery (Roose Shipping Co., Ltd.).—Work continued throughout the year on the small pillars left at the entrance to the old Waikato Mine workings. As these are on the point of being worked out, the company is preparing to develop another area on the Taupiri holdings about one mile north of the present workings. Here about 16 ft. of coal can be worked by stripping the light cover of about 4 ft. to 6 ft. of surface clay. A small area 40 ft. square has been stripped and a tram-line laid from the river-bank, a distance of about a quarter of a mile, and a start will shortly be made to produce coal from the area.

Glen Afton Potteries opencast.—The works have been limited in output by shortage of men, but throughout the year quarrying of fireclay for the manufacture of pottery has continued. A face of 8 ft. to 10 ft. of coal is being worked as an opencast, the coal being used in the works. The seam has been stripped of overburden.

Huntly Brickworks.—Fireclay, which is used in the works, has been worked continuously throughout the year. No coal is worked at present.

Dally's Mine, Kawhia.—No work has been done at this mine owing to the difficulty of obtaining experienced assistance in such an isolated district.

Taranaki District.

Aria Colliery.—No further work was done at this mine during the year. However, as a new party have now taken over the lease, it is to be expected that coal-production will be resumed shortly.

Mangapehi State Colliery, Mangapehi.—The main headings, both intake and return, have been brushed down to the bottom levels, a distance of 21 chains. Beyond this level the main headings have been dewatered and the intake has been brushed for 6 chains more.

Top East Levels: The main levels are standing against a down-throw fault at 24 chains from the main heading.

No. 1 panel to the rise has practically completed development and some of the top coal above the roads has been taken.

Development of No. 2 panel is also nearly completed, as all of the rise places have reached a down-throw fault which is being proved by a stone drive and boring.

The entries for No. 3 panel have been driven, but prospects of development are poor on account of the likelihood of striking the convergence of the two faults mentioned above.

Top west section is now formed, and development has been stopped against faulting to the south and west.

Bottom east levels have been driven 7 chains from the main haulage and are at present standing in good coal. Panel-development can be started here when required.

Bottom west levels penetrated the faulting and opened out for 4 chains, but faulting has been encountered again with floor rolls and thin and crushed coal.

During the year an average of fourteen pairs of men have been engaged on the coal.

A bore is being put down from the surface on the line of the main heading in order to test the seam beyond the faulting. The hole is down 870 ft., but is not yet near the coal horizon.

Tatu State Colliery, Ohura.—The north-west development headings have been driven 12 chains beyond the fault to a distance of 14½ chains from the main heading. The coal is of good quality and 6 ft. to 8 ft. thick.

Development to the north-east of these headings ran into further faulting at 4 chains from the main road.

To the south-west a panel has been developed in good coal and a pair of headings continued to the line of the main drive beyond the large fault on which it is standing. Headings in coal to continue the main drive are being driven north-east and south-west, and the north-east face is within 60 ft. of connecting with the main drive face. The south-west face has now reached a distance of 25 chains from the mine entrance.

On 18th April a small amount of inflammable gas was reported in the north-west section, and electric safety-lamps were introduced by the management throughout the mine.

MINE RESCUE-STATION.

During the year five rescue brigades were trained by Mr. F. Duffy, who was temporarily transferred to Huntly in order to start this training. Mr. Duffy returned to the West Coast early in the New Year, and was succeeded by Mr. A. Lennox, who has been appointed Superintendent to continue the training.

FATALITY.

Percy Larwood, a surface worker employed at Rotowaro Colliery, while shovelling slack out of a railway wagon on 11th June slipped and fell between the truck and an elevator, striking his chest. He continued work until 29th June, and died on 3rd August. The cause of death was stated as pericarditis following an injury due to the fall.

SERIOUS NON-FATAL ACCIDENTS.

On 1st August, D. Pumeheon, a trucker at Wilton Colliery, sustained a fracture of the right fibula. He was clipping empty skips and got caught between the buffers.

T. Healey, roadman, received a fracture of the small bone of the left leg above the ankle when he was struck by a falling rail. The accident occurred on 17th August.

On 18th November, M. O'Connor, a trucker at the Alison Colliery, sustained a colles fracture of the right wrist.

On 24th November, A. Levet, employed at the Renown Colliery, received serious burns on the right hand and right side. He was assisting the mine electrician, who was present at the time, in fitting a trifurcating-box at an outside substation. Levet slipped and caught at a pullwire. The wire broke and touched the incoming high-tension leads to the switch.

DANGEROUS OCCURRENCES (REGULATION 81, COAL MINES REGULATIONS 1939).

On Sunday, 8th February, a fire occurred in the Rope End section, South Mine, Pukemiro Colliery. The area was effectively sealed off.

On Sunday, 1st March, at 6 p.m. fire was discovered coming from a disused exit at No. 4 Daylight, No. 1 Mine, Rotowaro Colliery. The fire, which had a good hold, was put out by 8 p.m. with water pumped from an adjacent creek, and by 10.30 p.m. the drive was sealed. This fire affected the outcrop and goaf only, as the line of pillar-extraction was some 5 chains away.

On 18th April the examining deputy at the Tatu State Colliery, Ohura, reported the finding of a small amount of inflammable gas in the north-west heading section. Another small quantity was found in the same section later in the day. The mine has since been equipped with electric safety-lamps by the management as a precaution.

On 29th June at 2.30 p.m. a small active fire, which had burnt through a brattice stopping, was discovered by the deputy in the No. 3 West Jig, New Haulage section, No. 1 Rotowaro Colliery. This was temporarily sealed off, and by 7.30 p.m. a permanent brick stopping was completed.

On 15th June the manager, Glen Afton Collieries, Ltd., reported that a small quantity of hot coal had been found along the rib in a roadway on the E3 return side of the stoppings sealing the fire in E haulage road, Glen Afton No. 1 Colliery. The coal was filled out and the area cooled.

On 17th June a small fire was discovered by the night-shift deputy at the F wall stopping, Glen Afton No. 1 Colliery, at the edge of the concrete arching. The fire was put out, and the arching has been continued.

On Thursday, 27th August, an inrush of water occurred, following heavy rain, at the South Mine, Pukemiro Colliery. The water was overflow water from a dam in the old east section and caused a stoppage of the South Mine for the day owing to the flooding of the South No. 1 Junction. A better getaway for the water has now been provided in the east section.

On 1st October the underviewer at Mangapehi State Colliery reported the finding of a small quantity of inflammable gas above a fall near the face of the main dip, which had been recently unwatered. Further tests with the lamp were unsatisfactory owing to the presence of extinctive gas, but the analysis of samples showed that a low percentage of CH₄ was present. No further occurrence of inflammable gas has been reported from this mine, though a close watch has been kept.

PROSECUTIONS.

No prosecutions for breaches of the Coal-mines Act or regulations were taken during 1942.

WEST COAST INSPECTION DISTRICT (J. McARTHUR AND C. HUNTER, INSPECTORS OF COAL-MINES).

In accordance with section 42 of the Coal-mines Act, 1925, we have the honour to submit our annual report on the operations of the coal-mines in the West Coast Inspection District:—

GREYMOUTH DISTRICT.

Liverpool State Colliery, Rewanui.—Morgan Seam: Development work was completed in No. 3 and crosscut sections in the latter half of the year, and extraction of pillars was carried out satisfactorily throughout the whole area.

Morgan East Dip: Due to encountering a downthrow fault, development of the main dip has been suspended, but prospect work was continued in a subsidiary dip to the west. Development work was carried out to the east and west. Improvement of ventilation conditions in the west side has been secured by the completion of an undercast, thereby making the west side into a separate ventilating district. A compressed-air coal-cutting machine is employed in the west level and is operating satisfactorily. Pillar-extraction was commenced in a small panel in the top level section; the height of the seam is approximately 30 ft.

Kimbell Section: Extraction of pillars has been continued throughout the year. In the Kimbell east section pillar-extraction was carried out in Nos. 5 and 6 banks, the latter area being almost exhausted, and preparatory work for sealing proceeding at the end of the year.

Anderson Dip Section: Development work has been carried out to the west of the main dip immediately above the area sealed off because of heating in Murphy's dip. Improved conditions of roof and coal-seam were experienced in this section towards the end of the year. In a small section situated to the east, some pillar-splitting was carried out.

Strongman State Colliery.—The output was won from development work in the following areas:—

No. 1 North Section: Two main headings were advanced a total distance of 24½ chains from No. 1 main haulage in the bottom seam. Due to the existence of stone bands varying in thickness up to 14 in. and with a combined thickness of 27 in., the output from this area was considerably retarded.

No. 1 South Section (South Dip): Development work was continued in two levels advancing in a south-easterly direction towards the Doherty fault, and a connection formed with No. 1 south level, which now serves as the haulage road for the section.

No. 2 South Level: During the year the Doherty fault was penetrated and development of the area on the upthrow side of the fault commenced. Two main levels have been advanced in a south-easterly direction approximately 3 chains in coal of excellent quality.

No. 2 North Section: Development work was continued in the main headings, which have advanced a total distance of 24 chains from the main east heading.

James Colliery, Rapahoe.—The output was won from pillar-extraction. This mine has now a very limited life.

Blackball State Colliery, Blackball.—The output for the year was won from development work in the main headings and areas situated to the north and south of the main headings. Heavy roof weight, accompanied by feeders of water, resulted in No. 1 north section being stopped in July. Since then work has been proceeding in the main dips and No. 2 north and No. 2 south sections. Soft coal and faulted ground were encountered in No. 2 north level, and towards the end of the year similar conditions existed in the main dip headings, while a thinning of the seam had caused the temporary stoppage of No. 1 south level. The coal is generally of a soft nature.

Balderstone and Party.—The output for the year was again won from splitting and extracting of pillars in Nos. 3 and 4 sections in the top seam workings in the old Blackball Mine.

Briandale Collieries, Ltd., Ten-mile Creek.—Throughout the year pillar-extraction was continued in the top seam, No. 1 section, and development work in the bottom seam.

Wallsend Colliery (Brunner Collieries, Ltd.).—No. 1 Slant Dip: Development has been carried on for a distance of 6 chains west of this dip in good coal approximately 11 ft. in thickness. The dip on the east side was put down 3½ chains to the fault and two more levels broken away off this dip in an easterly direction.

No. 2 Slant Dip: Four levels west of this dip have been extended to a distance of 13 chains, the bottom level skirting the fault. At a point 1 chain above the fault a level has been driven 2 chains in an easterly direction.

"B" Panel: This panel was driven to a point where it was decided to form a barrier, and splitting has now commenced in this panel.

During the year the following jobs were completed above and below ground: Endless rope installed in No. 1 slant dip; main rope cut and separate haulage installed for extension rope-road; new bins put into commission and slack conveyor installed from old bins; steam-engine in bins replaced with electric motor; and old table replaced with rubber belt conveyor.

Dobson Colliery (Grey Valley Collieries, Ltd.).—Development was again resumed below No. 5 level and toward the east and west at this point. Unfortunately No. 5 west is rather seriously disturbed and the main level has been stopped in order to allow prospecting to be done below this level. No. 3 west has been finished and sealed off.

New driving gear to increase the fan speed has been installed and a new substation built. A new electric hoist has been built to replace the old air-driven hoist for the transportation of men up the stone drive.

Underground: The No. 1 dip endless ropeway has been extended a further 20 chains to No. 5 level and the whole of No. 1 dip has been regraded.

Paparoa Colliery (Paparoa Coal Co., Ltd.).—Aerial Section: For the first part of the year the output was obtained from the dip extension and the main south level. Development of the panel, rising off the main north level, was stopped until improved ventilation was obtained by the completion of the new main return on the south side of the main dip. This was completed about mid-year, and the development of the panel off the north level has been resumed in good-quality coal.

Pillar-extraction has commenced along the fault line from the north panel in the dip extension to the main dip heading where it contacted the main fault.

Five pairs of miners are employed on day shift and two pairs of men are employed in brushing and retimbering the main dip on back shift.

West Level Section (No. 2 Seam): Two pairs of miners are employed in the old slant heading section west of the main jig. This area, which had been standing for many years, was reopened and a steady production of good-quality coal is being maintained.

United Brunner Mines, Ltd., Brunner.—No coal was produced from this mine during the year.

CO-OPERATIVE MINES IN THE GREY DISTRICT.

Spark and Party's Mine, Rewanui.—All coal was won from development work to the east of the main dip.

Old Runanga Mine (O'Brien and Party).—No. 1 Seam: Pillar-extraction was continued throughout the year in coal with an average height of 3 ft. 6 in. This mine is nearing exhaustion, and it is estimated that the probable life is about nine months.

No. 2 Seam: Pillar-extraction in the rise panels was continued during the year. A new dip was started for the purpose of developing an area of thin coal to the west of the main level. The dip was advanced a total distance of 3 chains in coal with a height of 3 ft. 6 in.

Moody Creek Mine (Simpson and Party).—Operations throughout the year were confined to pillar-extraction (in No. 2 main dip), which has now retreated to No. 7 level.

Goldlight Colliery (McKenzie and Party).—During the year the main dip was advanced 3 chains, making a total distance of 8 chains. Work was confined to development on the north and south sides of the main dip. A second outlet has been secured by driving, from the surface, a level drive 6 chains in length. At the entrance to the stone drive an electrically-driven "Blackman" streamlined fan was installed.

New Point Elizabeth Colliery (Guy and Party).—The output from this mine was won from pillar-extraction in the main headings. On the 4th April a heating of coal in the goaf resulted in the area being sealed off and pillar-extraction commenced on the outbye side of the line of the stoppings.

Picry Cross Mine (Currie and Party), Dunollie.—Development work was continued in the new mine in an easterly and south-easterly direction, the main levels having advanced a total distance of 14½ chains to the southern boundary of the lease. Development work along the line of the eastern boundary constituted the remainder of the work carried out. The seam rises very steeply in an easterly direction, the average height of the coal being 4 ft. 6 in.

Castlepoint Mine (Duggan and Party).—The output from this mine was won from pillar-extraction in the rise area to the east of the main level.

Hilltop Mine (Armstrong and Party), Ten-mile.—Due to floods and slips, work has been carried out intermittently in this mine during the year. At a point 270 ft. from the mine entrance a main dip was set away in a southerly direction and advanced a distance of 6 chains. The coal is of excellent quality and has an average height of 16 ft.

Kaye and Party's Mine, Ten-mile.—No coal has been produced from this mine since April. Flooding of the Ten-mile Creek carried away the bins and caused a large slip which demolished the approaches to the mine. During the first three months coal-production was secured from development work on the east side close to the upthrow fault.

Hunter and Party's Mine, Dunollie.—Coal-production was secured in this mine through driving three main levels in a southerly direction for a total distance of 15 chains. The coal is of good quality and has an average height of 8 ft. 6 in.

Schultz Creek Mine (Marshall and Party), Twelve-mile.—The output for the year was won from extraction of a block of solid coal attached to the downthrow fault which crosses the main level at a point 16 chains from the surface. The coal is of good quality and has an average height of 3 ft. 3 in.

Bellbird Mine (Stuart and Party), Ten-mile.—The output from this mine was won from pillar-extraction in the thin coal area to the west of the main dip and development work on the upthrow side of the fault on the eastern side of the main dip. A slant dip is being driven to connect with the workings on the east side of the fault and, when completed, will serve as a main haulage road for that area.

Cain's Mine, Rapahoe.—Operations at this mine were resumed by a new party in January. Repairs were carried out to the storage bins and surface incline and a new jig constructed inside the mine. All coal was secured from pillar-extraction.

Bellvue Mine (Haderoft and Party), Rapahoe.—Operations in this mine were confined to driving the two main headings, which advanced 6 chains from the surface. All coal was won from the driving of these two headings and the necessary crosscuts.

Jubilee Mine (Tinning and Party), Rapahoe.—Development was continued in the two main headings, which were advanced a total distance of 5 chains from the surface. The coal is of a very hard nature with an average height of 9 ft.

Cliffside Mine (Moore and Party), Nine-mile.—The whole of the output was won from development work between the inbye side of the main stone drive and the downthrow fault, located 2 chains to the east of the stone drive. The coal is of good quality and maintained an average height of 11 ft.

Smith and Party's Mine, Dunollie.—All of the coal has been won from pillar-extraction to the east and west of the main dip.

Bracehead Mine (Boote and Party), Dunollie.—The whole of the output was won from the extraction of pillars on the east and west sides of the main level.

Harrison and Party's Mine, Ten-mile.—Due to damage caused by floods and slips, this mine was idle for several months. A new entrance was constructed, and operations were resumed on the east side of the main dip. The output was secured from development work in this area. New storage bins and a bathhouse were built at the new entrance.

REEFTON DISTRICT.

Archer's Mine, Caplestone.—Top Mine: Pillar-extraction in No. 1 seam was completed early in the year and all work thereafter was carried out in No. 2 seam. No. 2 seam was tapped by a stone drive 8 chains in length, and this drive now serves as a main intake airway.

Doran's Mine, Caplestone.—The output from this mine was won from development work, two headings being driven to the rise and a connection formed with the upper workings of the mine.

Archer Bros.' Mine.—Operations consisted of development to the east in the vertical seam. Three main levels were driven for a distance of 600 ft. when a fault was encountered. The coal is of good quality and the average height is 9 ft.

Coghlan's Mine, Caplestone.—The output for the year was won from extraction of pillars in No. 2 seam.

Low Level Mine, Coghlan's Frechold, Caplestone.—Development work was continued throughout the year in No. 2 seam to the dip of Coghlan's Mine.

Waitahu Mine (A. D. Williams), Reefton.—Top Mine: Operations were again confined to development work in three main headings which are advancing in a north-easterly direction. The total distance advanced, from the surface, is 27 chains.

McKinlay's Mine.—Three headings were advanced a distance of 30 chains from the surface, at which point low coal and heavy roof were encountered and the work of driving farther ahead discontinued. Towards the end of the year a dip, advancing in a northerly direction, was commenced and driven for a distance of 3½ chains on a grade of 1 in 3. The height of coal is 6 ft. 6 in.

Lewis and Party's Mine.—The output from this mine was won from development work in the two main levels, which were driven in a northerly direction from the bottom of the dip.

Victory Mine (Rolleston and Party), Waitahu.—This mine was opened up in February and is situated to the dip of McKinlay's Mine. The main dip, on the full grade of the seam, was driven a distance of 3 chains and development continued in a northerly direction. The height of seam is 6 ft. 6 in., the coal being of fairly good quality.

Pyramid Mine, Reefton.—The coal-seam is operated from two main levels, pillar-extraction being carried on in the upper level towards the outcrop and development work being conducted in the lower level in the direction of the Morrisvale Mines.

Burke's Creek Mine, Reefton.—The output for the year was won from pillar-extraction near the bottom of No. 3 panel, retreating on the horse level and barrier to No. 2 panel; also from development at a lower level which has advanced a distance of 25 chains from the main dip. In February the surface haulage and electrical plant were destroyed by fire. Temporary plant was installed and worked for two months until the Grey Power Board's supply was extended to the district.

Burnwell Coal Co., Reefton.—The output from this mine was won from development work in the main level and from two headings driven to the rise in a southerly direction. The total distance advanced from the surface is 16 chains.

Terrace Mine, Reefton.—The mine is being opened up by two levels being driven in an easterly direction which have been advanced to a distance of 11½ chains from the surface. Due to the increased orders, a storage bin for slack was built.

Defiance Mine (McClatchie and Co., Ltd., Christchurch).—The output was won from development work and pillar-extraction in the upper mine and the "Butler" seam, over which a lease was secured during the year. The latter area was standing in pillars, and all roadways were cleared of fallen coal and the roof and sides secured.

Clele Mine, Merrijigs.—Pillar-extraction was continued throughout the year in No. 1 section and development work was carried out in No. 2 section. The coal in both areas is of good quality with an average height of 4 ft.

Imperial Coal Syndicate, Caplestone.—An old mine situated on Coghlan's leasehold was reopened by this party in May and the extraction of pillars carried out to the end of the year. The seam operated was the Reef-ton No. 4, the coal being of a very soft nature and varying in height from 5 ft. to 15 ft.

Nicholls' Mine, Caplestone.—This mine is situated on the Caplestone side of Williams' coal lease, and operations commenced in July in a coal-seam which outcropped at the surface. Two main levels were driven from the outcrop a distance of 3 chains, but this work was abandoned owing to thin coal and intrusions of stone. Development to the rise was proceeding at the end of the year. A storage bin with a capacity of 30 tons, and a light single wire-rope aerial system 12 chains in length, were installed at the surface. The coal is of a hard but friable nature with an average thickness of 4 ft.

White Rose Mine, Merrifigs.—This mine was abandoned and the coal lease surrendered during the year.

BULLER DISTRICT.

Mitchell's Mine, Charleston.—Opencast operations were carried out intermittently in the upper 8 ft. of the coal-seam during the year.

Warne's Mine, Charleston; Bowater and Bryan's Mine, Charleston; Powell's Mine, Charleston; and Price's Freehold, Brighton.—These mines did not operate during the year.

Brighton Coal-mines, Ltd., Brighton.—This company ceased to operate and went into liquidation during the year. A small quantity of coal to meet local requirements was produced by the leaseholder.

Glencrag Mine (Forsyth and Bateson), Buller Gorge.—The output was won partly from development work in the main level and from the extraction of coal near the northern fault.

Coal Creek Mine (McGuire and Party), Seddonville.—During the year the output was secured from the splitting and "robbing" of pillars in the old Lawrence section of the Mokihinui Mine.

Cardiff Coal Co., Ltd., Mokihinui.—The larger portion of the output was won from development work in the area to the south-west of the mine entrance. A small quantity of coal was won from pillar-extraction along the fault on the northern boundary of the mine.

Hydro Coal-mines, Ltd., Seddonville.—The output from this mine was won entirely from pillar-extraction in the lower west section and the top section.

Charming Creek-Westport Coal Co., Ltd., Ngakawau.—The output for the year was won from pillar-extraction in No. 1 south section and development work in No. 2 south-east section, which is advancing towards a new area of proved coal located to the south of the existing workings. Development of No. 1 section was completed in October and two headings were advanced in a northerly direction in order to obtain re-entry to the main north heading. During the year a new dip drive was commenced for the purpose of providing an additional access road to the mine and was driven a distance of 6 chains at a uniform grade of 1 in 9. A further 2 chains of driving will connect with the workings.

Westport-Cascade Mine, Cascade Creek.—Production was continued throughout the year in the following areas:—

Durkin's South Section: Development work was continued and the main upthrow fault located at the upper end of the section.

Moynihan's Section: Extraction of pillars to a point 7 chains from the surface constituted the work performed in this area.

O'Brien's Opencast Area: Opencast work was carried out for the greater part of the year on the line of outcrop, 10 chains in length, in coal 24 ft. high.

Westport Coal Co., Ltd., Denniston Mines.—Ironbridge Mine: This mine is now nearing the end of its useful life, the number of coal-bowers having been reduced to seven pairs. The whole of the output was won from pillar-extraction.

Coalbrookdale Mine: The output was won from pillar-extraction in the Whareatea and Whareatea extended sections, and pillar-extraction and development work in Forsyth's sections. During the year Cascade section was not operated, and in this section, which had only a short life, the endless-rope haulage system was replaced by a direct haulage system. The section is again ready for coal-winning, and this will be resumed early in 1943. The proportion of pillar coal to solid from development was approximately 9 to 1. Boring was completed in lease No. 1107 and is proceeding in the Ironbridge and Cook's lease areas.

Westport Coal Co., Ltd., Millerton Mine.—The output was won from splitting and "robbing" of pillars in the following areas:—

Old Dip Area: Operations consisted of partial pillar-extraction and, where possible, total extraction. The area is divided into small panels to facilitate control of fire or spontaneous heating. The panels are enclosed by lines of concrete stoppings, thereby forming artificial barriers.

Mangatini Area: Operations consisted of total pillar-extraction, three pairs of miners being employed steadily throughout the year.

Mine Creek Area: Partial extraction of pillars, in conjunction with the working of bottom coal, provided the output from this area.

Three outbreaks of fire occurred, two of which were sealed by closing the stoppings, and the third, which occurred in the Mine Creek airway, was isolated by sealing off a portion of the main return airway.

Westport-Stockton Coal Co., Ltd., Ngakawau.—During the year operations were confined chiefly to development in the east McCabe's jig area and in the south beyond the south fault in good coal with a thickness of 10 ft. Exceptionally wet conditions were experienced in both areas. In the west dip section extraction has been completed and preparations made to commence a stone drive from the end of the haulage road to a new seam 140 ft. above. In old No. 2 section, adjacent to the loco. road, a fault was penetrated and two main headings have advanced 3 chains in fairly good coal. Considerable difficulty was experienced in dealing with intrusions of surface water during heavy rains. By widening the south branch of the Ngakawau River 15 ft. for about 6 chains, this trouble has been substantially removed. On 29th December a fire broke out in the east straight jig area. It received attention, and the flame had been extinguished by the end of the year.

Watson's Mine, Karamea.—No coal was produced from this mine during the year. A stone drive 70 ft. in length and north of the old mine has been completed and reached 5 ft. 6 in. thick.

Comet Mining Party, Inangahua.—Operations were confined to the development of the coal-seam situated on the northern side of Flaxbush Creek. The main level has been advanced a total distance of 7 chains from the mine entrance. At this point a fault was struck and development was continued towards the outcrop 2½ chains to the east. The height of coal averages 9 ft. and, in the vicinity of the fault, the seam is vertical. On account of the extensively-faulted ground, operations in the southern area were suspended, but an attempt to locate workable coal will be carried out later.

NELSON DISTRICT.

Puponga Mine, Puponga.—The output from this mine was won entirely from pillar-extraction in the horse level and the old dip areas situated to the north. The former area was exhausted in October, and preparations for opening an area of thin coal in the outbye tunnel were proceeding towards the end of the year.

Mount Burnett Mine, Collingwood; North Cape Syndicate's Mine, Onekaka; and Abbotsford Mine, Takaka.—These mines did not operate during the year.

Owen Colliery, Owen River, Murchison.—Development work was completed at this mine in May, and the output thereafter was won from the extraction of barriers and pillars in No. 3 main dip and the main level.

O'Rourke's Mine, Murchison.—No coal was produced from this mine, and the lease was surrendered.

Six-mile Mine, Murchison (J. Gillespie and Party).—Two main levels were driven for a distance of 5½ chains in the northern section, but the coal thinned to 18 in. Driving was discontinued and pillar-extraction commenced in October. On the southern side of the creek the coal-seam was tapped by a drive 1 chain in length. The drive was destroyed by floods and slips, and the work on this side abandoned.

O'Rourke's Mine, Arika (R. E. O'Rourke).—Work in this mine was confined to the driving of a main level which has now been advanced to a distance of 220 ft. from the surface. The height of the seam averages 4 ft., and the coal is of a high standard. Production is only carried out intermittently.

Westhaven Mine, Mangarakaui.—Coal produced from this mine was won entirely from developing places; usually three places are worked. The main dip, which is on a very easy grade, has been advanced to a distance of 7 chains from the mine entrance. During the year a fan was installed.

Glenhope Mine, Glenhope (Biggs and O'Brien).—Prospecting work was carried out intermittently during the year, a small quantity of coal being won from the vertical seam.

MINE RESCUE STATION.

All the trained men from the various mines fulfilled the two-monthly practices. The number of trained rescue men on the station register at the end of the year was sixty.

FATAL ACCIDENTS.

Three fatal accidents occurred during the year, as follows:—

On 13th January John Stephens, miner, Denniston Colliery, while levering a prop with his pick was struck by a piece of coal 18 in. in length, 16 in. in width, and 9 in. in thickness, which fell from the rib side, driving the right side of his chest on to the end of the pick handle. This resulted in serious injury to the lung, from which Stephens died shortly afterwards.

On 12th June Robert Glen, miner, Dobson Colliery, received fatal injuries. He was trimming a coal rib just after a shot had been fired when a stone weighing 3½ cwt. fell from the roof, pinning him to the floor.

On 25th July Michael Granich, miner, Liverpool Colliery, was completely buried when approximately 2 tons of coal fell from the rib side whilst he was in the act of preparing to set timber.

SERIOUS NON-FATAL ACCIDENTS.

On 13th January J. Cassidy, trucker, Wallsend Mine, sustained a broken pelvis. He was trying to push the full boxes in a lay-by back clear of the main road. He was caught between the boxes and the rake of trucks coming from the level below.

On 16th February H. Wiseman, surface worker, Denniston Mine, sustained a fracture of four ribs. He was employed on the slack dump on which a scraper-loader was operating when he was pinned by the tail-rope against the side of a trough which had been cut by the scraper. He was dragged or rolled for a distance of 20 ft. before the hauler was stopped.

On 6th March Henry Webster, miner, Coalbrookdale Mine, Denniston Colliery, was caught by a fall of roof coal whilst sitting on a truck buffer. His legs were pinned under the carrying-bar and he was buried under the coal. He sustained a compound fracture of both bones in the right leg below the knee.

On 25th March G. Dodds, miner, Millerton Mine, suffered a broken pelvis when he was struck by a fall of coal from the corner of a pillar.

On 29th April T. Kerr, rope-road worker, Denniston Colliery, sustained a simple fracture of the heel bone. He was endeavouring to clip off an empty box, slipped, and was dragged by the box, which passed over his right heel.

On 6th May Len Muir, rope-boy, Dobson Colliery, whilst coupling two boxes at the bottom of No. 1 endless rope had his fingers crushed.

On 30th May T. Nimmo, shiftman, Dobson Colliery, suffered a compound fracture of the right leg and a slight cut to the head when bratticing in White's place, No. 2 dip section. He was struck by a fall of coal from the rib side.

On 7th August R. Tolan, winch-driver, Young's Section, Ironbridge Mine, Denniston Colliery, sustained a fracture of one vertebra immediately below the base of the neck. The accident was caused by a fall of approximately 5 cwt. of coal.

On 8th September D. Melvor, shot-firer, No. 2 south level, Strongman Mine, sustained a fracture of the left leg below the knee as the result of being struck by a piece of coal weighing approximately 2 cwt. He was firing a shot in the main No. 2 south heading face and, as the result of the firing, the piece of coal was dislodged and travelled down the heading and struck Melvor on the leg.

On 19th September T. Dellaway, underviewer, Coalbrookdale Mine, Denniston Colliery, whilst assisting to relay a new road was struck by a prop which was dislodged when the trucker accidentally struck it. He sustained simple fractures of the tip of the fibula at the ankle and the tip of the tibia.

On 7th October T. Burchfield, miner, Millerton Mine, was caught by a fall of roof coal, in a place where top coal was being brought back, causing injuries to his head.

On 15th October C. Heaphy, miner, Buller Gorge Mine, Rahui, received fractures of tibia and fibula. He was struck by a piece of coal whilst a shot was being fired.

On 29th October K. Roper, horse-driver, Liverpool Colliery, sustained a fracture of the left leg below the knee. He was struck by a piece of coal which was dislodged when a prop was knocked out by an empty truck. The empty truck was derailed when the horse jerked away without warning.

On 13th November H. Dahren, miner, Millerton Mine, received a fractured right ulna, fractured right humerus, and three fractured ribs from a fall of roof coal in the Mangatini Area.

DAINGEROUS OCCURRENCES IN COAL-MINES (Regulation 81, Coal-mines Regulations 1939).

New Point Elizabeth Mine (Guy and Party).—On 6th May the manager reported that the presence of carbon monoxide was suspected adjacent to the goaf edges in the area south of the main heading. Instructions were issued that work in the mine must cease and no workmen be allowed to enter the mine until an inspection had been made. The area was sealed off on 12th May.

Millerton Mine.—On 18th May the manager reported that panel "A" at the far end of the settlement section of old dip mine gave evidence of spontaneous combustion. The heated material was filled out and the panel sealed off.

Millerton Mine.—On 21st May an outbreak of fire occurred in the sixth west Mine Creek section, and the workmen were withdrawn. Stoppings were completed, and the section resumed production on 22nd May.

Millerton Mine.—On 4th June spontaneous combustion occurred in the return airway outbye "P" panel, Mine Creek area. Temporary stoppings were erected.

Millerton Mine.—On 1st July there were indications of spontaneous combustion in third west section of Mine Creek area, panel "P." The miners were withdrawn and the area sealed with concrete-block stoppings.

Blackball Mine.—On the evening of 13th July an inrush of water occurred in "Dunn's level" in No. 1 north section, resulting in stoppage of all work throughout the section.

Coal Creek Mine.—On 31st July a fire broke out in the Lawrence section underneath a large fall of stone. The men and materials were withdrawn from the mine and the section sealed off with four stoppings.

Liverpool Colliery.—On 24th November it was reported that there were indications of heating in Nos. 1 and 2 banks, Morgan east section (Baxendale's level). Five stoppings were erected to seal off the area, which was almost worked out.

Dobson Colliery.—On 16th December the workmen's inspector reported that on the previous morning an accumulation of 200 cubic feet of firedamp had been found in a working-place in No. 2 dip section after the firing of a shot. The place was stopped until an inspection could be made.

Stockton Mine.—On 31st December serious heating was found inside the new east straight jig area, and measures were taken to deal with it. An inspection of the area was carried out. Permanent stoppings were later erected.

PROSECUTIONS UNDER THE COAL-MINES ACT, 1925.

Eighteen informations were laid during the year, and one was withdrawn.

On 2nd February three deputies, an underviewer, and an acting mine-manager were prosecuted for failing to make a full and accurate report as to the presence of noxious gas. In the case of the three deputies and the underviewer, section 128 (2) of the Coal-mines Act had been violated, and in the case of the acting manager section 129 (2), as amended by the 1936 Amendment. All five men were convicted and fined with costs.

On 13th April two charges were heard against a mine-manager. The first charge (under Regulation 76 of the Coal-mines Regulations 1939) was for permitting the width of working-places to exceed 14 ft. On this charge he was convicted and fined £3, with costs 10s. On the second charge, of entering an incorrect report in respect of the search of workmen before entering the mine (as prescribed in section 98 (2) of the Coal-mines Act, 1925), he was convicted and fined £1 10s., with costs 10s.

On 13th April a miner was prosecuted for having in his possession in the mine a live wax match, contrary to section 98 (1) of the Coal-mines Act, 1925. He was convicted and fined £1, with costs 10s.

On 13th April a miner was charged with having committed a breach of Regulation 76 of the Coal-mines Regulations 1939, in that the working-place under his charge had been driven to a width of 17 ft. He was convicted and fined £1, with costs 10s.

A mine-manager and a miner were prosecuted for a breach of Regulation 221 (1) of the Coal-mines Act, 1925, in that they permitted explosives, not being in a secure case or canister, to be taken into the mine. Each was convicted and fined £3, with costs 10s.

Two mine-managers were charged under Regulation 168 with using defective safety-lamps during compulsory inspections in the mine. Convictions were made in each case, the fines being £2 in one case and £3 in the other, with costs 10s. each.

On 26th May a miner, not being a qualified person, was prosecuted for firing a shot in the underground workings, a breach of Regulation 226 (b) of the Coal-mines Regulations. He was convicted and fined £1, with costs 10s.

On 25th August a mine-owner was charged under section 81 of the Coal-mines Act, 1925, with having failed to furnish a correct half-yearly coal output return. The information was later withdrawn.

On 23rd November a shot-firer and two miners were prosecuted for a breach of Regulation 224 (2) of the Coal-mines Regulations in connection with the firing of a shot. Convictions were secured, and fines of £2, with 10s. costs, were imposed on each charge.

SOUTHERN INSPECTION DISTRICT. (J. HUGHES, INSPECTOR OF COAL-MINES.)

In accordance with the Coal-mines Act, 1925, I have the honour to submit the following report on the mining activities for the year ended 31st December, 1942:—

CANTERBURY DISTRICT.

Aehcron Mine (Anthracite); Brockley Mine (Anthracite).—Developmental work has continued along lines previously followed, and at the former mine a reasonable area of anthracite is being proven.

Clearview Mine; Stencilton Mine.—No new developmental work of importance was undertaken, and the bulk of the output was obtained from pillar-extraction.

Tucknow Clay Mine; Sheffield Clay Mine.—In the former mine, development work was continued along the main levels, and in the latter mine pillar-extraction only took place.

Victory Mine.—Several attempts have been made to intercept a workable area of coal in Bush Gully, with, so far, nothing tangible resulting.

Klondyke Mine.—No major development work was done during the year, the output having been obtained from pillar-extraction in the No. 3 north level, and work preparatory to pillar-extraction in Nos. 5 and 6 north levels.

Mount Somers Mine.—In the old mine pillar-extraction was completed and the area sealed off. In the new mine development work was continued to the north for 5 chains, where inferior coal was encountered; however, a reasonable area of coal has now been proven.

Blackburn Mine.—General development work has continued with fairly satisfactory results.

Sunnydale Clay Mine.—The mine was worked intermittently and on a small scale.

Woodbank Mine (Albury).—Operations at this mine were confined to opencast work.

NORTH OTAGO DISTRICT.

Airedale Mine.—Development has continued to the dip and to the south-east, and the result can be classed as fair, development levels have also been driven east, but in both directions the coal is friable and roof conditions difficult.

St. Andrews Mine.—Development work has taken place to the north-west of the main jig heading with only fair results.

Ngaparua Mine; Willetts Mine. All output has been again won from pillar-extraction.

Rockvale Mine.—A small amount of development work was done to the east, the balance of the work consisting of pillar-extraction.

Shag Point Mine.—No serious effort was made in regard to development, and the bulk of the output was obtained from pillar-extraction.

CENTRAL OTAGO DISTRICT.

Shepherd's Creek Mine.—Pillar-extraction was completed at the old mine, and a block of old workings at the old No. 3 mine dewatered; it is proposed to extract the pillars from this area.

Cairnmuir Mine.—During the year a new dip heading was driven adjacent to the old Cairnmuir mine workings, but insufficient work has yet been done to assess the future prospects.

Otarukua and Idaburn Pits.—Opencast operations have been continued at these pits.

SOUTH OTAGO DISTRICT.

New Fernhill Mine. The whole of the year's output has been won from pillar-extraction.

Jubilee Mine.—Pillar extraction has been continued throughout the mine, and during the year it was found necessary to decrease the number of employees owing to limited pit room.

Fairfield Mine.—Pillar-extraction only has taken place throughout the year.

Willowbank Mine.—Pillar-extraction took place in the top seam along the lower south levels. The work of extending the main dip heading in the lower seam was also commenced towards the end of the year.

East Taieri Mine.—A small amount of development was carried out to the west in the lower levels, and towards the end of the year pillar-extraction was commenced in this area.

Elliotvale Mine.—A small amount of pillar-extraction was continued adjacent to the old mine, and some prospecting work was also done in the measures to the dip.

Benhar Mine. A small amount of development work was done to the dip, but most of the output was obtained from extracting top coal along the higher south levels.

Wangaloa Mine.—A small amount of development work was done to the dip, and pillar-extraction was continued in the lower north-west levels.

Kaitangata Mine.—In the main east level, and also in the lower east levels from the main south dip headings, pillar-extraction has continued throughout the year, and the greater portion of the mine output has been obtained from these areas. Pillar-extraction has also been continued in the northern portion of the area known as Saunson's, and it is in this seam that the only development work of

importance is taking place. The stone drive, which was commenced near the screening plant, has now intercepted Samson's seam. The length of the stone drive is approximately 3,000 ft., and its construction will materially lessen the underground transport charges and greatly facilitate the further development of this seam to the dip. So far as the present mine is concerned, the extent of its future life will be determined by the results obtained from development work in this locality.

SOUTHLAND DISTRICT.

At the Beattie Coster, Hedgehope, Coster, Wainumu, Newvale, Mataura Paper-mill, Croyden, Raby, Firelite, Argyle, Ota Creek, Asher's Siding, Waimamea, and Hawkanui Coal-pits, opencast operations were continued during the year.

Balfour Mine.—The main south levels have been continued and lignite of fair quality produced.

Boghead Mine.—Development places have been continued to the dip, and also lower levels to the north and south.

Otikerama Mine.—Development work has been continued along the main east levels, and a new air-shaft constructed.

Black Lion Mine.—Pillar-extraction has been continued to the north and north-west of the main jig heading. A development heading now being driven north-west may prove a small area of thin coal, but nothing has been done to indicate much more coal being made available.

Black Diamond Mine.—The whole of the mine output has again been won from pillar-extraction, the area worked being from the lower portion of the main dip heading and up to No. 4 level.

Mossbank No. 4 Mine.—Development work has been carried out to the north, east, and west. Faulting has been encountered in all three directions. Further development work will be commenced to the dip—*i.e.*, to the south.

Star Mine.—Pillar-extraction has continued in the panels to the rise of No. 1 east level with satisfactory results. Further development work was carried out to the dip, and a series of lower levels were also driven in an easterly direction. The result of the development work is reasonably good.

Birchwood Mine.—The greater portion of the output has again been won from pillar-extraction in the lower areas. Development work has also been continued in the No. 2 west section, but insufficient concentration has been applied to development work.

Wairaki.—No. 1 Mine: Pillar-extraction has been continued in the several sections of this mine throughout the year. As no further development work is anticipated at this mine, pillar-extraction will be continued.

No. 3 Mine: The main dip heading has been extended to a total distance of 17 chains and is being continued. No. 1 west level has been driven 12 chains; work in this level has disclosed a faulting running north-west—south-west. The quality of coal being developed is good, and the development of the mine continues to prove a fairly large area of good-quality coal.

Linton.—No. 1 Mine: During the year development work has taken place in Nos. 9 and 10 sections, following upon the extension of the main dip heading, which is standing on a fault running east—west and intercepted at a point 44 chains from the mine entrance. Pillar-extraction is proceeding in the remaining sections of the mine.

No. 3 Mine: The main north headings have now been driven a total distance of 26 chains, a fault having been driven through and an area of good-quality coal made available north of the fault. Development work and consequent pillar-extraction has continued throughout the sections to the east and west of the main headings and on the outbye or south side of the fault.

FATAL ACCIDENTS.

On the 14th September George Wilson, shiftman, was killed in the Wairaki No. 1 mine. He was engaged in laying a road into a pillar place when he sustained a fractured skull as a result of being struck by falling coal.

On the 28th October Arthur James Birley, employee at the East Taieri Mine, was killed by electric shock. Birley was illegally engaged in carrying out alterations to the electric underground circuit, and sustained an electric shock as a result of faulty electric connections made by him.

SERIOUS ACCIDENTS.

On the 7th January Eric Roberts, miner at the Airedale Mine, sustained a compound fracture of the left leg as a result of being struck by falling coal in a solid place.

On the 10th February R. Rutherford, miner at Birchwood Mine, sustained a fracture of the right leg as a result of being struck by falling stone just inbye of the lip of the working-place.

On the 17th February R. Lambert, surface worker at the Star Mine, sustained a fracture of the right forearm as a result of being trodden on by a horse.

On the 20th February Mark Lancaster, miner, Kaitangata, sustained head injuries as a result of being struck by falling coal; in this case the use of a helmet definitely averted a fatality.

On the 2nd April John Nally, trucker, Linton Mine, sustained a compound fracture of the right arm as a result of being struck by the jig-rope socket.

On the 24th April Robert Carson, screen worker, Kaitangata Mine, sustained a fracture of the right leg as a result of slipping adjacent to the picking-table.

On the 9th June S. C. Gray, surface worker at Linton Mine, sustained a fracture of the right forearm as a result of being crushed between two mine trucks.

DANGEROUS OCCURRENCES.

Wairaki No. 1.—17th January: Heating occurred in the goaf, stone dip section. Area effectively sealed off.

Linton No. 1.—20th February: Fire broke out in No. 3 section. Area effectively sealed.

Linton No. 1.—9th March: Fire broke out in the old horse-level section. Stoppings were erected and the area flooded.

Wairaki No. 1.—Heating occurred in No. 6 section. Area effectively sealed off.

Black Lion.—20th June: Fire broke over the stoppings in the horse-level section. The area was effectively sealed off.

Mount Somers.—19th July: Fire broke out in the old workings. Concrete stoppings were erected and the area flooded.

Wairaki No. 1.—23rd November: Heating occurred in the stone dip section. The area was effectively sealed off.

PROSECUTIONS.

On the 19th May a mine-manager was prosecuted and convicted for a breach of Regulation 220 (2) of the Coal-mines Regulations 1939, and fined £1 10s. and £2 costs.

On the 11th December a mine-manager was prosecuted and convicted for a breach of Regulation 254 (2) of the Coal-mines Regulations 1939, and fined £2 and 10s. costs.

ANNEXURE B.

STATISTICS OF WORKINGS IN COAL-MINES, 1942.

Name of Mine and Locality.	Title held (Crown Lease or otherwise).	Name of Mine-manager and Class of Certificate.	Name and Address of Owner.	Number of Years worked.	Classification of Coal.	Number of Seams worked.	Thickness of Coal-seams.	Thickness worked.	System of underground Working.	Depth of Shaft or Length of Drive (if any) to reach Coal-seam.	Total Output for 1942.	Total Output to 31st December, 1941.	Total Output to 31st December, 1942.	Number of Persons ordinarily employed.		Means of Ventilation.			
														Above.	Below.		Total.		
NORTHERN INSPECTION DISTRICT.																			
<i>Waikato District.</i>																			
Rotowaro, Rotowaro ..	Crown lease and freehold	J. Smith (1st C.) ..	Taupiri Coal-mines, Ltd., Auckland	25	Brown ..	2	7' to 27'	Full	Bord and pillar	..	Tons, 207,738	Tons, 3,186,006	Tons, 3,393,744	95	270	365	Fans.		
Pukemiro, Pukemiro ..	Ditto	W. N. Currie ..	Pukemiro Collieries, Ltd., Auckland	27	" ..	1	4' to 18'	4' to 14'	Ditto ..	2 1-25 yd.; 1-100 yd.	125,989	3,077,844	3,203,833	55	180	244	"		
Wilton, Glen Massey ..	Freehold	T. L. Andrews (1st C.) ..	Wilton Collieries, Ltd., Auckland	12	" ..	1	6' to 8'	7' 6"	" ..	.. 57 ch.	73,967	927,544	1,001,511	89	122	161	"	
Waikato Extended, Huntly West	" ..	J. Honey (U.) ..	Roose Shipping Co., Mercer	26	" ..	1	14'	12'	" ..	.. 5 ch.	3,535	120,543	124,075	2	5	7	Natural.	
Glen Afton No. 1 ..	Crown lease and freehold	W. C. Inglis ..	Glen Afton Collieries, Ltd., Auckland	22	" ..	1	4' to 16'	9'	" ..	..	46,791	2,061,944	2,108,735	29	90	128	Fan.	
MacDonald, Waikowai	" ..	" ..	Ditto	12	" ..	1	6' to 20'	9' to 14'	" ..	..	177,698	1,435,270	1,612,968	67	212	279	"	
Taupiri East, Kimihia ..	Crown lease	W. Scurr (D.) ..	Holland and party, Huntly	21	" ..	1	7'	7'	" ..	.. 2½ ch.	4,612	43,105	47,807	2	5	7	Natural.	
Whatawhata, Campbell, Whatawhata	" ..	A. Penman (1st C.) ..	Whatawhata Campbell Coal Co., Ltd., Hamilton	21	" ..	1	7'	7'	" ..	..	6,669	87,207	93,876	2	4	9	Fan.	
Renown, Renown	Freehold	T. Geddes (1st C.) ..	Renown Collieries, Ltd., Auckland	15	" ..	1	15'	7' 6" to 9'	" ..	.. 73 ch.	131,637	1,374,626	1,506,263	59	105	254	Natural.	
Glen "A" Potteries, Glen Afton	" ..	J. Howie (P.) ..	Taranaki Brick and Land Co., Ltd., New Plymouth	6½	" ..	1	8'	8'	Opencast	..	180	2,221	2,411	3	..	3	Natural.		
Graham, Glen Afton ..	" ..	J. Tweedie (2nd C.) ..	Graham Coal Co., Glen Afton	19	" ..	1	2' 6" to 4 6"	2' 6" to 4 6"	Bord and pillar	.. 5 ch.	289	147,566	147,835	1	3	4	Fan.		
<i>Taranaki District.</i>																			
Old Stockman, Mokau ..	Freehold	H. W. Jones (D.) ..	Chambers Bros., Havelock	22	Brown ..	1	4' 6"	4' 6"	Bord and pillar	{ No. 1, 9 ch. } { No. 2, 5 ch. }	1,066	12,439	13,555	1	2	3	Natural.		
Mangapehi, Mangapehi (State)	Crown lease	H. Quinn ..	N.Z. Government, Wellington	8½	" ..	1	8' to 20'	7' to 8'	Ditto ..	.. 6 ch.	49,108	71,238	120,366	24	68	92	Fan.	
Tatu, Ohura (State) ..	" ..	A. E. McMillan (1st C.) ..	" ..	6	" ..	1	7'	Full	" ..	..	26,222	78,862	105,084	28	44	72	"	
<i>Hikurangi District.</i>																			
Waro, Hikurangi ..	Freehold	A. Burt (1st C.) ..	Waro Coal-mines, Ltd., Auckland	8	Sub-bituminous	1	4' to 6' 6"	All	Bord and pillar	.. 1,550'	21,593	109,856	131,449	15	65	80	Fan.		
New Kamo, Kamo ..	Crown lease and freehold	J. Makinson (1st C.) ..	Kamo Collieries, Ltd., Whangarei	8½	" ..	1	5' to 12'	8'	Ditto ..	.. 450' and 1,100'	51,693	243,603	295,296	20	84	104	Fans.	
Pollock's Mine, Kamo ..	Freehold	J. A. Pollock ..	A. E. Pollock, 176 Kamo Road, Whangarei	½	" ..	1	3' 9"	3' 9"	" ..	.. 70'	486	..	486	1	2	3	Natural.	
Ruatangata, Kamo	" ..	G. Cross (2nd C.) ..	Kamo Potteries, Ltd., Whangarei	22	" ..	1	5'	5'	" ..	.. 250'	1,091	61,634	62,715	1	7	8	Mechanical.	
Tauranga Block, Hikurangi	" ..	J. B. Orr ..	Wilson's Portland Cement Co., Ltd., Auckland	8	Bituminous	1	2½' to 3½'	3½'	" ..	..	260	9,998	10,238	..	3	3	Natural.	
														12,377,063	12,377,063

Outputs of collieries included in previous statements at which operations have been abandoned or suspended

STATISTICS OF WORKINGS IN COAL-MINES, 1942—continued.

Name of Mine and Locality.	Title held (Crown Lease or otherwise).	Name of Mine-manager and Class of Certificate.	Name and Address of Owner.	Number of Years worked.	Classification of Coal.	Number of Seams worked.	Thickness of Coal-seams.	Thickness worked.	System of Under-ground Working.	Depth of Shaft or Length of Stone Drive (if any) to reach Coal-seam.	Total Output for 1942.	Total Output to 31st December, 1941.	Total Output to 31st December, 1942.	Number of Persons ordinarily employed.		Means of Ventilation.	
														Above.	Below.		
WEST COAST INSPECTION DISTRICT.																	
<i>Nelson District.</i>																	
Westhaven, Collingwood	Freehold	G. Wynn (D.)	G. and A. H. Wynn, Mangarakau	4	Sub-bituminous	1	8'	6'	Bord and pillar	..	3,094	7,790	10,893	2	6	8	Natural.
Puoponga, Puoponga	Crown lease	A. J. McHardy (2nd C.)	Puoponga Coal-mines, Ltd., Puoponga	39	Ditto	1	3'	6'	Ditto	..	5,110	418,983	424,093	2	6	8	"
Owen, Owen River	"	O. J. Gilroy (D.)	Owen Collieries, Ltd., Nelson	13	"	1	4' to 6'	6'	Double stall	4 ch.	2,726	40,225	42,951	1	6	7	Fan.
Strathmore, Ariki	"	R. O'Rourke (P.)	R. O'Rourke, Murchison	13	"	1	4' to 5'	6'	Ford and pillar	..	185	72	257	..	2	2	Natural.
Six-mile, Murchison	Freehold	J. Gillespie (P.)	Six-mile Coal Co., Murchison	14	Bituminous	1	5'	Full	Ditto	..	1,057	111	1,198	1	3	4	"
Victory, Glenhope	"	R. H. O'Brien (P.)	Hovson and O'Brien, Glenhope	1	Bituminous	1	5'	"	"	..	61	..	64	..	1	1	"
<i>Buller District.</i>																	
Allan's, Charleston	Crown lease	T. D. Allen	T. D. Allen, Charleston	10	Lignite	1	40'	8'	Opencast	..	9	75	84	1	..	1	Natural.
Bowater and Bryan, Charleston	"	F. M. Mitchell (P.)	Bowater and Bryan, Westport	12	"	1	40'	8'	Bord and pillar	..	128	3,124	3,252	1	..	1	"
Brighton, Fox River	"	A. Hunter (P.)	Brighton Coal-mines, Ltd., Brighton	10	"	1	12' to 15'	8'	"	..	78	3,655	3,733	..	2	2	"
Cascade, Cascade Creek	"	W. Brown (1st C.)	Cascade-Westport Coal Co., Ltd., Westport	16	Bituminous	1	25'	8'	Ditto	..	13,765	244,167	257,932	9	11	20	"
Charming Creek, Ngakawan	"	B. J. Wearn (1st C.)	Charming Creek-Westport Coal Co., Ltd.	15	"	1	8' to 20'	10'	"	20 ch.	42,680	253,743	296,429	29	40	69	Fan.
Coal Creek, Seddonville	"	T. Quinn (D.)	Coal Creek Mining Pty., Seddonville	25	"	1	30'	8'	"	..	4,343	114,035	118,375	1	6	7	Natural.
Hydro, Seddonville	"	N. Forsyth (2nd C.)	Hydro Coal mines Ltd., Westport	7	"	1	20'	Full	"	..	13,294	54,274	67,568	2	8	10	Fan.
Dove's, Seddonville	"	J. T. Dove (D.)	J. T. Dove, Seddonville	12	"	1	20'	8"	"	22 ch.	11	119,661	119,672	..	1	1	Natural.
Mitchell's, Charleston	"	F. M. Mitchell (P.)	F. T. Mitchell, Charleston	17	Lignite	1	40'	8'	Opencast	..	392	1,135	1,547	1	..	1	"
Warne's, Charleston	"	G. N. Warne (P.)	G. N. Warne, Charleston	17	"	1	40'	8'	"	..	4	1,358	1,62	1	..	1	"
Rocklands, Buller Gorge	"	N. B. Paine (D.)	Paine Bros., Buller Gorge	40	Brown	1	20'	8'	Bord and pillar	1 ch.	290	18,933	19,249	1	4	5	"
Glenrag, Buller Gorge	"	N. Forsyth (2nd C.)	Forsyth and Bateson, Westport	19	Bituminous	1	20'	10'	Ditto	..	1,833	9,117	10,950	2	2	2	"
Denniston, Denniston	"	A. Openshaw (1st C.) and R. Marshall (1st C.)	Westport Coal Co., Ltd., Dunedin	62	Bituminous	7	3' to 30'	Full	"	..	178,653	11,536,000	11,714,655	107	249	356	Fans.
Millerton, Granity	"	O. J. Davis (1st C.)	Westport-Stockton Coal Co., Ltd., Christchurch	51	"	1	4' to 40'	12'	"	298 ch.	111,709	8,821,571	8,933,280	38	120	158	"
Westport-Stockton, Ngakawan	"	T. McGhie (1st C.)	Westport-Stockton Coal Co., Ltd., Christchurch	34	"	3	4' to 20'	10'	"	28 ch.	140,136	4,150,433	4,296,589	94	187	281	"
Opasara, Karamea	"	A. J. Watson	A. J. Watson, Karamea	5	Lignite	1	2 1/2' to 3'	Full	"	..	20	217	237	..	1	1	Natural.
Cariff, Mokihini	"	J. Simpson (D.)	Cariff Coal Co., Ltd., Westport	63	Bituminous	1	10' to 12'	10'	"	..	4,315	18,694	23,009	1	5	6	"
Buller Gorge, Rahui	"	R. Chester (D.)	Buller Coal-mining Co., Ltd., Westport	3	Brown	1	14'	Full	Opencast	..	730	..	790	5	..	5	"
<i>Reefton District.</i>																	
Archer's, Capleston	Crown lease and freehold	F. W. Archer (2nd C.)	F. W. Archer, Reefton	47	Brown	2	9' to 18'	9'	Bord and pillar	540'	9,294	105,172	114,466	3	17	20	Natural.
Burice's Creek	Crown lease	C. D. Buist (1st C.)	Burice's Creek Collieries, Ltd., Wellington	41	"	1	8' to 12'	9'	Ditto	..	23,726	387,379	411,105	14	38	52	Fan.
Clele, Merniggs	"	R. V. Alborn (1st C.)	R. V. Alborn, Christchurch	56	"	1	5' to 40'	Full	"	..	5,184	98,871	104,055	2	9	11	Natural.
Coghlan's Mines, Capleston	Crown lease and freehold	W. H. Smith (P.), J. J. Coghlan (D.), and T. Coghlan (P.)	J. H. Coghlan, Reefton	45	"	2	7' to 12'	10'	"	..	5,878	47,583	53,461	1	8	9	"
Defiance, Murray Creek	Crown lease	G. Turner (2nd C.)	McClatchie and Co., Ltd., Christchurch	14	"	1	6'	Full	"	..	9,248	29,224	38,472	7	10	17	"
Morrisvale, Reefton	"	C. Curtis (2nd C.)	W. J. Morris, Reefton	30	"	1	12'	10'	"	..	10,939	183,621	194,560	1	17	18	Fan.
Burnwell, Reefton	"	D. Hamit (D.)	Burnwell Coal Co., Ltd., Reefton	14	"	1	50'	10'	"	90'	2,987	11,906	14,893	..	5	5	"

STATISTICS OF WORKINGS IN COAL-MINES, 1942—continued.

Name of Mine and Locality.	Title held (Crown lease or otherwise).	Name of Mine-manager and Class of Certificate.	Name and Address of Owner.	Number of Years worked.	Classification of Coal.	Number of Seams worked.	Thickness of Coal-seams.	Thickness worked.	System of underground working.	Depth of Shaft or Length of Drive (if any) to reach Coal-seam.	Total Output for 31st Decem-ber, 1942.	Total Output to 31st Decem-ber, 1941.	Total Output to 31st Decem-ber, 1942.	Number of Persons ordinarily employed.		Means of Ventilation.
														Above.	Below.		Total.
SOUTHERN INSPECTION DISTRICT—continued.																
<i>Central Otago.</i>																
Cairnmuir, Cromwell ..	Freehold and Crown lease	W. Hodson (D.) ..	Cairnmuir Coal Co., Ltd., Christ-church	2	Lignite	1	6' to 20'	7'	Bord and pillar	..	214	808	1,022	1	2	Natural.
Idaburn, Otarehua ..	Freehold	R. Barber (D.) ..	R. Barber, Otarehua ..	72	"	1	30'	28'	Opencast	..	1,158	65,221	66,379	2	2	"
McPhersons, Coal Creek ..	Crown lease	N. J. Harlwich (P.) ..	N. J. Harlwich, Roxburgh ..	72	"	1	14'	14'	"	..	1,493	117,513	119,006	2	2	"
Otarehua, Otarehua ..	"	A. Brown (D.) ..	J. K. and A. Becker, Otarehua ..	43	"	1	12'	12'	"	..	30	8,345	8,375	2	2	"
Shepherd's Creek, Bannockburn ..	"	J. Hodson (2nd C.) ..	J. Hodson, Bannockburn ..	65	"	1	16' to 20'	10'	Bord and pillar	..	1,232	146,669	147,901	1	2	Fan.
<i>South Otago.</i>																
Benhar, Benhar ..	Freehold and Crown lease	J. Findlater (D.) ..	McSkimming and Sons, Ltd., Ben-har	79	Lignite	1	14'	10'	Bord and pillar	..	6,744	362,990	369,734	1	7	Fan.
East Taieri, East Taieri ..	Freehold	J. Dunlop (D.) ..	J. Dunlop, East Taieri ..	23	"	1	15'	6'	Ditto	..	1,849	54,585	56,434	2	3	"
Elliotvale, Milton ..	"	C. Harris (P.) ..	Elliotvale Collieries, Ltd., Dunedin	13	"	1	20'	8'	"	..	607	11,897	12,312	2	2	"
Fairfield, Fairfield ..	"	J. G. Barclay (U.) ..	Fairfield Coal Co., Ltd., Dunedin	10	"	1	5'	6'	"	..	2,369	24,343	26,912	1	4	"
Jubilee, Saddle Hill ..	W.L. and free-hold	F. Barclay (2nd C.) ..	Jubilee Coal Co., Ltd., Dunedin	45	"	1	7 to 9'	6'	"	..	9,057	665,013	674,102	5	10	"
Kaitangata, Kaitangata ..	Freehold and Crown lease	F. Carson (1st C.) ..	Kaitangata Coal Co., Ltd., Dunedin	66	"	1	8' to 20'	8' to 20'	"	..	130,042	6,096,240	6,226,282	61	180	"
New Fernhill, Abbotsford ..	Freehold	M. Hewitson (D.) ..	Fernhill Coal Co., Ltd., Dunedin	10	"	1	7' to 14'	6'	"	..	4,935	36,171	41,106	2	5	"
Wangaloa, Kaitangata ..	Freehold and Crown lease	R. McVie (D.) ..	Wangaloa Coal Co., Ltd., Dunedin	20	"	1	25'	25'	"	..	3,431	23,414	26,845	1	3	"
Willowbank, East Taieri ..	Freehold	G. Scurr (D.) ..	G. Scurr and Co., Mosgiel ..	22	"	2	10'	6'	"	..	6,133	98,952	105,105	2	6	"
<i>Southland District.</i>																
Argyle, Waikaka ..	Crown lease	C. Hall (P.) ..	T. Woodward, Waikaka ..	51	Lignite	1	10'	11'	Opencast	..	981	14,612	14,893	1	1	Fan.
Birchwood, Ohai ..	"	J. Lewis (1st C.) ..	Birchwood Coal Co., Ltd., Dunedin	19	Brown	1	9' to 25'	6' to 8'	Bord and pillar	..	39,392	327,637	367,029	17	51	"
Black Diamond, Nightcaps ..	"	R. McDonald (2nd C.) ..	Black Diamond Coal Co., Ltd., Ben-nightcaps	27	"	1	25'	25'	Ditto	..	24,783	324,449	349,232	6	14	"
Black Lion, Ohai ..	"	A. Cain (2nd C.) ..	McSkimming and Sons, Ltd., Ben-nightcaps	21	"	1	8'	8'	"	..	13,666	239,612	253,278	4	16	"
Boghead, Mataura ..	Freehold	J. Dee (P.) ..	C. E. Rowe, Mataura ..	37	Lignite	1	22'	10'	Opencast	..	6,702	144,790	151,501	1	3	"
Costers, Edendale ..	"	D. A. Coster (P.) ..	D. A. Coster, Mataura ..	64	"	1	13'	13'	"	..	963	6,514	7,477	1	1	"
Croydon, Gore ..	"	C. McGregor (P.) ..	S. B. Taylor, Gore ..	27	"	1	15'	15'	"	..	1,327	41,644	42,971	1	1	"
Diamond Lignite, Asher's Sliding ..	Crown lease	A. McMillan (P.) ..	S. McMillan, Invercargill	40	"	1	38'	38'	"	..	1,065	47,982	49,047	1	1	"
Firelight, Gore ..	Freehold	J. S. Harvey (D.) ..	J. S. Harvey, Te Tipua ..	1	"	1	11' to 12'	7'	Bord and pillar	..	725	..	725	1	1	Natural.
Glenlee, Waikaka ..	"	J. G. Burgess (P.) ..	F. W. Edge, Waikaka ..	49	"	1	14'	10'	Ditto	..	1,911	46,104	48,015	1	1	Fan.
Gold Light, Waikaka ..	"	R. J. Meechang (P.) ..	R. J. Meechang, Gore ..	1	"	1	11'	10'	"	..	152	..	152	1	1	Natural.
Hawkanui, Waikaka ..	"	K. J. Meechang (P.) ..	K. J. Meechang, Gore ..	1	"	1	8'	8'	"	..	71	..	71	1	1	"
Hedgehope, Waikaka ..	"	F. W. Burton (P.) ..	F. W. Burton, Gore ..	1	"	1	18' to 20'	18' to 20'	Opencast	..	6,332	15,298	21,630	4	4	"
Linton, Ohai ..	Freehold and Crown lease	A. Collihan (1st C.) ..	Linton Coal Co., Ltd., Invercargill	27	Brown	1	30' to 40'	30' to 40'	Bord and pillar	..	88,341	1,737,383	1,845,724	44	108	Fan.
Mataura Lignite, Mataura ..	Crown lease	J. Pearson (D.) ..	Beattie, Coster, and Co., Ltd., Mataura	66	Lignite	1	14'	14'	Opencast	..	2,449	420,468	422,917	3	3	"
Mataura Paper-mills, Mataura ..	"	A. W. Coster (D.) ..	N.Z. Paper Mills, Ltd., Dunedin	1	"	1	14' to 24'	14' to 24'	Bord and pillar	..	22,500	54,121	76,621	4	4	"
Mossbank, Ohai ..	Crown lease	J. T. McLelland (1st C.) ..	Mossbank Coal Co., Ltd., Inver-cargill	2	Brown	1	17'	8'	"	..	23,391	639,409	682,800	15	38	Fan.
Newvale, Waikaka ..	Freehold	P. J. Terry ..	Terry and Bryant, Gore ..	94	Lignite	1	12'	12'	Opencast	..	5,215	3,305	8,520	5	5	"
Ota Creek, Wymann ..	Crown lease	E. Genge (P.) ..	E. Genge, Wymann ..	53	"	1	9'	8'	"	..	1,472	35,759	36,231	2	2	"
Oukerama, Oukerama ..	Freehold	J. Hoffman (P.) ..	J. Hoffman, Gore ..	53	"	1	20'	8'	Bord and pillar	..	3,242	76,273	79,515	2	2	Natural.
Raby, Gore ..	"	J. S. Wilks (P.) ..	J. E. Miller, Gore ..	11	"	1	30'	30'	Opencast	..	3,184	27,804	27,804	2	2	"
Star, Ohai ..	"	J. S. Baird (1st C.) ..	Star Coal Co., Ltd., Invercargill	11	Brown	1	20'	8'	Bord and pillar	..	35,941	126,679	162,620	12	38	Fan.
Terrace, Balfour ..	Crown lease	A. C. Dixon (D.) ..	A. C. Dixon, Balfour ..	11	Lignite	1	16'	9'	Ditto	..	1,178	15,279	16,457	1	2	Natural.
Waimeara, Orepuki ..	Freehold	J. L. Hennessy (P.) ..	J. L. Hennessy, Orepuki ..	37	"	1	16'	13'	"	..	20	38,649	38,669	1	1	"
Waikaka, Waikaka ..	Freehold and Crown lease	A. Maxwell (P.) ..	Waikaka Coal Co., Ltd., Gore ..	14	"	1	30'	30'	Opencast	..	6,771	46,103	52,874	3	3	"
Wairaki, Ohai ..	Freehold and Crown lease	T. Young (1st C.) ..	Wairaki Coal Co., Ltd., Invercargill	23	Brown	1	7' to 22'	7' to 22'	Bord and pillar	..	56,288	670,804	727,092	27	43	Fan.
Output of collieries included in previous statements at which operations are abandoned or suspended																
Totals, Southern District, South Island ..																
Totals, West Coast District, South Island ..																
Totals, Northern District, North Island ..																
Grand totals ..																
Output of collieries prior to 1890, not included in above statement ..																
Shale exported, 1914 ..																

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