MINES STATEMENT.

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APPENDICES TO THE MINES STATEMENT—*continued.*

1939.

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, 1938.

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 1938 and 1937 :—

Mineral.	1938.		1937.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Gold and silver*	509,759 oz.	1,214,054	612,468 oz.	1,319,743
Platinum	$1\frac{6}{20}$,,	7	55 ,,	423
Iron-ore	1,218 tons	3,666	571 tons	880
Stone	..	555,295	..	444,837
Pumice	3,046 ,,	8,811	2,931 tons	8,057
Coal	2,222,088 ,,	2,222,088	2,277,799 ,,	2,277,799
Tungsten-ore	$45\frac{13}{20}$,,	8,604	$23\frac{14}{20}$,,	6,468
Manganese-ore	90 ,,	450	5 ,,	50
Silica sand	1,459 ,,	1,126	164 ,,	236
Quicksilver	760 lbs.	190	1,344 lb.	336
Fuller's earth	56 tons.	154	..	..
Diatomaceous earth	..	70	..	..
Totals	..	£4,014,515	..	£4,058,829

* The gold-silver bullion is generally exported unseparated.

The value of minerals, including kauri-gum, exported and of the coal used in the Dominion, which is shown in Table No. 1 accompanying this Statement, amounted to £3,672,075, as compared with £3,916,176 during 1937. The total value of such minerals exported to the end of 1938 amounted to £203,548,007.

GOLD AND SILVER MINING.

During the year 509,759 oz. of bullion, valued at £1,214,054 was produced, a decrease in quantity of 102,709 oz., and in value of £105,689, as compared with the previous year.

The gold content of the bullion is estimated at 152,050 oz., valued at £1,182,719.

The estimated gold-production for the past nine years has been as follows :—

Year.	Oz.	Year.	Oz.
1930	120,931	1935	165,277
1931	129,861	1936	164,575
1932	166,354	1937	168,487
1933	161,755	1938	152,050
1934	160,248		

It will be noted that for the year under review there has been a decrease in gold-production of 16,437 oz. It is disappointing to have to record this heavy drop in output, particularly in view of the fact that the production for the previous year was the largest recorded for the past eighteen years. The decline in the figures is due to substantial decreases in the production of gold from quartz-mining and alluvial-mining, amounting for the year to 11,849 oz. and 7,213 oz. respectively. On the other hand, dredge-mining showed an increase of 2,625 oz.

The reduction in gold output from quartz-mines was caused by decreases in the amount of gold won from the Martha Mine, the Waihi Grand Junction Mine, the Golden Dawn Mine, and the Talisman Dubbo Mine. The aggregate production of the Martha and Waihi Grand Junction Mines in 1937 was 59,275 oz., while for 1938 the figure was 51,950 oz., a decrease of 7,325 oz. The production from the Golden Dawn Mine in 1937 was 3,307 oz., but only 966 oz. in 1938, a decrease of 2,341 oz. The output from the Talisman Dubbo Mine dropped from 1,895 oz. in 1937, to 318 oz. in 1938.

The decrease in alluvial-mining is due to two principal causes—firstly, the very dry season experienced; and, secondly, the increased diversion to other occupations of subsidized prospectors. The number of men engaged in alluvial-mining dropped from 2,168 in 1937, to 1,374 in 1938.

Twenty-four dredges operated in 1938, as compared with twenty-two in 1937. Three large dredges are under construction—namely, the Arahura and Ngahere on the West Coast, and the Austral Malay Dredge at Lowburn in Central Otago. It is hoped that during the present year the increased gold-production resulting from the operations of the large dredges recently completed or now under construction will more than offset the past year's reduction in output from the other forms of gold-mining.

The following statement shows the quantity and value of bullion-production, the dividends paid by registered companies, and the number of productive claims and gold-dredges during 1938 and 1937 :—

Class of Gold-mining.	Production of Bullion.				Dividends paid by Registered Companies.		Number of Productive Claims and Dredges.	
	1938.		1937.		1938.	1937.	1938.	1937.
	Oz.	£	Oz.	£	£	£		
Quartz	435,703	622,336	534,424	710,421	105,041	126,088	59	77
Alluvial	19,929	149,586	27,142	200,024	13,819	14,683	1,088	2,753
Dredging ..	54,124	442,132	50,902	409,298	98,888	55,533	24	22
Totals ..	509,759	1,214,054	612,468	1,319,743	217,748	196,304	1,171	2,852

MINING AND COAL-MINING LEGISLATION.

The only amendment to the Mining Act during 1938 was one which slightly altered and extended the provisions of that Act relating to the granting of mineral licenses, and was effected by a section in the Statutes Amendment Act, 1938.

An amendment of eleven clauses was made to the Mining Regulations.

No coal-mining legislation was brought forward during the year, but the Coal-mines Regulations were revised and consolidated, and were recently issued.

GOLDFIELDS REVENUE AND GOLD DUTY.

The amount of goldfields revenue received and credited to the accounts of local bodies during the year ended 31st March, 1939, was £18,226 12s. 1d., a decrease of £1,278 11s. 3d. compared with the previous year. During the same period the total of the three duties on exported gold amounted to £108,076 15s. 4d., of which £5,502 5s. 9d. was credited to the accounts of local bodies under section 12 of the Gold Duty Act, 1908. The special export duty of 12s. 6d. per ounce amounted to £100,011 9s. 3d., which sum was paid into the Consolidated Fund.

MINING PRIVILEGES.

Interest is still being maintained in the mining industry, although the number of licenses granted has decreased. During the year ended 31st March, 1939, 568 licenses for mining privileges were granted under the provisions of the Mining Act, 1926, as compared with 743 for the previous year. Out of this number 72 were licenses for claims authorizing the holders to mine for gold. For the same period 384 mining privileges, including 89 licenses for claims, were struck off the registers under the provisions of section 188 of the Act.

PETROLEUM OIL.

From the Nos. 1, 2, and 4 wells of Moturoa Oilfields, Ltd., at Moturoa, Taranaki, 116,585 gallons of crude petroleum oil was obtained.

From the Kotuku field on the West Coast of the South Island 1,269 gallons was recovered.

The Dominion's total production of crude petroleum oil to 31st December, 1938, is estimated at 2,883,650 gallons.

As announced in my last statement the passing of the Petroleum Act, 1937, heralded a new era in the search for oil in New Zealand. Following the passing of this Act, considerable interest was evinced by some of the major oil companies, and practically all the potential oil-bearing land in New Zealand was applied for. In all, 52 licenses, with an aggregate area of 9,236 square miles, have been granted, and applications for further areas are still coming to hand. With the granting of the licenses the search for oil commenced on a scale unprecedented in the history of New Zealand.

Geological and geophysical investigations are being carried out on all licensed areas, and the first important well is being drilled near Gisborne with a modern and efficient plant capable of drilling to a depth of 10,000 ft.

The scope of the investigations undertaken by the various licensees is being rapidly expanded with the arrival of expert staff and special equipment from overseas.

COAL-MINING.

There were 159 coal-mines operating in the Dominion in 1938. Seventy-one of these mines are situated on freehold property and produced 840,598 tons or 38 per cent. of the total output. The remaining 88 mines are situated on Crown lands and produced 1,381,490 tons, or 62 per cent. of the total output of 2,222,088 tons.

The annual production of coal since 1930 has been as follows :—

Year.	Tons.	Year.	Tons.
1930 ..	2,542,092	1935 ..	2,115,184
1931 ..	2,157,756	1936 ..	2,140,217
1932 ..	1,842,022	1937 ..	2,277,799
1933 ..	1,821,258	1938 ..	2,222,088
1934 ..	2,060,315		

The decrease in output for 1938 is 2·44 per cent. below the figure for 1937, and is confined to brown coal.

The quantity of coal imported into New Zealand in 1938 was 109,206 tons, as compared with 116,499 tons for the previous year, a welcome reduction of 6·27 per cent.

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

Class of Coal.	Output of Coal during 1938.				Total Output to the End of 1938.
	Northern District (North Island).	West Coast District (South Island).	Southern District (South Island).	Total.	
	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and sub-bituminous	44,838	933,012	..	977,850	51,784,420
Brown	717,879	50,231	344,304	1,112,414	33,291,193
Lignite	..	1,146	130,678	131,824	5,401,817
Totals for 1938 ..	762,717	984,389	474,982	2,222,088	90,477,430
Totals for 1937 ..	778,498	975,228	524,073	2,277,799	88,255,342

WASTAGE OF COAL.

I am happy to say that the tremendous improvement effected in regard to the wastage of slack coal during the last three years has been maintained.

NEW AVENUES OF COAL-UTILIZATION.

Surveys of our coal resources have been continued, and further references to the work carried out appear later in this statement.

DOBSON RESCUE-STATION.

The new rescue-station at Dobson was completed in April, 1939, and lectures are now being conducted in the building by a competent officer of the Department. Instruction is being imparted to teams of selected men from the Dobson, Wallsend, Blackball, Paparoa, Briandale, and State Collieries and from nearby small co-operative mines.

Twenty sets of Proto self-contained breathing-apparatus were imported from England and are now in use at the station. For charging the small steel cylinders of the Protos by a special type of pump which had to be imported, a supply of oxygen in large cylinders is kept at the station and is replenished from Christchurch.

The teams are trained to use an up-to-date oxygen and carbon-dioxide inhalator by which two unconscious persons can be resuscitated simultaneously, and also to use smoke helmets, of which there are two types at the station.

The station itself has been erected in reinforced concrete and consists of seven rooms, the largest being the demonstrating-chamber in which the trainees wear the Protos in an irrespirable atmosphere for periods gradually increasing in length until the full two-hour maximum is reached. While wearing the apparatus they perform tasks similar to the class of work they are required to undertake in a coal-mine.

Outside the demonstrating-chamber are observation and lecture rooms, and beyond the observation room is a change-house equipped with hot and cold showers.

Under the same roof as the rescue-station is a large concrete garage in which is stored a fully equipped rescue van to convey brigades and apparatus to any mine in which a fire has broken out or in which an explosion has occurred. The van is so designed that it can be used as an ambulance van if required.

Independently of the instructional work carried on at Dobson, the training of men in rescue-work was continued during the year at the Liverpool State Colliery where five sets of Protos are kept.

The levy imposed on the output of coal from the mines which are served by the Dobson Rescue-station to meet the cost of its upkeep was reduced last year from 1d. per ton to ¾d. per ton.

SOCIAL AMENITIES IN MINING TOWNSHIPS.

During the year new recreational facilities were made available at a number of mining townships, and I am happy to say that there is ample evidence that such amenities are increasingly utilized and appreciated by the miners and their families. As in former years, I have continued to make available small grants to libraries in mining townships for the purchase of books.

CARBONIZING AND BRIQUETTING.

The low-temperature coal-carbonizing and briquetting plant of Waikato Carbonization, Ltd., at Rotowaro, operated for ten months during 1938.

The following figures show the production during that period:—

Raw coal carbonized	39,412 tons.
Carbonized coal produced	19,311 tons.
Average percentage of carbonized coal to raw coal	49 per cent.
Carbonettes manufactured	22,500 tons.
Oil treated	284,835 gals.
Pitch produced	982 tons.
Light oil produced	62,700 gals.
Heavy oils	74,790 gals.
Creosote produced	36,800 gals.

The briquetting plant of Briquettes Ltd., at Onehunga, produced 1,085 tons of briquettes during 1938.

For the twelve months ended 31st December, 1938, Smokeless Fuel and Briquettes (Canterbury), Ltd., produced 5,889 tons of briquettes at its works at Sockburn.

LABORATORY INVESTIGATIONS.

The Dominion Laboratory has continued to carry out the testing and analysis of mineral samples and mine gases for the Department and to act in an advisory capacity when required.

Prospectors' samples tend to be fewer each year. Those containing gold came from such well-known localities as Kuaotuna, Poerua, and Skippers; lead and zinc ores were examined from previously-worked areas at Te Aroha and Waiorongomai, and galena (lead sulphide) and copper pyrites from Murchison; molybdenite was present in a small specimen from Merrivale, Southland, a locality from which it has not been previously reported; a sample of asbestos from D'Urville Island was examined; the best of the manganese ores received came from Red Island, south of Waimarama, Cape Kidnappers, and from Otau, near Bombay, the ore from Red Island being of exceptionally good quality; numerous samples of diatomaceous earth were reported on and consideration given to possible uses; a number of borings were examined for scheelite for the Employment Division of the Labour Department.

Some chemical assistance was given to the Director of the Thames School of Mines, who was investigating the treatment of refractory ore from Reefton. The development of the production of iron and steel in the Dominion would have a profound effect on mineral industries generally, and in this connection the analysis of numerous samples of iron-ore from Onekaka, also coal and limestone, by the Laboratory should be noted.

In connection with the fuller utilization of slack coal, samples from Rewanui Merrijigs (Reefton), and Rotowaro were submitted to the Laboratory for report during the year. Coals that had given trouble at gasworks were also examined, the difficulties in most cases being due to the highly swelling properties of otherwise excellent coal. Coals with low swelling properties and low sulphur content are relatively scarce in the Dominion.

The coal survey, set up on the joint recommendation of the Scientific and Industrial Research and Mines Departments, and staffed from the Geological Survey and Dominion Laboratory, has operated during the year in the Greymouth and Westport coal areas.

The Inspecting Engineer of Mines and the Superintendent of State Collieries ably represent the Department on the controlling Committee.

Detailed field investigations of quantities, also mapping of areas, are supplemented by Laboratory examination of carefully selected samples representative of various portions of each seam. In addition to proximate and ultimate analyses and determination of calorific values, the coals are examined for coking index, swelling properties, and sulphur forms, and a Gray King assay is made of each. The survey will thus result in data being made available as to the amount of coal in each seam and the purposes for which it is best suited, and will also help to determine whether conservation of special coals for the future requirements of the Dominion is desirable. The results obtained to date have been of very great value to the Iron and Steel Department in its investigational work.

PERSONS EMPLOYED IN OR ABOUT MINES AND STONE-QUARRIES.

The following table shows the number of persons employed in each inspection district during 1938 and 1937 :—

Classification.	Inspection District.			Totals.		
	Northern (North Island).	West Coast (of South Island).	Southern (rest of South Island).	1938.	1937.	Increase or Decrease.
Gold, silver, and tungsten ore	857	1,488	653	2,998	3,910	Dec. 912
Coal	1,541	2,071	951	4,563	4,417	Inc. 146
Stone-quarries under the Stone-quarries Act	2,107	81	479	2,667	2,117	Inc. 550
Oil	34	..	..	34	4	Inc. 30
Cinnabar	2	..	..	2	2	..
Iron ore	4	..	..	4	1	Inc. 3
Manganese	8	..	..	8	..	Inc. 8
Totals	4,553	3,640	2,083	10,276	10,451	Dec. 175

The heavy drop shown in the number of persons employed in metalliferous mines is due principally to the diversion to other occupations of a large number of subsidized prospectors. It will be noted that the coal-mining industry found work for an additional 146 men during the year.

MINING AND QUARRY ACCIDENTS.

In metalliferous mines, at which 3,012 men were ordinarily employed, two persons were killed and eleven persons seriously injured.

At stone-quarries under the Stone-quarries Act, employing 2,667 men, there were three fatal accidents and four serious accidents.

In coal-mines, where 4,563 persons were ordinarily employed, eleven persons were killed and twenty-four persons seriously injured.

CO-OPERATIVE MINING, STATE COAL RESERVE.

Nineteen co-operative parties working portions of the State Coal Reserve near Greymouth produced, during the year 1938, 108,214 tons, the number of men employed being 170. During the previous year nineteen parties produced 109,052 tons, there being a decrease this year of 838 tons.

Up to the end of 1938 these parties have produced a grand total of 1,341,444 tons of coal, and have in the same period paid royalties to the State amounting to £63,028.

STATE COAL-MINES.

The net profit for the year ended 31st March, 1939, after making provision for interest and depreciation, amounted to £13,313, an increase of £145 compared with the previous year. A sum of £11,767 was transferred to the sinking fund, leaving a net surplus for the year of £1,546.

The Liverpool Colliery worked 202 days during the year, an increase of 1 day 5 hours compared with the previous year. At the James Colliery work was carried out on 208 days, a decrease of thirty-two days compared with the previous year.

Output and Sales.

Liverpool Colliery.—The gross output for the year was 137,533 tons, as compared with 137,806 tons for the previous year, a decrease of 273 tons.

James Colliery.—The gross output for the year was 42,649 tons, as compared with 42,608 tons for the previous year, an increase of 41 tons.

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

Mine.	Output, in Tons, 1938–39.		Output, in Tons, 1937–38.	
	Gross.	Net.	Gross.	Net.
Liverpool	137,533	131,807	137,806	132,144
James	42,649	41,434	42,608	41,099

Note.—The difference between the gross and the net output is the allowance for mine consumption and waste. In addition to the above, 2,689 tons of coal was purchased for resale, of which 1,312 tons was purchased from co-operative parties on the West Coast.

The disposal, inclusive of stock on hand at the beginning of the year, was as follows : Supplied to—Depots, 46,612 tons ; railways, 34,256 tons ; other Government Departments, 8,840 tons ; shipping, 6,487 tons ; gasworks, 64,864 tons ; other consumers, 5,932 tons : total, 166,991 tons.

The total sales of State coal from the Liverpool Mine for the year amounted to 131,437 tons, value £165,243* as compared with 128,793 tons, value £165,752* for the previous year—an increase of 2,644 tons, with a decrease in value of £509.

The average price realized by the mine on the total sales for the year was £1 5s. 1·7d.,* a decrease of 7·2d. on the previous year's average.

The total sales of State coal from the James Mine for the year amounted to 35,554 tons, value £49,579,* as compared with 36,889 tons, value £46,538,* for the previous year—a decrease of 1,335 tons, with an increase in value of £3,041.

The average price realized by the mine on the total sales for the year was £1 7s. 10·6d.* per ton, an increase of 2s. 7·9d. on the previous year's average.

The sales of coal, &c., through the medium of the depots totalled 122,335 tons, value £209,267,* as against 117,821 tons, value £199,343,* for the previous year.

* These values include sales made c.i.f. and f.o.b. as well as f.o.r.

ITEMS FROM ANNUAL ACCOUNTS AND BALANCE-SHEET.

The following details extracted from the audited accounts will enable honourable members to appraise the financial position of the Department's trading venture :—

	£
The payments for interest totalled	2,964
The cost of sea carriage of coal amounted to	46,527
The cost of railway haulage amounted to	33,033
The total wages paid for coal-winning were	112,072
The cost of management and office salaries (Head Office and mines) totalled	4,579
The gross capital expenditure on the whole undertaking to the 31st March, 1939, was	827,498
The total depreciation written off to 31st March, 1939 (equal to 67·48 per cent. of the gross capital expenditure) amounted to	558,399
The amount written off for depreciation for the year was	7,282
The present book value of permanent or fixed assets is	268,722
The loan capital as at 31st March, 1939, stood at	154,718
The net profits of the State Coal-mines Account from inception to 31st March, 1939, after charging the special depreciation of Colliery Development Accounts and after crediting interest on Sinking Fund investments, were	233,421
The net profit for the year ended 31st March, 1939, was	13,313
The Sinking Fund as at 31st March, 1939, was in credit	11,767
The amount taken out of the Sinking Fund during the year and applied in reduction of loan capital was	9,525
General Reserve as at 31st March, 1939, stood at	220,107
The amount at credit of Profit and Loss as at 31st March, 1939, was	1,546
Realization of investments of the State Coal-mines Account as at 31st March, 1939, to meet expenditure in opening up and developing the new mine amounted to	62,800
The cash in hand and in the Public Account as at 31st March, 1939, was (last year £11,956)	7,625

The total wages paid for coal-winning at both collieries during the year amounted to the sum of £112,072. These wages were distributed amongst 385 men and 26 youths, and represent an average income per employee of £273. For the previous year the average income per employee was £271, the total sum paid in wages for coal-winning being £109,098 and the number of employees being 377 men and 26 youths.

STRONGMAN MINE.

Throughout 1938 steady progress was made in the construction of the stone drives required to extend the James Mine haulage system and to reach the coal-seam in the new colliery, now known as the Strongman Mine, in the Nine-mile Creek area.

This work was practically completed at the end of the year, and coal-production commenced on 31st January, 1939.

Including the new drive over the northern portion of the James haulage road, 111 chains of driving in stone had to be carried out, and the haulage road from the bins to the present coal-face is over two miles in length.

The seam now being worked is the upper of two seams each over 20 ft. in thickness. The coal finds a ready sale for household purposes and is also of excellent quality for gasmaking.

Near the mine-entrance a reinforced-concrete bathhouse has been built capable of accommodating a hundred workmen. The miners' clothes will be dried by an up-to-date method which is novel to New Zealand collieries.

A large steel screening and storage plant, designed by a well-known firm of English mining engineers, has been imported and is in process of erection near the old James Mine bins at Rapahoe.

Apart from run-of-mine coal, it will be possible to produce four sizes of the product and mixtures of all grades (except the fines) will be available to suit any particular requirements of the market.

HOUSING.

Fifty-four loans, including thirteen during the year under review, have been granted to miners and other workmen under the Department's housing scheme to enable them to erect and own their own houses. The loans, which range from £180 to £550, are repayable, together with interest, by fortnightly payments over a term of twenty years. I am pleased to state that a sum of £6,000 to enable further loans to be made is being provided on the current year's estimates of the State Coal-mines Account, together with a sum of £4,000 for the erection of four new staff cottages.

GEOLOGICAL SURVEY.

During the 1938–39 field season the Geological Survey carried out systematic mapping and other investigation in the Amuri, Greymouth, and Glenorchy districts. Geophysical examinations were also made at Top Valley, Reefton, Kotuku, and Cromwell. In addition, officers made official visits to other parts of New Zealand, several of them being to Taranaki and Takaka, where iron-ore occurs in quantity.

The mapping of the Amuri Subdivision, begun several years ago and stopped because of more urgent work, was continued this year. The district contains large quantities of limestone and some low-grade phosphate.

The detailed survey of the Greymouth Coalfield, in which the most valuable coking and gas coals of the Dominion occur, was considerably hampered by persistent bad weather. Most of the seams now being worked in the Greymouth and Westport areas were systematically sampled. Estimates of the amounts of extractable coal were made, but it is clear that the quantity of available coal in the field can be accurately estimated only after extensive boring.

The mapping of the Glenorchy district, which contains quartz veins carrying gold and scheelite, was finished this season, a work made possible in this extremely rugged mountainous region only with the aid of aerial photography.

Geophysical studies were continued in the Reefton district, and the rock structures beside the productive Blackwater Lode were traced north beyond Big River. It is hoped that surface prospecting will later lay bare workable quartz veins in the wide belt of country between Waiuta and Merrijigs in which profitable lodes have so far not been found. Some geophysical work was also carried out in Top Valley, Marlborough, and at Bendigo, near Cromwell, Otago. In the former locality, what is believed to be part of the Jubilee Lode was located; some direct prospecting is required. Further seismic investigations near the oil-seepages at Kotuku tended to confirm the presence of a low dome in the unfavourably thin Tertiary beds of that region.

This year, in addition to several short papers, two areal bulletins, dealing respectively with the coal-mining area of Kaitangata and the gold-mining district of Naseby, have been printed.

SCHOOLS OF MINES.

Six scholarships are offered annually by the Department for competition by students attending the various Schools of Mines within the Dominion. Two candidates sat for the annual Scholarship Examinations held in November, 1938, and of these candidates, one from the Thames School was successful in gaining a scholarship, which is tenable for four years at the University of Otago.

The expenditure on Schools of Mines for the year ended 31st March, 1939, was £3,460, as compared with £3,910 for the previous year.

Students at the Otago University who are proceeding to the Diploma of Associate of the Otago School of Mines are required to obtain twelve months' practical experience in mining. For some years past considerable difficulty has been experienced by these students in obtaining employment at coal and metal mines during the summer vacation of the University, and it is therefore pleasing to record that during the 1938–39 vacation practically all the men who wanted work were satisfactorily placed.

MINERS' PENSIONS.

The Pensions Act, 1926, as amended, provides for payment of pensions to miners seriously and permanently incapacitated by miners' phthisis or totally incapacitated by other occupational disease or heart-disease contracted while mining in New Zealand. The rate of pension for a miner is 25s. a week, with 10s. a week added for his wife, if he is married, and a maximum of 10s. a week for each dependent child under fifteen, subject to a limit of £4 5s. a week for the family.

The widow of a miner who dies while in receipt of a pension is entitled to receive 17s. 6d. a week while she remains a widow.

The scheme, which originated in the Miners' Phthisis Act, 1915, is administered by the Social Security Department, and the following summary of operations for the year ended 31st March, 1939, has been supplied by that Department:—

		£
Payments made from 1st November, 1915, to 31st March, 1938		991,625
Payments 1938–39		87,094
		£1,078,719
Number of new grants for year 1938–39—		
Miners	76	
Widows	25	
	101	
Annual value of new grants		£7,927
Number of pensions in force at 31st March, 1939—		
Miners	871	
Widows	191	
	1,062	
Annual value of pensions in force at 31st March, 1939		£85,938
Average pension per annum		£80 18s. 5d.
Number of pensions granted to 31st March, 1939		2,873
Dissection of pensions in force at 31st March, 1939—		
Unmarried miners	242	
Married miners	629	
Miners' widows	191	
	1,062	

It should be noted that the Pensions Act, 1926, under which miners' pensions were paid, was operative only until the 31st March, 1939, after which date it was superseded by the Social Security Act. The main alterations in the general qualifying conditions are that the benefit for the miner himself has been increased from 25s. weekly to 30s. weekly, and where any grant is authorized in respect of the child it is payable to the age of sixteen years, whereas the benefit formerly ceased on the fifteenth birthday.

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, 1939, was £893 16s. 1d., as against £930 16s. 11d. for the previous year, while for the same periods the receipts from the ½d. per ton contributions were £4,635 16s. 6d. and £4,596 17s. 4d. respectively.

The total expenditure for the year ended 31st March, 1939, amounted to £7,424 15s. 8d., as against £5,300 18s. 1d. for the previous year.

The amount standing to the credit of the fund at the 31st March, 1939, was £24,933 11s. 9d., as against £26,828 14s. 10d. at the 31st March, 1938.

STATE AID TO MINING.

(*a*) Mines Department.

As in previous years, considerable use was made of the Government prospecting-drills. They were hired by eleven parties, and a total of 14,072 ft. was drilled.

The sum of £9,200 was voted for expenditure for assistance towards prospecting. The balance of unexpended authorities at the 31st March, 1938, and those issued during the year, less cancellations, amounted to £14,998 7s. 8d. Of this amount £3,730 3s. 2d. was expended by way of actual subsidies during the year, leaving a balance of £11,268 4s. 6d. authorized but not spent at the 31st March, 1939. The number of men given employment through the subsidies granted by the Mines Department was 53.

The increased amounts available during the past two years enabled the Department to arrange with the Labour Department to prospect areas in the Reefton and South Westland Districts. This prospecting is now being carried out by parties of men under skilled direction. The cost is being shared by the two Departments, and the sum of £4,563 1s. 8d., in addition to the amount of £14,998 7s. 8d. authorized by way of subsidies, was set aside out of the Mines Department's vote, of which £4,249 2s. 7d. came to charge during the year. The number of prospectors in these parties is 27.

Provision totalling £5,230, including £4,230 in the Public Works Fund, was made for expenditure by way of direct grants and subsidies for roads and tracks. The balance of the unexpended authorities at the 31st March, 1938, and those issued during the year, amount to £6,009 3s. 4d. Of this amount, the sum of £5,220 12s. 3d. was expended.

The expenditure on Schools of Mines amounted to £3,460.

(*b*) Labour Department.

For the financial year ended the 31st March, 1939, expenditure from the Employment Promotion Fund for the purpose of assisting individual gold-prospectors and the gold-mining industry generally amounted to £50,271, which sum includes all payments made in respect of subsidies, wages, and equipment connected with the Labour Department's ordinary gold-mining scheme, but does not include salaries and allowances paid to mining engineers and supervisors. Subsidies paid to gold-mining companies and syndicates under Scheme No. 8B during the year amounted to £302, but this expenditure was offset by refunds of previous advances amounting to £316.

In addition to the above expenditure, a sum of £13,752 was advanced to gold-mining companies by way of loans, such advances being secured by bills of sale or other chattels security over the plant and mining titles of the companies concerned.

The average number of men engaged in gold-prospecting work under the Department's subsidized gold-mining scheme during the year was 477, excluding those employed by companies and syndicates. This is a decrease of nearly 50 per cent. as compared with the figure for the previous twelve months, and is due to the fact that considerable numbers of previously subsidized prospectors have continued to be absorbed into public works and private industry.

Gold won by subsidized prospectors during the year, apart from that produced by subsidized companies and syndicates, was approximately 3,350 oz., bringing the total gold-production for this class of prospector from the inception of the gold-mining scheme to the 31st March, 1939, up to approximately 42,850 oz. The amount of gold produced by subsidized men for the year compares very favourably with that of the preceding year, when an average of 887 prospectors won approximately 4,500 oz.

The general prospecting and investigation of the Reefton Goldfields which was commenced in 1936 has been continued during the year, this work, for the most part being confined to the opening-up and extension of old workings and further driving and crosscutting in the Perseverance and Golden Treasure Mines. Expenditure for the twelve months ended 31st March, 1939, on this undertaking amounted to £7,661, making the total expenditure to that date £17,756, which has been contributed equally by the Mines and Labour Departments.

With the continued decrease in the numbers of prospectors operating under the gold-mining scheme the technical and field staff has been further reduced, and for the latter half of the year the total number of engineers and other field officers engaged in supervising the Department's activities in this direction was twenty-five, including a Senior Mining Engineer under whose general direction and control the whole of the Department's mining operations were conducted.

The scheme was conducted by the Labour Department (Employment Division) up to the end of the financial year, but since the 1st April, 1939, its administration has been taken over by the Mines Department, under whose control it will be continued on much the same lines as has been the case in the past, except, of course, that all future expenditure in connection therewith will be met from the Mines Department vote instead of from the Employment Promotion Fund as previously.

A summary of the results obtained by special investigations carried out under the Labour Department's gold-mining scheme will be found in each of the reports of the Inspectors of Metalliferous Mines.

STAFF.

I desire to place on record my sincere thanks to the officers of the Department for their loyal co-operation and ready assistance at all times during the past year.

TABLES TO ACCOMPANY MINES STATEMENT.

No. 1.

TABLE SHOWING THE QUANTITY AND VALUE OF GOLD AND OTHER MINERALS AND ALLIED SUBSTANCES EXPORTED DURING THE YEARS ENDED THE 31ST DECEMBER, 1938 AND 1937, AND THE TOTAL VALUE SINCE THE 1ST JANUARY, 1853. THE COAL-OUTPUT IS ALSO INCLUDED.

Name of Metal or Mineral.	For Year ended the 31st December, 1938.		For Year ended the 31st December, 1937.		Total from the 1st January, 1853, to the 31st December, 1938.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Precious metals—	Oz.	£	Oz.	£	Oz.	£
Gold*	151,162	1,287,421	170,715	1,423,348	25,203,028	103,970,295
Silver	369,896	38,857	438,637	48,087	30,921,099	3,544,415
Total gold and silver ..	521,058	1,326,278	609,352	1,471,435	56,124,127	107,514,710
Mineral produce, including kauri-gum—	Tons.	£	Tons.	£	Tons.	£
Copper-ore	$\frac{3}{20}$	7	..	..	1,504$\frac{3}{20}$	19,397
Chrome-ore	..	..	..	..	5,869	38,002
Antimony-ore	2$\frac{11}{20}$	20	..	..	3,788	55,101
Manganese-ore	75	150	1	10	19,462$\frac{11}{20}$	62,171
Hæmatite-ore	..	..	..	..	77	469
Tungsten-ore	48$\frac{11}{20}$	10,804	30$\frac{1}{20}$	7,248	2,686$\frac{1}{20}$	348,165
Sulphur (crude)	..	..	..	..	4,927	13,241
Mixed minerals	3,049$\frac{11}{20}$†	8,895	2,934	8,078	109,444$\frac{14}{20}$	428,530
Coal (New Zealand) exported	55,711	73,477	113,116	61,540	6,810,020	7,569,769
Coke exported	9	56	3	17	17,786	28,348
Coal, output of mines in Dominion (less exports)	2,166,377	2,148,611	2,164,683	2,216,259	83,675,410	63,819,700
Oil-shale	..	..	..	..	14,444	7,236
Kauri-gum	2,304	103,777	3,226	151,589	440,185	23,617,529
Pig iron	..	..	..	..	1,614	6,615
					lb.	
Quicksilver	..	..	..	..	87,993	19,024
Total value of minerals ..	..	2,345,797	..	2,444,741	..	96,033,297
Value of gold and silver, as above	..	1,326,278	..	1,471,435	..	107,514,710
Total value of minerals, including gold and silver	..	3,672,075	..	3,916,176	..	203,548,007

*In respect of gold, ounces of the fineness of 20 carats and upwards. † Includes pumice-sand and stone, 3,046 tons, value £8,811, and iron-ore, 3 tons, value £21.

NOTE.—The gold and silver recorded in this table are the products of the mines of the Dominion and do not include jewellers' sweepings or old jewellery.

No. 2.

TABLE SHOWING THE QUANTITY AND VALUE OF GOLD EXPORTED FROM NEW ZEALAND FOR THE YEARS ENDED THE 31ST DECEMBER, 1938 AND 1937, AND THE TOTAL QUANTITY AND VALUE FROM 1857 TO THE 31ST DECEMBER, 1938.

District and County or Borough.	Year ended 31st December, 1938.		Year ended 31st December, 1937.		Total Quantity and Value from January, 1857, to 31st December, 1938.	
	Quantity.	Value.	Quantity.	Value.		
AUCKLAND—	Oz.	£	Oz.	£	Oz.	£
County of Ohinemuri ..	2,326	17,339	6,491	47,915		
County of Coromandel ..	428	3,185	269	2,056		
County of Thames	1,756	11,313	537	4,073		
Borough of Waihi	52,017	464,373	59,369	516,619		
Borough of Thames ..	216	1,596	297	2,251		
	56,743	497,806	66,963	572,914	8,216,437	34,034,605
WELLINGTON	..	..	..	..	188	706
MARLBOROUGH—						
County of Marlborough ..	164	1,368	187	1,532		
County of Sounds	..	..	2	17		
	164	1,368	189	1,549	118,165	484,757
NELSON—						
County of Collingwood ..	..	..	3	27		
County of Murchison ..	5,979	47,348	6,416	50,800		
County of Waimea	248	2,056	456	3,713		
	6,227	49,404	6,875	54,540	1,785,729	7,242,752
WEST COAST—						
County of Grey	22,677	193,089	14,461	118,316		
County of Buller	869	7,455	3,695	30,750		
County of Inangahua ..	21,775	176,830	23,883	193,473		
County of Westland ..	20,793	180,327	27,129	225,005		
	66,114	557,701	69,168	567,544	7,098,491	29,807,982
CANTERBURY—						
County of Ashburton ..	..	..	..	..		
	..	..	..	..	165	669
OTAGO—						
County of Taieri	13	114	6	50		
County of Tuapeka ..	1,190	9,866	1,918	15,873		
County of Vincent	9,516	78,339	9,202	75,934		
County of Maniototo ..	1,527	12,459	2,066	16,566		
County of Waitaki	317	2,584	513	4,238		
County of Lake	2,291	19,017	3,560	29,098		
County of Wallace	2,165	18,412	2,467	20,387		
County of Southland ..	2,716	22,333	5,618	46,827		
County of Waihemo ..	2,149	17,770	1,967	16,185		
County of Bruce	28	231	145	1,154		
County of Clutha	2	17	19	157		
County of Waikouaiti ..	..	..	..	..		
	21,914	181,142	27,481	226,469	7,970,465	32,343,153
Unknown	..	..	39	332	13,388	55,671
Totals	151,162	1,287,421	170,715	1,423,348	25,203,028	103,970,295

NOTE.—The gold recorded in this table is the product of the mines of the Dominion and does not include jewellers' sweepings or old jewellery.

No. 3.

TABLE SHOWING QUANTITY OF GOLD EXPORTED ANNUALLY FROM NEW ZEALAND FROM 1857 TO 1938.

Year.	Quantity. Oz.	Year.	Quantity. Oz.	Year.	Quantity. Oz.	Year.	Quantity. Oz.
1857	10,437	1878	310,486	1899	389,558	1919	320,210
1858	13,534	1879	287,464	1900	373,616	1920	212,973
1859	7,336	1880	305,248	1901	455,561	1921	149,595
1860	4,538	1881	270,561	1902	508,045	1922	131,848
1861	194,031	1882	251,204	1903	533,314	1923	169,512
1862	410,862	1883	248,374	1904	520,320	1924	133,631
1863	628,450	1884	229,946	1905	520,486	1925	114,696
1864	480,171	1885	237,371	1906	563,843	1926	125,777
1865	574,574	1886	227,079	1907	508,210	1927	130,171
1866	735,376	1887	203,869	1908	506,423	1928	118,722
1867	686,905	1888	201,219	1909	506,371	1929	116,848
1868	637,474	1889	203,211	1910	478,288	1930	133,749
1869	614,281	1890	193,193	1911	455,226	1931	139,974
1870	544,880	1891	251,996	1912	343,163	1932	167,784
1871	730,029	1892	238,079	1913	376,161	1933	164,998
1872	445,370	1893	226,811	1914	227,954	1934	157,375
1873	505,337	1894	221,615	1915	422,825	1935	168,756
1874	376,388	1895	293,491	1916	292,620	1936	166,210
1875	355,322	1896	263,694	1917	218,624	1937	170,715
1876	322,016	1897	251,645	1918	11,987	1938	151,162
1877	371,685	1898	280,175				

No. 4.

TABLE SHOWING THE OUTPUT OF COAL FROM THE VARIOUS COALFIELDS, AND THE COMPARATIVE INCREASE AND DECREASE, FOR THE YEARS 1938 AND 1937, 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, 1938.
	1938.	1937.			
	Tons.	Tons.	Tons.	Tons.	Tons.
North Auckland	44,838	41,694	3,144	..	5,899,506
Waikato (including Taranaki)	717,879	736,804	..	18,925	16,938,522
Nelson	16,574	17,505	..	931	667,134
Buller	440,457	432,378	8,079	..	25,483,368
Reefton	48,225	44,077	4,148	..	1,057,668
Grey	479,133	481,268	..	2,135	17,734,087
Canterbury	19,639	22,580	..	2,941	1,119,182
Otago	188,389	209,540	..	21,151	13,780,447
Southland	266,954	291,953	..	24,999	7,797,516
Totals	2,222,088*	2,277,799	..	..	90,477,430

*Decrease, 55,711 tons.

No. 5.

TABLE SHOWING THE OUTPUT OF DIFFERENT CLASSES OF COAL.

Class of Coal.	Output.		Increase.	Decrease.	Approximate Total Output to the 31st December, 1938.
	1938.	1937.			
	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and sub-bituminous	977,850	969,984	7,866	..	51,784,420
Brown	1,112,414	1,186,320	..	73,906	33,291,193
Lignite	131,824	121,495	10,329	..	5,401,817
Totals	2,222,088	2,277,799	..	..	90,477,430

No. 6.

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 1878 ..	709,931	..	..	..	..
1878	162,218	..	174,148	..	..
1879	231,218	Inc. 69,000	158,076	..	16,072
1880	299,923	,, 68,705	123,298	..	34,778
1881	337,262	,, 37,339	129,962	6,664	..
1882	378,272	,, 41,010	129,582	..	380
1883	421,764	,, 43,492	123,540	..	6,042
1884	480,831	,, 59,069	148,444	24,904	..
1885	511,063	,, 30,232	130,202	..	18,242
1886	534,353	,, 23,290	119,873	..	10,329
1887	558,620	,, 24,267	107,230	..	12,643
1888	613,895	,, 55,275	101,341	..	5,889
1889	586,445	Dec. 27,450	128,063	26,722	..
1890	637,397	Inc. 50,952	110,939	..	17,124
1891	668,794	,, 31,397	125,318	14,379	..
1892	673,315	,, 4,521	125,453	135	..
1893	691,548	,, 18,233	117,444	..	8,009
1894	719,546	,, 27,998	112,961	..	4,483
1895	726,654	,, 7,108	108,198	..	4,763
1896	792,851	,, 66,197	101,756	..	6,442
1897	840,713	,, 47,862	110,907	9,151	..
1898	907,033	,, 66,320	115,427	4,520	..
1899	975,234	,, 68,201	99,655	..	15,772
1900	1,093,990	,, 118,756	124,033	24,378	..
1901	1,239,686	,, 145,696	149,764	25,731	..
1902	1,365,040	,, 125,354	127,853	..	21,911
1903	1,420,229	,, 55,189	163,923	36,070	..
1904	1,537,838	,, 117,609	147,196	..	16,727
1905	1,585,756	,, 47,918	169,046	21,850	..
1906	1,729,536	,, 143,780	207,567	38,521	..
1907	1,831,009	,, 101,473	220,749	13,182	..
1908	1,860,975	,, 29,966	287,808	67,059	..
1909	1,911,247	,, 50,272	258,185	..	29,623
1910	2,197,362	,, 286,115	232,378	..	25,807
1911	2,066,073	Dec. 131,289	188,068	..	44,310
1912	2,177,615	Inc. 111,542	364,359	176,291	..
1913	1,888,005	Dec. 289,610	468,940	104,581	..
1914	2,275,614	Inc. 387,609	518,070	49,130	..
1915	2,208,624	Dec. 66,990	353,471	..	164,599
1916	2,257,135	Inc. 48,511	293,956	..	59,515
1917	2,068,419	Dec. 188,716	291,597	..	2,359
1918	2,034,250	,, 34,169	255,332	..	36,265
1919	1,847,848	,, 186,402	391,434	136,102	..
1920	1,843,705	,, 4,143	476,343	84,909	..
1921	1,809,095	,, 34,610	822,459	346,116	..
1922	1,857,819	Inc. 48,724	501,478	..	320,981
1923	1,969,834	,, 112,015	445,792	..	55,686
1924	2,083,207	,, 113,373	674,483	228,691	..
1925	2,114,995	,, 31,788	572,573	..	101,910
1926	2,239,999	,, 125,004	483,918	..	88,655
1927	2,366,740	,, 126,741	378,090	..	105,828
1928	2,436,753	,, 70,013	247,861	..	130,229
1929	2,535,864	,, 99,111	215,656	..	32,205
1930	2,542,092	,, 6,228	157,943	..	57,713
1931	2,157,756	Dec. 384,336	179,060	21,117	..
1932	1,842,022	,, 315,734	103,531	..	75,529
1933	1,821,258	,, 20,764	99,272	..	4,259
1934	2,060,315	Inc. 239,057	100,715	1,443	..
1935	2,115,184	,, 54,869	97,398	..	3,317
1936	2,140,217	,, 25,033	111,078	13,680	..
1937	2,277,799	,, 137,582	116,499	5,421	..
1938	2,222,088	Dec. 55,711	109,206	..	7,293

No. 7.

TABLE SHOWING THE TOTAL QUANTITY AND VALUE OF COAL IMPORTED INTO AND EXPORTED FROM NEW ZEALAND FROM AND TO EACH COUNTRY DURING THE CALENDAR YEAR 1938.

Imports.

Country whence imported.	Tons.	Value.
		£
United Kingdom	151	682
Australia	109,054	107,414
South Africa	1	4
Totals	109,206	108,100

Exports: Bunkers.

Produce of New Zealand.		Produce of other Countries.	
Tons.	Value.	Tons.	Value.
	£		
43,178	60,895	..	..

Exports: Cargo.

Country to which exported.	Produce of New Zealand.		Produce of other Countries.	
	Tons.	Value.	Tons.	Value.
		£		
Fiji	19	84	..	..
Western Samoa	2	6	..	..
Australia	205	185	..	..
Tutuila	2,024	2,024	..	..
New Caledonia	10,283	10,283	..	..
Totals	12,533	12,582	..	..

No. 8.

NUMBER OF PERSONS ORDINARILY EMPLOYED AT OR ABOUT MINES OTHER THAN COAL-MINES DURING THE YEAR ENDED 31ST DECEMBER, 1938.

County or Borough.	Number of Persons ordinarily employed at				Total.	
	Gold-quartz Mines.	Gold Alluvial Mines.	Gold-dredges.	Mines other than Gold and Coal.	1938.	1937.
NORTHERN INSPECTION DISTRICT.						
County of Thames	69	..	..	..	69	85
„ Ohinemuri	99	..	..	..	99	183
„ Coromandel	48	..	..	..	48	60
„ Piako	2	..	..	..	2	6
„ Manakau	..	..	..	2	2	..
„ Franklyn	..	..	..	6	6	..
„ Whangarei	..	..	..	4	4	3
„ Bay of Islands	..	..	..	2	2	..
„ Cook	..	..	..	20*	20	..
„ Patangata	..	..	..	4*	4	..
„ Taranaki	..	..	..	3*	3	3
„ Otamatea	..	..	..	7*	7	..
Borough of Thames	32	..	..	..	32	60
„ Waihi	607	..	..	..	607	629
Great Barrier Island	..	..	..	..	..	1
WEST COAST INSPECTION DISTRICT.						
County of Marlborough	..	74	..	..	74	85
„ Waimea	..	23	..	..	23	24
„ Takaka	..	34	..	..	34	57
„ Collingwood	..	34	..	..	34	81
„ Murchison	..	160	31	..	191	295
„ Buller	2	76	..	..	78	145
„ Inangahua	308	71	47	..	426	398
„ Grey	..	225	130	..	355	494
„ Westland	..	161	112	..	273	316
SOUTHERN INSPECTION DISTRICT.						
County of Taieri	..	5	..	..	5	9
„ Ashburton	..	3	..	..	3	5
„ Tuapeka	..	76	..	1	77	103
„ Vincent	6	106	50	..	162	280
„ Maniototo	..	85	..	..	85	122
„ Waihemo	12	16	..	2	30	44
„ Waitaki	..	18	..	..	18	32
„ Lake	4	77	12	40	133	194
„ Wallace	..	58	..	..	58	82
„ Southland	..	63	10	..	73	110
„ Waikouaiti	..	2	..	..	2	3
„ Bruce	..	3	..	..	3	5
„ Clutha	..	3	..	..	3	2
„ Fiord	..	1	..	..	1	1
Totals	1,189	1,374	392	91	3,046	3,917

* Employed in oil-boring operations.

Summary of Persons ordinarily employed in or about New Zealand Mines during 1938 and 1937.

—	1938.	1937.	Increase or Decrease.
Gold, silver, and tungsten mines	2,998	3,910	Dec. 912
Other metalliferous mines	48*	7	Inc. 41
Coal-mines	4,563	4,417	„ 146
Totals	7,609	8,334	Dec. 725

* Includes thirty-four persons employed in oil-boring operations.

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.

SIR,— Wellington, 1st June, 1939.

I have the honour to present my report on metalliferous mines and stone-quarries, together with statistical information, for the year ended 31st December, 1938.

In accordance with the usual practice, the tables showing expenditure on roads, bridges, tracks, prospecting operations, &c., are for the period covered by the financial year—viz., from the 1st April, 1938, to the 31st March, 1939.

The reports, &c., are divided into the following sections: I. Minerals produced and exported. II. Persons employed. III. Accidents. IV. Gold-mining—(1) Quartz-mining; (2) Dredge Mining; (3) Alluvial Mining. V. Minerals other than Gold. VI. Stone-quarry Inspection and Statistics. VII. State Aid to Mining—(1) Subsidized Prospecting; (2) Government Prospecting-drills; (3) Subsidized Roads on Goldfields; (4) Legislation affecting Metalliferous Mines.

Annexures: (A) Summary of Reports by Inspectors of Mines. (B) Summary of Report by Inspector of Quarries. (C) Mining Statistics.

I. MINERALS PRODUCED AND EXPORTED.

The following statement shows the quantity and value of the production from metal-mines and of the value of production from stone-quarries under the Stone-quarries Act during 1938 and 1937:—

Mineral.	1938.		1937.	
	Quantity.	Value.	Quantity.	Value.
	Oz. dwt.	£	Oz. dwt.	£
Gold and silver (estimated)	509,759 0	1,214,054	612,468 0	1,319,743
Platinum	1 6	7	55 4	423
	Tons cwt.		Tons cwt.	
Iron-ore	1,218 10	3,666	571 0	880
Stone	..	555,295	..	444,837
Pumice	3,046 6	8,811	2,931 0	8,057
Tungsten-ore	45 13	8,604	23 14	6,468
Manganese-ore	90 0	450	5 0	50
Silica-sand	1,459 0	1,126	164 7	236
Fuller's earth	56 0	154	..	..
Diatomaceous earth	..	70	..	..
	lb.		lb.	
Quicksilver	760	190	1,344	336
Totals	..	1,792,427	..	1,781,030

The following statement shows the value of New Zealand minerals (other than coal and coke) and allied substances exported during 1938 and 1937, and since 1st January, 1853 :—

—	1938.	1937.	Increase or Decrease.	Total from the 1st January, 1853, to the 31st December, 1938.
	£	£	£	£
Gold	1,287,421	1,423,348	Dec. 135,927	103,970,295
Silver	38,857	48,087	,, 9,230	3,544,415
Tungsten-ore	10,804	7,248	Inc. 3,556	348,165
Kauri-gum	103,777	151,589	Dec. 47,812	23,617,529
Sand, lime, and building-stone	8,811	8,057	Inc. 984	649,786
Other minerals	261	31		
Totals	1,449,931	1,638,360	Dec. 188,429	132,130,190

II. PERSONS EMPLOYED.

The following statement shows the number of persons ordinarily employed in or about the metalliferous mines* of the Dominion during the year :—

Classification.	Inspection District.			Total, 1938.
	Northern.	West Coast.	Southern.	
Gold, silver, and tungsten	857	1,488	653	2,998
Cinnabar	2	..	..	2
Iron-ore	4	..	..	4
Manganese	8	..	..	8
Totals for 1938	871	1,488	653	3,012
Totals for 1937	1,027	1,894	992	3,913

*In addition thirty-four persons were employed in oil-boring operations.

III. ACCIDENTS.

During 1938 two fatal and ten serious but non-fatal accidents occurred in or about metalliferous mines, at which 3,012 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	..	..	10	11
Miscellaneous, underground	..	..	..	..
Totals	2	2	10	11

Both of the fatalities occurred in the West Coast district and both were from falls of earth or clay in sluicing claims.

It is pleasing to record the absence of fatal accidents in both Northern and Southern districts during 1938.

Of the ten serious but non-fatal accidents, six were in the West Coast district, three in the Southern district, and one in the Northern district.

Two of the six West Coast serious accidents were due to falls from ladders or stairways, one to a blow from a windlass handle, another to a blow from a tightening headline of a dredge, another to the backfire of a tractor used at a dredging claim, and the sixth to the fall of a screen-drive bearing on a dredge.

One of the three men injured in Southern mines was struck by a wire rope whilst working on his alluvial claim, another was caught between a dredge and a large boulder on the river-bank, and the third was injured by the collapse of a trestle when he was erecting an aerial ropeway.

IV. GOLD-MINING.

The following statement shows the value of the bullion-production, also the dividends declared, number of persons employed, and the number of gold mines and dredges :—

—	Production of Bullion, 1938.* (All Mines.)		Dividends paid, 1938. (By Registered Companies only.)†	Number of Persons ordinarily employed at Productive and Unproductive Mines, 1938.	Number of Productive Quartz-mines, Alluvial Mines, and Dredges, 1938.
	Quantity.	Value.			
	Oz.	£	£		
Quartz-mining ..	435,706	622,336	105,041	1,189	59
Alluvial mining‡ ..	19,929	149,586	13,819	1,374	1,088
Dredge mining ..	54,124	442,132	98,888	392	24
Totals, 1938 ..	509,759	1,214,054	217,748	2,955	1,171
Totals, 1937 ..	612,468	1,319,743	196,304	3,877	2,852

* In addition to the gold produced from the gold-mines, silver was obtained from them, hence the word "bullion" is used in preference to "gold."
† The profits of privately owned dredges and mines are unobtainable, which renders this statement incomplete.
‡ The bullion-production is from 1,088 alluvial claims, but the dividends are only obtainable from those few that are the property of registered companies.

(1) QUARTZ-MINING.

Inspection District.	Statute Tons of Ore treated.		Value of Bullion.		Dividends paid (by Registered Companies only).	
	1938.	1937.	1938.	1937.	1938.	1937.
			£	£	£	£
Northern	189,334	211,852	426,580	511,585	81,292	106,088
West Coast	48,646	49,234	188,941	191,807	23,749	20,000
Southern	2,163	2,097	6,815	7,029	..	..
Totals	240,143	263,183	622,336	710,421	105,041	126,088

The average value per ton of ore treated during 1938 amounted to £2 11s. 9d., as compared with £2 14s. during 1937.

At the Martha Mine 181,740 tons of quartz was mined and treated, from which 51,627 oz. of gold, valued at £367,844, and 350,095 oz. of silver, valued at £30,633, were recovered. The dividends paid during the year—£74,386 1s.—were £24,795 17s. less than those paid in 1937. The total dividends paid to date from the Martha Mine are £6,561,348 5s. 6d. No development work was done during 1938 in the Nos. 10, 13, and 14 levels, but stoping was continued in these levels as well as in the higher ones. Driving was continued on the Dreadnought lode in No. 12 level; on the Royal and Martha lodes in Nos. 9 and 10 levels; on the Edward in Nos. 3, 4, and 7 levels; and on the Martha North branch in Nos. 4, 5, and 6 levels. Some work was done also on the I and J lodes in No. 3 level, and stoping-blocks are to be opened up on these lodes.

From the Waihi Grand Junction Mine, worked by the Martha Gold-mining Co., only 979 tons of quartz was mined in 1938, from which 323 oz. of gold, valued at £2,303, and 1,489 oz. of silver, valued at £130, were recovered. A similar dividend to that paid in 1937—£6,906 5s. 4d.—was paid to the shareholders in 1938. The mine was purchased outright by the Martha Gold-mining Co. on 1st August, and since then details of the work done in the Grand Junction Mine have been included in the Martha Mine report. Prior to that date only a small amount of stoping was done in 1938.

At the Golden Dawn Mine development work was continued in the No. 3 level and in the intermediate level 70 ft. above the No. 3. In the No. 3 level a small amount of driving was done to the south on the No. 4 reef and 60 ft. on the No. 5 reef, but nothing payable was met. In a crosscut off the intermediate level above No. 3 a narrow reef carrying values and thought to be the No. 4 reef was met. Quartz weighing 2,064 tons was mined in 1938 and treated for a return of 967 oz. of gold, valued at £8,674, and 1,983 oz. of silver, valued at £190.

At the Talisman Dubbo Mine, near Karangahake, the development work done in 1938 was confined to the Nos. 4 and 7 levels, while some stoping was done in the Talisman No. 2 and the Dubbo levels. Most of the stoping, however, was in a shrinkage stope on the No. 7 Hauraki level. Since the completion of this company's own up-to-date battery all the quartz from their mine has been treated there. The battery includes a 5-ft.-diameter ball mill, classifiers, &c., and a Merril Crowe plant, and is capable of treating a much larger tonnage than is now being put through it. During 1938 the Talisman Dubbo Gold-mining Co. mined 1,667 tons of ore, which yielded 318 oz. of gold, valued at £2,913, and 1,370 oz. of silver, valued at £155.

From two other mines in the Karangahake district 516 tons of quartz was mined, yielding 243 oz. of gold, valued at £1,894, and 429 oz. of silver, valued at £26.

In the Blackwater Mine development was continued in Nos. 11, 12, and 14 levels to the north and in Nos. 12, 13, and 14 levels to the south. In No. 11 North level the reef, averaging over 11 dwt. per ton, was met after it had been advanced 37 ft. beyond the Prohibition fault. In the lower levels values were somewhat higher, reaching 21·8 dwt. in the No. 12 South level. The new and compact treatment plant was completed about the middle of 1938 and is proving very satisfactory. During 1938, 43,506 tons of ore from the Blackwater Mine was crushed and treated, from which 19,465 oz. of gold, valued at £161,147, was recovered.

Most of the ore mined in 1938 at the Alexander Mine was from stopes above the No. 5 level. Development was continued in No. 6 level crosscut and in an intermediate level 77 ft. below No. 5 level. Production from this intermediate level will soon commence. During 1938, 2,163 tons of ore was crushed and treated, yielding 1,665 oz. of gold, valued at £13,593.

At the Big River Mine the restoration of the main shaft was continued from No. 5 level to No. 6 level, and the chamber at No. 6 was restored also. A little driving was done at both the north and south ends of No. 5 level, and from the south end a winze was sunk 65 ft. The No. 6 level was extended to the south and a rise put up to connect with a winze below No. 5 level. Above No. 5 level stoping was continued from the central and north stopes, the former being exhausted by the end of the year. During 1938, 2,289 tons of ore was treated at the Big River battery and yielded 1,560 oz. of gold, valued at £13,020.

The prospecting parties organized by the Labour and Mines Departments which were engaged in investigating mining areas in South Westland completed their task early in 1938, but nothing of much value was located.

In the Reefton field the Oriental No. 1 level was extended another 12 ft., but, the lode proving unpayable, the drive was abandoned. The Oriental No. 2 level was extended 250 ft. on the wide reef and many samples were taken and assayed. The results proved unsatisfactory, and this drive was abandoned. The General Gordon level was driven 655 ft., crosscuts driven to east and west, and a winze sunk 64 ft. The results of many assays of this reef were disappointing, the ore going about 3 dwt. per ton, so work ceased there also. The crosscut from the Perseverance lower level to the Golden Treasure shaft was extended a further 957 ft., and at the end of 1938 was within 200 ft. of the shaft. From a spot 635 ft. in from the portal the lode channel was driven on for 245 ft.

(2) Dredge Mining.

The following is a statement showing the capacity and production of bucket gold dredges and dividends declared by dredging companies during 1938. (Note.—The dividends declared by privately owned dredges are not obtainable for publication.)

Name of Dredge.	Locality.	Capacity of Dredge-buckets, in Cubic Feet.	Number of Buckets discharged per Minute.	Nominal Horse-power of Engines.	D = Diesel. S = Steam. E = Electrical. H = Hydraulic.	Average Depth of Ground dredged	Quantity and Value of Bullion obtained during 1938.		Dividends declared. During 1938.	Dividends declared. Total to End of 1938.
						Ft.	Oz.	£	£	£
West Coast.										
Mataki	Murchison	7	10	120	S	17	1,745	13,191	1,406	8,436
Mataki Junction	"	6	21	370	D E	19	2,756	23,138	2,500	5,000
Worksop	Antonios	4	12	140	D	12	1,733	13,079	4,800	20,800
Mossy Creek	Hukarere	4	26	225	E	12	1,300	10,724	1,250	15,000
Grey River	Ikamatua	16	28	1,266	E	27	438	3,627	..	..
Argo	Blackball	4½	18	210	E	20	3,502	27,884	10,000	31,200
Blackball Creek	"	5	20	383	E	33	1,427	12,484	..	..
Maori Gully	Maori Gully	4	20	225	E	20	1,330	9,888	..	6,000
New River	Dunganville	4	15	140	D	16	1,697	12,946	1,409	1,409
Nemona	Marsden	4½	23	255	E	20	2,379	20,767	9,000	21,000
Bundi	Camerons	10	18	500	S	24	957	7,309	..	..
White's Electric	Barrytown	4	10	226	E	16	1,540	11,634	..	..
Barrytown	"	12	21	879	E	30	6,801	52,300	..	..
Stafford	Stafford	8	12	320	E	32	177	1,431	..	3,750
Rimu	Rimu	12	23	922	E	53	12,148	104,911	37,501	157,051
Kanieri	Kanieri	18	21	1,487	E	28	374	2,905	..	..
Five Mile Beach	Okarito	5	10	..	H	20	1,280	9,632	4,667	38,500
Gillespies Beach	Gillespies Beach	5	13	225	E	28	1,951	16,023	2,917	21,000
Otago and Southland										
Molyneux	Molyneux River	9	12	580	E	30	1,097	8,087	..	..
Nevis Crossing	Nevis	3½	10	12	S	10	247	1,833	..	..
Rainbow	Maitland	2½	12	38	D	7	131	1,070	..	173
Aitkens	"	6	10	32	S	14	994	7,651	..	..
Goldfields	Big Beach	8	18	305	E	23	494	3,325	..	..
Clutha River	Clutha River	12	12	570	E	65	7,626	66,293	23,438	23,438
Totals, 1938	..	..	..	..	..	..	*54,124	442,132	98,888	Unknown.
Totals, 1937	..	..	..	..	..	..	50,902	409,298	55,533	Unknown.

* Includes 802 oz. of silver, valued at £76.

The fifteen dredges which were working in the West Coast district in 1937 were augmented by three others in 1938, one at Ikamatua, one at Kanieri, and the third at Blackball Creek. The one at Ikamatua, called the "Grey River dredge," and the one at Kanieri have all-steel pontoons, the hull of the Grey River dredge weighing 550 tons and that of the Kanieri dredge 650 tons.

The Blackball Creek dredge, like the other two new dredges, is electrically driven, but is of a much smaller type, being fitted with 5-cubic-feet buckets, compared with the other's 16-cubic-feet and 18-cubic-feet buckets.

Two other large all-steel dredges are now under construction, one at Arahura and the other at Ngahere. The Arahura dredge will be completed about August and the Ngahere dredge towards the end of the year.

The Maori Gully dredge ceased operating in August, 1938, as the claim was worked out; and the Stafford dredge was holed by a submerged log and sank in March, 1938, becoming a total loss.

In the Southern district only six dredges were worked in 1938, the Bendigo dredge again being idle throughout the year.

A large all-steel dredge is under construction at Lowburn, in Central Otago, but owing to difficulty in obtaining delivery of the steel parts it will be some months before the dredge commences operations.

(3) Alluvial Mining.

The following is a statement showing the production of, and dividends declared by, alluvial gold-mines during 1938:—

Name of Owner.	Estimated Quantity and Value of Gold produced.		Dividends declared.	
			During 1938.	Total to End of 1938.
West Coast.	oz.	£	£	£
Addison Exploration, Ltd.	190	1,164	..	..
Addison's Flat Gold-mining Co., Ltd.	591	4,564	650	4,745
Giles Terrace Sluicing Co., Ltd.	4	28	..	..
Glenroy Gold, Ltd.	9	63	..	..
Golden Sands, Ltd.	295	2,427	..	7,167
Golden Valley Syndicate	95	691	..	..
Hohonu Gold-sluicing Syndicate	97	797	..	..
Kumara Goldfields Syndicate	124	938	..	..
Lawson's Flat Gold-mining Co., Ltd.	24	181	..	..
Moonlight Goldfields, Ltd.	1,192	10,485	1,486	2,477
Mount David Sluicing Co., Ltd.	25	180	..	..
Newton Flat Gold-sluicing Co., Ltd.	8	50	..	..
Totara Gold-mining Co., Ltd.	32	201	..	..
Waitahu Gold-mining Co., Ltd.	558	4,274	1,333	1,333
All other claims	4,820	34,945	..	..
Otago and Southland.				
Central Shotover Gold-mining Co., Ltd.	297	2,190	..	..
Golden Arrow Mining Co., Ltd.	203	1,478	..	2,200
Jones Nevis Sluicing Co., Ltd.	83	640	..	813
Kildare Consolidated Gold-mining Co., Ltd.	206	1,538	..	1,000
Macrae's Gold-mining Co., Ltd.	1,420	10,442	1,500	9,000
Mining House Concessions, Ltd.	111	907	..	..
New Gabriels Gully Gold-mining Co., Ltd.	195	1,463	..	..
Nevis Sluicing Claims, Ltd.	93	691	..	..
Nokomai Gold-mining Co., Ltd.	1,239	9,067	..	..
Paddy's Point Gold-mining Co., Ltd.	401	2,988	700	2,802
Round Hill Gold-mining Co., Ltd.	1,767	13,870	6,000	21,929
Sandhills Gold-mining Co., Ltd.	547	3,996	2,000	2,000
Short and Party, Ltd.	112	827	..	..
Skippers Ltd.	20	140	..	..
Sailors Gully (Waitahuna) Gold-mining Co., Ltd.	135	1,067	..	..
Tuapeka Mouth Gold-mining Co., Ltd.	120	974	..	1,800
Vinegar Hill Hydraulic Sluicing Co., Ltd.	167	1,210	150	1,200
Waimumu Sluicing Co., Ltd.	23	186	..	..
All other claims	4,726	34,924	..	..
Totals, 1938	19,929	149,586	13,819	Unknown.
Totals, 1937	27,142	200,024	14,683	Unknown.

In the West Coast and Southern Inspection Districts 1,374 men were employed at alluvial mining in 1938, as compared with 3,495 men in the previous year.

In the West Coast district the number engaged in alluvial work dropped from 2,131 to 858, and in the Southern district from 1,364 to 516. The 225 men in the Grey district alluvial mines produced 3,138 oz. of gold in 1938. In the Murchison district 160 men produced 1,417 oz., in the Buller district 76 men produced 853 oz., and in the Westland district 161 men produced 1,167 oz. of gold.

The three-compartment shaft commenced at Waikakaho in 1937 was completed in 1938, having been sunk in schist for 100 ft. A chamber has been formed at the shaft bottom, and a 300 ft. crosscut is to be driven to intersect the lead.

The drag-line plant which had been working on a bank of the Buller River was shifted in 1938 to an area at Maud Creek which had been unprofitable to work by manual labour. A paddock was stripped and cleared, but the test was not completed by the end of the year.

At the Waitahu sluicing claim 324,000 cubic yards of dirt of an average value of 4·37d. was treated in 1938.

At the Golden Sands sluicing claim the elevator and treatment plant were shifted about half a mile north of the former set-up, the pipe-line was extended, and sluicing recommenced near the end of 1938.

The two 12 in. gravel-pumps which were installed at Nokomai in 1937 continued to operate satisfactorily in 1938 and recovered 1,239 oz. of gold, valued at £9,067.

Gravel-pumps were in use also at Little Waikaka, Macrae's, the "55" Mine at Tuapeka Mouth, Pleasant Valley near Roxburgh, and at Glenore. The two pumps at Macrae's handled 153,100 cubic yards of material in 1938, from which 1,420 oz. of gold, valued at £10,441, was recovered.

At the Bell-Hooper claim, near Cromwell, work has ceased and the plant has been sold. A little driving was done early in the year at Cornish Point and again towards the end of the year. Some driving has also been done by another small party nearby, and they have sunk a vertical shaft, to the bottom of which the driving is now directed.

Six claims were worked in the Shotover River in 1938, and three parties continued to operate on Skippers Creek.

V. MINERALS OTHER THAN GOLD.

Iron.

In 1938 the State Iron and Steel Department commenced a thorough investigation of the Onekaka field by means of many drives and boreholes. The investigation is still in progress. No limonite was produced.

Near Kamo, North Auckland, 835 tons of limonite, valued at £2,630, was mined in 1938, and used chiefly for gas-purification. At Okaihau, North Auckland, a further 383 tons of limonite, valued at £1,036, was won. Both these deposits of limonite are said to contain a very small percentage of cobalt.

Asbestos.

No asbestos was produced from the Upper Takaka field during 1938.

Sulphur.

No work was done on any of the sulphur deposits during the year.

Manganese.

In the Auckland district 90 tons of manganese ore, valued at £450, was mined near Clevedon; and about two miles south of the ore being worked, another area is being prospected.

Quicksilver.

From the Mercury Mines (N.Z.), Ltd's mine at Puhipuhi 760 lb. of mercury, valued at £190, was obtained.

Tungsten.

From the Glenorchy, Macrae's, and Waipori districts 44 tons 12 cwt. of scheelite was produced. Some of this has not yet been sold. From the Wakamarina district a further production of 1 ton 1 cwt. 3 qr. was obtained.

Silver.

With the gold recovered by the Clutha dredge, 269 oz. of silver, valued at £29 10s. 9d., was won. From the bullion recovered by four West Coast dredges, silver amounting to 533 oz., valued at £47, was obtained.

Platinum.

Together with the gold recovered at a sluicing claim at Orepuki, Southland, 1 oz. 6 dwt. of platinum, valued at £7 8s. 11d., was saved.

Silica Sand.

From Hyde, Central Otago, and Mount Somers, Canterbury, 1,356 tons of silica sand, valued at £997, was produced in 1938. Silica was obtained also from two mines in the Wanganui district.

Fuller's Earth and Kieselguhr.

At Kamo, North Auckland, 56 tons of Fuller's earth and 76 cubic yards of kieselguhr or diatomaceous earth were obtained.

Petroleum.

Since the passing of the Petroleum Act, 1937, practically all the possible oil-bearing land in New Zealand has been taken up under license.

The New Zealand Petroleum Co., Ltd., imported from the United States a large boring-rig 136 ft. high and set it up at the Totangi Dome, near Gisborne. Boring commenced on 12th October, 1938, the hole being started 24 in. in diameter. The first string of casing ($18\frac{5}{8}$ in. diameter) was cemented at 171 ft., the hole being continued from that depth 17 in. in diameter to 2,715 ft., when a line of $13\frac{3}{8}$ in. casing was cemented in. Below that depth the hole was continued $12\frac{1}{4}$ in. in diameter. Near

the end of the year it was found, by means of delicate borehole-surveying instruments, that the hole had deflected near the bottom about 5° off the vertical. To correct this deflection the hole was cemented up to the 1,800 ft. mark, and special tools to force the drill out of its old course were ordered from the United States. Early in 1939 boring was resumed, the deviation from the vertical having been reduced to $2\frac{1}{2}°$.

Near Dargaville a $2\frac{1}{2}$-in.-diameter borehole was put down by the Northern Oilfields, Ltd., a Sullivan "N" diamond drill being used. By the end of the year the hole had been drilled to a depth of 552 ft.

No drilling was done on the Kotuku or Moturoa fields during 1938. From the three producing wells owned by Moturoa Oilfields, Ltd., Nos. 1, 2, and 4, a total of 116,585 gallons of petroleum was obtained, all of which was treated by New Zealand Refineries, Ltd.

VI. 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 1938 :—

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.							
				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.	Value at Quarry.
				Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
Auckland ..	R. H. Schoen, Mines Dept., Huntly	243	1,445	942,706	..	360	110,037	219,118	..	46,025	270,125
	E. J. Scoble, Mines Dept., Waihi (Hauraki Mining District only)	23	153	146,781	..	4,476	..	..	..	..	50,700
Hawke's Bay	R. H. Schoen, Mines Dept., Huntly	24	116	28,004	..	..	29,998	..	..	..	7,541
Taranaki ..	Ditto	22	143	43,461	3,004	..	8,533	..	..	..	16,642
Wellington..	,, ...	34	250	95,907	3,226	..	32,440	..	..	134,238	31,645
Nelson ..	G. W. Lowes, and A. W. Turner, Mines Dept., Greymouth	21	81	21,056	19,377	..	10,155	60,449	..	..	17,332
Westland ..											
Buller ..											
Marlborough											
Canterbury..	T. McMillan, Mines Dept., Dunedin	62	479	165,610	29,566	20,503	290,549	52,888	..	..	161,310
Otago ..											
Southland ..											
Totals, 1938	..	429	2,667	1,443,525	55,173	25,339	481,712	332,455	..	180,263	555,295
Totals, 1937	..	378	2,117	1,156,876	52,246	35,731	410,770	268,190	..	64,708	444,837

Quarry Accidents.

The following is a summary of serious accidents during 1938 at quarries under the Stone-quarries Act :—

Cause.	Number of Accidents.		Number of Sufferers.	
	Fatal.	Serious.	Killed.	Seriously injured.
Haulage	1	1	1	1
Machinery	..	..	..	..
Explosives	1	1	1	1
Falls of ground	..	..	..	..
Miscellaneous	1	2	1	2
Totals	3	4	3	4

For the fourth year in succession there was no fatal accident in the South Island quarries, but in the North Island quarries there were three fatal accidents in 1938 : one in the Hunua quarry, Papakura, on 27th June, one in the Opahi quarry, Bay of Islands, on 29th June ; and the third in the Moa Point quarry, Wellington, on 27th September. A runaway truck on an inclined plane caused the Hunua fatality, the premature explosion of gelignite in a bulled hole the one at the Opahi quarry, and the workman killed at Moa Point was struck by a flying piece of stone from a shot.

VII. STATE AID TO MINING.

(1) Subsidized Prospecting.

Upon subsidized prospecting operations fifty-three persons were intermittently employed during the year.
The following is a statement showing the results of prospecting operations as reported by the Inspectors of Mines:—

Name of Prospecting Party.	Number of Prospectors.	Locality of Operations.	Amount of Subsidy granted.*	Amount of Subsidy expended.	Distance driven or sunk.	Nature of Claim.	Character of Operations.	Remarks.
Northern Inspection District.			£ s. d.	£ s. d.	Ft.			
J. B. Morris	6	Waiawa Claim, Karangahake	75 12 6	24 15 0	18	Quartz	Rising	
Golden Spur Syndicate	2	Maratoto	100 0 0	17 10 0	20	Quartz	Driving	
Talisman Dubbo Gold-mines, Ltd.		Karangahake	1,000 0 0			Quartz	Driving, &c.	Work not commenced.
Commissioner Claim	4	Thames	740 5 10	634 5 3		Quartz	Driving	
Una Hill Consolidated Gold-mining Co., Ltd.	6	Thames	1,000 0 0		74	Quartz	Sinking	Work in progress.
Puru Gold, Ltd.		Thames	100 0 0			Quartz	Reefing	Work not commenced.
School of Mines		Thames	47 10 0	36 14 0			Crushing	
Sylvia Gold, Silver, and Base Metal Mines (N.L.)		Tararu Creek	2,000 0 0			Quartz	Sinking, &c.	Work not commenced.
Heather Bell Gold-mining Co.		Whenuakite	400 0 0			Quartz	Driving and cross-cutting	Work not commenced.
Golden Crown Gold-mining Co. (N.L.)		Komata	627 10 0			Quartz	Driving	Work not commenced.
West Coast Inspection District.								
Consolidated Goldfield of New Zealand, Ltd.	4	Globe-Progress Area	5,350 0 0	1,607 3 5	1,278	Quartz	Diamond drilling	Second bore. Work in progress.
Mount David Sluicing Co., Ltd.	4	Blackwater	250 0 0	108 10 0		Alluvial	Claim development	Work discontinued.
Wainihinihi Steatite Syndicate	2	Wainihinihi	25 0 0	25 0 0		Mineral	Trenching and track-making	Operations being continued.
Waikakaho Deep Lead, Ltd.		Cloudy Bay	300 0 0			Alluvial	Driving and cross-cutting	Work not yet started.
Murray Creek Consolidated, Ltd.		Westland	3,100 0 0			Quartz	Shaft-sinking	Work not yet started.
Ross Aerodrome	3	Westland	500 0 0	352 7 5	450		Drilling	Work completed.
Southern Inspection District.								
S. I. Bickerstaff	4	Waipori	45 0 0			Reefing	Driving	Work not yet completed.
Jas. McMullan	5	Arthur's Point	533 6 8	484 18 11		Alluvial	Sluicing	Work in progress.
Vinegar Hill Sluicing Co., Ltd.	4	Vinegar Hill	500 0 0	355 0 6		Alluvial	Sluicing	Balance subsidy cancelled.
S. C. Fache	7	Nevis	68 18 8	68 18 8		Dredging	Dredging	Work still in progress.
Cairns and Truesdale	2	Matakanui	53 0 0	15 0 0	20	Reefing	Driving and sinking	Balance subsidy cancelled.
F. Birse		Growler's Flat	100 0 0			Alluvial	Sinking	Work not commenced.
Moonlight Valley Gold (N.L.)		Mid-Wakatipu	600 0 0			Alluvial	Sluicing	Work not commenced.
	53			3,703 3 2†				

* Includes authorizations in previous years. The total of the subsidies granted, less cancellations, during the year ended 31st March, 1939, amounted to £9,133 7s. 4d. The amounts authorized for prospecting, in conjunction with the Labour Department (Employment Division) in South Westland and in the Reefton district are not included in this total. † In addition, the Mines Department is paying—(*a*) Half the cost of an investigation of areas in South Westland, the other half being paid by the Labour Department; eight prospectors were employed and £45 1s. 3d. was expended by the Department during the year. (*b*) Half of the cost of the prospecting of the Globe and Merrijigs area, Reefton district, the other half being paid by the Labour Department (Employment Division); nineteen prospectors are engaged on this scheme, and the Department's expenditure during the year amounted to £4,204 1s. 4d.

(2) Government Prospecting Drills.

The following table gives details of the drilling done for twelve months ended 31st December, 1938: —

Drills used: Diamond and Keystone drills. Percussion and Hand-placer drills.

Number of Holes drilled.	Total Depth.	Diameter of Hole.	Mineral sought.	Character of Country drilled through.	To whom lent.	Cost per Foot of Drilling.	Cost per Foot of Transport.	Cost per Foot of Carbons' Wear.	Remarks
	Ft.	In.				s. d.	s. d.	s. d.	
66	5,543	6	Gold	Gravel ..	Clutha River Gold Dredging, Ltd.	..	..	..	In progress.
1	152	1¾	Coal	Clay, shale, &c.	Goldlight Co-op. Party	11 5	..	0 2	..
40	1,365	4	Gold	Gravels, &c. ..	Labour Dept. (Employment Division)	..	..	..	In progress.
18	1,180	6	Gold	Gravels, &c. ..	Labour Dept. (Employment Division)	5 3·84	0 5·36	..	
21	1,253	6	Gold	Gravels, &c. ..	Labour Dept. (Employment Division)	4 8·81	0 4·67	..	
52	867	6	Gold	Gravels, &c. ..	Maori Gully (Kokiri) Gold-Dredging Co., Ltd.	*	*	..	..
1	150	4¾ and 6	Gold	Gravels, &c. ..	Mines department	..	..	..	In progress.
1	143½	3	Coal	Sandstone, &c. ..	Moore and Party	16 6	..	0 0·7	..
3	538	3	Coal	Sandstone, &c. ..	McTaggart and Party	..	..	..	In progress.
2	211	6	Gold	Gravel, &c. ..	Rimu Gold Dredging Co., Ltd.	..	..	..	In progress.
131	2,221	6	Gold	Gravel, &c. ..	Snowy River Dredging Syndicate	7 3	3 6	..	..
1	20	2¼	Coal	Sandstone ..	State Coal-mines	3 2·4	..	..	..
3	197	2¼	Coal	..	State Coal-mines	0 10·24	..	0 3	..
1	232	2¼	Gold	Andesite, &c. ..	Sylvia Gold, Silver, and Base Metals Mines (N.L.)	47 2	..	1 9·2	..
341	14,072								

* Costs not yet to hand.

(3) Subsidized Roads on Goldfields.

The expenditure in the form of subsidies and direct grants upon roads on goldfields amounted to £5,220 12s. 3d., as compared with £16,869 2s. 7d. during the previous year.

(4) Legislation affecting Metalliferous Mines.

The only amendment made to the Mining Act in 1938 was to section 106, which was effected by a clause of the Statutes Amendment Act, 1938. That clause extends and amends the provisions relating to the granting of mineral licenses.

An amendment of eleven clauses was made to the regulations under the Mining Act during 1938. Clause 1 to 3 are purely machinery clauses, and clauses 4, 5, and 6 deal with procedure in regard to applications for mining privileges, the service of notices, and the endorsement of documents in Wardens' Courts.

Several important amendments to Regulation 94 are effected by clause 7. Previously mines in the Hauraki Mining District were classed as No. 1 in regard to temperature of working-places, and all other mines in New Zealand as No. 2.

In the mines classed as No. 2 in all places where the temperature exceeded 80° F., wet bulb, six-hour shifts were worked, while in the Hauraki Mining District the temperature of working-places in mines had to exceed 83° F., wet bulb, before six-hour shifts were compulsory. The amendment brings the Hauraki District mines into the same category as regards temperature and length of shifts as the other New Zealand mines.

The wording of Regulation 94 (1) (*f*), dealing with the compulsory installation of ventilating appliances under certain conditions, has been altered.

Inspectors are given discretionary power to permit the use of approved respirators in places where liquid sprays cannot be used satisfactorily to allay mine dust.

Instead of having to use an electric firing-apparatus in all cases where more than six, and not more than twelve, shots are to be fired at one time, a recently introduced contrivance for multiple shot-firing is now permitted to be used.

The number of lifebuoys, lines, and boathooks which have to be provided on all dredges to comply with Regulation 95 has been increased by clause 8.

Clause 9 is a slight amendment to Regulation 180, the term "ambulance carriage" being replaced by "ambulance conveyance."

As regulations under the Petroleum Act, 1937, replace Regulations 181 to 289 under the Mining Act, they were no longer required, and were revoked by Clause 10.

Clause 11 amends Regulation 300 by inserting at the beginning thereof the words "While any person is underground," so unless there is any one in the mine it is not necessary for an attendant to be constantly on duty when the electrical apparatus or machinery is in use.

I desire again to acknowledge the efficient help and co-operation which I have received during the year from the District Inspectors of Mines.

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, (W. Morrison, Manager).—No. 15 level: This is only used for water storage in connection with pumping, the water-level being kept just below No. 14 level. No. 14 level: From Trout block on the Edward lode 10,771 tons of ore were drawn. Work is being continued. Trucking of broken ore from Gin block on the Martha lode was completed towards the end of the year. No. 13 level: A small tonnage of ore was taken from Cow block on the Martha lode. No. 12 level: A total of 27,086 tons of broken ore was won from drives and shrinkage stopes on this level and on intermediate levels between it and No. 11. Bomb East block was opened up on the Dreadnought lode by driving eastward at 30ft. below No. 11 level, and the ore has now been stoped up to the floor of the latter. The lode was also tested for a distance of 79½ ft. westward from Bomb block, but is not payable. No. 11 level: A total of 13,932 tons was won from work on this level and intermediate levels between same and No. 10. Investigation of a block of ground on the Edward lode, known as Roach block, is taking place. Shrinkage stoping proceeded in Pike block on the Edward lode and was carried up to the floor of No. 10 level at the south end, an arch of 15 ft. being left at the northern end. No. 10 level: A total of 20,407 tons of ore was won from work at this level and intermediate levels up to No. 8. A large block of ore on the Royal lode westward from No. 5 shaft south-east crosscut, known as Dragon block, is being investigated. The top of the block, as exposed at No. 8 level, measures 340 ft. in length of payable ore, the width at that level ranging from 21 ft. to 27 ft. On No. 9 level there is a length of 140 ft. of payable ore at the eastern end, and stoping operations will be commenced here. Payable ore may be found to extend westward as work continues upwards. A considerable amount of development work was carried out in the footwall of the Martha lode in the neighbourhood of No. 6 shaft at 70 ft. above No. 9 level, preliminary to caving operations being put in hand. A footwall gangway was driven for 279 ft., and crosscuts taken across to the lode itself. A shaft chamber has been opened up at this intermediate level. No. 8 level: A total of 63,361 tons of ore was won from this level and points between Nos. 8 and 7 by caving, stoping, and development work. Martha caving area: This block comprises remnants of old stopes, arches, and pillars of the Martha lode, and is the biggest single supplier of good payable ore left in the mine. The total output from this ground for the year under review was 53,122 tons, equivalent to 24 per cent. of the total mine output. The ore is worked from footwall gangways and crosscuts at No. 8 level and at three intermediate levels. Martha lode, Regina section: A stoping-block, 80 ft. in length and known as Jim block, is being worked in this section. Edward lode, west branch: Operations, started here in 1937, were continued, and a shrinkage stope 164 ft. in length, known as Alpha block, is being exploited. Royal lode, north section: A stoping-block 50 ft. in length westward from the Edward lode junction was opened up. On the Empire lode the work of extracting the arch under No. 7 level was practically completed. No. 7 level: A total of 23,779 tons of ore was won from this level, of which 21,447 tons came from stoping-blocks on the Royal lode. Edward lode, west branch: Investigation of this lode was continued from the 112 ft. mark to 168½ ft. The width of quartz varied between 1½ ft. and 4 ft. and the average value was low. At 166 ft. a crosscut was put through northward to the main part. This is payable. A drive was advanced south-west from this crosscut on the main lode for 134 ft. The width of reef (formation) varied from 9 in. to 5 ft., and assay values were patchy. Following the work on these two sections of the branch lode a stoping-block 57 ft. long on the eastern section and 130 ft. long on the main part has been opened up. It is estimated to contain 3,815 tons of payable ore. North branch of Martha lode (westward from No. 2 shaft): Stoping of Whittaker block, at 50 ft. up from No. 7 level, is in operation, and an extension of the block at the western end is being developed. No. 6 level: A total of 14,021 tons of ore was won from this level, the chief contributors being the north branches of the Martha lode and the Royal. North branches of Martha lode (westward of No. 2 shaft): Exploration carried out during recent years has shown there is more than one branch of the Martha lode in the west footwall country between Nos. 3 and 7 levels. In some parts these are connected by small subsidiary branches, the whole forming a network or complex of lodes. This is being closely investigated. A drive was put out westward for 225 ft. on one of the main branches, situated at 106 ft. south of Munro block in Giddens south crosscut. As far as the 205 ft. mark, the ore was of good value, but the lode then became low grade, and at 223 ft. was split up. Driving has been temporarily suspended while a length between the 15 ft. and 130 ft. marks is being stoped. The stope is known as "Riley new block," and is estimated to contain about 1,220 tons of good-grade ore. Espir rise and block: Development work of much interest was carried out on the same north branch at a point 160 ft. west of Espir west crosscut. Espir rise was taken up at this point to a height of 83½ ft. and disclosed ore of very good value over widths ranging from 2 ft. to 6 ft. Rising was suspended in July owing to ventilation difficulties, and a winze was then sunk from No. 5 level and holed through to the rise. A stoping-block extending between 83 ft. and 185 ft. west of Espir west crosscut was then opened up. The estimated value for a stoping width of 4 ft. is 30s. per ton. Osborne north crosscut: At the end of the year 1938 the exploratory drive westward from Giddens north crosscut on what appeared to be the main north branch had been carried to 862 ft. west. During the year the drive was extended to 902 ft. west. The lode, between the 862 ft. and 902 ft. marks, was small and of little or no value, and at the face was split into three stringers. Driving was stopped. Investigation of the country to the north was then made by means of a crosscut at 600 ft. west of Giddens north crosscut. This is known as "Osborne north crosscut," and was driven a total distance of 138 ft. It was thought that a north part of the north branch of the Martha lode might be met with. Several small leaders were passed through, but these were generally of little or no value. Six inches of quartz at 36 ft. north showed good value, and this was driven on for 14 ft. westward and 22 ft. eastward, but it proved of no importance. No. 5 level: A total of 11,820 tons was won from this level. An east part of the Edward lode, in the neighbourhood of No. 2 shaft, was opened up. A drive was advanced northward 48½ ft. in payable ore and connected to an old balance-bob chamber of No. 2 shaft, and southward 53 ft. where the reef split up. A stoping length, called "Manzoni block," was opened up and is estimated to contain 1,446 tons of fair average value. Following up the work commenced in 1937, the north branch of the Martha lode, met at 85 ft. north in Taylor's north crosscut, was driven on westward a distance of 87 ft., but the results were not encouraging. The lode was also tested eastward for a distance of 133 ft., but the width proved to be irregular with only occasional payable samples, and the reef split up at the end of the drive. No. 4 level: A total of 6,755 tons of ore was won from this level. The chief suppliers were the Edward and the north branch of the Martha lode. H Lode—Branches: The testing of the block of ground between the Edward lode and the No. 2 shaft south-east crosscut by means of Lovett south crosscut was continued. A branch, met at 75 ft. south was tested, but proved to be very narrow. A branch, at 115 ft., showed payable values for a distance of 40 ft. east and 116 ft. west of the crosscut. A shrinkage stope, called McEnteer new block, has been prepared. A crosscut,

known as "Potts north-west crosscut," was driven 35 ft. north-west from the main north branch, Martha lode. At 31 ft. another part of the north branch was intersected and was driven on westward for a distance of 97 ft. Values proved irregular, however, and the reef became very narrow. No. 3 level: Ore was drawn from the Edward and I lodes. Lovett south crosscut, started at the Edward lode, was driven southward 287½ ft. A number of leaders were intersected, but proved too small to be payable. The two main reefs in this part were also met with—viz., I and J lodes, on both of which testing work was carried out. A stoping-block will be opened up on each lode. No. 2 level: Some 4,689 tons of ore was won from the Edward and north branch of the Martha lode on this level. School drive: This is a surface drive, extended for the purpose of extracting certain remnants of ore on the Martha lode, which work has now been completed. The workings have been extended eastward for the purpose of further testing the Martha lode and exploring the ground for the upward continuations of the north branches thereof. The workings are about 115 ft. above the horizon of No. 2 level. Walker north crosscut was put out to a distance of 122½ ft. from the Martha lode. An ore-body giving fair values was met with at 69 ft. north. Tested for 31½ ft. westward, this proved to be from 2 ft. to 5 ft. in width and to contain payable values. Eastward, a total of 86 ft. was driven to junction with the main Martha lode. This part was irregular in width, with occasional payable samples. The drive crossed the Martha as a diagonal crosscut, the value being 5s. 2d. per ton. A drive was then extended eastward on reef for 116 ft. from the junction with the Martha, the quartz proving to be low grade. The Martha lode was crosscutted at 100 ft. east, and this work is still proceeding. A total of 894 tons of ore was won during the year from this and other surface workings. Extraction of No. 2 shaft pillars: During the year work preliminary to the extraction of some 80,000 tons of ore contained in pillars and arches of the Martha and Welcome lodes at present supporting No. 2 shaft was put in hand. The work consists in sinking a footwall pass (known as No. 7) in the Martha footwall country opposite No. 2 shaft and connecting this by means of crosscuts with the old workings. Output: A total of 181,740 long tons of quartz was mined and treated, from which gold and silver to the value of £398,477 12s. 5d. was obtained. The gold recovered amounted to 51,627 oz. 5 dwt., valued at £367,844 6s., and the silver to 350,095 oz. 1 dwt., valued at £30,633 6s. 5d. Dividends were paid during the year to the amount of £74,386 1s. The average number of men employed was 605. The total yield of bullion (gold and silver) since the beginning of operations, including that won by the Waihi Gold-mining Co., Ltd., is 27,774,191 oz. 8 dwt. 11 gr., valued at £19,773,483 6s. 3d.

Waihi Grand Junction Gold-mining Co., Ltd. (W. Morrison, Manager).—The Martha Gold-mining Co. (Waihi), Ltd., continued the working of this mine under arrangement, as in previous years, until the end of July, when it purchased outright all the holdings of the Grand Junction Co. From the 1st August any tonnage won from this area has therefore been included with that won from the Martha Mine. Work in the Grand Junction section to 30th July consisted merely of the extraction of a portion of the small remnant of ore still in that mine. The shaft was maintained in good working-order. An average of two men was employed. Output: To the 30th July, 979 tons of quartz were mined and treated for a return of 323 oz. 4 dwt. of gold, valued at £2,302 16s., and 1,489 oz. 10 dwt. of silver, valued at £130 6s. 8d. Dividends to the amount of £6,906 5s. 4d. were paid. The total value of the bullion won from the mine since the commencement of operations is £2,739,623 5s. 8d.

Golden Dawn Gold-mines, Ltd., Owharoa (J. H. Benney, Mine-manager)—No. 3 level: The drive south on No. 4 reef was advanced 9 ft., total distance 155 ft. The reef here was 9 in. wide, but the average values were not payable. The drive south on No. 5 reef was advanced 134 ft., total 194 ft., from the main crosscut. The stone is wider than the drive, and work was undertaken over the west wall portion, which averages 5 ft. in width and in places carries very fair values, but is unpayable on the whole. A crosscut 60 ft. south of the main crosscut was extended for 25 ft. in the east wall and penetrated ore 15 ft. wide. This carried low values and showed signs of splitting into stringers at the point named. No. 1 rise on No. 5 reef, constructed at 46 ft. south of the main crosscut, was put up on reef 3 ft. 6 in. wide to a height of 123 ft. above the level. Values were patchy and unpayable. No. 2 rise, on No. 5 reef, at 101 ft. south of the main crosscut, was put up on stone 3 ft. 8 in. wide to a height of 33 ft. Values were unsatisfactory. Bottom intermediate level (70 ft. above No. 3): The crosscut mentioned in last year's report has been extended for a total distance of 237 ft. in country rock of a favourable character. A reef 8 in. in width was intersected at 59 ft. This carries values, and it is thought that it is an upward continuation of No. 4 reef. From 10 ft. to 15 ft. of additional crosscutting is required to reach No. 5 reef. Stoping operations were carried out on the west wall branch of No. 1 reef, and on Nos. 2 and 4 reefs on the levels mentioned. The average number of men employed was forty. Output: During the year 2,064 tons of quartz were mined and treated for a return of 966 oz. 12 dwt. of gold, valued at £8,674 2s. 7d. and 1,983 oz. 9 dwt. of silver, valued at £189 19s. 1d. No dividends were paid. The company's battery also treated ore for outside suppliers to the total of 123 tons, which yielded 81 oz. 17 dwt. of gold, valued at £572 11s. 1d., and 405 oz. of silver, worth £36 5s. 11d. The total yield from the Golden Dawn Mine since the beginning of operations is 89,854 oz. 6 dwt. of bullion, valued at £238,818 13s. 10d.

Talisman-Dubbo Gold-mines, Ltd., Karangahake (R. B. Dunlop, Manager).—For the early part of the year operations were carried out by forty men, but by the end of February, owing to the anticipated early completion of the company's own mill and other factors, ore-breaking was more or less suspended. The number of men underground was reduced to fourteen, just sufficient to keep the mine in repair and to carry on developmental work at Nos. 4 and 7 levels. Stoping was undertaken on a small block of ore situate on No. 2 Talisman level. Dubbo level: Stoping was carried on here from 40 ft. north to 38 ft. south of the main Dubbo rise for a height of 52 ft. above the level. The lode is 10 ft. wide and contains high values. Underhand stoping was commenced at 44 ft. north of the Dubbo rise, west branch. Depth of stope 9 ft., average width of reef 15 in., and values satisfactory. No. 4 Talisman level: This has been cleaned out and retimbered where required from 767 ft. to 1,409 ft. south of the rise which connects with the Dubbo No. 2 level. At 1,074 ft. south in the Crown block, which has not previously been worked, a rise was constructed to test the size and value of the lode. At 20 ft. up the lode is exposed in the hanging-wall, is 24 in. wide, and of good grade. It is intended to commence stoping operations under this block as soon as air is available. No. 7 Hauraki level: Considerable quantities of ore have been drawn from a shrinkage stope on this level, and about 1,200 tons still remain. The level was cleaned out from 930 ft. south to the face at 990 ft. south, the lode being 5 ft. wide. Some stone was drawn from under Hyde's stope at 930 ft. south, but proved to be low grade. At the Talisman Woodstock boundary stoping has been in operation for a length of 50 ft. and has been carried to a height of 12 ft. above the level. The lode here is 6 ft. wide, but only 3 ft. of the footwall is being stoped. The company's battery was completed during the year, and crushing commenced in same. It comprises the following items of plant: One Telsmith-Wheeling jaw crusher driven by a 25 h.p. motor; a 16 in. Challenge feeder; a Head-Wrightson ball mill, 5 ft. in diameter and 4 ft. long, worked by a 50 h.p. motor; a Dorr-Duplex classifier; one Dorco diaphragm pressure pump to deliver classifier overflow to Dorr thickener tank; eight agitators (B. and M. tanks), each 20 ft. deep by 6 ft. in diameter; and an Oliver filter 5 ft. 4 in. in diameter by 8 ft. in length. The air for the agitators is supplied by an Ingersoll-Rand type thirty automatic compressor. The vacuum for the Oliver filter is supplied by a 7½ h.p. Thompson vertical pump. The filtered solution is delivered by a 1½ in. centrifugal pump to a Merril-Crowe precipitation plant, and the barren solution is returned for wash by a similar pump. The Merril-Crowe plant consists of a clarifying unit, Crowe tank, and Merril bag-type filter, operated by two 1½ in. and one 1 in. water-sealed centrifugal pumps. Precipitation is obtained through a zinc-dust emulsifier and a feeder driven by a ½ h.p. motor.

The average number of men employed was twenty. For the year the company mined 1,667 tons of ore, which yielded 318 oz. 8 dwt. of gold, valued at £2,913 2s. 11d., and 1,370 oz. 10 dwt. of silver, worth £155 3s. 5d. No dividends were paid. The total output since the commencement of operations is 57,291 oz. 15 dwt., valued at £83,870 13s. 4d.

New Talisman Claim, Karangahake (C. Waines and R. Schulzki, Owners).—This claim produced 32 tons of quartz, from which 12 oz. 11 dwt. of gold, valued at £95 7s. 4d., and 79 oz. 6 dwt. of silver, valued at £3 19s. 3d., were obtained. The total production since the commencement of operations is 1,151 oz. 4 dwt. of bullion, valued at £828 9s. 2d.

Waiawa Claim, Karangahake (J. B. Morris, Owner).—Owing to flood damage on three different occasions very little development work was done on this property. A rise was put up 30 ft. in the Monastery section with the object of enabling a block of ore above river-level to be opened up. Further work must, however, be carried out before this objective is attained. During the year 484 tons were mined and treated for a return of 230 oz. 16 dwt. of gold, valued at £1,798 10s., and 349 oz. 15 dwt. of silver, worth £22 5s. 4d. The total production since the commencement of operations is 1,339 oz. 11 dwt. of bullion, valued at £4,189 4s. 8d. Ten men were employed.

New Maoriland Claim, Waitekauri (E. C. Roberts, Owner).—Driving and restoration work was carried on intermittently, and 50 tons of ore were produced, which on treatment in the owner's battery yielded 56 oz. 2 dwt. of bullion, valued at £254 19s. 5d. The total output since the commencement of operations is 171 oz. 18 dwt. of bullion, worth £568 12s. 1d.

Golden Spur Claim, Maratoto (A. Duke, Owner).—The driving of a low level on this claim was started at a point about 3½ chains south of the boundary of the adjoining Golden Loop property and almost in the bed of a creek. The level was advanced to 198 ft. from the portal. At 145 ft. a rise was put up and connected to the level above, thus providing ample ventilation. Definite signs of reef were met with after driving 100 ft., and samples taken in various places are said to have given promising results. No stone was crushed during the year. The total output since the commencement of operations is 190 oz. 7 dwt. of bullion, valued at £65 11s. 11d.

Golden Crown Gold-mining Co. (N.L.), Komata (A. A. Adams, Manager).—Stoping operations were commenced over the Golden Crown level. On No. 1 level a drive north from the crosscut was cleaned out and retimbered for a distance of 60 ft. The new No. 2 level was advanced for 400 ft., and at this point holed through to the south end of the old No. 2 level, Te Ao Marama section. The latter level, which has been driven on reef, was renovated for a distance of 45 ft. The average number of men employed was eighteen. Approximately 235 tons of ore were mined and treated for a yield of 153 oz. 2 dwt. of gold, valued at £1,333 3s. 11d., and 734 oz. 16 dwt. of silver, valued at £55. The total production since the commencement of operations is 1,086 oz. 14 dwt. of bullion, worth £2,143 2s. 7d.

Graceville Syndicate, Neavesville.—In the Remuera section a lower level 50 ft. from the outcrop was driven and the main reef intersected at 165 ft. It is stated that this ore-body contained some good ore for a width of 6 ft. in the footwall. It was driven on so as to reach a point 110 ft. southward, where payable ore occurred on the surface. The prospects at the lower level were reported to be more encouraging than those indicated at the surface level. Considerable surface prospecting was carried out on the company's areas without disclosing any further payable ore. During the year 364 tons of quartz were treated in the company's battery for a return of 178 oz. 18 dwt. of bullion, valued at £822 18s. 6d. The total production since the commencement of operations is 810 oz. 5 dwt. of bullion, valued at £4,225 4s. 8d.

Wealth of Nations Mining Syndicate, Tairua.—The No. 2 main level was retimbered, and the winze at the south end dewatered. Considerable general testing was undertaken, but the results were not encouraging. The reopening of No. 3 low level was commenced, but work was suspended when a slip occurred. Thirty tons of ore were mined and treated for a return of 13 oz. 5 dwt. of bullion, valued at £55 16s. 7d. The total production since the beginning of operations is 25 oz. 1 dwt. of bullion, valued at £105 12s. 5d.

Kernick's Freehold, Tapu.—A rise was put up near the end of No. 1 level, and a certain amount of stoping was undertaken therein. Towards the end of the year a new level, 25 ft. above No. 1, was driven for exploratory purposes. This passed through a narrow reef 82 ft. from the portal, and fair crushing dirt is now being mined therefrom. A winze was sunk in No. 2 level, but work had to be discontinued on account of water. Driving on reef was then recommenced from a level previously constructed 27 ft. below No. 2 level, and altered slate and some rich veins of ore were met with after advancing 70 ft. A crushing of 2½ tons from this level yielded 128 oz. of bullion. Stoping has been carried on in the slate country above the low level without definite results. A ball mill is now being erected with the object of ascertaining whether the country encasing the reef at the low level is of sufficient value to warrant treatment. For the year 16 tons of ore were treated for a return of 241 oz. 10 dwt. of bullion, valued at £1,485 8s. 8d. The total output since the beginning of operations is 1,121 oz. 16 dwt. of bullion, valued at £6,644 17s. 5d.

Shannon Claim, Tapu (J. Matthews and H. Hemara, Owners).—The stoping of a narrow reef on this claim resulted in 3 tons 12 cwt. of ore being produced, which yielded 121 oz. 10 dwt. of gold, valued at £714 14s. 2d. The total production since the commencement of operations is 259 oz. 3 dwt. of bullion, valued at £1,487 6s. 4d.

Mountain King Claim, Puhoi (Pereiha and Te Moananui, Owners).—Nineteen tons of quartz, obtained as a result of driving on and stoping a narrow reef, yielded 36 oz. 4 dwt. of bullion, valued at £218 3s. 10d. The total output since the commencement of operations is 102 oz. 18 dwt. of bullion, valued at £595 13s. 9d.

Hector McDonald Claim, Puhoi (McFetridge Bros. and Hemara, Owners).—A low level was extended for 180 ft., where it intersected a reef 12 in. in width, which was driven on for 20 ft. north and 30 ft. south. Stoping operations on this reef yielded 7½ tons of ore, and this gave a return of 10 oz. 5 dwt. of bullion, valued at £76 6s. 3d. The total production since the commencement of operations is 38 oz. 13 dwt. of bullion, valued at £272 6s. 4d.

Golden Ridge Claim, Puru (R. E. Codd and A. Harold, Owners).—The erection of a small mill was completed and crushing commenced during the year. No. 2 level was driven 160 ft., largely on reef (average width, 15 in.), which was stoped out to surface. Another level, No. 2A, 40 ft. below the one previously mentioned, was then driven and intersected the reef. This should give a block of ore 100 ft. in length, 34 ft. in height, and 15 in. in width, with payable values. An average of seven men was employed. During the year 515 tons of quartz were crushed for a return of 243 oz. 15 dwt. of bullion, valued at £1,266. The total output since the commencement of operations is 269 oz. 5 dwt. of bullion, valued at £1,402 18s. 3d.

Virginia Claim, Thames (W. F. Smith and Party).—One hundred feet was driven east in the main crosscut in the hope of intersecting the Windfall reef. No stone was produced. The total output since the commencement of operations is 87 oz. 10 dwt. of bullion, valued at £239 10s. 3d.

Sylvia Gold, Silver, and Base Metals, Ltd., Thames.—The drilling of No. 1 bore, commenced in 1937, was completed early in 1938 at a depth of 634½ ft. An average of five men was employed. The company has since been endeavouring to raise capital to carry out development operations on its property.

Advance Claim, Thames (Armstead and Kendall, Owners).—No. 2 level was renovated for approximately 500 ft. The reef operated on at No. 3 level was not found at the estimated distance, and this factor, together with poor returns from ore treated, led to the suspension of work. The ore referred to, stoped above No. 3 level, comprised 32½ tons, which yielded 4 oz. 18 dwt. of bullion, valued at £25 11s. 8d., which is also the total output since the commencement of operations.

Commissioner Claim, Thames.—The work of reconditioning the old level, as referred to in last year's report, was completed to where the reef entered faulted country. Driving was resumed and carried on northward for about 50 ft., when east and west crosscuts were constructed, but to no purpose. It is now proposed to drive north and south on some rich but narrow leaders which were intersected at approximately 500 ft. from the portal of the main crosscut. An average of four men was employed during the year.

Progress Claim, Thames (H. W. Lloyd and Party, Owners).—Driving operations on the main reef were continued for a further 19 ft., total 145 ft., and a leading stope was advanced about 40 ft. The intermediate level from No. 2 winze was driven both north and south for a total of 112 ft. The production for the year amounted to 72 tons of ore, which yielded 38 oz. 18 dwt. of bullion, valued at £176. The total output since the commencement of operations is 420 oz. 15 dwt. of bullion, worth £2,119 15s. 8d.

Hauraki Mines Consolidated, Ltd., Coromandel.—Tributers continued work on this claim during the year and produced 4 tons of quartz, which gave a return of 6 oz. 9 dwt. of bullion, valued at £39 10s. 5d. making the total production since the commencement of operations 710 oz. 5 dwt. of bullion, worth £2,598 12s. 5d. The main portion of the property was dormant.

Coromandel Gold-mines, Ltd., Coromandel.—The drilling of No. 1 bore was continued to a depth of 484 ft., where work was suspended. The company has recently gone into liquidation.

New Royal Oak Claim, Coromandel (H. W. Chipman and Party).—A total of 400 ft. of driving and 20 ft. of rising was carried out from the main and subsidiary levels. Some good specimen stone was obtained. The output for the year amounted to 2 tons 14 cwt., which yielded 278 oz. of bullion, valued at £1,362 4s. 8d. The total production since the commencement of operations is 611 oz. 13 dwt. of bullion, valued at £2,946 17s. 7d.

Gem Claim, Coromandel (A. A. Lynne, Owner).—A limited amount of sinking and driving was done on this claim, and 12 tons 14 cwt. of ore was crushed for a return of 11 oz. 9 dwt. of bullion, worth £60 19s. 2d. The total production since the commencement of operations is 53 oz. 12 dwt. of bullion, valued at £293 1s. 2d.

Speedmint Claim, Coromandel (G. T. Edwards, Owner).—One hundred feet of driving and 25 ft. of rising were carried out on a small reef, known as the Peep o' Day, and 15 ft. of rising was undertaken on the Swedish Crown leader. Five tons of quartz were treated for a return of 25 oz. 1 dwt. of bullion, valued at £139 13s. 7d., which is also the total output since the beginning of operations.

Lone Hand Claim, Waikoromiko (W. J. Pearce, Owner).—Some 52 ft. of driving was carried out on the footwall reef, and a rise was constructed to a height of 30 ft. in the low level. The output for the year amounted to 2½ tons, which gave a return of 19 oz. 15 dwt., of bullion, value £107 9s. 9d. The total production since the commencement of operations is 150 oz. of bullion, value £785 7s. 7d.

Opitonui Consolidated Gold-mining Co., Ltd., Opitonui.—Very little work was done in the company's mine (Rexman) during the year, and operations were confined almost wholly to altering the treatment plant by adding a cyanide unit to existing facilities. The quartz crushed during the year amounted to 200 tons, which yielded 33 oz. 12 dwt. of bullion, value £204. This is also the total production since the commencement of operations.

Heather Bell Claim, Whenuakite.—Stoping operations in the low level on a reef averaging 7 ft. in width produced 305 tons of ore, which on treatment in the owner's battery yielded 112 oz. 9 dwt. of bullion, valued at £635 5s. 7d. The total output since the commencement of operations is 155 oz. 16 dwt. of bullion, value £878 1s. 1d.

Hardy's Mines, Waiorongomai (M. Y. Hardy, Owner).—Some sampling was done in this mine and a test crushing forwarded to America for treatment, but the results of same are not yet to hand. An average of two men was employed.

Boring Operations.

Sylvia Gold, Silver, and Base Metal Mines (N.L.) commenced boring operations with the Government C.N. Sullivan diamond drill on 16th August, 1937. Location: Tararu Creek, Block I, Thames Survey District. Boring operations were completed in April, 1938, one hole being drilled to a depth of 634½ ft.

Drilling Prospectors, Ltd., using a Jumper and rotary drill with 3 in. casing, commenced boring operations on 11th June, 1938, on the New Shotover Special Quartz Claim at Thames. Up to 31st December, 1938, two holes had been bored, No. 1 to a depth of 310 ft. and No. 2 to a depth of 303 ft. Operations are still in progress.

Prospecting.

As in previous years, the greater part of the prospecting work done was carried out at Thames and Coromandel under the Labour Department's schemes. The number of men so employed decreased to an average of forty at Thames and seventeen at Coromandel. The subsidized men in the former district won approximately 258 oz. 6 dwt. of bullion, valued at £1,282 9s. 11d., while those in the Coromandel areas produced 377 oz. of bullion, valued at £1,899 10s. 2d.

Oil-wells.

Moturoa Oilfields, Ltd. (K. E. Pederson, Manager).—Operations were confined to repairs and maintenance in connection with the production of Nos. 1, 2, and 4 wells. Three men were employed. The wells named produced 5,070 gallons, 84,147 gallons, and 27,368 gallons respectively, the total value of the oil being £2,185 19s. 4d.

New Zealand Petroleum Co., Ltd. (H. L. La Mar, Manager).—This company holds several areas under petroleum-prospecting licenses in the Taranaki, Poverty Bay, and Wellington districts. The drilling of Totangi No. 1 well, which is located in Section 5, Block X, Gisborne Land District, commenced on 12th October and was carried on to the end of the year. The well was started with a diameter of 24 in. and a surface string of 18⅝ in. casing was cemented at 171 ft., where the hole was reduced to 17 in. and carried down with that diameter to 2,443 ft. From there to 2,458 ft. (the total depth reached at the end of December) the hole has a diameter of 12¼ in. A gravimetric survey and geological investigations were undertaken in the Taranaki district, and a geological survey was made in the Poverty Bay region. An average of twenty men was employed.

New Zealand Oil Exploration, Ltd.—This company holds petroleum-prospecting licenses in the Hawke's Bay, Gisborne, and Taranaki-Wellington districts, but work was confined to the geological investigation of the Hawke's Bay area only. The geology and topography of the northern portion of this district are now being studied abroad by means of aerial survey photographs.

Northern Oilfields, Ltd. (F. Cumming, Manager).—The drilling of a prospect bore was commenced with a Sullivan N type (diamond) drill on the property of Mr. R. Montgomery, Lot 33 and part 34, Block II, Arapohue Parish, Mititai, near Dargaville. The hole is 2½ in. in diameter and had been sunk to a depth of 552 ft. by 22nd December. The average number of men employed was seven.

Miscellaneous.

Quicksilver.—A syndicate, which operated on the New Zealand Quicksilver Mine (held by Mercury Mines (N.Z.), Ltd.), at Puhipuhi, obtained 760 lb. of mercury of an estimated value of £190, during the year. Two men were employed.

Manganese.—Impex Ltd, Battery-manufacturers, Melbourne, have an option and are operating on property held by Mirandite Products, Ltd., near Clevedon, South Auckland. During the year 90 tons of manganese of an estimated value of £450 were produced.

A fair amount of work in the way of constructing an access tramway and bridges was done in connection with the opening up of another manganese deposit located on an area held by L. Piggott, which is situated about two miles south of the one being worked by Impex Ltd. The average number of men employed was six. No manganese was produced.

Limonite.—Reyburn's Lime Co., Ltd., operating on an area near Kamo, Whangarei, produced 835 tons of limonite, valued at £2,630 6s. 8d., during the year. This was mainly used by gasworks for purification purposes, and by farmers.

Okaihau Quarries, Ltd., extracted 383½ tons of limonite, valued at £1,036 3s. 1d., from an area situate at Okaihau, North Auckland. The mineral was largely disposed of to farmers.

It is understood that the limonites referred to above contain cobalt in minute quantities, and that this is a missing element in the so-called cattle-sick country of Taupo. Satisfactory results are said to be obtainable by using the limonite, both as a fertilizer and as a constituent of cattle-licks.

Silica.—Small quantities of silica were got from the following named places in the Wanganui district: Gilberd's Mine produced approximately 100 tons of an estimated value of £125, which was used by J. B. Gilberd and Sons, Ltd., in their pumice and sandsoap business. Tucker's Mine produced about 3 tons, valued at £3 15s.

Fuller's Earth.—Approximately 53 tons of this material were obtained from a property situate at Kamo, Whangarei, held by the executors in the estate of the late Alexander Crawford. The product was sold to Messrs. Thos. Borthwick and Sons (N.Z.), Ltd., the value being approximately £154.

Diatomaceous Earth.—Seventy-six cubic yards, valued at £69 14s., were obtained from Mr. S. C. Crawford's property at Kamo, Whangarei, and sold to the Auckland Gas Co. and the Neuchatel Asphalte Co.

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

Accidents.

It is pleasing to record that no fatal and only one serious non-fatal accident occurred in the mines and quarries of the district during the year. The victim of the serious accident referred to was W. H. Owen, employed at the Wealth of Nations Mine, Tairua, who was chopping wood for a tramway when a chip struck him in the eye and resulted in the loss of same.

Labour Department's Gold-mining Scheme: Summary of Results of Special Investigations.

Sylvia Crosscut, Thames.—This crosscut had already been driven some 447 ft. by subsidized men when on the 8th April, 1938, the Labour Department took over with the object of driving a further 375 ft. to intersect the Sylvia Reef on its southern trend. A reef 6 in. wide and assaying 3½ dwt. of gold was cut at a distance of 475 ft. from the portal. The main reef showed 7 ft. of quartz, intermixed with country rock at 725 ft. The crosscut was continued a few feet past the reef, when it was decided to drive south on the reef to see if values would improve. To date a distance of 15 ft. has been driven, but values are still low.

Commissioner Crosscut, Thames.—In 1936 the Labour Department, in conjunction with the Mines Department, commenced prospecting-work in the Commissioner Claim, Thames. The work proposed was the driving of a crosscut to take the place of the old Balmoral crosscut and the reopening of the old main drive to the north from its intersection with the new crosscut. It was considered probable that several payable reefs would be intersected in the crosscut, and the Waiotahi Reef at the end of the ground was supposed to contain values of 10 dwt. of gold to the ton. The work was done under contract, and the crosscut was driven a distance of 720 ft. before breaking into the level on the Waiotahi-Cambria Reef. This old level was picked up, on the line of reef, and retimbered for approximately 480 ft. The country at the end of the ground proved to be faulted and the reef small and low in value. The drive was pushed on another 20 ft., and 60 ft. of crosscutting east and west was done, but nothing of value was located. A winze was sunk on the reef, under where the values occurred overhead, to a depth of 23 ft., but it proved to be unpayable. The only encouraging result located during the operations was the cutting of two reefs, both 3 in. in width, in the main crosscut, and they assayed respectively £21 and £24 to the ton.

WEST COAST INSPECTION DISTRICT (G. W. Lowes and A. W. Turner, Inspectors of Mines).

Quartz-mining.

Marlborough County.

Lode mining in this district is now almost extinct; the Golden Bar treatment plant has been dismantled and the licenses have been surrendered. Intermittent attention has been given to some quartz lodes in the district by prospecting, and, while nothing of a distinctly payable nature has been located, some of the occurrences are border-line propositions and worthy of further investigation.

Buller County.

Mokihinui District.—Lady Agnes Workings: A total of 360 ft. was driven on the new low level, 116 ft. of the length being in reef up to 36 in. in width; consistently low values prevailed, and the mine was abandoned.

Swansea Lode: This lode is situated north of the Red Queen on the opposite side of the Mokihinui River, and was worked in the earlier period of the Buller County's mining history. The old level was cleaned out for sampling purposes, but the work was not completed owing to the necessity for concentration on the Red Queen lode, which had been located by crosscutting from the main level.

Red Queen Mine: A level midway between the old workings and low level was driven on an ore-channel believed to be the continuation at depth of the narrow lode worked from several higher levels. A crosscut put out to the east from 64 ft. located the true channel, which was driven on for 126 ft. on a lode which contained specimen quartz in several places and payable values for the greater part of its length. A low level 513 ft. in length driven many years ago was cleared out, and a crosscut in the same direction cut the lode at 35 ft. The leader was 7 in. wide and carrying visible gold, and when developed will undoubtedly open up to the usual width of 12 in. to 18 in. exposed in upper level. The development of the low level, if widths and values equal to those on the top level are realized, will give a substantial tonnage of payable rock. The unworked backs equal approximately 160 ft. on dip of ore-body.

Swastika Lode: From the upper level of the Red Queen Mine a crosscut was extended 132 ft. to the east, with the object of locating a larger low-grade ore-body exposed on the surface. The crosscut was evidently not far enough south to achieve its purpose, and the crosscut in the low level which intersected the Red Queen lode is being continued and a distance of 56 ft. driven in favourable country.

Lyell District.—Reid's Reef—No. 1 Level: Driving was continued to where the reef pinched out at 197 ft. An attempt to sink a winze was frustrated by drainage difficulties; consequently, another level was started to prove the possible downward continuation of the ore-body.

No. 2 Level: A distance of 265 ft. was driven without locating the lode, which had been subject to strong faulting between the levels. A crosscut was put out at 174 ft. from portal and at a distance of 35 ft. entered into what was considered to be the ore-channel before development of this section ceased.

Alpine Mine.—No. 7 Level: The main crosscut and level, 2,614 ft. in length, were cleared out and retimbered where necessary. Ventilation of the mine was provided for by installing a fan, Pelton wheel, and the necessary conduits for conveyance of air to the workings.

A race 40 chains in length was constructed to convey water to the power-plant and deliver it under approximately a 300 ft. head through a pipe-line to the Pelton wheel.

The Nos. 2 and 3 West crosscuts (125 ft. and 217 ft. in length respectively) driven by the now defunct Alpine Mining Co. in their efforts to locate the north block, which when producing at its peak was the mainstay of the district, were cleaned out for the purpose of ascertaining the structure of the country, dip, and direction of the major fault.

A drive, 150 ft. in length, was extended on a fault-line from No. 3 crosscut, but was abandoned when the survey of Nos. 1 and 2 levels of Reid's reef was completed and the relative positions of these levels and the Alpine workings ascertained.

The work now in hand is the extension of No. 3 crosscut westward to cut the downward continuation of the ore-channel developed on No. 1 level, Reid's reef. A considerable amount of geological investigation was carried out on the surface and in the accessible workings of the Lyell district. The unexplored country, with 1,500 ft. of backs between Reid's No. 1 level and Alpine No. 7, offers scope for legitimate prospecting and possible reward if the formerly highly profitable north Alpine block can be again discovered and developed. All the lode prospecting and development carried out in the Buller County was under the direction of the Labour Department's mining staff, and the necessary finance was provided from the Employment Promotion Fund.

The average number of men employed on lode-development work was twenty.

Inangahua County.

Blackwater Mine (T. R. Hogg, Manager).—This mine employed an average of two hundred and thirty men. Development completed during the year totalled 1,561 ft. of driving, 188 ft. of rising, 592 ft. of winzing, and 144 ft. of crosscutting. The details concerning the development on main levels are given below:—

No. 11 Level Drive North: This drive was continued along the Prohibition fault, and after advancing for 37 ft. a reef was encountered showing good values. The reef was driven on, and by the end of the year 43 ft. of reef was exposed averaging 11·29 dwt. over a width of 22 in.

No. 12 Level Drive North from Crosscut West at 105 ft. N.: This drive was advanced 141 ft., of which 103 ft. were on reef averaging 19·75 dwt. over width of 22 in.

No. 12 Level Drive South from Crosscut West at 105 ft. N.: This drive was advanced 91 ft., of which 40 ft. exposed reef averaging 21·81 dwt. over width of 18 in.

No. 13 Level Drive South: An advance of 360 ft. was made in this drive, of which 259 ft. exposed reef averaging 18·85 dwt. over a width of 31 in.

No. 13 Level Drive South, Backshunt Drive: This drive was advanced 52 ft., all of which exposed reef averaging 14·68 dwt. over a width of 22 in.

No. 14 Level Drive North: This drive was started during the year and an advance of 430 ft. was made, 388 ft. being on reef averaging 12·54 dwt. over a width of 24 in.

No. 14 Level Drive South: This drive was started during the year and an advance of 391 ft. was made, 211 ft. exposed reef averaging 17·38 dwt. over a width of 21 in.

During the early part of the year the No. 14 level station crosscut intersected the reef at a distance of 54 ft. from the shaft, and the driving of No. 14 drives north and south was commenced.

The reef continues to show up well in the bottom levels, indicating continuity in depth.

Ore-reserves at the end of the year stood at 91,647 tons, this figure being 6,770 tons in excess of the previous year's total. 43,506 tons of ore were treated for a return of 16,079 oz. 16 dwt. by amalgamation, 2,697 oz. 10 dwt. by cyanidation, and 688 oz. 2 dwt. recovered from roasted concentrates, making a total of 19,465 oz. 8 dwt.

The total value of gold won from all sources amounted to £161,147 5s. 11d., making a gross total of £2,837,144 3s. 2d. by the sale of 576,562 oz. 7 dwt. of gold won since the mine commenced operations in 1908. Dividends paid during the year amounted to £18,749 8s., making a total of £381,236 18s. distributed to shareholders since the inception of the company. The foregoing dividend figures are given in English currency.

New Treatment Plant: The construction of the new treatment plant was completed during the year, and the crushing and flotation sections were put into operation during the month of July. The full cycle of treatment was commenced during the month of November, and has given entire satisfaction to date.

New Assay Office: A new and well-equipped assay office was erected adjacent to the site of the new mill.

Old Mill: Crushing and treatment in the old battery was suspended at the end of July, and from that time until the end of the year the work of cleaning up in and around the plant was carried out.

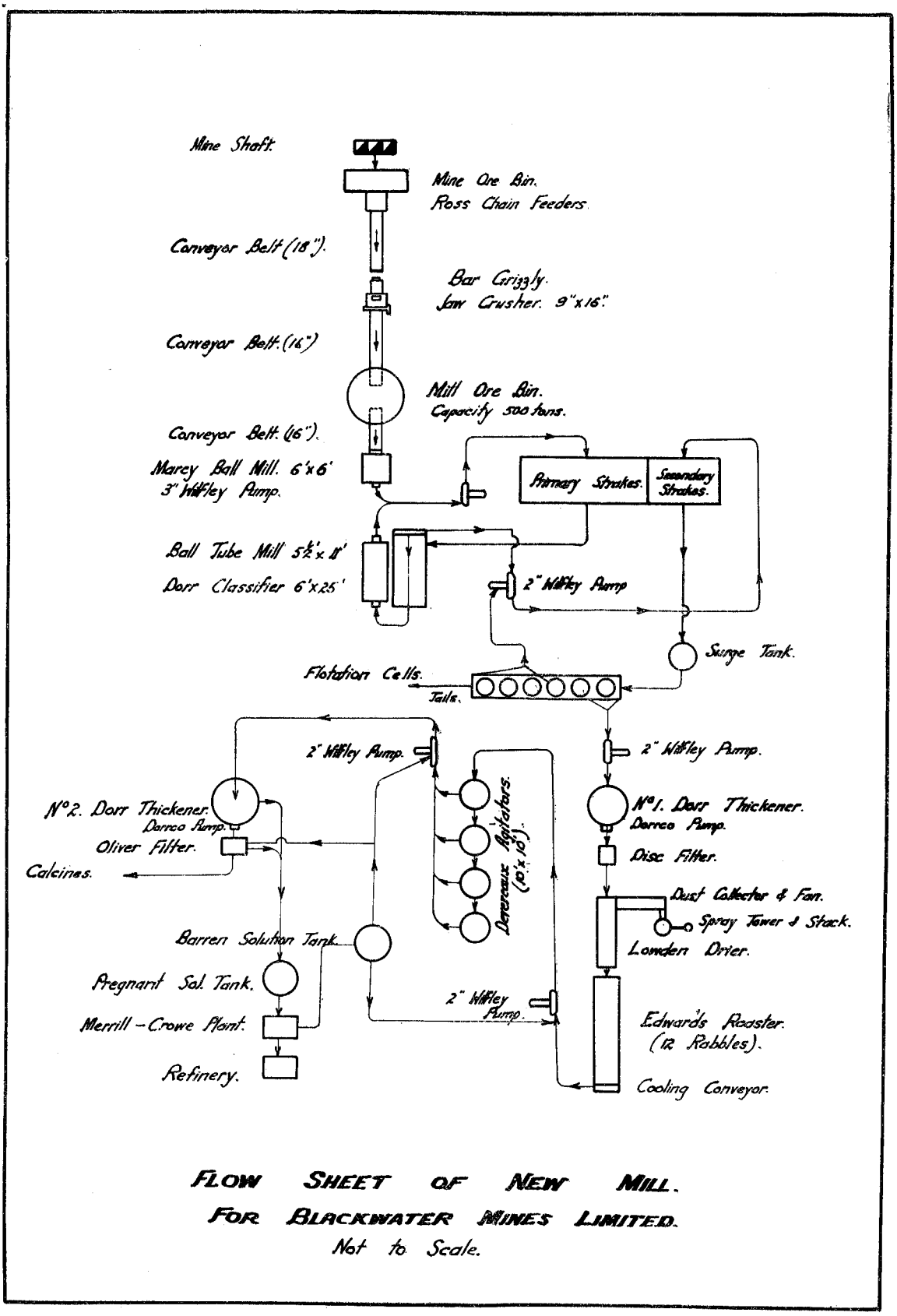
Electrical: A new substation was erected to distribute power to the new treatment plant, which is run entirely by electricity, and alterations and additions were made to the original substation.

Hydro-electric Plant: During the year work was commenced at the old battery-site on the erection of a new hydro-electric plant incorporating two modern Pelton wheels, to utilize the water from the water-races used to drive the old mill, and to convert same into electrical energy.

Notes on Metallurgical Treatment at Blackwater Mine by Courtesy of the General Manager (to be read in conjunction with the flow-sheet on page 34): The ore from the mine-bin is fed, by means of a Ross feeder, on to an 18-in. conveyer-belt leading to the primary jaw-crusher, where it is crushed to approximately 2 in. A second conveyer-belt, 16 in. in width, then conveys the broken ore to the mill ore-bin, this latter being a circular wooden bin with a capacity of approximately 500 tons. From the main-mill bin the ore is fed by means of a Challenge ore feeder on to a third conveyer-belt, which latter passes the ore direct to a 6 ft. by 6 ft. Marcy ball mill—passing through an automatic weighing-machine *en route*—which grinds the ore to ¼ in. mesh. At the feed end of the Marcy ball mill, cresyllic acid, pine oil, and a xanthate, chemicals essential for the flotation process, are added, and these become well mixed with the ore on its passage through the ball mill. The discharge from the Marcy mill is then pumped over a series of strakes, which collect the heavy concentrates and coarse gold. These concentrates are treated in an amalgam barrel for the recovery of the coarse gold. The overflow from the strakes then passes to a rake classifier, where the product is split up, the underflow being led to a 11 ft. by 5 ft. ball mill, and the overflow goes to a second series of strakes (blanket strakes as before), the concentrates obtained from the latter being treated in the same manner as that recovered on the first set of strakes. The discharge from the 11 ft. by 5 ft. ball mill, which has now been ground to 60 mesh, then joins the discharge of the 6 ft. by 6 ft. Marcy ball mill, and is returned over the first series of strakes for further removal of concentrates. The overflow from the second series of strakes is led to a surge tank and on through a series of six Fagergren flotation cells. The first two cells recover a clean concentrate, which is led to the No. 1 Dorr thickener for further treatment in the cyanide department, and, the concentrate obtained from the remaining four cells, joins up with the overflow from the rake classifier and is returned to the second series of strakes in a closed circuit back to the feed end of the flotation cells. The tails from the flotation cells are sent to waste.

Cyanide Department: The concentrates obtained from the flotation cells, having been collected in the No. 1 Dorr thickener, are now thickened up, the overflow being returned to the last two flotation cells and the thickened concentrates, or underflow, is passed through a disk filter. After passing through the disk filter the concentrates are dragged slowly over a Lowden drier to remove moisture, and are then elevated to a steel storage tank, from whence they are conveyed to an Edwards roasting furnace by means of a screw conveyer. Having passed through the roaster, the concentrates or calcines are then passed through a cooling-conveyer and on to a Devereaux agitator—of which there are four—where they are agitated with cyanide. When sufficient

time has elapsed for the cyanide to do its work the contents of the agitator are pumped to the No. 2 Dorr thickener—similar to the No. 1 Dorr thickener—and the thickened pulp is then passed through an Oliver filter, where the gold solution is extracted and sent to the Merrill-Crowe plant, where the gold is precipitated by means of zinc-dust. The zinc-gold precipitate obtained in the Merrill-Crowe plant is caught in a bag-filter, and to obtain the gold the bags, with contents, are dried off in a furnace and then fluxed and melted in a



FLOW SHEET OF NEW MILL.
FOR BLACKWATER MINES LIMITED.
Not to Scale.

tilting oil-furnace. With regard to the roaster, it is interesting to note that the flue-gases are led through a dust-collector, thence to a circular steel condensing-tower before passing out through the stack, and the dust collected in the dust-collector is returned to the No. 1 Dorr thickener for further treatment. Work is now being done to convey the fumes from the roaster stack to a point far removed from the mill-site, in order to eliminate all trace of arsenic and sulphur from the vicinity of the works.

Alexander Mine (W. J Hall, Manager).—During the year under review, No. 6 level crosscut was completed; a distance of 1,600 ft. was driven before the lode channel was intersected, and after driving 30 ft. a rise was started at a point vertically under the No. 5 winze. When this was connected, the main drive was extended north for 100 ft. without locating ore. At 97 ft. north of the main crosscut a crosscut was put out for 23 ft., but driving of the main level was resumed when the crosscutting disclosed no lode. A flat-lying ore-body was encountered in the drive face, and No. 1 crosscut was then extended 20 ft., making a total of 43 ft. east of the drive. The No. 6 level rise was put through, and at 74 ft. holed to the winze from No. 5 level, and by this means ventilation and ore-transport were improved. Previously No. 5 winze had to be discontinued until a sinking-pump was procured, and when drainage difficulties were overcome sinking was resumed down to 77 ft. No. 6 intermediate level was commenced at 77 ft. below No. 5 level and driving proceeded north on the ore-body prior to commencing stoping operations. During the year the stopes above No. 5 level supplied most of the ore milled, and at the end of the period these were approaching exhaustion. Production from the new intermediate level will commence shortly, and No. 6 level should be developed early in the year to a stage that will substantially increase the mine's ore reserves. The battery crushed 2,163 tons, and by amalgamation 1,156 oz. 11 dwt. of gold were recovered, valued at £9,941 10s. 10d. From the cyanide plant 300 oz. 3 dwt., valued at £2,316 13s. 2d. were obtained, and concentrates yielded 208 oz. 16 dwt., valued at £1,335 4s. 9d., making a total yield and from all sources of 1,665 oz. 10 dwt., valued at £13,593 8s. 9d. The total gold produced since the commencement of operations is 33,948 oz. 15 dwt., valued at £213,861 7s. 3d., and dividends aggregating £48,750 have been paid.

Big River Mine (T. Thomson, Manager).—This company employed an average of twenty-four men for the year on mining and treatment operations, and carried out the following development and stoping operations: The main shaft was retimbered from No. 5 to No. 6 level, a distance of 147 ft., and the chamber at the lower level was restored to working-condition. No. 6 level: Ventilation appliances were installed and the original crosscut 240 ft. in length was cleared out to a point where it intersected the old level driven on the ore-channel. Part of this level was utilized, and when solid ground was reached the level was extended south to a point under the winze being sunk from No. 5 on an ore-body stoped out to No. 4 level. No. 5 level: Prospecting-drives were put out on this level at both north and south ends for short distances. A winze 65 ft. deep was sunk from this level on the south block, and for ventilation and development purposes will eventually be connected with the lower level by rising. Stoping: Operations were chiefly confined to the centre and north stopes above No. 5 level, the former being exhausted by the end of the period; 2,289 tons of ore were mined and treated, from which were recovered 1,440 oz. 15 dwt. of gold by amalgamation, valued at £12,026 5s. 5d. and cyanidation of sands yielded 119 oz., valued at £994 1s.—a total of 1,559 oz. 15 dwt., which realized £13,020 6s. 5d. The total amount of gold produced since operations commenced amounts to 7,961 oz. 11 dwt., valued at £62,895 8s. Dividends amounting to £5,000 were paid during the year and were the first distribution of profits since the reconstruction of the company.

New Welcome Gold-mining Co. (A. Honey, Manager).—On the completion of a 5 ft. track from the Boatman's Road, this company commenced the driving of a 1,200 ft. tunnel for the purpose of exploiting the Welcome west reefs. Hand-drills were used by a party of six men who entered into a contract with the company near the end of the year. Buildings are being erected and an air-compressor and Diesel engine installed to operate an axial water-feed drifter. When the plant is completed the substitution of power for hand-drilling will facilitate the construction of a new low level adit and the working of a lode that has remained intact for nearly thirty years.

Homer Mine: Goldwater Mines N.L. (F. R. Marshall, Manager).—Development on this mine for the year consisted of driving No. 3 level a distance of 266 ft. south in the ore-channel. The face is now 340 ft. south of the crosscut which intersected the lode on this level, which is the lowest of a series of three driven to reach the ore-body. The lode developed was narrow and broken, the clean ore contained fair values, but these were reduced below paying-point by dilution with barren reef track and soft-wall rock. A small amount of stoping was carried out in Nos. 1 and 3 levels, but the ore produced yielded insufficient gold to cover working and treatment costs. A considerable amount of new and second-hand plant was installed during the year for both mining and milling purposes. Operations proved definitely unprofitable, and, the company's working capital being exhausted, the mine ceased operations at the end of the year. The average number of men employed was eighteen. During the year the company crushed 210 tons of ore, which yielded 40 oz. 4 dwt. 15 gr. of gold valued at £248 9s. 8d. From the commencement of the former owners' crushing operations in 1931 until the Goldwater Co. acquired the mine, 524 tons of ore were treated, yielding 162 oz. 3 dwt. 9 gr., valued at £791 3s. 6d. With the company's returns from last year, therefore, the total produced from this mine has been 734 tons, which yielded 202 oz. 8 dwt. of gold, valued at £1,039 13s. 2d.

Lankey's Creek.—Watts and party of three men consistently worked this cemented quartz-gravel deposit for payable returns, and carried out a considerable amount of development work with the dual object of increasing their payable ore reserves and reducing the length and grade of the trucking road to the battery. They now have an adequate mining and milling plant and their claim developed to a stage where it ensures the party a substantial return for their work. 478 tons of cemented gravel were crushed for a return of 111 oz. 7 dwt., which realized £851 10s.

Murray Creek Mine.—Operations in this mine were confined to keeping the shaft and workings drained, repairs to battery level, and installation of steam-driven air-compressor. An average of three men was employed during the year. Preparations to sink the main shaft and crosscut to the Victoria block are being made, the Mines Department having granted a substantial subsidy under certain conditions for the vigorous prosecution of the main development items.

State-controlled Prospecting Operations—Globe-Progress Area: On the Oriental No. 1 tunnel 12 ft. of driving was done in the first month of the year prior to lifting the rails and abandoning the level after an exhaustive test of the lode, which proved to be unpayable except for a lense near the mouth of the drive. This lense was worked out in the lower levels of the Globe Mine; consequently, only a small tonnage of ore could have been developed by sinking on the block. Oriental No. 2 Level was extended 250 ft. on the wide lode before operations ceased. Results of the prospecting and careful sampling did not justify any further expenditure on the lode.

General Gordon: The total amount of underground development carried out in the section of the Globe lode consisted of 655 ft. of driving, 211 ft. of crosscutting, both east and west, and 64 ft. of winzing. On the surface a considerable amount of trenching and sampling was carried out; plans and assay records covering all the work completed were compiled before work on this area ceased at the end of the year. Cessation of operations was influenced by the results obtained. A large amount of low-grade ore was disclosed, but the general average was under £1 per ton at £7 per ounce.

Murray Creek Area—Irvin's Reef: An outcrop situated on the side of the road and directly opposite the Energetic shaft and on the north side of the road was driven as far as 46 ft., a small broken lode being disclosed before operations ceased in order to concentrate on more important work. The former is worthy of further attention, as it is undoubtedly an extension of one of the lodes worked from the Ajax side of Murray Creek.

Perseverance No. 1 Level: The drive and crosscut on this level were cleared and retimbered where necessary for a distance of 160 ft. prior to sampling the lode driven in 1912 and 1913 by the Consolidated Goldfields Co. Preparations are in hand to sink a winze that will eventually connect Nos. 1 and 2 levels.

Perseverance No. 2 Level: From the 635 ft. mark in Perseverance-Golden Treasure crosscut the lode-channel was driven on for 245 ft. north. Owing to the northerly pitch of the ore-body developed in the upper level, the extension of the low level will be necessary to exploit the ore-bodies overhead.

Golden Treasure Mine: The crosscut was extended 957 ft. for the period, and the face is now 1,592 ft. from the portal, leaving approximately 200 ft. of driving to reach the Treasure shaft, which is 308 ft. deep and contains water to within 20 ft. of the collar-set. The State prospecting scheme gave continuous employment to an average of twenty men, most of the underground work being carried out on contract at the usual rates prevailing in the district.

Diamond Drilling—The Consolidated Goldfields Co. on the Globe-Progress area completed No. 1 bore-hole, which could not be extended beyond a depth of 1,165 ft. owing to the loss of circulating water through fissured strata encountered at the depth reached. No. 2 hole was started early in the year, and at the end of the period had reached a depth of 1,278 ft. The drilling was carried on through difficult country and casing had to be used of sizes varying from 3 in. for 202 ft., decreasing to "E" casing of 1½ in. diameter. The Goldwater Mines Co. at the Homer Mine put in No. 1 hole at an angle of +5 degrees from the No. 2 level to prospect for a parallel ore-body. They reached a length of 86 ft. 8 in. through greywacke without locating ore. No. 2 hole was bored from No. 3 intermediate level at an angle of —75 degrees from horizontal for the purpose of proving the lode below this level. It reached a depth of 90 ft. and penetrated 12 in. of quartz at 72 ft. Both holes were 1½ in. in diameter, and the plant was driven by compressed air.

Grey County.

In this county lode-mining was restricted to prospecting operations at the Upper Moonlight Creek and Langdon's Creek in the Paparoa Ranges, and some surface prospecting at the Waikiti and Trent Rivers, Upper Ahaura district. The foregoing prospecting operations were all carried out under the gold-prospecting scheme of the Employment Division, Department of Labour. Reefs were investigated systematically in these localities, but the results in every case proved the lodes either too low in grade and/or lacking in continuity, and of insufficient bulk to be of economic value. Prospecting work was discontinued at Langdon's Creek in July, 1938, and at the Upper Ahaura in March, 1938; work at the Upper Moonlight will probably be completed early in 1939.

Westland County.

During 1938 there was no production of gold from lode-mining. Some lode-prospecting was carried out near the Seven-mile, Taipo Valley, and in the Totara Valley near Ross, the results in both cases being inconclusive.

Greenland Gold, Ltd., Mount Greenland.—This company took over the property formerly held by Bierworth's Gold Reefs, Ltd., and at the end of the year, after repairing the pack track, it was engaged in the erection of an improved battery and cyanide plant at the former mill-site below No. 2 adit level. No work was done at the mine during the year. Six men were engaged during the latter half of the year.

Dredge Mining.

Mataki Dredge, Murchison County (T. B. Gillooly, jun., Dredgemaster).—This steam-powered dredge, with 7-cubic-feet buckets, was operated throughout the year in the Mataki River, the average depth being 17 ft. The average number of men employed was fifteen; 423,121 cubic yards were dredged and treated for a return of 1,745 oz. 8 dwt. 7 gr. of alluvial gold valued at £13,191 7s. 7d., and £1,405 16s. 7d. was paid in dividends. Since the commencement of operations this dredge has won 8,942 oz. 8 dwt. 8 gr., valued at £65,547 8s. 10d., and dividends total £8,435 10s. 5d. Towards the end of the year a series of heavy floods interfered with dredging. The dredge is now operating in the No. 3 area, and the time is approaching when river work will be finished and the dredge can operate in its own pond.

Mataki Junction Dredge, Murchison County (F. McFelin, Dredgemaster).—During the year this Diesel electric dredge, with 6-cubic-feet buckets, treated 953,000 cubic yards of gravel and recovered 2,756 oz. 4 dwt. of alluvial gold bullion valued at £23,137 10s. 3d; and £2,500 was distributed in dividends. Since the inception of operations 8,368 oz. 3 dwt. 8 gr. of alluvial gold have been won, valued at £66,431 2s. 2d.; and £5,000 has been paid in dividends. During the year the average number of men employed was sixteen; the average depth dredged was 19 ft.

Worksop Dredge, Inangahua County (N. Curnow, Dredgemaster).—During the year the dredge treated 457,300 cubic yards of gravel, which yielded 1,732 oz. 15 dwt. of alluvial gold valued at £13,079 3s. 5d., the sum of £4,800 being paid in dividends. The average number of men employed was twelve. Since the commencement of operations 8,209 oz. 18 dwt. 17 gr. of alluvial gold have been recovered, valued at £64,055 1s., and the sum of £20,800 has been paid in dividends. The average depth of the ground was 12 ft. The dredge is driven by Diesel engine and is equipped with 4-cubic-feet buckets.

Mossy Creek Dredge, Inangahua County (A. Keith, Dredgemaster).—During the year this electrically driven 4-cubic-feet-bucket dredge treated 397,000 cubic yards and recovered 1,300 oz. 4 dwt. 8 gr. of alluvial gold, valued at £10,724 3s. 7d.; the sum of £1,250 was paid in dividends. Since the commencement of operations 6,852 oz. 12 dwt. 6 gr. of alluvial gold have been won, valued at £56,304 9s. 5d.; and £15,000 has been paid in dividends, this latter amount being equal to the original capital of the company. The average number of men employed throughout the year was eleven; the average depth of ground was 12 ft. During the year the company prospected 100 acres at the top end of the area above their special dredging claim; the shafts were stated to have disclosed an average depth of 12 ft., with satisfactory results.

Grey River Dredge, Inangahua County (A. Samson, Dredgemaster).—During the first eleven months of the year the dredge was under construction; the pontoon was launched on 23rd April, and actual dredging operations commenced on 3rd December. From that date until the 31st idem, the dredge operated 396¼ hours, representing 71 per cent. of the possible digging-time, and worked a superficial area of 4,954 acres to an average depth of 27·4 ft., from which a total of 218,499 cubic yards of gravel was excavated. This yardage is equivalent to 551 cubic yards per digging-hour, but this yardage will be increased considerably when operations have reached a normal working basis. (Early in 1939 averages as high as 720 cubic yards per hour were attained during weekly runs.) During the period 438 oz. of bullion were obtained, the estimated value of which was £3,626 12s. 10d. The average number of men employed in dredging operations during the year was twenty-four. The dredge is of all-steel construction with 16-cubic-feet buckets, and electrically driven, power being obtained from the Greymouth reticulation, which is to be linked with the Coleridge generating-station early in 1939. The pontoon dimensions are—length 147½ ft., width 65 ft., depth 11 ft., and there are thirty-one watertight compartments; total weight of hull, 550 tons. The digging-ladder is 108 ft. 7¾ in. between centres and weighs 95 tons; the maximum digging depth is 40 ft. below water-level. The buckets are 16-cubic-feet capacity, and there are seventy-seven in the line, each weighing 1·7 tons with lip; the rate of discharge is twenty-eight per minute. The bucket-pins are 7 in. diameter and 38 in. pitch. The screen is 8 ft. 3 in. inside diameter, 47 ft. 7½ in. length overall, slope 1¾ in. to the foot, and revolutions 7½ per minute. The size of the holes are constant throughout, ½ in. to ⅝ in., but the density of the spacing is variable. The stacker-ladder is 144 ft. between centres, the conveyer-belt being 48 in. in width. Two sand-elevator wheels, each 12 ft. 8 in. in diameter, are fitted to elevate, if necessary, excess sand from the tail chutes to the transverse conveyers, which, in turn discharge on

to the stacker conveyer. The dredge is spud operated, one spud 38 tons in weight being located slightly off-centre, the stacker being located slightly off-centre in the opposite direction. Gold-recovery is effected by a large spread of tables fitted with Hungarian riffles, the effective width of the sluices being 28 in. and the grade 1⅜ in. to the foot. Motor horse-powers are: Bucket drive, 400; ladder hoist, 250; screen pump, 200; table pump, 100; hopper pump, 50; screen drive, 100; stacker-conveyer drive, 60; swing winch, 60. In addition to the above motors there are separate motors for the sand-elevator wheels and transverse conveyers, the stacker-hoist, auxiliary pump, and air-compressor. The total horse-power of all motors connected is 1,266. The total weight of the dredge is 1,800 tons. The dredge has worked constantly since the inception of operations, requiring merely adjustments of a minor nature during the running-in period.

Argo Dredge, Grey County (A. Fischer, Dredgemaster).—During the year this electrically-driven 4½-cubic-feet-bucket dredge gave employment to an average number of fourteen men, and treated 589,800 cubic yards of gravel, which yielded 3,501 oz. 18 dwt. of alluvial gold, valued at £27,884 3s. 7d.; the sum of £10,000 was paid in dividends. Since the commencement of operations 10,336 oz. 17 dwt. have been won, valued at £82,079 10s., and the sum of £31,200 has been paid in dividends. During the year a new digging-ladder was installed on the dredge, auxiliary pontoons were fitted, and the plant was overhauled generally. The average depth of the ground was 20 ft.

Blackball Creek Dredge, Grey County (R. J. Archer, Dredgemaster).—The erection of the dredge was completed on the 11th March, when dredging operations were commenced. From that date until the end of the year 380,000 cubic yards were dredged, the resulting yield being 1,426 oz. 18 dwt. 9 gr. of alluvial gold, valued at £12,483 14s. 7d. The average number of men employed during the year was twelve; the average depth of ground was 33·6 ft. The dredge is electrically driven and is fitted with 5-cubic-feet buckets.

Maori Gully Dredge, Grey County (D. Caithness, Dredgemaster).—The dredge ceased operations on the 30th August, 1938, the claims on the Stillwater and Waimea Creeks having been worked out. The dredge was worked as far as was practicable in the shallow ground up the latter creek before operations were suspended. From the beginning of the year until the cessation of dredging 289,200 cubic yards were treated for a yield of 1,330 oz. 6 dwt. of alluvial gold, valued at £9,888 0s. 2d.; the total production figures from the inception until the cessation of dredging operations were 6,156 oz. 15 dwt 7 gr. of alluvial gold, valued at £45,520 5s. 5d. Dividends over the latter period totalled £6,000. The dredge was electrically operated, with 4-cubic-feet buckets, and an average of ten men was employed. During the year the company investigated several auriferous areas in various parts of the West Coast district with a view to resuming dredging operations.

New River Dredge, Grey County (J. D. Anderson, Dredgemaster).—During the year this Diesel-powered 4-cubic-feet-bucket dredge treated 403,600 cubic yards, which yielded 1,696 oz. 11 dwt. of alluvial gold, valued at £12,946 0s. 9d. Since the commencement of operations 3,635 oz. 2 dwt. of gold, valued at £26,862 12s., have been won. The company paid its initial dividends during the year, £1,409 7s. 1d. being distributed in this manner. The average number of men employed throughout the year was ten. The average depth of ground was 16 ft. During the year the dredge continued up New River and its tributary, Maori Creek, as far as the Dunganville – Maori Gully Track.

Nemona Dredge, Grey County (A. Holden, Dredgemaster).—During the year the dredge operated in Cockeye Creek, a tributary of New River, near Marsden, the average number of men employed being twelve, and the average depth 20 ft. (approximately); 606,700 cubic yards were treated for a yield of 2,378 oz. 19 dwt. of alluvial gold, valued at £20,767 3s., and the sum of £9,000 was paid in dividends. Since the inception of operations the total gold won has been 6,056 oz. 13 dwt. 3 gr., valued at £48,961 6s. 4d., and dividends total £21,000. The dredge is electrically operated and is fitted with 4½-cubic-feet buckets.

Bundi Dredge, Grey County (F. E. Fanning, Dredgemaster).—The dredge operated intermittently throughout the year at Chinaman's Terrace, in the New River Valley about two miles from Camerons. Dredging was carried on until the end of January, 1938, when operations were suspended while further prospecting was carried out; dredging operations were resumed in September. During the year 204,940 cubic yards were treated for the return of 956 oz. 13 dwt. 3 gr. of alluvial gold, valued at £7,309 2s. 8d. Since the commencement of operations the total gold-production has been 7,034 oz. 14 dwt. 5 gr., valued at £52,252 5s. 3d. The average number of men employed throughout the year was sixteen; the average depth of ground was 24·5 ft. The dredge is steam-driven and fitted with 10-cubic-feet buckets.

White's Electric Dredge, Grey County (H. J. Werner, Dredgemaster).—This electrically-driven dredge, fitted with 4-cubic-feet buckets, worked near Barrytown, an average of seventeen men being employed throughout the year; 320,355 cubic yards were treated for a yield of 1,539 oz. 19 dwt. of alluvial gold, valued at £11,634 9s. 9d. Since the commencement of operations the total gold-production has been 2,489 oz. 6 dwt., valued at £18,522 6s. 7d. The average depth of ground was 16 ft. Additions to the gold-saving tables were carried out during the year.

Barrytown Dredge, Grey County (T. B. Gillooly, sen., Dredgemaster).—During the year this dredge treated 2,280,000 cubic yards, which yielded 6,801 oz. 5 dwt. 18 gr. of bullion, valued at £52,299 11s. 11d. Since the commencement of operations the total production has been 9,786 oz. 2 dwt. 3 gr. of bullion, valued at £74,268 18s. 11d. The average number of men employed throughout the year was thirty-nine. The dredge, which is electrically driven, with 12-cubic-feet buckets, worked northwards on the Barrytown Flats, the average depth of ground dredged being 30 ft. Gold-saving is effected by eighteen Bendelari jigs and plush-lined tables, the concentrates being treated in amalgamation barrels. For testing purposes under operating conditions a pilot flotation plant is now being installed.

Stafford Dredge, Westland County (D. McRae, Dredgemaster).—This electrically-driven 8-cubic-feet-bucket dredge had the misfortune to be badly holed by a submerged log early in March, 1938, and, partially turning over, sank in the pond, becoming almost a total loss. From the beginning of the year until the cessation of operations 43,120 cubic yards were treated for a return of 176 oz. 18 dwt. of alluvial gold, valued at £1,430 10s. 10d. The total production from the inception of operations was 6,384 oz. 9 dwt. 2 gr., valued at £51,605 19s., and one dividend of £3,750 was paid. Eleven men were employed from the beginning of the year until the cessation of operations. The company is now going into liquidation.

Rimu Dredge, Westland County (F. B. Lewis, Dredgemaster).—During the year this electrically-operated 12-cubic-feet-bucket dredge treated 2,559,178 cubic yards, which yielded 12,148 oz. of gold bullion having an estimated value of £104,911; the sum of £37,501 4s. was paid in dividends. Since the commencement of dredging operations the Rimu Gold-dredging Co. has produced 213,511 oz. of gold bullion valued at £1,241,544, and has paid £157,051 4s. in dividends. The average number of men employed throughout the year was forty-two. The dredge excavated a superficial area of 30·141 acres to an average depth of 53 ft.; total operating time was 6,386 hours 26 minutes, representing 87 per cent. of the possible time, the average throughput being 401 cubic yards per digging-hour. The gravel treated throughout the year had an average value of 9·84d. per cubic yard, with gold at the present market price, or 4·38d. with gold at £4 per ounce. Coarser and more tightly compacted gravels were encountered, otherwise the year's operations were uneventful. The dredge is working towards the Rimu Township end of the Flat.

Kanieri Dredge, Westland County (D. Pettigrew, Dredgemaster).—The erection of the dredge was completed during the year, and dredging operations were commenced on 9th December, 1938. During trial runs to the 31st December the dredge treated 152,000 cubic yards, which yielded 373 oz. 15 dwt. 10 gr. of bullion, valued at £2,905 2s. 1d. The average number of men employed by the company (Kanieri Gold-dredging, Ltd.) on dredging operations during December was thirty-two. The average depth of ground was 28·5 ft. The dredge is of all-steel construction, with 18-cubic-feet buckets. It is electrically driven, power being obtained from the Greymouth reticulation, which is

expected to be linked with the Coleridge hydro-electric station early in 1939. The pontoon dimensions are—length 186 ft. 8 in., beam 72 ft., depth 12 ft. at bow stepped to 11 ft. midships and continuing that dimension to the stern. There are twenty watertight compartments, and total weight of the hull is 650 tons. The digging-ladder is 161 ft. between centres and weighs 168 tons. The dredge is designed to dig 85 ft. below water-level and carry a 30 ft. face above water-level. The buckets are 18 cubic-feet capacity, and there are 107 in the line, the rate of discharge being twenty-one per minute. The bucket-pins are 8 in. in diameter. The screen is 9 ft. in diameter, 54 ft. 10¼ in. overall. It is set on a slope of 1¾ in. to the foot, and revolves at 5·86 revolutions per minute. The size of the holes are ⅜ in. to 7/16 in., ⅝ in. to ¾ in., and 1 in. to 1⅛ in. The stacker-ladder is 223 ft. 1¼ in. between centres, the conveyor belt being 44 in. in width. The dredge is spud-operated, two spuds being fitted each 75 ft. in length and weighing 57 tons. Gold-recovery is effected by both short riffles and jigs, the latter being of the Bendelari type constructed in two banks, one on each side of the dredge. There are twelve primary jig units altogether, each with four cells and two secondary jig units, the concentrates from which may be treated in two amalgamation barrels or tables in the usual manner as necessity demands. The horse-power of the principal units are—bucket drive, two individual motors of 250 horse-power each, one on each side of the upper tumbler gearing driving through Pulvis shot-clutch and Brown reduction gearing; ladder-hoist 250 horse-power, screen drive 100 horse-power; swing winch 80 horse-power; stacker conveyor-belt drive 75 horse-power; jig-drive—two motors 40 horse-power each, high-pressure pump 170 horse-power; low-pressure pump 100 horse-power; hopper pump 60 horse-power. In addition to the above motors there are separate motors for the gangway hoist, stacker hoist, amalgamation barrels, and service pumps. The total horse-power of all motors connected is 1,487. The total weight of the dredge is 2,970 tons.

Okarito Five-mile Beach Dredge, Westland County (W. Cummings, Dredgemaster).—During the year the dredge employed an average of eleven men and treated 269,766 cubic yards for a return of 1,280 oz. of alluvial gold, valued at £9,632; the sum of £4,666 13s. 4d. was paid in dividends. Since the year 1931 the gold produced from this claim totals 15,056 oz. 9 dwt., valued at £99,494 6s. 3d., from which £38,500 has been paid in dividends. The dredge is operated by water-power and is fitted with 5-cubic-feet buckets. The average depth of ground dredged during the year was 20 ft.

Gillespies' Beach Dredge, Westland County (G. Pettigrew, Dredgemaster).—This electrically driven 5-cubic-feet-bucket dredge employed an average of sixteen men throughout the year, and treated 583,508 cubic yards for a yield of 1,951 oz. 9 dwt. of alluvial gold, valued at £16,023 7s. 9d. The sum of £2,916 13s. 4d. was paid in dividends during the year. Since the commencement of operations the total gold-production has been 10,488 oz. 2 dwt. of alluvial gold, valued at £83,463 8s. 7d. and the sum of £21,000 2s. 3d. has been paid in dividends. The average depth of ground was 28 ft. The Gillespies' Beach – Cook River motor road was opened during the year.

Dredge-construction.

Arahura Dredge, Westland County (Arahura Gold Dredging Co., Ltd.).—The erection of this dredge proceeded steadily throughout the year and is scheduled to be completed in May or June, 1939. The plant is an 18-cubic-feet-bucket dredge, capable of digging 85 ft. below water-level in addition to carrying a face 30 ft. above water-level. The approximate weight of the completed dredge will be 3,000 tons, and the total connected horse-power will be approximately 1,500. The pontoon is 186 ft. 8 in. in length, 72 ft. beam, and 12 ft. deep in the bows, and 11 ft. in the stern. The dredge is a sister-ship to the Kanieri Dredge, and the general dimensions given under the report on the latter dredge in the Dredge-mining Section will apply to the Arahura Dredge.

Ngahere Dredge, Grey County (Ngahere Gold Dredging, Ltd.).—The erection of the dredge hull was commenced in October, 1938, and rapid progress had been made on this work by the end of the year. The hull is 172 ft. in length, 72 ft. wide, and 12 ft. in depth. The dredge is to have 18-cubic-feet buckets, and is designed to dig 75 ft. below water-level and carry a 25 ft. bank. During the first of the year the work of digging the dredge pit with a steam-shovel was carried to completion, and workshops, store shed, and an office were built on skids so that they could be moved in sections; the power-line linking up the construction site with the Grey reticulation was completed, and the clearing of the land ahead of the dredge was commenced. The construction of the water-supply system for the dredge pond, involving a 30 in. pipe-line across German Gully and a 3 ft. by 2 ft. fluming 6,000 ft. in length, was commenced in August, and was well advanced at the end of the year. It is anticipated that the erection of the dredge will be completed in November, 1939.

The Blackball Creek Dredge, Grey River Dredge, and Kanieri Dredge were all completed during the year It is estimated that the average number of men engaged in dredge-construction during the year was 210.

Alluvial Mining.

Marlborough County.

Waikakaho Deep Lead Gold-mining Co. (R. C. Ruffin, Manager).—The three compartment shaft commenced last year was bottomed at a depth of 100 ft., having been sunk through schist rock for the full distance. A chamber has been opened out at shaft-bottom, and preparations are in hand for the extension of a 300 ft. crosscut to cut the lead proved by boring. Four men were employed during the year in shaft-sinking, no gold being produced.

Mahakipawa.—Sparkes and party, comprising four men, are working the Cullen's Creek deep lead from their shaft sunk on the south side of the valley and adjoining the King Solomon Mine. Their return for the year was 74 oz. 5 dwt. 3 gr. which realized £567 8s. 7d.

In the Wakamarina and Deep Creek areas a considerable number of men were engaged in alluvial mining. Seventy-four men were employed in alluvial mining in this county and won 267 oz. 9 dwt. 23 gr., valued at £1,958 18s. 4d.

Collingwood County.

Diamond's Flat Gold-mining Co., Ltd. (W. G. Mouat, Manager).—This company merged its interests with those of Mouat and Son and commenced hydraulic elevating at the upstream end of the freehold area. Only a short period was worked after the installation of the plant, which worked effectively, and 10 oz. 13 dwt. 6 gr. of gold were recovered, which realized £70 7s. 9d. Three men were employed while mining operations were in progress.

The total number of men employed in alluvial mining in the county was thirty-four, and the amount of gold recovered 127 oz. 8 dwt. 9 gr., which realized £878 9s. 3d. The production of gold and the number of men employed decreased during the period, many of the subsidized miners being transferred to Onekaka when an investigation of the iron-ore deposits commenced.

Takaka County.

Glover's Flat Syndicate.—Manoy Bros. claim; two men and a working manager engaged in alluvial mining an old channel of the Anatoki River. The claim is drained by a tail-race cut fron the river to the paddock, and mechanical appliances are used to hoist the overburden and wash from the floor of the workings to the sluice-boxes.

A total of thirty-four subsidized and other alluvial miners in this county produced 61 oz. 6 dwt. 21 gr., worth £400 15s. 5d.

Waimea County.

In this county twenty-three men were engaged in alluvial mining and produced 64 oz. 4 dwt. 17 gr. of gold, valued at £497 18s. 2d. The gold was produced mainly from small claims on the Wangapoka and Baton Rivers.

Murchison County.

Glenroy Gold, Ltd.—Operations on this claim were chiefly confined to driving a tunnel tail-race through rock and rising through rock and gravels to the surface prior to resuming sluicing operations. The work was completed, pipe-lines relaid, and main water-race repaired just before the period under review ended. An average of two men was engaged, and gold produced for the year equalled 8 oz. 13 dwt. 12 gr., which realized £62 12s. 6d. Since the commencement of operations this claim has produced 471 oz. 0 dwt. 16 gr. of gold, valued at £3,600 7s. 5d.

Newton Flat Gold-mining Co. (H. Lowther, Manager).—An area of freehold ground at Newton Flat was acquired by a company who enlarged an old race, laid a pipe-line to the claim, and erected gold-mining tables on the banks of the Buller River. A tail-race through granite was constructed from the tables to a point where gravel-sluicing commenced on a face 18 ft. deep, and five men produced 8 oz. 0 dwt. 15 gr. of gold, valued at £49 16s. 4d.

The Maud and Maggie Creek areas continue to produce a substantial amount of gold, despite the decreasing number of miners employed.

On the conclusion of experimental operations with a drag-line plant, the property of Mr. E. W. Tait at Narrow Neck on the Buller River, the plant was removed to Maud Creek and set up with the object of proving its value as a mechanical mining unit under the conditions prevailing on the ground that had been left unworked by miners as unprofitable to mine by hand methods. By the end of a year a paddock had been cleared and stripped of overburden, and the plant was undergoing a test that would shortly demonstrate its possibilities of dealing with comparatively low-grade ground at a cost that would leave a margin over working-expenses.

During the year 160 men were employed in the county and won 1,417 oz. 4 dwt. 5 gr. of gold, valued at £10,326 13s. 7d. These figures exclude returns from dredges, but include the yield from all other alluvial mining operations.

Buller County.

Addison's Flat Gold-mining Co. (J. M. Powell, Manager).—This company employed a force of ten men at hydraulic sluicing and elevating operations on cemented wash. During the year the plant and tables were removed to another section of the old beach lead of a similar depth and character to that worked in previous years, and operations were resumed. Gold-production for the period amounted to 591 oz., valued at £4,563 14s. 9d. Since commencing operations the company has produced 3,314 oz. 7 dwt. 8 gr., valued at £25,104 16s. Dividends paid during the year amounted to £650, making total of £4,745 distributed since the commencement of operations. Ten acres of ground were treated for the year's yield, the average depth being 8 ft.

Totara Gold-mining Co., Ltd. (D. Hartill, Manager).—The company employed six men for a short period during the year and produced 31 oz. 11 dwt. 6 gr., valued at £201 4s. 2d.

Seventy-six men were engaged at alluvial mining in this county and produced 853 oz. 7 dwt. 19 gr., valued at £6,513 12s. 5d.; these figures include all alluvial gold won in the county during the year under review.

Inangahua County.

Waitahu Gold-mining Co. (P. P. Thomas, Manager).—This company during the year employed nine men and removed four paddocks of wash and overburden by ground sluicing and hydraulic elevating, and the following figures represent the amount of dirt treated and gold recovered: Percentage of wash stripped by ground sluicing, 65 per cent.; percentage of ground mined by elevating, 35 per cent.; total mined, 324,000 cubic yards; rate of treatment when stripping, 112 cubic yards per hour; rate of treatment when elevating, 33½ cubic yards per hour; average value surface to bottom, 4·37d. per cubic yard; working-costs, slightly under 3d. per cubic yard. The total amount of gold recovered was 558 oz. 1 dwt., which realized £4,273 16s. 2d., making the totals since production commenced 3,368 oz. 4 dwt. 2 gr., valued at £25,134 16s. Dividends paid during the year amounted to £1,333 6s. 8d.

Mount David Sluicing Co. (W. G. Baird, Manager).—This company employed four men for the period, during which they operated and won 25 oz. 5 dwt. of gold, valued at £180 18s. 6d. Repeated failures of the main race hindered mining operations and finally caused the cessation of work owing to lack of funds to carry out the necessary repairs.

During the year seventy-one men were employed in alluvial mining in the county, and the production was 967 oz. 3 dwt. 20 gr., valued at £7,244 4s. 10d. The figures include all gold won from alluvial workings, except dredges.

Grey County.

Golden Valley Sluicing Claim, Gow's Creek (T. Donnellan, Manager).—During the year this company treated 15,000 cubic yards of gravel and recovered 95 oz. 1 dwt. of alluvial gold, valued at £691 1s. 5d. The average number of men employed throughout the year was four. Since the commencement of operations the total production has been 111 oz. 3 dwt. of gold, valued at £803 3s. 2d.

Golden Sands Sluicing Claim, Barrytown (J. M. Dennehy, Manager).—Sluicing and elevating operations were carried out continuously from the beginning of the year until August, when faces workable from the former set-up of the suction elevator and gold-saving tables became exhausted. The elevator and a substantial washing-plant were then erected 36 chains north of the former set-up, the pipe-line was extended, and sluicing operations recommenced towards the end of the year. During the year 295 oz. 2 dwt. of gold was recovered, valued at £2,427 6s. 11d. The average number of men employed was ten. Since the commencement of operations the total production has been 3,859 oz. 6 dwt. 13 gr., valued at £30,618 9s., and the sum of £7,166 13s. 4d. has been paid in dividends.

Moonlight Goldfields Sluicing Claim, Healey's Gully (R. C. Bell, Manager).—Sluicing operations were carried out throughout the year on two faces, and a new tail-race, 1,600 ft. in length, was constructed; 241,200 cubic yards were treated for a yield of 1,191 oz. 11 dwt. of gold, valued at £10,485 8s. 4d., and the sum of £1,486 1s. was paid in dividends. Since the commencement of operations gold to the value of £25,116 15s. 11d. has been produced, and the sum of £2,476 15s. has been paid in dividends. The average number of men employed throughout the year was sixteen.

Welshman's Claim, Marsden (A. J. M. Millar, Manager).—Operations at this claim were suspended in February, 1938; the company (Addison's Exploration, Ltd.) is now in the process of liquidation. The production during the year was 189 oz. 11 dwt. of gold, valued at £1,163 19s. 6d. Since the commencement of operations in 1936 this claim produced a total of 1,884 oz. 16 dwt. of gold, valued at £12,164. The claim was worked by a Diesel-powered 1-cubic-yard shovel, the spoil being transported to the washing plant by a steam-locomotive and railway wagons. The average number of men employed was twenty-one.

Hohonu Sluicing Claim, Greenstone (J. S. Langford, Manager).—During the year this claim was operated by a private syndicate, who repaired portion of the water-conduit and carried out intermittent sluicing operations. The average number of men employed was five.

Kumara Goldfields Syndicate, Payne's Gully (A. E. Langham, Manager).—Sluicing operations were suspended at this claim in July, 1938. During the year 123 oz. 16 dwt. 6 gr. of gold were produced, valued at £938 3s. 3d.; five men were employed. The total production since the commencement of operations has been 414 oz. 1 dwt. 8 gr., valued at £3,304 0s. 11d.

The total number of men engaged in alluvial mining in the Grey County was two hundred and twenty-five, and the gold-production was 3,138 oz. 9 dwt. 8 gr., valued at £24,686 1s. 5d. These figures include the Golden Valley, Golden Sands, Moonlight Goldfields, Welshman's, Hohonu, and Kumara Goldfields claims and all the small alluvial claims, but not the dredges.

Westland County.

Lawson's Flat Sluicing Claim (N. Lowther, Manager).—During the first two months of the year this claim was worked intermittently on tribute, but operations were finally discontinued. Since the commencement of operations this claim has produced 2,831 oz. 16 dwt. 23 gr. of gold, valued at £16,481 8s. 8d. Seven men were employed during the first two months of the year.

McIntosh, Hyndman and Party (S. Hyndman, Manager).—An average of five men was employed in sluicing operations at this claim at Back Creek, near Rimu. A new face has been opened up on the south-eastern side of the old Jerk Claim.

The total number of men engaged in alluvial mining in the Westland County was 161, and the gold-production was 1,167 oz. 6 dwt. 1 gr., valued at £8,481 1s. 9d. These figures include the Lawson's Flat Claim and McIntosh, Hyndman, and Party's claim and all the small alluvial claims, but not the dredges.

MINERALS OTHER THAN GOLD.

Asbestos.—No asbestos was produced by the Hume Pipe Co. (Aust.), Ltd., from its mineral lease at Upper Takaka, and active prospecting operations were subordinated to the work of providing better access to the area. Five miles of road have now been completed, and this has alleviated the transport problem, caused formerly by many miles of circuitous pack track.

Iron-ore.—No iron-ore was produced during the year, but an intensive prospecting campaign was commenced at Onekaka by the State Iron and Steel Department, and was proceeding at the close of the year.

Mica.—A party commenced prospecting a pegmatitic formation containing mica in the Charleston district.

Petroleum.—No drilling was carried out during the year. The Kotuku field produced 1,269 gallons, valued at approximately £39 13s. 9d. from wells put down in former years.

Silver.—From the bullion recovered by four dredges in the West Coast district the total amount of silver returned was 533 oz., valued at £47.

Steatite.—A syndicate at Wainihinihi carried out prospecting operations on an occurrence of steatite in the Pounamu formation near the Taipo River; work was still proceeding at the end of the year. There was no production of this mineral during the year, but samples were obtainable for experimental purposes.

Tungsten.—The total weight of scheelite concentrates produced from the Wakamarina district was 1 ton 1 cwt. 3 qr., valued at £238 6s. 4d. The concentrates were obtained from the retreatment of tailings from the Golden Bar Mine. Two men were engaged on this work.

PROSPECTING.

During the past year the most important undertaking in this direction was the prospecting-work carried out on the Inangahua Goldfields under the joint control of the Mines and Labour Departments. The surface and underground search for ore-bodies in other areas of this district had been almost completed in the previous year, and all areas that did not measure up to the standard for profitable exploitation were abandoned. The prospecting of alluvial areas by dredging and other interests was actively continued throughout the year, a total of 621 holes being drilled on twenty-seven areas. Alluvial prospecting in 1938 and earlier years revealed further potential dredging properties at the current gold prices; three dredges commenced operations on new properties during the year. Two dredges were under construction at the end of the year, and the construction of at least two further dredges was scheduled to begin early in 1939.

FATAL ACCIDENTS.

There were two fatal accidents during the year; both fatalities were caused by falls of earthy material in small alluvial claims.

On the 21st March Alexander Frick (*alias* Brooker) was fatally crushed by a fall of clay while working in a tail-race at Cape Terrace, Kumara, during a period of exceptionally heavy rain.

On the 26th November Marshall John Forman was crushed by a fall of earth while working his alluvial claim at Mountain Camp, Wakamarina; he received injuries to the spinal column and dislocation of the neck, and died on the following day.

NON-FATAL ACCIDENTS.

There were six non-fatal accidents of a serious nature during the year.

On the 6th January, at the Mataki Dredge, Murchison, James Shields received injuries to the toes of his left foot when the screen-drive bearing fell during repair work. It was found necessary later to amputate one toe.

On the 11th January, at the Mataki Junction Dredge, Murchison, E. St. C. Swainston received severe scalp injuries when struck by the headline while replacing some timber dislodged from the top of the dam in front of the dredge.

On the 18th April, at the Worksop Dredge, Antonios, the engineer, Jack Muir, had his right wrist fractured when a back-fire occurred in the engine of the tractor used in connection with dredging operations.

On the 21st June, at the Grey River Dredge, Ikamatua, Alfred T. Olsen was struck by a windlass-handle and received a comminuted fracture of the left arm.

On the 14th September, while working in the new mill at the Blackwater Mine, Waiuta, Ernest Orr, carpenter, had the misfortune to fall from a stairway he was building and sustained three fractured ribs on the left side, one of which penetrated the left lung, causing empyema.

On the 24th September, at the Grey River Dredge, Ikamatua, Joseph Byrne fell while dismantling a staging round the new stacker-ladder after its erection on shore, and sustained two fractured ribs, laceration of the right knee, and minor cuts and bruises.

GENERAL REMARKS: MINING.

Gold won from alluvial mining (other than dredging) amounted to 8,064 oz. 1 dwt. 3 gr., valued at £60,987 15s. 2d., which represents a decrease of 3,357 oz. 6 dwt. 14 gr., valued at £23,816 4s. 6d. when compared with the preceding year's figures. The number of men in this branch of the industry decreased by 473 to 858.

Gold won by dredges amounted to 43,002 oz. 4 dwt. 7 gr., valued at £353,826 4s. 9d., which represents an increase of 2,342 oz. 17 dwt. 3 gr., valued at £28,854 8s. 11d. over last year's production. During the year three gold dredges commenced operations—namely, the Blackball Creek, Grey River, and Kanieri Dredges. The two latter dredges, however, did not commence operating until December, and as they were still passing through the running-in and opening-out periods at the end of the year they did not have an opportunity to influence greatly the gross return from dredge mining. The number of men engaged in active dredging operations was 320, an increase of 52 over the previous year. The number of men engaged on dredge-erection work was 210; in addition to this number there was an indeterminable number of men engaged in steel-fabrication work in workshops and foundries.

Gold won from quartz-mines during the year amounted to 22,853 oz. 19 dwt. 12 gr., valued at £188,941 6s. 5d. These figures show a decrease over those of the previous year of 983 oz. 9 dwt. 17 gr., valued at £2,866 0s. 6d., the disparity between the number of ounces and the value being accounted for by the increased value realized on gold sales during 1938, when the price was higher per ounce than that prevailing in 1937. The number of men employed in producing quartz-mines was 310, an increase of 15 over the previous year.

The total quantity won from all branches of mining was 74,453 oz. 4 dwt. 22 gr., valued at £603,802 6s. 4d. This represents a decrease in the quantity over the previous year of 1,464 oz. 19 dwt. 84 gr., but an increase in the value of £2,219 3s. 11d., the apparent discrepancy in these figures is due to the rise in the price of gold during 1938 over that prevailing in 1937.

During the year the total number of men engaged in actual gold-mining operations decreased by 406 to 1,488, the decline being due principally to the number of men who left the subsidy scheme controlled by the Employment Division of the Department of Labour to take up other work. In addition to the 1,488 men engaged in gold-production work and the 210 men on dredge erection, there was an undetermined number of men engaged in prospecting alluvial and lode deposits.

Boring.

A summary of the boring activities carried out during the year by Government Departments, companies, and syndicates is set out hereunder :—

N.Z. Prospecting and Mining, Ltd.

(1) *Kohinoor* (Mikonui), Ross.—Drilling not continued in 1938.

(2) *Kawhaka.*—All bore-holes drilled this year were situate in Native Reserve No. 30, Block III, Kanieri Survey District. The company continued operations from 1937, completing a further seven holes, making a total of forty-two holes since the inception of their drilling programme. Two drills, a Keystone No. 2 and a Keystone No. 8 machine with 6 in. casing and 7¾ in. shoe, were used by the company on this area. Drilling was suspended in March.

(3) *Atarau.*—Situation : In Moonlight Creek Valley, Blocks III and IV, Mawheranui Survey District, and Block XV, Waiwhero Survey District, on various ordinary prospecting licenses and freehold land. A Keystone No. 8 machine with 6 in. casing and 7¾ in. shoe was used to put down seventy-four holes.

(4) *Red Jacks.*—Situation : On Donaldson's freehold and on ordinary prospecting licenses in Block VII, Mawheranui Survey District. The company's No. 5 machine with 6 in. casing and 7¾ in. shoe was used to drill ten holes during the year, making a total of eighty-one holes put down altogether.

(5) *Marsden.* — Situation : On ordinary prospecting licenses held by the company in Block I, Hohonu Survey District, and Block IV, Waimea Survey District. Operations were completed during the year and were carried out with a Keystone No. 1 machine using 6 in. casing and 7¾ in. shoe. Forty-five holes were put down by the company on this area.

(6) *Waitaha.*—Situation : On Ordinary Prospecting License 3369 in Block XI, Waitaha Survey District. The company's No. 8 Keystone drill equipped with 6 in. casing and 7⅝ in. shoe was used to put down four holes during the year.

(7) *Kumara.*—Situation : Near the Borough of Kumara, Westland, on an ordinary prospecting license held by D. B. Jellie. The company's No. 3 machine with 6 in. casing and 7¾ in. shoe was used to drill two holes at the end of 1937 and the beginning of this year.

Rimu Gold-dredging Co., Ltd.

(1) *Rimu Flat.*—Situation : Ahead of the company's dredge operating on Rimu Flat, Westland. Continuing operations from 1937, thirty-one holes were drilled during the year. The company used a Keystone drill with 6 in. casing and 7½ in. shoe. Operations were still in progress at the end of the year.

(2) *Totara Flat.*—Situation : On ordinary prospecting licenses in Block XIII, Mawheraiti Survey District held in the name of W. J. Radford. The Mines Department's No. 5 alluvial drill equipped with 6 in. casing and 7½ in. shoe was used to put down two holes. Drilling on this area commenced late in the year, and operations were still in progress at the end of the year.

Maori Gully (Kokiri) Gold-dredging Co., Ltd.

(1) *Waipuna.*—Situation : On ordinary prospecting licenses held by the company and Mackley's freehold in Block IV, Ahaura Survey District. The company's own drilling-machine with 6 in. casing and 7½ in. shoe put down thirty-eight holes during the year.

(2) *Callaghan's.*—Situation : On Ordinary Prospecting License No. 5221, held by C. Cook, Ordinary Prospecting License No. 2546 and Special Alluvial Claim No. 4005 held by J. Manzoni, and on ordinary prospecting license held by the company in Blocks 15 and 16, Waimea Survey District. A Mines Department No. 2 alluvial drill equipped with 6 in. casing and 7½ in. shoe was used to put down forty holes during the year. On Ordinary Prospecting License No. 5760 (Kumara) held by the company twelve holes were put down with the company's own drill, same being transferred from the Waipuna area.

(3) *New River (Camerons).*—Situation : On Special Dredging Claim No. 76/34 held by the Bundi Tin Dredging (N.L.), in Blocks III, IV, and VIII, Waimea Survey District. One of the Bundi Tin's drilling-machines with 6 in. casing and 7¼ in. shoe was used to put down six holes during the year. Operations were continued from 1937, when nine holes were drilled, making a total of fifteen holes for the area.

Bundi Tin Dredging Co.

(1) *Chinaman's Terrace.*—Situation : On Special Dredging Claim No. 76/34 held by the company, situate in Blocks III, IV, and VIII, Waimea Survey District. A Keystone machine with 6 in. casing and 7¼ in. shoe was used to put down thirty-one holes.

Austral Malay Tin, Ltd.

(1) *Cape Terrace.*—Situation : On ordinary Prospecting Licenses 82–86 held by the company in Block VIII, Waimea Survey District. Continuing operations from late in 1937, when one hole was drilled, nine holes were drilled during the year with a Keystone type plant using 6 in. casing and 7¼ in. shoe, and a Keystone machine equipped with 6 in. casing and 7¾ in. shoe.

Snowy River Dredging Syndicate.

(1) *Snowy River.*—Situation : On ordinary prospecting license held by James Andrew Davy, situate in Blocks XI and XII, Mawheraiti Survey District. A Keystone drill equipped with 6 in. casing and 7¼ in. and 7½ in. shoes was used to put down 132 holes.

Tronoh (New Zealand), Ltd.

(1) *Top Valley.*—A Keystone drill with a 6 in. casing and 7½ in. shoe was used to put down twenty-one holes on this area.

(2) *Armchair Valley.*—A Keystone Drill with 6 in. casing and 7½ in. shoe was used to bore four holes on this area.

(3) *Timm's River.*—*A* Keystone drill with 6 in. casing and 7½ in. shoe was used to put down six holes in this locality.

(4) *Mahakipawa Valley.*—The company put down three holes on this area, using a Keystone drill with 6 in. casing and 7½ in. shoe.

Barrytown Gold-dredging, Ltd.

(1) *Barrytown.*—Situation : On Company's Special Dredging claim No. 232/34, a Keystone type drill equipped with 5 in. casing and 5 in. shoe was used to bore fifteen holes.

Okarito Five-mile Beach Gold-dredging Co., Ltd.

(1) *Okarito.*—Situation: On Five-mile Beach swamps. The company used a Stewart drill with 4 in. casing and 4½ in. shoe to put down sixteen holes.

Gillespies' Beach Gold-dredging Co., Ltd.

(1) *Gillespies' Beach.*—Situation: On the company's special dredging claim in Blocks IX and X, Gillespies' Beach Survey District. A Keystone drill with 3 in. casing and 4 in. shoe put down sixty-one holes.

Argo Gold-dredging Co., Ltd.

(1) *Ahaura Valley.*—Situation: At Baldock's farm, in Blocks I and II, Ahaura Survey District. A Keystone type drill with 6 in. casing and 7½ in. shoe was used to drill four holes.

Department of Labour.

(1) *Wakamarina Valley.*—Situation: In Blocks XIV, Wakamarina Survey District, and Block I, Onamalutu Survey District. A Government No. 5 percussion drill equipped with 4 in. casing and 5¼ in. shoe was used to drill forty-one holes during the year. Operations were still in progress at the end of the year.

Mines Department.

(1) *Ross Aerodrome.*—Situation: In Block II, Totara Survey District. Government alluvial drill No. 3 was used to put down one hole, using 4¾ in. and 6 in. casings with 5⅞ in. and 7¾ in. shoes. Operations were still in progress at the end of the year.

Diamond Drilling.

The Consolidated Goldfields drilled No. 1 hole to a depth of 1,165 ft. before commencing No. 2 hole on the Globe Progress Area. The second hole was drilled to a depth of 1,278 ft., and operations were still in progress at the end of the year.

At the Homer Mine, *Goldwater Mines (N.L.)* bored two holes to depths of 86·8 ft. and 90 ft. respectively in the mine workings.

SUMMARY OF AREAS.

Name of Company.	Number of Areas bored.	Number of Holes bored in 1938.
N.Z. Prospecting and Mining, Ltd.	6	143
Rimu Gold-dredging Co., Ltd.	2	33
Maori Gully (Kokiri) Gold-dredging Co., Ltd.	4	96
Bundi Tin Dredging, Ltd.	1	31
Austral Malay Tin, Ltd.	1	9
Snowy River Dredging Syndicate	1	132
Tronoh (N.Z.), Ltd.	4	34
Barrytown Gold-dredging, Ltd.	1	15
Okarito Five-mile Beach Gold Dredging Co., Ltd.	1	16
Gillespies' Beach Gold-dredging Co., Ltd.	1	61
Argo Gold-dredging Co., Ltd.	1	4
Department of Labour	1	41
Mines Department	1	1
Consolidated Goldfields of New Zealand, Ltd. (diamond drilling)	1	2
Goldwater Mines (N.L.), (diamond drilling)	1	2
Totals	27	621

LABOUR DEPARTMENT'S GOLD-MINING SCHEME: SUMMARY OF RESULTS OF SPECIAL INVESTIGATIONS.

The following notes give a brief summary of the results of special investigations made since the inception of the scheme:—

In the northern sections of the West Coast Inspection District special investigation was confined largely to the Marlborough County, where a geological and prospecting party consisting originally of eight men under the direction of a geologist worked for several months.

The party commenced operations at the head of the Wakamarina River and covered an area of high country extending to the Wairau Valley. In the subsequent reports of the party it was recorded that scores of quartz outcrops were tested for gold, and in the majority of cases were found to be barren or of extremely low value. An exception to this rule was the location of leaders carrying a little gold, but the limited size of such veins rendered them worthless for profitable exploitation.

Considerable attention was paid to the streams and terraces of the area with the object of adding to the alluvial areas available for subsidized miners, but nothing was discovered that justified the extension of the scheme beyond the proved ground in the Wakamarina Valley diggings which include the tributary streams and their terraces. After a year had been spent on the work and nothing of importance had been discovered, the party was disbanded.

It is perhaps worthy of comment that extensive sampling for scheelite was carried out in old workings above Mountain Camp Creek, the results from which indicated that, although large-scale scheelite-mining in the area would not be warranted there might be some possibilities of remunerative employment if a small working-party desired to prospect on their own account.

Better results were obtained from boring carried out in the valley. The high-level channels of the river were located, and values from several holes in one section of the Valley above Mountain Camp disclosed ground that can be worked by blocking the wash dirt resting on the schist bottom.

In the Collingwood County the Victoria Creek terraces in Block III, Aorere Survey District, were carefully tested by means of shafts with a view to locating suitable ground on which subsidized prospectors could be placed. Over forty shafts were sunk, varying in depth from 6 ft. to 15 ft., and although at the top end of the main terrace the first twelve shafts showed fair gold returns values became progressively less as the work was extended. The over-all value of the ground prospected was, on an average, very poor, the last few shafts showing only a few colours.

In the Golden Hope area the bed of the Maggie Creek was tested by boring, three lines of holes being drilled. The values were disappointing and shaft-sinking was commenced for the purpose of checking the results obtained. This work was abandoned when it was found that the pumping-plant available was unable to cope with the inflow of water, but in view of the fact that results obtained from one shaft which was successfully bottomed confirmed the values disclosed by the boring it was considered that expenditure on a more powerful pumping-plant was not justified. Consequently the work was abandoned before finality was actually reached.

On the Reefton field prospecting and development of quartz lodes was given close attention, a considerable number of miners and prospectors being employed under the leadership of engineers and geologists. The Merrijigs, Globe-Progress, and Murray Creek areas containing old workings, known outcrops, and abandoned mines were reopened, surveyed, and tested, with the result that much data has been accumulated re the values of the deposits. The economic value, under to-day's conditions and gold-prices, can now be stated within close limits of all the areas examined with the exception of the Golden Treasure and Perseverance Mines, where investigations are not yet completed.

At Lankey's Creek a party of men were subsidized until they had developed an area of cemented gravels and installed a crushing-plant and air-compressor. This party is now self-supporting and has a considerable tonnage of payable ground proved which will give them several years of remunerative employment.

In the Grey County extensive prospecting of alluvial deposits was carried out under the control of the Grey County Mining Committee and later by the Labour Department's Mining Branch. On the Mosquito Creek - Irishman's Creek area nearly 5,000 ft. of driving and about 600 ft. of shaft-sinking were completed in the search for a deep-lead deposit rich enough to drive out. Much of the ground tested was about 200 ft. in depth, and a theory was held, and later completely disproved, that a deep lead, a continuation of rich deposits worked in the early days of Coast mining, would be traced.

The work cost thousands of pounds, employed a considerable amount of labour, and was finally abandoned as being too poor even for subsidized miners to exploit. Citirini's, New River, Bell Hill, Red Jacks, Deadman's, Blackball, and the Moonlight were extensively tried out, and in none of the areas was a profitable claim discovered.

At Nelson Creek a long tunnel was driven under the flat below the Deep Lead Claim, and later a line of bores was put down, but the supposedly rich continuation of the Nelson Creek lead was not located and the values of the wash proved by both drive and bores disclosed the area to be too low grade for even a large-capacity dredge capable of covering expenses at 4d. per cubic yard.

Lode prospecting in the county, although secondary in both labour and expenditure to alluvial prospecting, was by no means overlooked. A well-equipped prospecting party controlled by a Field Supervisor under the direction of a Mining Engineer spent the greater part of two years in the Waikiti district. No expense was spared in the equipment of the party, tracks were cut, good camps established, and they worked under conditions much superior to those endured by their predecessors.

The discovery of reefs was of daily occurrence, and extravagant stories were circulated concerning the possibilities of the field, but careful sampling by responsible persons and a final check-up of all the operations by a geologist removed all doubts as to the possibilities of the area from a lode-mining point of view.

The Kea Creek, Waikiti, Blue Lake, and Sulphide lode series were all extensively prospected and sampled, and, although it is possible in these areas to pick up fragments of ore which may assay up to 6 oz. or more of gold per ton, nothing approaching these values was found when representative samples were assayed. The final results of the work undertaken proved that the gold is patchy and sporadic in all the reefs investigated and that the quantity is too small to raise the value of the ore as a whole to a payable average.

Owing to a rich patch of gold being found in the Moonlight area by a party of subsidized men in some crushed country containing quartz the idea gained ground that valuable lodes were to be found in the vicinity, and the Labour Department drove an aggregate of 1,490 ft. of tunnels and carried out a considerable amount of trenching before their officers were convinced that the chances of locating a solid body of payable ore were remote.

The Buller County placed their hopes in the reopening of the Mokihinui and Lyell Mines. In the Mokihinui area a large amount of money was spent in restoring the road which was ruined by the 1928 earthquake. Four mines were tested by driving new levels on each of them, and, with the exception of the Red Queen, all were proved to be of too low a grade for economic working. Fairly good ore was struck in the Red Queen below the old workings, and the show has prospects of employing a working party of men.

On the Lyell area eight mines were reopened during the past three years, and Reid's Reef, a new find, which was vigorously developed from two levels, proved a disappointment. Encouraging assays were given by the outcrop and from parts of the top level, but the average value per ton of all lodes exposed was under 3 dwt.

The ventures were eliminated one by one as prospecting and sampling prospered, and when the Labour Department handed over their affairs to the Mines Department the No. 7 level of the Alpine Mine alone survived the tests. From this level a crosscut is being extended east in search of the north block, which was lost between Nos. 6 and 7 levels. This mine is now at a stage where capital could be usefully employed in prospecting. The level, 2,400 ft. in length, is open for the first time in thirty years, and should the faulted block be located there are three levels below No. 7 that could be worked from No. 10 adit, and also three shaft levels below No. 10 that are unworked so far as the north block is concerned.

Late in 1936 parties were organized to prospect in south Westland, and the results of the party led by Mr. W. J. Bolitho in the Paringa District are summarized as follows :—

The search for gold, either lode or alluvial, was not attended with success. The small amount of fine gold found in the Paringa River ended the party's hopes of payable alluvial deposits in this area, and the lodes, although numerous, were, on their appearance alone, not worth sampling. The iron-ore deposits were, on examination, found to be merely rocks coated with oxide of iron. The rumour about a 7 ft. seam of bituminous coal proved it to be 3 ft. in thickness interstratified with pug seams and on the south side of the Paringa River. The geologist's opinion is that the deposit has no commercial value. The reputed occurrence of oil at Lake Paringa was investigated, and certain beds favourable in age and structure were reported, but no signs of oil discovered.

A party, led by Mr. H. I. Evans, examined the Weheka area and investigated a wide belt of metamorphic schists between the Omoeroa and Cook Rivers. They subsequently reported unfavourably on the lenses of quartz they examined and that the chances of finding payable ore-bodies in such formation were not hopeful.

The outlook for profitable alluvial mining is on a par with the lode possibilities. Several streams and their terraces were prospected, but the results in each case showed fine values of gold that were evidently derived from glacial gravels, which were all that could be found or were likely to be found.

In the Craig's Peak area between the 5,000 ft. and 6,000 ft. levels nothing of importance was discovered, and it is now believed that the massive quartz reefs which were reported to be outcropping are merely large bands of quartzite occurring in the schists of the district.

The Lower Waikukapa area, situate between 4,000 ft. and 5,000 ft. above sea-level, contains various schists with bands of quartzites, the latter probably accounting for the quartz lodes described by travellers in the region.

The Cook and Balfour River areas both contain a little fine gold, but cannot be classed as potential goldfields, and the results of the prospecting venture have definitely proved that many of the beliefs and theories concerning the mineral wealth of south Westland are illusions cherished for years and built up from unreliable information.

The same party also investigated the Haast area, including Bullock Creek, Copper Creek, Fox Creek, Wells Creek, Sardine Terrace, and Bald Hill, but no mineral deposits of economic value were discovered.

No auriferous reefs were found, but fine alluvial gold is widely distributed in marine and fluvio-marine gravels which occur extensively in the Bullock Creek area. From the prospects taken by the party, however, it appears that all the available payable ground in this area was thoroughly worked by early prospectors and, although it is possible that isolated patches of rich ground remain, such patches would be very limited.

Iron-ore deposits at the summit of Bald Hill were tested but proved to be very low grade, while outcrops of coal at Coal Creek proved to be of little or no commercial value.

SOUTHERN INSPECTION DISTRICT (T. McMillan, Inspector of Mines).

Quartz and Alluvial Mining.

Waitaki County.

Maerewhenua Goldfields Development Co., Ltd., Golden Gully, Livingstone (A. Adams, Manager).—The tribute arrangement has been continued during the year, and mining operations have been carried on whenever water has been available. Work has been carried out in Blacksmiths Gully, and also in the main or Golden Gully. The tunnel tail-race is functioning satisfactorily. Six men have been employed when water has been available.

Mining House Concessions, Ltd., has been operating at Maerewhenua under the management of R. Webb, mine foreman. As the area previously worked by Fenning and party was becoming exhausted, another area has been prospected. Three men have been employed.

The small alluvial mines in the Maerewhenua mining field have been operated whenever water has been available.

Diggers Gully, Kurow.—Very little work has been carried out during the year.

A total of eighteen men (inclusive of the companies) has been employed in the Waitaki County during the year, winning 330 oz. 1 dwt. 9 gr., valued at £2,509 6s. 8d.

Waihemo County.

Macraes Flat Gold and Scheelite Co., Ltd., Golden Point Mine, Deep Dell, Macraes (H. P. Lewis, Superintendent, and seven men employed).—Mining and crushing operations have been carried out during the year. Ore has been mined from the home and dip-reef sections of the mine above the low-level tunnel. There were 922 tons of ore treated during the year, yielding 447 oz. 15 dwt. 7 gr. of gold, valued at £2,743 8s. 7d.

Callery and Bradbrook, Round Hill Mine, alongside the Macraes – Golden Point Road. Prospecting-work has been carried out in the western and northern portions of the lease. A considerable amount of driving and sinking has been done and 655 tons of ore have been treated at the treatment plant in Deep Dell. Four men have been employed.

Galli's Gold-mining Co. (J. Phelan, Mine-manager).—Two men have been employed throughout the year. Driving and stoping have been carried out on and above the 70 ft. level. There were 78 tons of ore crushed at the treatment plant, situated in Tipperary Gully near the Macraes–Dunback Main Road.

Macraes Gold-mining Co. (J. McKenzie, Manager).—Twelve men have been employed during the year. The two gravel-pumping plants have been operating steadily, and 153,100 cubic yards of auriferous gravels have been treated for return of 1,420 oz. 0 dwt. 14 gr. of gold, valued at £10,441 10s. 4d.

The Macraeburn Mining Co. has been formed during the year to take over on the upper section of the Macraes Flat. Prospecting-work has been carried out on this area.

A total of sixteen men (inclusive of the companies) has been employed in the alluvial mines in the Waihemo County during the year, winning 1,439 oz. 5 dwt. 7 gr., valued at £10,579 2s. 9d.

Maniototo County.

Earl and Brown Mining Party, Ophir (S. Earl, Manager).—Two men have been employed during the year, and an intermediate and a low-level tunnel have been driven. There were 78 tons of ore treated at the treatment plant during the year.

Kildare Consolidated Gold-mining Co., Ltd. (W. J. Wade, Manager).—Sluicing operations in quartz gravels have been carried on steadily during the year in Redmiles Gully, near St. Bathans. Seven men were employed, and the gold won amounted to 206 oz. 2 dwt. 6 gr., valued at £1,537 11s. 3d.

Vinegar Hill Sluicing Co., Vinegar Hill, near Cambrians (T. E. Morgan, Manager).—This company reconditioned the water-races, installed the necessary pipe-lines, cleaned out and reconditioned the main tail-race, erected sluice-boxes, stripped an area of heavy overburden, and resumed active mining operations at the old Vinegar Hill Alluvial Mine. Six men were employed.

Patearoa Hydraulic Sluicing Co., Patearoa (E. Carr, Manager).—Work was carried on steadily when water was available.

The various privately-owned alluvial mines in the Cambrians, Vinegar Hill, Kyeburn, and Patearoa and Naseby Districts have worked steadily during the year when water has been available.

There were eighty-five men employed (inclusive of the companies) in the Maniototo County during the year, winning 1,635 oz. 7 dwt. 7 gr., valued at £12,035 6s. 6d.

Tuapeka County.

New Gabriels Gully Sluicing Co., Ltd. (D. Boyes, Manager).—Sluicing and elevating operations have been carried out in the remaining portion of the hard cement on the western side at the head of Gabriels Gully. Drought conditions prevailed during the first seven months of the year, and much sluicing-time was lost through shortage of water. The cement has also been very hard. The gold won amounted to 194 oz. 12 dwt. 14 gr., valued at £1,463. Seven men were employed.

R. S. Thompson, Wetherstones (I. D. Walker, Manager).—Sluicing and elevating on the Wetherstones Flat, near Wetherstones Road line, have been carried on steadily whenever water has been available. There were five men employed.

Paddy's Point Gold-mining Co., Ltd. (J. Homer, Manager).—Sluicing and elevating operations have been carried on in the south-west corner of the Waitahuna Township, and the amount of gold won was 401 oz., valued at £2,988. There were seven men employed.

Sailors Gully Sluicing Co., Ltd., Waitahuna Gully (J. Hore, Manager).—Sluicing and elevating operations were carried on from the beginning of May until the end of the year in the cemented conglomerates. Mining operations could not be carried on during the first four months on account of the very dry season and the consequent shortage of water. Approximately three-quarters of an acre of conglomerate, with an average depth of 55 ft., was treated during the working-period. This section of the cement deposit was harder and more difficult to work than usual. The gold won amounted to 135 oz. 7 dwt., valued at £1,067. There were six men employed.

Tuapeka Mouth Sluicing Co., Ltd. (J. Cartwright, Manager).—On account of the shortage of water in the Tuapeka District the low-pressure turbine, used for supplying pressure water, could operate only for about three months during the year. Two men were employed during the working-period, and the gold won amounted to 120 oz. 2 dwt. 2 gr., valued at £974 4s. 9d.

The Fifty-five Gold Mine, Tuapeka Mouth (C. Taylor, Manager).—Sluicing and gravel-pumping operations were carried on during the year. The deposit proved to be very difficult to handle on account of the large percentage of heavy boulders encountered in the opening-out paddocks. Suction-gas engines are in use for operating the Gwynne pressure-pump and generating electric power for the Thompson gravel-pump. There were eight men employed during the year.

Fruidburn Sluicing Co.—Very little work was done on this area during the year.

Pleasant Valley, Clutha River Gorge, above Coal Creek, Roxburgh.—During the latter part of the year Mr. Foord, who has been operating a gravel-pumping plant in the Adams Flat District, took over an area held by Messrs. Tamblyn and partners. The plant at Adams Flat was dismantled and transported to the Pleasant Valley area, where it is being reassembled.

A small number of subsidized and other miners have been operating in the county during the year.

Prospecting-work has been carried out in Johnston Gully, Waipori, where the scheelite reef is being tested. Prospecting-work has also been carried out in the deep lead alluvial deposit on Mitchells Flat.

A total of seventy-six men (inclusive of the companies) was employed in the Tuapeka County, producing 1,329 oz. 19 dwt. 16 gr., valued at £9,991 6s. 4d.

Bruce County.

Foord's Mine, Adams Flat (E. G. M. Foord, Owner and Manager).—Gravel-pumping operations were carried on, whenever weather conditions were suitable, during the early part of the year. Two men were employed. During the latter part of the year the plant was dismantled and transported to Pleasant Valley, Roxburgh.

Glenore Mining Syndicate (A. Stewart, Manager).—Two men were employed on the eastern river flat of the Tokomairiro Creek, between Glenore and Mount Stuart, reworking this flat by gravel-pump methods.

A total of three men (inclusive of the companies) was employed in Bruce County winning 86 oz. 14 dwt. of gold, valued at £599 9s. 5d.

Clutha County.

A total of three men was employed in the Clutha County during the year, winning 6 oz. 6 dwt. 20 gr. of gold, valued at £46 0s. 6d.

Taieri County.

A total of five men was employed in the Taieri County during the year, winning 7 oz. 8 dwt. 11 gr. of gold, valued at £52 18s. 11d.

Waikouaiti County.

A total of two men was employed in the Waikouaiti County during the year, winning 2 oz. 17 dwt. 12 gr., valued at £20 2s. 6d.

Southland County.

Nokomai Gold-mining Co., Ltd., Nokomai, near Parawa (C. Sew Hoy, Manager).—Sluicing, elevating, and gravel-pumping operations were actively carried on during the latter months of the year. Work was intermittent during the first four months of the year on account of the dry season experienced in the Otago and Southland Districts. The two 12 in. gravel-pumps operated satisfactorily, and the amount of gold won was 1,239 oz. 5 dwt. 12 gr., valued at £9,067. Fifteen men were employed at the alluvial mine and nine men in the extensive-race system.

The Winding Creek Syndicate.—Sluicing operations were continued during the year at the King Solomon tailings dump. Two men were employed.

A. Mutch, Happy Valley, Waikaia (A. Mutch, Manager).—After extending water-races and installing pipe lines, sluicing and elevating operations were carried on at the lower end of the valley. Three men were employed.

Dome Creek Mining Syndicate Dome Creek, Waikaia.—Work was suspended and mining operations ceased.

Union Mining Syndicate, Upper Waikaia River, just above The Branches.—Operations have been suspended.

Freshford Mining Syndicate (R. T. McKenzie, Manager).—Prospecting-operations were carried out on the right-hand terraces of Muddy Creek, downstream from the area worked by the Freshford Dredge. A power-pumping plant, consisting of 7 in. by 9 in. Mather and Platt pump, direct coupled to a 105 h.p. electric motor, and a 6 in. by 8 in. Thompsons nozzle pump, belt driven by a 50 h.p. electric motor, and the necessary pipe-lines, elevator, valves, and fittings, have been installed. Water is obtained from the Muddy Creek. Four men were employed in the erection and operation of this plant.

Waimumu Sluicing Co., Ltd., Waimumu (F. A. Faulkner, Manager).—The workable deposits in the southern tributary gully have become exhausted. The plant was shifted to the left-hand flats of the Waimumu Stream, downstream from the tributary junction. A 10 in. Mather and Platt centrifugal pump, direct coupled to a 150 h.p. Thompson-Houston electric motor was installed to replace the steam-pumping equipment. A 15 in. pipe-line from the pump to the mine, together with the necessary fittings, was also installed. When mining operations were recommenced the new ground proved to be of low value and working costs were high. Operations were suspended and the company went into liquidation. There were two men employed during the period of operation.

Stewart Gold Co., Little Waikaka (R. T. Stewart, Engineer and General Manager; W. Stewart, Mine-manager).—During the early part of the year the water-supply was poor and operations were hampered. A sudden rise in the floor practically cut off the auriferous gravels in the northern end of the mine, and operations were suspended. Prospecting-operations were carried on in other sections of the mine, and the company is now preparing to remove the gravel-pump and other plant to the southern end of the mine. There were seven men employed during the working-periods.

A total of sixty-three men (inclusive of the companies) was employed in the Southland County during the year, winning 1,951 oz. 9 dwt. 19 gr., valued at £14,455 14s. 11d.

Wallace County.

Round Hill Gold-mining Co., Ltd. (F. Hart, Manager).—Active sluicing and elevating operations have been carried out during the year, and approximately 10 acres, to an average depth of 50 ft., with varying depths of marine wash, from 6 in. to 6 ft. in thickness, has been mined. The overburden contains large lenses of tough clay, and in some places the driftwood timber is 30 ft. deep. The water-races have been kept in good order, and they provide a reliable water-supply from the Longwood Ranges. There were eighteen men employed, and the gold won amounted to 1,767 oz. 6 dwt. 15 gr., valued at £13,870.

Orepuki Mining Township, Old Township Diggings, Orepuki (J. Sorenson, sen., Manager).—Two men were employed sluicing previously-driven ground in the old workings.

Shaw and Braid.—Sluicing operations have been carried out on the right-hand terraces of the Taunoa Stream.

Other miners are also employed in the neighbourhood of old workings in the Orepuki area.

A total of fifty-eight men (inclusive of the companies) was employed in the Wallace County during the year, winning 2,222 oz. 3 dwt. 6 gr., valued at £17,142 16s. 2d.

Fiord County.

There was one man employed in the Fiord County during the year, and the gold won amounted to 12 dwt., valued at £4 5s. 1d.

Lake County.

Glenorchy Scheelite-mining Co., Ltd. (D. Wylie, Manager).—Six men were employed in the mine from the beginning of January until the middle of April. The mine was then closed down until mid-December, when operations were again resumed underground. The work carried out consisted of driving the No. 1 level ahead, driving a crosscut between No. 1A and No.1 level, and a semi-crosscut from No. 1 level in the direction of No. 2 level. Small but steady quantities of ore were encountered. Two men were employed at the treatment plant. During the year a new roaster has been installed in order to save a larger percentage of scheelite. There is a small percentage of gold in the quartz, but this is proving very difficult to extract. The scheelite-ore produced from the mine during the year amounted to 280 tons, producing 4 tons 2 cwt. of scheelite concentrates, valued at £963. The treatment plant has also been treating scheelite ore for other parties of scheelite miners.

Tungsten Minerals, Ltd. (G. Reid, Manager).—At Glenorchy work was carried out on the slopes of Mount Judah, east of the Glenorchy Scheelite Mine, and a Diesel-driven compressor plant and pipe-line were installed. Trenching, driving, and rising operations were carried out under D. McKenzie, mine foreman, at the Twelve-mile, near the Rees River Road Bridge, driving and stoping being carried out under the supervision of George Paulin, mine foreman. Work was not resumed during the latter part of the year. Ten men were employed from January to June.

Rees Valley.—Scheelite-prospecting operations were carried on during the working-seasons, and some good scheelite was obtained from slip material overlying Muddy Terrace on the eastern side of the Rees Valley.

Oxburn or Twelve-mile.—Driving operations are still being continued by M. Petersen, and other prospectors have been looking for scheelite in this area.

Bucklerburn, Glenorchy.—Subsidized and other miners are employed on the banks and in the bed of this creek prospecting for both gold and scheelite.

Sunshine Mine, situated on the north-eastern slopes of Mount Judah.—Very little work has been carried out at this mine during the year. The Elliott Bros. are now driving in the Bonnie Jean Gorge.

Heather Jock Mine, situated on the the slopes of Mount Judah, overlooking the Bucklerburn Valley, and at an elevation of 4,000 ft. (Wylie Bros. and Thompson, Owners).—J. Wylie, manager, and five men employed. Driving and stoping operations have been carried out at the mine. A rock crosscut has also been driven in order to provide easier transport for the ore from the mine to the upper end of an aerial ropeway. This ropeway has been erected during the year, and is 2,000 ft. in length. The scheelite ore is partially treated at the foot of the aerial, and the concentrates are then conveyed to the end of the motor road above the Glenorchy Scheelite-mine by means of a caterpillar tractor. Stores and timber are taken as back loading up to the Heather Jock and other mines. This syndicate has shown energy and initiative, and the advent of the caterpillar tractor has speeded up the transport of scheelite ore from the mines near the Bonnie Jean track.

Sharpe Bros. are driving in the Bonnie Jean Gorge below the old Boozer Mine. They have installed an air-compressor and drilling-plant, and have erected an aerial ropeway, 800 ft. in length, for the transport of the ore produced by the Elliott Bros. and themselves through the difficult part of the Bonnie Jean Gorge.

J. R. Tripp has opened up the mine, known as Groves Mine, alongside the Bonnie Jean track, and is installing a small treatment plant.

R. Paulin and Son continue to work on the slopes of Mount McIntosh.

McLaren and Partner and *MacPherson and Son*, on the Black Peak Field, have worked steadily during the working-season. The treatment plant in Long Gully, on the southern slopes of Mount McIntosh, is used by the Black Peak and Mount McIntosh miners.

Subsidized and other miners have been working steadily during the working-season on the slopes of Mount Judah, Mount McIntosh, Black Peak, The Precipice Creek, Rees Valley, The Twelve-mile, and the Bucklerburn.

Twelve-mile Creek, Lake Wakatipu.—Operations have been continued steadily and 43 chains of head-race have been reconditioned, and 20 chains of fluming and 2 chains of intake pipe-line have been erected. The old storage dam has been cleared out and another dam constructed for extra storage, and the main pipe-line and sluicing-plant have been installed. Three to four men have bene employed during the year. Mining operations are being carried out at the Seven, Eight, and Nine Mile Creeks. Very little work has been done in the Moke Creek during the year.

Moonlight Valley Gold (No Liability), (E. T. Anderson, Manager; F. Carter, Engineer).—Work was continued on the mine access road, and it was completed by April. The pipes and other plant were then transported by motor-lorry from Queenstown to the site of the Old Moonlight Station House, taken across the Dead Horse Creek Gorge by means of a ropeway, and conveyed by horses and jinker to the Upper Moonlight, the head-race, and Butchers Creek. The work necessary for the completion of the head-race was expedited as much as possible under the circumstances. This work was difficult, as the race is carried through very rugged and, in many places, precipitious country. Two 36 in. syphons were placed in position. Many chains of rock benching were widened and, in other places, stone walls were built to carry the fluming on a solid foundation. The race was carrying water in November. The race-line was extended down Sheepyard Terrace and the necessary pipe-line and sluicing equipment was installed on the north side of Butchers Creek, and a sluicing-face was opened up and shift-sluicing operations were commenced on the 31st December. Permanent quarters, smithy, and stone sheds have been erected on the south side of Butchers Creek.

Oxenbridge Shotover Gold, Ltd.—The tributers discontinued operations in the bed of the Moke Creek and then removed plant to the Shotover Gorge. They increased the storage capacity at Staircase or Devils Creek, installed a pipe-line, and commenced to wing-dam the beach. Flood conditions did damage in the early part of the season, and as the water-supply failed on account of the dry season, very little could be accomplished during the year.

The Wheeler Party continued to operate near the entrance to the Shotover River Gorge, above Arthurs Point, but the shortage of water retarded operations.

Arthurs Point Sluicing Co., Sugar Loaf Mine.—James McMullan continued his mining and prospecting operations at the lower end of the mine in an attempt to open up the back lead. Four men were employed.

Sandhills Gold-mining Co., Ltd., Upper Shotover (A. E. Smith, Manager).—Sluicing and elevating operations in the bed and on the benches of the Shotover River, below Waterfall Creek, were actively carried on during the working season. Three men were employed, and the gold won amounted to 546 oz. 19 dwt., valued at £3,996.

Short and Party, Ltd., below Ballarat Creek, Junction Shotover River.—The river below the Big Beach was very narrow, therefore the plant had to be removed downstream to the beach at the lower end of the big slip. The main race was extended over the slip by means of a pipe-line, and mining operations were carried out on this beach below Rogers Terrace.

Skippers Ltd. (Maori Point and Skippers Point), (J. Stephens, Manager).—Sluicing and elevating operations were carried out in the bed of the Shotover River above and below the power-house site at Skippers Point until the middle of June. Results were poor and operations were then discontinued, and a caretaker was appointed for the balance of the year.

Mountain Terrace Sluicing Co., Skippers Creek (R. McDonald, Manager).—Stripping and sluicing operations were carried out during the early part of the year, and then operations were suspended.

Skippers Sluicing Co., Skippers (E. Sainsbury, Manager).—Mining operations have been carried on during the season on the western Shotover Terrace workings, between Pleasant and Stoney Creeks.

Central Shotover Gold-mining Co., Ltd., Deep Creek, Shotover River (George Vernon, Manager).—Mining operations in the bed and beaches of the Shotover River have been carried on during the year. The up-river limit of the plant had been reached and the plant was then shifted to the river section of the claim below the Deep Creek Junction. There were five men employed, and the gold won amounted to 297 oz. 4 dwt. 15 gr., valued at £2,189 14s. 6d.

Crystal Quartz-mine, Sawyers Gully, Skippers (F. A. Tripp, Manager).—Prospecting-operations were continued and the low-level adit was driven to a distance of 250 ft. when the reef was intersected, and levels were then driven 90 ft. to the west and 30 ft. to the east in ore of varying width. The width of stone was from 2 ft. to 7 ft., with values varying from 8 dwt. to 20 dwt. per ton. Four men were employed at the mine and treatment plant, and 226 tons of quartz were treated.

No work has been done by the Ballarat Syndicate, and no deep-level development-work has been carried out on the Macetown reefing systems.

Beale and Son have continued to sluice on the terraces above the old Macetown Township during the working-season, and other miners have been sluicing on the left-hand terraces of the Arrow River, about two miles above Macetown.

The *Upper Arrow Sluicing Co.* has gone into liquidation and the plant has been sold.

The *Hannah Anderson Party* continued to sluice and elevate in the bed of the Arrow River, between the township and the Billy or Soho Creek Junction, when river and water conditions were suitable, but the water-supply was limited and the river-bed deposit contains a large percentage of boulders.

Sinking operations have been continued on the western bank of the Soho Creek and driving operations on the eastern bank of the Arrow River, below the Billy Creek Junction, but nothing of value has been located.

The *Hamilton Party*, now known as *Douglas and Party* (J. Douglas, Manager), has continued to operate in the bed of the Shotover River below Scoles Bend, whenever river conditions were suitable, and water was available from the Arrow River irrigation pipe-line. Two men were employed.

The Golden Arrow Gold-mining Co., Ltd. (G. Pittaway, Manager).—Active mining operations have been carried on in the bed of the Arrow River, above the Bush Creek Junction, near Arrowtown. The depth to bottom varies from 20 ft. to 40 ft., generally averaging about 27 ft. Pressure water is obtained from the Arrow River irrigation scheme. There were six men employed, and the gold won amounted to 203 oz. 2 dwt. 23 gr., valued at £1,478.

Tributers have been operating the *Junction Reward Mine* at Bush Creek, near Arrowtown.

Two men have been working in the Upper Matapu Valley.

A total of seventy-seven men (inclusive of the companies) has been employed in the Lake County during the year, winning 1,849 oz. 14 dwt. 11 gr., valued at £13,476 4s. 1d.

Vincent County.

Holm Syndicate, Kawarau River, Cornish Point, opposite the upper end of Cromwell Township (W. Hodson, Mine-manager).—Driving operations were continued during the early portion of the year. A small sluicing-plant was then installed, and an attempt was made to sluice the deposit. The plant installed was too small, and sluicing operations were discontinued, as a more powerful plant is necessary for the successful sluicing of this area. After a short cessation driving operations were again resumed.

The *Bates Party*, upstream from the Holm Party, has continued driving operations. They also sank a vertical shaft. The main drive will be connected with the shaft, and ventilation will thus be provided for.

Work has been discontinued at the *Bell Hooper Mine*, and the plant sold. Very little work has been done at the alluvial mine of the Cairnmuir Sluicing Co.

Subsidized and other miners have been employed driving in the Cairnmuir area and at the entrance to the Kawarau Gorge.

Nevis Mining Field, Upper Nevis, Stone Huts.—J. Williamson has continued sluicing operations and operated in the shallow ground in Camerons Gully until the gravels were exhausted. The plant was then shifted to the deeper ground, up the valley from the Stone Huts. When the elevating limit was reached the plant was again shifted, lower down the valley, where the deep ground outcrops. Six men have been employed during the working-season. Mr. Williamson purchased some of the huts from the Nevis Diesel Dredging Co. in order to provide accommodation for his workmen. He has also purchased the Nevis Diesel hydro-electric plant. The other Diesel units have been sold and removed from the Upper Nevis. The dredge is now being dismantled for removal to the West Coast.

The *Jones Nevis Sluicing Co., Ltd., Whittons Creek, Upper Nevis* (J. O. Buckland, Manager).—Operations were resumed at the beginning of the working-season. The returns did not come up to expectations, and operations were discontinued. Six men were employed during the period worked, and the gold won amounted to 82 oz. 11 dwt. 23 gr., valued at £640.

The *McLean Bros.* have carried out active mining operations during the working-season in the old township workings, upstream from the Nevis Township.

D. and J. Adie worked the high-level terraces above the old township workings during the early portion of the year, and then moved to the right-hand or western terrace of Schoolhouse Creek, where mining operations were resumed after the winter cessation of work.

Nevis Sluicing Claims, Ltd. (J. H. Johnston, Manager).—Sluicing operations have been continued in this heavy deposit during the working-season. Five men were employed, and the gold won amounted to 92 oz. 11 dwt. 4 gr., valued at £691.

J. Murrell continued to work the shallow ground over the old workings to the north of the Nevis Sluicing Claim.

Reward Gold-mining Co., between Gorge Creek and Fruitlands.—Two men have been employed in sluicing operations when water has been available. Some driving has been done in the dry season. Sluicing operations were continued in Donnelly's Gully, Matakanui, by the Matakanui Sluicing Syndicate.

Shine Again Gold-mining Co., Ltd., Bendigo.—This mine is situated in the Upper Bendigo Creek, about twenty miles from Cromwell. The mine was reopened by the Bendigo Rise and Shine Gold-mining Co., which went into liquidation. The mine and plant were purchased as a going concern, and the Shine Again Gold-mining Co. was formed. They have erected a five-stamp battery, amalgamating-table, Wilfley table, berdan pans and roaster, and laid down a tramway between the mine and the new mill. Opencast-mining operations were commenced on the north and south ore-body and crushing commenced on the 19th September. Four men were employed, and the quantity of ore treated amounted to 204 tons, yielding 23 oz. 15 dwt. 8 gr. of gold, valued at £172.

The *New Bendigo Gold-mining Co.* has gone into liquidation and the plant has been sold. Subsidized and other miners have been working on many of the old mining fields, such as Blackmans and Conroys Gullies, Manorburn, Galloway, Matakanui, and Devonshire, and on the terraces of the Clutha and Manuherikia Rivers.

A total of 106 men (inclusive of the companies) has been employed in the alluvial mines of the Vincent County during the year. The gold won amounted to 977 oz. 2 dwt. 4 gr., valued at £7,516 5s. 1d.

Canterbury District.

Ashburton County.—Three men have been employed during the year on the Rakaia Mouth and other beaches, winning gold amounting to 25 oz. 11 dwt. 21 gr., valued at £169 7s. 1s.

Dredge Mining.

Goldfields Dredging Co., Ltd., Big Beach, Shotover River, near Arthurs Point, Lake County (J. S. Ritchie, Dredgemaster).—Dredging operations were carried on at the Big Beach, and the dredging depth varied from 15 ft. to 30 ft. Twelve men were employed, and the gold won amounted to 494 oz., valued at £3,325. The dredge is electrically-driven, and the power-station is situated at Wye Creek, alongside the Queenstown–Kingston Main Road.

Nevis Crossing Dredge, Lower Nevis, Vincent County (S. C. Fache, Dredgemaster and owner).—The dredge was moved upstream until the new area was reached. Dredging operations then commenced in ground varying in depth from 8 ft. to 11 ft. This dredge is steam-driven, and the old boiler was replaced by a new one during the year. Coal is obtained from the local coalfield.

Nevis Diesel Electric Dredging Co., Ltd., Upper Nevis.—The Diesel plants have been removed, and the dredge is being dismantled for removal to the West Coast.

Bendigo Goldlight Dredging Co., Ltd., Bendigo Flat, Vincent County.—This dredge is still idle, and no work has been carried out during the year.

Molyneux Gold-dredging Co., Ltd. (R. P. Opie, Manager; S. Chapman, Dredgemaster).—The dredge, at the beginning of the year under review, was operating at a point in the Molyneux River, approximately two miles and a half above Clyde Bridge, having just been moved ahead a distance of 70 chains, due to the unsatisfactory recoveries that were being obtained at that time. The dredging conditions and characteristics of the ground remained almost unaltered for some time, but toward the end of February a decided improvement was shown and some good returns were obtained. Upon entering the very narrow and rocky section that lay ahead values fell off considerably in the confined channel to which dredging operations were limited by the rocky formation. It then became necessary to move ahead once again to a point near Champagne Gully. This section was very carefully dredged, in the light of some good recoveries that were apparently obtained by the old miners working on the banks many years ago, but from a dredging point of view it was not so satisfactory, and, after a comparatively short time, a very narrow gorge which then lay ahead once again necessitated the removal of the dredge a distance of three-quarters of a mile. On the completion of the removal the company's dredge was then operating in the area which many years ago was dredged, with a certain element of success, for a short time by the old Monte Christo Dredge. Some very satisfactory returns were obtained in this section, which appeared to coincide, as nearly as can be estimated at the present time, with the area worked by the old dredge, but the channel was narrow and the area decidedly limited. Once again massive reef formation was encountered, and, in consequence, values fell very considerably. Some difficulty was then experienced in moving ahead owing to the very narrow channel which lay between the reefs on either side; in fact, at three points it was necessary to blast away the rock formation in order to permit the dredge to be pulled ahead into the bay which lay beyond. By this time winter had set in and the river-level began to fall very rapidly, so that it became necessary, on 23rd June, to cease operations and moor the dredge in a safe bay until such time as the river-level permitted the safe passage of the dredge farther up the river. The river during the winter reached an extremely low level, at some points being as much as 17 ft. to 20 ft. below the usual summer level. The weather conditions throughout the next few months were very adverse, and a satisfactory rise was not obtained until 10th October, when the staff was re-engaged and a commencement made on the task of moving the dredge a distance of one mile and three-quarters. In this section of one mile and three-quarters there were no less than five severe falls, which were quite impassable for a large modern dredge with low river-level, but the rise in the river fortunately remained fairly constant for some time, and the task of moving was completed satisfactorily and operations recommenced on 21st November. Since then and to the close of the period under review the dredge has continued to operate satisfactorily. During the year ended 31st December, 1938, the dredge treated 416,740 cubic yards, recovered 1,097 oz. of gold, valued at £8,087, and traversed just over five miles of river. Twenty men were employed during the working-periods. This dredge is electrically-operated, and power is obtained from the Otago Power Board. A Diesel generator is provided on the dredge for use in the event of power-failure or other emergency.

Clutha River Gold-dredging, Ltd. (W. Curphy, Manager; A. E. Newick, Dredgemaster).—Dredging operations have been continued during the year under review, and the dredge has been operating in the Clutha River between Butchers Creek and the Manuherikia Junction. Two miles of the river course have been dredged, and work has been carried on with few delays, although the low state of the river during portions of the year caused some inconvenience. The gold was obtained principally from the rough ground near the banks of the river. The dredge is electrically-operated, power being obtained from the Otago Central Power Board. A Diesel generator, standby set, is provided on the dredge for use in case of power-failure or other emergencies. Drilling operations have been continued on the Earnscleugh and Alexandra Flats, four machines, employing twelve men, being in use during the major portion of the year. Twenty-three men have been employed, and the gold won amounted to 7,356 oz., valued at £66,264.

The *Austral New Zealand Mining, Ltd., Lowburn, near Cromwell. Vincent County* (T. Blackie, Superintendent).—Construction work has been carried on during the year, and the pontoons were successfully launched on the 16th August. Construction work is still being carried out, and it will be a considerable time before the work is completed. On account of the international situation there has been a big demand for high-class steels, with a consequent increase in price and sometimes a difficulty in obtaining prompt delivery. From twenty-six to forty men have been employed on the construction work.

Aitken's Dredge, Maitland, Waikaka Valley, Southland (R. L. Smaill, Dredgemaster).—This dredge has continued to operate in freehold land on the eastern side of the Gore – Little Waikaka Road. Average dredging depth 16 ft. Eight men have been employed. The dredge is steam-operated, and lignite coal is used for fuel.

Rainbow Dredging Co., Ltd., Waimumu, Southland (A. Cook, Dredgemaster).—Dredging operations were continued in the Waimumu area for a short period. The dredge was then dismantled and conveyed to the Waikaka Valley at Maitland, on the western side of the valley on freehold ground (Section 23, Block I, Chatton Survey District). The dredge was re-erected, and dredging operations were again resumed on the 9th May. Average dredging depth 8 ft. Two men have been employed, and the gold won amounts to 131 oz., valued at £1,070. This dredge is Diesel-operated.

There were seventy-two men employed on the working dredges during the year, and the gold won amounted to 10,589 oz., valued at £88,259.

MINERALS OTHER THAN GOLD.

Platinum.—The platinum won during the year was produced by J. Sorenson, Orepuki, and amounted to 1 oz. 6 dwt., valued at £7 8s. 11d.

Silver.—The Clutha River Dredging Co., Ltd., won 269 oz. 4 dwt. of silver, valued at £29 10s. 9d.

Silica Sand.—A total of 1,356 tons of silica sand was produced, valued at £997. The producers were the Blackburn Coal Co., Mount Somers, and W. S. Bower, Timaru, in Canterbury, and R. Christie, Hyde, Central Otago.

Tungsten.—The total yield of scheelite concentrates from the Glenorchy, Macraes, and Waipori Districts during the year amounted to 44 tons 12 cwt. The total value of this output cannot be given, as a quantity has not yet been disposed of. There has been an increase of over 20 tons, and the major portion of the output has been obtained from the Glenorchy District.

Boring Operations.

Vincent County.

The Labour Department (Employment Division) continued boring operations in the Galloway District on Runs 220H and 220I, Blocks VI and XIX, Tiger Hill Survey District. The Government No. 4 Alluvial Drill, with 6 in. casing, was used. Seventeen holes were drilled, and operations ceased in May. A total footage of 3,865 ft. was drilled on this field. The No. 4 drill was then transferred to the German Hill District on Run 261L, Poolburn Survey District, and operated from May to September, drilling twenty-one holes with a total footage of 1,253 ft. W. H. Gibson, Drill Superintendent.

Clutha River Gold-dredging, Ltd., continued an extensive drilling programme on the Alexandra and Earnscleugh Flats. For a considerable portion of the year four machines were in use. The No. 15 and No. 16 machines, belonging to the company, and the No. 6 alluvial and No. 2 steam Keystone Mines Department drills were in use for the major portion of the year. Six-inch casing was used, and the work was carried out under the supervision of A. Williamson, Drill Superintendent. In all, 149 holes were drilled for a total footage of 12,513 ft.

Accidents.

There were no fatal accidents during the year.

There were three serious accidents during the year, whereby four persons were injured.

On the 6th May Peter Ireland, a miner employed at the Sugar Loaf Alluvial Mine, Arthurs Point, Queenstown, was injured through being hit by a wire rope. He suffered fractured ribs and injury to a kidney.

On the 8th September Bert Wright, an employee of the Clutha River Dredging Co., suffered a severe injury to his left foot, necessitating its amputation, through being caught between the dredge and a boulder on the river-bank.

On the 20th October J. Wylie, mine-manager, and E. Elgin, miner, of the Heather Jock Scheelite Mine, Glenorchy, were injured through the collapse of a wooden trestle during the installation of an aerial cable-way. Wylie suffered a fractured right forearm and Elgin a broken nose, a twisted knee, and abrasions.

General Remarks.

The gold won from quartz mining during the year amounted to 1,028 oz. 14 dwt. 22 gr., valued at £6,814 11s. 9d., this being an increase of 29 oz. 4 dwt. 20 gr., with a decrease in value of £214 7s. 4d. The number of men decreased by seventeen.

There has been a considerable decrease in the yield of alluvial gold during the year under review. This can be accounted for by the very considerable decrease in the number of men employed, the very dry season, and the increasing difficulty of production. The gold produced by the alluvial mines amounted to 11,864 oz. 13 dwt. 23 gr., valued at £88,598 6s., this being a decrease of 3,856 oz. 11 dwt. 6 gr., valued at £26,621 6s. 8d. The number of men decreased by 322.

The amount of gold obtained by dredge-mining amounted to 10,320 oz., valued at £88,230, this being an an increase of 283 oz. in quantity and of £3,924 in value. The number of men employed decreased by eleven. This decrease can be accounted for by the cessation of dredging by the Waipapa Beach and the Bendigo Goldlight dredges. Thirty-five men were employed in dredge-construction work.

The number of men employed on the subsidized mining schemes has decreased considerably, and many areas have been eliminated as being valueless from a mining point of view. The subsidized scheelite miners in the Glenorchy District have continued to operate during the year, and in some cases men have become self-supporting, as the assisted development work has enabled them to locate payable deposits. Many sections of the Glenorchy reefing areas are being prospected, and there has been an increase in the output of scheelite concentrates during the year.

The Clutha River Gold-dredging Co. continued the extensive drilling programme on the Alexandra-Clyde Flats during the whole year. Two machines were used and drilling operations are being continued. On the Earnscleugh Flats two machines were operating until October, when they were transferred to the Alexandra terraces.

Labour Department's Gold-mining Scheme: Summary of Results of Special Investigations.

The scheme was inaugurated in 1932 and, in the earlier years, small parties of prospectors carried out operations in practically all the known auriferous areas in the Southern District, but in no case was any deposit of an enduring life opened up. As it was considered that certain alluvial areas were potential "deep lead" or dredging deposits it was decided in May, 1934, at the request of the Lake County Mining Executive, to proceed with the testing of the Millers Flat sector of the Shotover Survey District, between Arthurs Point and Arrowtown, in the Lake County.

A magnetic survey of the area was carried out by the Department of Scientific and Industrial Research, and a site for the drilling was selected in the freehold of Messrs. Reid and Butel.

Ten holes, in two lines, with a total footage of 1,650 ft., were drilled across the line of the buried channel using the Mines Department's No. 2 Keystone drill with 6 in. casing. This drilling was carried out from May to August, 1934. A belief had been held that this area was an old river-bed and possibly gold-bearing, but the results of the drilling proved conclusively that the buried channel was not gold-bearing and that the valley had been formed by glacial erosion.

Waenga.

A party of subsidized men were testing a deep lead or buried river channel at Waenga, in the Clyde-Cromwell Gorge in Run 238D, Block VIII, Leaning Rock Survey District, Vincent County, by means of a dip drive. It was decided, in September, 1935, in order to expedite this work, to drill the area, and twenty-nine holes were drilled with a total footage of 1,183 ft. The Mines Department No. 2 steam Keystone and the No. 4 alluvial drill, with 6 in. casing, were used for the work.

This drilling was undertaken in order to locate the course and width of the buried channel and to ascertain the nature of the bedrock underlying the channel. When this data was obtained the No. 4 alluvial drill was transferred to the Luggate area. The drilling operations at Waenga were carried out from September, 1935, to February, 1936.

Driving and prospecting operations were continued at Waenga until June, 1936, when it was definitely proved that the lead was too low valued, too narrow, and too near the main road and railway-line to be a profitable deep lead proposition.

Luggate.

An area of Crown land in Run 531, Block VI, Tarras Survey District, Vincent County, was drilled by the No. 4 alluvial drill, using 6 in. casing, during the period from February to July, 1936.

A total of seventy-two holes, with a footage of 1,958 ft., was drilled, and the results obtained from this drilling gave a total yardage of 315,440 cubic yards at an average value of 3·6d. per cubic yard, and a total value of £4,723. This yardage and value were too small to warrant large-scale mining operations, and the nature of the deposit, together with the excessive water seepage, prevented the adoption of driving methods.

Branch Creek.

The drill was then transferred to the Branch Creek section of the Cardrona Valley on Run 340B, Block II, Cardrona Survey District, Lake County. A total of 148 holes, with a footage of 1,780 ft., was drilled, and 6 in. casing was used. The drilling period commenced in August, 1936, and concluded in February, 1937. As this sector had been considered to be workable the testing was thorough, and proved that the average depth of the ground is 10·6 ft., with a total yardage of 1,237,000 cubic yards and an average value of 1·56d. per yard, with a total value of £8,040.

These results show that there is practically no possibility of working the ground profitably.

Galloway.

The drill was then transferred to Runs 220H and 220I in Blocks VI and XIX, Tiger Hill Survey District, about two miles and a half north-west from Galloway Railway-station. The ground was deep when compared with Luggate and Branch Creek, and a total of fifty-seven holes, with a footage of 3,865 ft., was drilled during the period from March, 1937, to May, 1938.

This drilling indicated that the major portion of the area drilled had a depth of between 65 ft. and 82 ft. from the surface-level, but that values existed only in portions of the area. A few good values were located, but the drilling as a whole gave very low values, and the area is of no value from a dredging or gravel-pumping point of view.

German Hill.

The No. 4 alluvial drill was then transferred to German Hill in Run 261L, Poolburn Survey District, where twenty-one holes were drilled, with a total footage of 1,253 ft., during the period from May to September, 1938. A line of holes was drilled parallel to the foothills in order to ascertain if a dredging or gravel-pump area existed on the flat below the German Hill surface workings. The first row of holes proved that the schist bed-rock was dipping at the rate of 14 ft. per chain. A second row of holes was drilled farther out on the flat, and the last hole drilled reached a depth of 158 ft. Values in this and the adjoining hole indicated that a deep lead exists in this area parallel to the line of the foothills.

As this drilling was carried out in order to ascertain if shallow ground existed suitable for either dredge or gravel-pump mining, drilling operations were suspended when the deep ground was located. The result of this drilling has shown that there are a few acres of shallow ground along the foothills which could be worked by a small elevator plant if a suitable water-supply could be obtained. Up to the present time it has been impossible to obtain pressure water for elevating purposes, as this is a very dry area, with a resultant poor water-supply. No expression of opinion can be given on the possibilities or extent of the deep ground until further drilling is carried out.

Devonshire.

In order to test the extension of the Devonshire deep lead eastward towards the Matakanui deep-lead workings the No. 7 Niven drill, using 4 in. casing, was employed from January, 1936, to April, 1937, on Run 223O, Block VIII, Lauder Survey District. During this period twenty-one holes, with a total footage of 1,225 ft., were drilled. The Matakanui deep lead, about five miles to the east of the Devonshire deep lead, had been extensively worked, and had yielded good returns until the depth of the workings prevented further profitable work with the water-pressure available.

It has always been considered by the local mining experts that the deep lead is continuous between Matakanui and Devonshire, having been covered by hill-slope material from the foothills of the Dunstan Range. This drilling was carried out so that the eastward extension could be traced from the Devonshire end of the field.

The eastward extension was proved for a distance overlain by varying depths of overburden, but drilling operations were suspended before the track of the hidden lead could be fully outlined. The value and width of the lead were not ascertained, as either deep-drilling or prospecting shafts would be required for this purpose.

The results of the drilling campaign proved that the Arrowtown, Waenga, Luggate, Branch Creek, and Galloway areas were of no use from an economic mining point of view. The German Hill drilling proved that deep ground existed parallel to the foothills on the flats in front of the German Hill surface workings, and the Devonshire drilling proved that the deep lead extends toward the Matakanui deep-lead workings, being overlain by hill-slope detritus between the surface workings at Devonshire and Matakanui.

Reef-prospecting.

During the early years of the scheme all the reefing areas in the Otago Central and Lake County areas were again prospected by small parties of subsidized and other miners, but nothing of importance was located. It was then decided to give the most promising areas a thorough test by means of organized parties of experienced reef-miners under the supervision of practical prospectors acting under instructions from the area mining engineer.

Skippers Creek Survey District.

In March, 1937, a party of four men prospected the reefing systems of the Skippers area under the supervision of Supervisor George Carson. The following line of lodes was prospected by trenching, dollying, and sampling:—The British American (the extension of the Bullendale reef system), Sainsbury Reef, the Canobia, the Eureka, the Mountain Terrace, the Ballarat Creek, Harveys Reef, and Short's Reef.

The samples taken gave the following returns:—

British American	6 grains per ton.
Sainsbury Reef	15 dwt. 15 grains per ton.
Canobia	9 dwt. 2 grains per ton.
Eureka	6 grains per ton.
Mountain Terrace	5 dwt. 5 grains per ton.
Short's Reef	4 grains per ton.

Prospecting-work had to be discontinued on account of the weather conditions, and operations ceased in April, 1937. The results obtained proved that the reefing systems were broken, with small bunches of low-grade quartz in irregular blocks.

As Sainsbury Reef had given the most promise, a party of two experienced men, under the supervision of the area mining engineer, was sent out to this reef in February, 1938. Old prospecting drives were re-opened and the line of reef in the direction of the Bullendale area opened up by trenching. The mining engineer then sampled the various sections of the reef, taking twelve samples :—

Sample No.	Assay Result. (Per ton of 2,240 lb.) Oz.	dwt.	gr.
1	0	0	22
2	0	2	2
3	0	0	21
4	0	4	7
5	0	0	10
6	0	1	10
7	0	0	21
8	0	2	12
9	0	0	15
10	0	1	13
11	1	19	0
12	0	0	21

Only one of these samples, No. 11, gave a reasonable value. Work was discontinued in March, 1938.

The work done confirmed the results obtained by the previous party, and proved conclusively that there were only small blocks of low-grade stone at irregular intervals on the line on the Sainsbury reef.

The general results of this prospecting have proved the thoroughness of the early prospectors, who have left little payable surface quartz.

Rough Ridge or Oturehua Reefing System in the Blackstone Survey District, Central Otago.

As this system had yielded good returns in the early reefing periods it was decided to give this area a thorough test, first of all by opencuts and trenching, and finally by driving and sinking methods. The Otago Central Reef, Dovers Reef Nos. 1, 2, 3, and 4, West of England, Great Eastern, Gardiners, Gardiners North, Perseverance, Paynes, Lloyds, Connells, Golden Progress, and the North of England lines of reefs were located by trenching and opencutting, and the whole of the reefing system was plotted and a plan made showing the relationship of these lines of reef.

Where promising prospects were obtained the trenches were deepened, drives were put in, and, in the Otago Central Reef and the Dover No. 3 reef, prospecting-shafts were sunk to a depth of 50 ft. In all cases the width and value of the leaders decreased at depth. In order to test Paynes reef at depth a level was reconditioned and the face extended to a distance of 264 ft. from the surface, but the reef did not live down, and there was only a reef track 2 in. wide carrying a little mineral when the reef line was intersected.

The results obtained from this prospecting showed that the reefs and leaders became poorer at depth and that here again the early reef miners had extracted all the payable blocks of surface quartz.

Eight men were employed under Supervisor George Carson from May, 1937, to September, 1938.

Barewood, Nenthorn Survey District.

Similar prospecting and mapping work was carried out on the Barewood line of reefs, from January to April, 1938, under the supervision of Mr. Archibald Graham, Mining Geologist.

This area is situated in the Nenthorn Survey District, Otago, and lies between the Taieri River and its tributary, Flat Stream. The Taieri Gorge Reef, the Castle Creek Reef, Main Barewood Reef, Ewarts Reef, Coolgardie Reef, and an unnamed reef lying to the south of Trig. A were prospected by trenching and open-cut methods. The results obtained proved that the surface gold and scheelite blocks of ore had been stoped out when this field was previously worked, and that the only methods of testing the possibilities of this area at depth are by means of core drilling or a combination of shaft sinking and core drilling.

Glenorchy, Earnslaw Survey District.

Special prospecting-work, under Supervisor James Reid, was carried out in the Upper Oxburn basin situated in Blocks XVI and XVII and parts Blocks XIII and XIV in Earnslaw Survey District, where there were numerous reef outcrops.

Two men were employed in March and April, 1938, and fifty samples were taken from reef outcrops. These samples were assayed, but the values proved to be low, ranging from 2 dwt. 23 gr. downwards. No further work was carried out, as the prospects of locating payable reefs were poor.

ANNEXURE B.

STONE QUARRIES.

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

(R. H. Schoen.)

The following is my report for the year ending 31st December, 1938, covering quarries and tunnels worked under the Stone Quarries Act, 1910, in the North Island District. The statement attached gives details of the number of quarries worked, men employed, output of various classes of stone, and value of stone at quarries.

Quarries and Tunnels worked and Men employed.

Quarries.

Three hundred and twenty-three quarries were worked during 1938, showing an increase of thirty-four over the number worked in the previous year, while the number of men employed increased by 468, from 1,486 in 1937 to 1,954 in 1938.

The increase in the number of quarries worked and men employed is probably due to the great activity noticeable throughout the year in roading contracts, particularly in secondary-roading work being carried out by North Auckland counties. The large fixed quarries with steady business do not seem to contribute much to variation in the number of men employed. In these cases the quarry itself is generally well organized for production, which can be increased by arranging for a better throughput at the plant.

Work on city reserves involving quarrying in Auckland and Wellington has also increased the number of men employed.

Tunnels.

Wellington City Council.—A commencement was made early in February with a sewer tunnel extending from Drummond Street to Molesworth Street. At the last inspection fifty men were employed at the different faces and in lining work, 3,748 ft. having been driven. The tunnel is timbered when driven, the permanent lining of brick and concrete being put in as each length is completed. Good ventilation is provided by fans, and electric light is used. The work throughout is of a high standard.

Birkenhead Borough Council.—A tunnel was driven 700 ft. by the contractor to the borough to provide an outfall at Brassey Road for the borough's sewerage scheme. The tunnel was driven 3 ft. by 5 ft. in the clear through sandstone and papa and was timbered throughout. Ventilation by fan. Eight men were employed in tunnelling.

Output of Stone.

The bulk of the output from quarries in the North Island district is used for roading purposes, and during 1938 continued expansion of this work has caused another large increase in output from the quarries used. The output for road use during 1938 was 1,110,078 tons, an increase of 232,280 tons on the 1937 total of 877,798 tons.

Limestone quarried for the manufacture of agricultural lime, with a total of 181,008 tons, showed an increase of 16,519 tons over the 1937 total of 164,489 tons, while limestone for cement increased by 45,944 tons, from 173,174 tons in 1937 to 219,118 tons in 1938. Stone for miscellaneous purposes has been increased by 119,531 tons to a total of 180,263 tons for 1938. Nearly all of this increase can be accounted for by outputs from quarries on city reserves, the material being used largely for filling and reclamation work within the city boundaries.

The total tonnage of stone produced during the year was 1,697,057, valued at £325,952 at the quarry. The 1937 total was 1,298,199 tons, valued at £263,622.

Accidents.

The following accidents occurred in quarries during 1938:—

Fatalities.

On 26th June, at Hunua Quarry, Papakura, Percival William Piggott, loader, aged twenty-six years, single, was struck by an empty iron truck running down a ramp from the crusher, and was fatally injured.

On 29th June, at a quarry operated by the Bay of Islands County Council at Opahi, Henry Graydon Wright, quarryman, married, aged fifty-four years, while charging a hole with gelignite, received fatal injuries due to a premature explosion.

On 27th September Frederick Charles Liddy, loader, married, aged forty-seven years, employed at Wellington City Corporation Moa Point Quarry, was struck on the head by a piece of stone from a shot fired 181 ft. away, and was fatally injured.

Serious Accidents.

On 2nd May Charles Weller, quarry foreman at H. Bray and Co.'s quarry, Bombay, was trucking stone and slipped under the front of a truck, sustaining a fracture of the right leg.

On 8th June George Jones, quarryman at McCallum's Karamuramu Island Quarry, Kawakawa Bay, was charging a down hole with lithyte, when a premature explosion occurred. He slipped down face with broken rock. Injuries consisted of burns to face, injuries to eyes, and lacerations on left forearm.

On 4th July T. A. Marshall, tunneller, employed at Wellington City Corporation sewer tunnels at Buckle Street north drive, was struck on the neck by precast concrete invert while assisting to put it into position, and sustained a fracture of the spinous process of one of the neck vertebræ.

On 19th July L. Turchi, popperman, employed at Auckland City Council quarry, Mount Eden, had two small bones broken in his right ankle when a stone slid 4 ft. down a heap of broken rock where he was working.

Magisterial Inquiry.

A magisterial inquiry, as required by section 11 of the Stone Quarries Act, into the circumstances of the death of Frederick Charles Liddy at Moa Point Quarry, Wellington, was held before Mr. W. F. Stillwell, S.M., on 8th November, 1938. The Magistrate's finding was that no negligence in the performance of his obligations had been disclosed by the evidence against the quarry foreman.

Prosecution.

On 6th December a quarry foreman and contractor was proceeded against on two charges of breaches of explosive rules under the Stone Quarries Act, section 9, and one charge of breach of Regulation 51. He pleaded guilty, and was fined £2 10s., costs 10s.; £1, costs 10s.; convicted, costs £3, on the three charges.

ANNEXURE C.

MINING STATISTICS.

Table I.

STATEMENT SHOWING THE QUANTITY OF QUARTZ CRUSHED AND BULLION OBTAINED IN THE NORTHERN INSPECTION DISTRICT FOR THE YEAR ENDED 31ST DECEMBER, 1938.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Bullion obtained by		Value.
			Amalgamation.	Cyanidation.	
WAIHI BOROUGH.					
Waihi—		Tons cwt. qr.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
Martha	605	181,740 0 0	..	401,722 6 0	398,477 12 5
Grand Junction	2	979 0 0	..	1,812 14 0	2,433 2 8
Silverton Battery-site	..	..	6 14 0	..	15 7 9
	607	182,719 0 0	6 14 0	403,535 0 0	400,926 2 10
OHINEMURI COUNTY.					
Karangahake—					
Talisman-Dubbo	20	1,667 8 0	..	1,688 18 0	3,068 6 4
New Talisman	2	32 0 0	..	91 17 0	99 6 7
Talisman Battery-site	2	150 0 0	122 12 0	..	475 2 0
Waiawa	10	484 10 0	..	580 11 0	1,820 15 4
Comstock	3	4 6 0	..	8 3 0	27 17 1
Waitekauri—					
New Maoriland	2	50 0 0	56 2 0	..	254 19 5
Owharoa—					
Golden Dawn	40	2,064 0 0	..	2,950 1 0	8,864 1 8
Komata—					
Te Ao Marama	18	235 0 0	..	887 18 0	1,388 3 11
	97	4,687 4 0	178 14 0	6,207 8 0	15,998 12 4
THAMES COUNTY.					
Neavesville—					
Remuera	10	364 0 0	178 18 0	..	822 18 6
Tapu—					
Kernick's	4	16 0 0	241 10 0	..	1,485 8 8
Shannon	2	3 12 0	121 10 0	..	714 14 2
Tapu	2	10 0 0	25 5 0	..	133 0 0
Tararu—					
Eclipse	2	7 10 0	7 3 0	..	37 2 6
Puru—					
Golden Ridge	7	515 0 0	243 15 0	..	1,266 0 0
Puhoi—					
Mountain King	2	19 1 1	36 4 0	..	218 3 10
Hector McDonald	2	7 10 0	10 5 0	..	76 6 3
Tairua—					
Tairua	6	30 0 0	13 5 0	..	55 16 7
Western	4	50 0 0	21 9 0	..	70 16 0
Coric Bell	2	10 0 0	4 13 0	..	23 9 3
Blue Pidgeon	2	7 10 0	4 12 0	..	13 8 1
Puketui	1	15 0 0	18 10 0	..	89 0 0
Battery clean-ups	..	..	116 16 0	..	206 8 8
Prospectors	8	27 14 0	14 8 0	..	54 11 6
	54	1,082 17 1	1,058 3 0	..	5,267 4 0
THAMES BOROUGH.					
Thames—					
Lucky Shot	5	20 5 2	35 7 0	..	180 16 11
Progress	4	72 0 0	38 18 0	..	176 0 0
Little Horseshoe	2	7 13 0	52 18 0	..	267 13 7
Cambria	1	..	7 19 0	..	43 10 2
Lap	1	80 0 0	11 12 0	..	45 6 0
Hopeful	2	8 0 0	28 4 0	..	158 1 11
Relief	2	6 13 2	9 14 0	..	48 15 4
Anniversary	2	7 10 0	2 2 0	..	11 13 1
Dauntless	2	5 0 0	13 1 0	..	67 9 10
Advance	3	32 10 0	4 18 0	..	25 11 8
Prospectors	2	..	4 12 0	..	24 2 5
Collections	..	..	19 16 0	..	108 4 3
	26	239 12 0	229 1 0	..	1,157 5 2

Table 1—*continued.*

STATEMENT SHOWING THE QUANTITY OF QUARTZ CRUSHED AND BULLION OBTAINED IN THE NORTHERN INSPECTION DISTRICT FOR THE YEAR ENDED 31ST DECEMBER, 1938—*continued.*

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Bullion obtained by		Value.
			Amalgamation.	Cyanidation.	
COROMANDEL COUNTY.					
Coromandel—		Tons. cwt. qr.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
Hauraki	2	4 0 0	6 9 0	..	39 10 5
Land's	2	..	6 14 0	..	38 5 3
Tokatea—					
New Royal Oak	6	2 14 0	278 0 0	..	1,362 4 8
Gem	2	12 14 0	11 9 0	..	60 19 2
Southland	2	10 5 0	32 15 0	..	184 16 3
Rock-of-ages	2	0 10 0	5 7 0	..	28 3 6
Speedmint	2	5 0 0	25 1 0	..	139 13 7
Tiki—					
Pukewhau	2	2 5 0	26 11 0	..	150 4 4
Dredgers Ltd.	2	..	22 11 0	..	134 5 4
Waikoromiko—					
Lone Hand	2	2 10 0	19 15 0	..	107 9 9
Preece's Point—					
Success	2	60 0 0	6 3 0	..	32 2 3
Whenuakite—					
Heather Bell	4	305 0 0	112 9 0	..	635 5 7
Opitonui—					
Rexman	6	200 0 0	33 12 0	..	204 0 0
Prospectors	7	..	21 5 0	..	113 11 1
	43	604 18 0	608 1 0	..	3,230 11 2
SUMMARY.					
Waihi Borough	607	182,719 0 0	6 14 0	403,535 0 0	400,926 2 10
Ohinemuri County	97	4,687 4 0	178 14 0	6,207 8 0	15,998 12 4
Thames County	54	1,082 17 1	1,058 3 0	..	5,267 4 0
Thames Borough	26	239 12 0	229 1 0	..	1,157 5 2
Coromandel County	43	604 18 0	608 1 0	..	3,230 11 2
Totals, 1938	827	189,333 11 1	2,080 13 0	409,742 8 0	426,579 15 6
Totals, 1937	978	211,851 14 0	1,779 11 0	507,807 9 0	511,585 5 9

Table I—*continued.*

STATEMENT SHOWING THE QUANTITY OF QUARTZ CRUSHED AND BULLION OBTAINED IN THE WEST COAST INSPECTION DISTRICT FOR THE YEAR ENDED 31ST DECEMBER, 1938.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Bullion obtained by		Value
			Amalgamation.	Cyanidation and Concentration.	
INANGAHUA COUNTY.					
Alexander River—		Tons cwt. qr.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
Alexander	33	2,163 0 0	1,156 11 0	508 19 0	13,593 8 9
Big River—					
Big River	24	2,289 0 0	1,440 15 0	119 0 0	13,020 6 5
Crushington—					
Lankey's Creek (Watts and Party)	3	478 0 0	111 7 0	..	851 10 0
Waiuta—					
Blackwater	230	43,506 0 0	16,079 16 0	3,385 12 0	161,147 5 11
Snowy River—					
Homer	18	210 0 0	40 4 15	..	248 9 8
BULLER COUNTY.					
Westport—					
Gillow's Terrace	2	..	..	11 14 21	80 5 8
Totals, 1938	310	48,646 0 0	18,828 13 15	4,025 5 21	188,941 6 5
Totals, 1937	284	49,234 0 0	18,551 5 6	5,286 3 23	191,807 6 11

STATEMENT SHOWING THE QUANTITY OF QUARTZ CRUSHED AND BULLION OBTAINED IN THE SOUTHERN INSPECTION DISTRICT FOR THE YEAR ENDED 31ST DECEMBER, 1938.

Locality and Name of Mine.	Average Number of Men Employed.	Quartz crushed.	Bullion obtained by		Value.
			Amalgamation.	Concentration.	
VINCENT COUNTY.					
Bendigo—		Tons cwt. qr.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
Shine Again Gold-mining Co., Ltd.	4	204 0 0	23 15 8	..	172 0 0
Ophir—					
Earl and Brown	2	78 0 0	45 1 5	..	333 1 7
LAKE COUNTY.					
Skippers—					
J. R. Tripp	4	226 0 0	144 1 2	..	1,053 5 11
WAIHEMO COUNTY.					
Macrae's Flat—					
Macrae's Flat Gold and Scheelite Mining Co., Ltd.	7	922 0 0	362 12 19	85 2 12	2,743 8 7
Callery and Bradbrook ..	3	655 0 0	238 10 0	37 19 0	1,885 19 6
L. C. Galli	2	78 0 0	91 13 0	..	626 16 2
Totals, 1938	22	2,163 0 0	905 13 10	123 1 12	6,814 11 9
Totals, 1937	39	2,097 0 0	999 10 2	..	7,028 19 1

SUMMARY OF INSPECTION DISTRICTS.

Inspection District.	Average Number of Men employed.	Quartz crushed.	Bullion obtained.	Value.
		Statute Tons.	Oz. dwt. gr.	£ s. d
Northern (North Island)	827	189,334	411,823 1 0	426,579 15 6
West Coast (South Island)	310	48,646	22,853 19 12	188,941 6 5
Southern (Otago and Southland) ..	22	2,163	1,028 14 22	6,814 11 9
Totals, 1938	1,159	240,143	435,705 15 10	622,335 13 8
Totals, 1937	1,301	263,183	534,423 19 7	710,421 11 9

In addition 30 persons were employed at unproductive quartz-mining.

Table 2.

STATEMENT OF AFFAIRS OF MINING COMPANIES.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up in Cash.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount called up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold and Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
AUCKLAND DISTRICT.														
		£	£	£			£			oz.	£	£	£	£
Rangitoto Mining Co., Ltd.	3/2/36	1,000	1,000	Nil	1,000	£1	Nil	2	Nil	15	29	4,865	Nil	3,865
Mercury Deposits, Ltd.	21/12/36	3,000	200	2,800	3,000	£1	Nil	5	Nil	Nil	Nil	3,000	Nil	Nil
Golden Crown Gold-mining Co. (No Liability)	12/10/32	23,008	17,174	4,000	230,078	9d. and 2/-	Nil	258	16	1,084	2,143	31,310	Nil	1,267
Tararu Prospecting Co., Ltd.	25/8/36	1,500	675	500	1,500	Various	Nil	3	Nil	Nil	Nil	682	Nil	Nil
Tairua Gold-mining Co., Ltd.	18/4/35	3,730	1,123	2,500	3,730	Various	Nil	26	Nil	Nil	Nil	1,143	Nil	38
Rexman Mines, Ltd.	29/7/36	13,000	6,000	7,000	52,000	5/-	Nil	71	Nil	Nil	Nil	12,370	Nil	Nil
Opitonui Consolidated Gold-mining Co., Ltd.	16/8/38	10,868	6,071	3,500	43,475	Various	1,202	64	10	27	180	11,483	Nil	1,772
Gold Recovery, Ltd.	24/7/36	1,500	975	200	1,500	15/-	Nil	21	Nil	Nil	Nil	1,164	Nil	50
Opitonui Developments, Ltd. (In Liquidation)	11/6/33	5,302	3,302	2,000	5,302	£1	Nil	59	Nil	Nil	Nil	5,448	Nil	268
Drilling Prospectors, Ltd.	11/5/38	400	350	50	400	£1	Nil	9	2	Nil	Nil	424	Nil	239
Minerals Concentrator Co., Ltd.	27/5/31	6,530	3,455	3,075	6,530	£1	Nil	41	Nil	Nil	Nil	3,226	Nil	495
Monowai Gold Development, Ltd.	2/3/37	607	269	Nil	607	£1	337	8	Nil	Nil	Nil	73	Nil	126
Puru Gold, Ltd.	7/12/35	1,575	1,075	500	8,575	2/6 and £1	Nil	29	Nil	Nil	Nil	1,604	Nil	360
Mirandite Products, Ltd.	24/12/34	2,800	1,548	735	2,800	15/-	Nil	47	2	*	..	2,001	Nil	Nil
Heather Bell Mining Co., Ltd.	23/3/36	4,928	1,928	3,000	4,888	£1	Nil	63	4	138	592	1,998	Nil	6,287
* Produced 500 tons of Manganese valued at £500.														
NELSON DISTRICT (INCLUDING WEST COAST).														
Worksop Extended Gold-dredging Co., Ltd.	8/9/33	16,000	9,000	7,000	320,000	1/-	Nil	223	12	8,433	64,055	38,748	20,800	769
Westland Developments, Ltd. (In Liquidation)	24/1/35	8,775	2,278	Nil	175,500	3½d.	127	33	Nil	Nil	Nil	2,118	Nil	..
Koura Mining Co., Ltd.	29/3/34	1,260	1,260	Nil	126	£10	Nil	16	Nil	33	289	3,775	Nil	810
Gillespies Beach Gold-dredging Co., Ltd.	10/2/32	35,000	29,250	5,750	700,000	£1	Nil	769	16	10,487	83,463	78,238	21,000	Nil
Snowy River Sluicing Co., Ltd.	10/12/31	26,116	25,163	Nil	522,325	1/-	953	379	Nil	174	1,217	23,402	Nil	100
Big River Gold-mines, Ltd.	29/9/29	30,000	27,145	2,855	600,000	1/-	Nil	660	28	8,089	62,895	71,092	5,000	869
Addison's Flat Gold-mining Co., Ltd.	7/2/33	6,500	4,950	1,550	130,000	1/-	Nil	109	10	3,314	25,095	24,417	333	144
Lawson's Flat Gold-sluicing Co., Ltd.	4/2/33	18,043	15,043	3,000	360,875	1/-	Nil	324	Nil	2,729	20,125	37,764	Nil	678
Mataki Gold-dredging, Ltd.	15/1/32	33,741	24,341	9,400	337,409	2/-	Nil	520	15	8,942	65,547	80,104	8,435	468
Nemona Gold-dredging Co., Ltd.	30/7/35	18,000	16,000	2,000	360,000	1/-	Nil	146	13	6,177	48,851	45,155	21,000	679
New River Gold-dredging Co., Ltd.	16/11/34	16,912	11,412	5,500	338,245	1/-	Nil	200	10	3,521	26,862	41,751	1,409	311
Moonlight Goldfields Co., Ltd.	21/11/33	20,582	11,343	8,737	617,476	8d.	501	197	17	2,880	25,117	51,008	2,477	36
Blackball Creek Gold-dredging, Ltd.	25/5/37	18,000	13,500	4,500	360,000	1/-	Nil	159	14	1,305	10,982	43,849	Nil	Nil
Kumara Gold-mining Co.	13/3/36	1,028	Nil	1,028	1,028	£1	Nil	17	Nil	Nil	Nil	Nil	4,959	Nil
New Welcome Gold-mining Co., Ltd.	12/2/37	6,892	2,999	1,750	137,840	7d.	354	121	10	Nil	Nil	2,471	Nil	110
White's Electric Gold-dredging Co. (Barrytown), Ltd.	13/12/34	21,979	14,724	7,000	439,575	1/-	254	194	17	2,472	18,692	51,127	Nil	3,278
Alexander Mines, Ltd.	9/3/26	75,000	34,500	29,000	75,000	15/-	190	340	33	33,900	213,861	234,367	48,750	220
Cumberland Prospecting Co., Ltd.	21/12/34	3,690	1,190	2,500	3,690	£1	6	24	Nil	Nil	Nil	3,060	Nil	Nil
Maori Gully (Kokiri) Gold-dredging Co., Ltd.	27/10/33	24,000	18,000	6,000	480,000	1/-	Nil	670	10	6,150	45,520	53,028	6,000	309
Asbestos Mines (N.Z.), Ltd.	14/10/37	1,875	1,000	625	1,875	Various	13	19	1	Nil	Nil	964	Nil	Nil
Mount David Sluicing Co., Ltd.	2/9/30	50,000	30,000	20,000	200,000	5/-	Nil	267	4	614	3,949	72,825	Nil	10,986
New River Alluvials, Ltd. (In Liquidation)	8/9/32	3,000	2,300	700	300	£10	Nil	42	Nil	Nil	Nil	2,131	Nil	83
Glenroy Gold, Ltd.	19/10/33	16,000	12,000	4,000	320,000	1/-	Nil	222	3	501	3,616	20,045	Nil	285
Paroa Gold, Ltd.	11/7/36	4,189	2,912	Nil	83,790	10d.	579	80	Nil	Nil	Nil	Nil	Nil	Nil
Buller Diversion Gold-mining Co., Ltd.	13/3/28	10,634	6,343	3,125	49,910	3/- and 5/-	1,006	155	Nil	Nil	Nil	8,030	Nil	311
Arahura Gold-dredging, Ltd.	6/3/36	205,000	200,000	Nil	200,000	1/- and 15/-	Nil	320	5	Nil	Nil	191,706	Nil	9,448
N.Z. Mining Investments, Ltd.	12/8/31	7,291	6,791	500	145,830	1/-	Nil	121	Nil	Nil	Nil	6,840	Nil	273
Waikakaho Deep Lead, Ltd.	7/9/34	10,525	7,678	2,800	210,010	1/-	31	221	5	Nil	Nil	10,430	Nil	100

Greenland Gold, Ltd.	15/4/37	30,457	19,507	5,000	30,457	16/-	Nil	212	Nil	Nil	Nil	10,829	Nil	5,000
Mossy Creek Gold-dredging Co., Ltd.	31/1/34	15,000	11,400	3,600	300,000	1/-	Nil	168	12	6,852	45,504	43,606	15,000	175
Argo Gold-dredging Co., Ltd.	16/7/34	24,000	17,000	5,000	480,000	6d. and 1/-	Nil	342	14	10,264	82,079	64,162	31,200	2,306
Okarito Five-mile Beach Gold-dredging Co., Ltd.	29/10/28	35,000	30,500	4,500	140,000	5/-	Nil	419	11	14,922	98,777	97,263	38,500	230
Waitahu Gold-mining Co., Ltd.	17/3/32	40,000	34,000	6,000	160,000	5/-	Nil	325	9	3,334	25,135	57,946	1,333	144
Diamond's Flat Gold-mining Co., Ltd.	29/9/34	6,405	3,304	2,000	128,100	9d. and 1/-	Nil	67	3	132	908	9,127	Nil	3,517
Rimu Gold-dredging Co., Ltd.	20/7/20	166,672	142,863	23,809	166,672	£1	Nil	16	43	207,082	1,236,702	1,073,685	157,051	11,417
Bierwirth's Gold Reefs, Ltd.	31/1/35	4,000	Nil	4,000	4,000	£1	Nil	76	Nil	528	4,070	8,328	Nil	4,913
Golden Sands, Ltd.	2/2/32	7,000	4,000	3,000	140,000	1/-	Nil	135	10	3,859	30,618	21,429	7,166	954
Dominion Mineral Prospecting Co. (No Liability)	12/3/37	623	467	Nil	12,457	9d.	Nil	Nil	Nil	Nil	Nil	404	Nil	Nil
Hura Gold Prospecting Co., Ltd.	22/3/35	3,000	7	2,993	60,000	1/-	Nil	14	Nil	Nil	Nil	Nil	Nil	Nil
Barrytown Gold-dredging, Ltd.	21/9/34	128,750	128,750	Nil	200,000	1/- and £1	Nil	264	34	9,786	73,996	218,437	Nil	37,059
Totara Gold-mining Co., Ltd.	19/12/36	11,837	6,043	5,750	11,837	£1	44	45	6	31	223	4,848	Nil	4,496
Pool Ltd.	1/3/35	5,000	5,000	Nil	5,000	£1	Nil	35	Nil	Nil	Nil	5,454	Nil	450
Kanieri Gold-dredging, Ltd.	30/11/35	205,000	205,000	Nil	300,000	1/- and £1	Nil	333	29	374	2,897	219,078	Nil	16,105
Gold Mines of New Zealand, Ltd.	5/10/34	4,500	4,500	Nil	4,500	£1	Nil	13	3	Nil	Nil	10,888	Nil	553
Kumara Alluvials, Ltd.	3/11/36	3,200	1,117	1,550	64,000	1/-	533	7	2	Nil	Nil	2,585	Nil	1,624
OTAGO DISTRICT.														
Oxenbridge Shotover Gold, Ltd.	14/7/33	12,500	8,300	4,200	250,000	1/-	Nil	160	Nil	82*	596	12,028	Nil	413
Sailor's Gully (Waitahuna) Gold-mining Co., Ltd.	3/6/1896	8,400	6,200	2,200	8,400	£1	Nil	26	7	15,742	70,109	63,588	13,925	100
Macraeburn Mining Co., Ltd.	10/6/38	550	350	200	550	£1	Nil	14	Nil	Nil	Nil	290	Nil	59
Kildare Consolidated Gold-mining Co., Ltd.	19/6/28	8,000	4,000	4,000	80,000	2/-	Nil	142	7	3,380	19,325	27,375	1,000	1,128
Round Hill Gold-mining Co., Ltd.	30/10/32	60,000	12,500	47,500	60,000	£1	Nil	35	18	7,382	56,384	47,401	21,929	2,302
Vinegar Hill Hydraulic Sluicing Co., Ltd.	23/9/1900	6,000	6,000	Nil	6,000	£1	Nil	15	4	5,494*	21,099	25,439	1,200	355
Golden Point Gold and Scheelite Co., Ltd.	6/8/30	17,991	6,993	11,000	680,025	6d. and 1/-	Nil	503	Nil	1,394	7,509	53,208	Nil	4,550
Macrae's Flat Gold and Scheelite Co., Ltd.	25/8/37	1,072	1,072	Nil	21,451	1/-	Nil	49	9	515	3,157	4,574	Nil	424
Austral New Zealand Mining, Ltd.	4/6/36	211,750	206,750	5,000	245,000	1/- and £1	Nil	276	Nil	Nil	Nil	194,980	Nil	1,453
Nevis Sluicing Claims, Ltd.	28/2/34	6,500	5,500	1,000	130,000	1/-	Nil	73	4	584	4,981	15,760	Nil	50
Nevis Diesel Electric Dredging Co., Ltd. (In Liquidation)	2/6/33	39,000	39,000	Nil	780,000	1/-	Nil	877	Nil	72	483	44,772	Nil	926
Sandhills Gold-mining Co., Ltd.	21/9/33	24,000	17,000	7,000	480,000	1/-	Nil	192	3	2,414	13,371	34,283	2,000	92
New Gabriels Gully Gold-mining Co., Ltd.	16/9/33	16,800	7,116	8,800	67,200	4/6	Nil	55	7	1,099	8,200	15,977	Nil	810
Riverside Sluicing Co., Ltd.	6/3/34	2,000	1,500	500	2,000	£1	Nil	16	Nil	124	871	4,139	Nil	1,268
Shine Again Gold-mining Co., Ltd.	30/3/38	1,000	1,000	Nil	1,000	£1	Nil	23	5	24	158	3,129	Nil	45
Nokomai Gold-mining Co., Ltd.	17/3/32	62,054	42,054	20,000	248,215	5/-	Nil	451	25	6,086	41,379	95,448	Nil	5,283
Glenorchy Scheelite-mining Co., Ltd.	6/12/11	11,025	875	10,150	11,025	£1	Nil	17	6	67†	446	101,076	7,125	4,820
Tuapeka Mouth Gold-mining Co., Ltd.	4/10/26	1,200	600	600	1,200	£1	Nil	15	2	908	5,612	5,426	1,800	178
Mining House Concessions, Ltd.	24/3/33	25,000	25,000	Nil	500,000	1/-	Nil	381	3	329	2,563	26,070	Nil	30
Central Shotover Gold-mining Co., Ltd.	13/3/33	11,000	9,000	2,000	220,000	1/-	Nil	219	6	2,045	14,234	21,016	Nil	16
Paddy's Point Gold-mining Co., Ltd.	4/8/28	14,010	11,500	2,500	56,040	1/-	Nil	198	7	4,168	27,252	35,901	2,802	31
Jones Nevis Sluicing Co., Ltd.	30/11/33	16,257	16,257	Nil	325,150	1/-	Nil	329	5	1,059	7,686	23,623	813	300
Waipapa Beach Gold-dredging Co., Ltd.	12/7/34	10,000	8,200	1,800	200,000	1/-	Nil	152	Nil	2,162‡	15,881	22,011	1,666	Nil
Arthur's Point Sluicing Co., Ltd.	27/3/34	5,500	5,490	Nil	110,000	1/-	Nil	72	Nil	527	3,800	9,106	Nil	350
Bendigo Goldlight Dredging Co., Ltd.	22/8/33	25,000	19,400	5,600	500,000	1/-	Nil	367	1	105	747	28,291	Nil	1,588
Macrae's Gold-mining Co., Ltd.	23/11/31	5,000	3,400	1,600	5,000	£1	Nil	15	11	7,541	54,208	43,381	9,000	111
Golden Arrow Mining Co.	4/11/32	1,100	1,000	100	11,000	2/-	Nil	32	7	1,610	11,438	9,553	2,200	206
Goldfields Dredging Co., Ltd.	17/5/33	31,000	31,000	Nil	620,000	1/-	Nil	613	11	3,196	23,364	54,409	Nil	258
St. Bathans Channel Co., Ltd.	4/1/82	4,590	4,590	Nil	27	Various	Nil	2	Nil	1,507	5,817	11,207	Nil	Nil
Amalgamated Kawarau Gold-mining Co., Ltd.	30/6/31	96,308	Nil	96,308	1,926,163	1/-	Nil	8,000	Nil	Nil	Nil	4,618	Nil	1,650
Cromwell Hydro-electric Gold-dredging, Ltd.	20/6/36	21,450	4,900	16,500	429,000	1/-	50	115	Nil	Nil	Nil	4,798	Nil	Nil

* Property worked on tribute. † Also produced 635 tons sheelite valued at £102,430. ‡ Also produced 23 ozs. 10 dwt. platinum valued at £223 6s. 3d.

FOREIGN COMPANIES.

Name of Company.	Date of Registration of Office in Dominion.	Subscribed Capital.	Amount of Capital actually paid up in Dominion.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares on Dominion Register.	Amount called up per Share, Dominion Register.	Arrears of Calls, Dominion Register.	Number of Shareholders on Dominion Register.	Number of Men employed in Dominion.	Quantity and Value of Gold and Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid in Dominion.	Amount of Liabilities of Company in New Zealand.
										Quantity.	Value.			
		£	£	£			£			oz.	£	£	£	£
Moonlight Valley Gold. (No Liability).. ..	..	73,400	Nil	13,400	Nil	Nil	Nil	Nil	16	Nil	Nil	10,041	Nil	548
Martha Gold-mining Co. (Waihi), Ltd.	24/4/35	247,953	Nil	247,951	320,947	5/-	Nil	1,532	605	*2,056,179	1,848,359	1,432,356	101,078	128,744

* Waihi Gold-mining Co., Ltd., transferred their undertaking to Martha Gold-mining Co. (Waihi), Ltd., on 24th April, 1935. Since that date production on behalf of Martha Company has been 1,916,352 oz. of bullion, valued at £1,737,692.

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.

SIR,— Wellington, 19th May, 1939.

I have to honour to present my annual report, together with statistical information, in regard to coal-mines of the Dominion for the year ended 31st December, 1938, in accordance with section 42 of the Coal-mines Act, 1925. The report is divided into the following sections :—

I. Output.
II. Persons employed.
III. Accidents.
IV. Working of the Coal-mines Act—(*a*) Permitted Explosives ; (*b*) List of Mines at which Permitted Explosives are used ; (*c*) List of Mines required by Law to use Safety-lamps ; (*d*) Dangerous Occurrences ; (*e*) Electricity at Collieries ; (*f*) Prosecutions.
V. Legislation affecting Coal-mining.

Annexures—
A. Summary of Annual Reports by Inspectors of Mines.
B. Colliery Statistics.

SECTION I.—OUTPUT.

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

Class of Coal.	Output of Coal during 1938.				Total Output to the End of 1938.
	Northern District (North Island).	West Coast District (South Island).	Southern District (South Island).	Totals.	
	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and sub-bituminous	44,838	933,012	..	977,850	51,784,420
Brown	717,879	50,231	344,304	1,112,414	33,291,193
Lignite	..	1,146	130,678	131,824	5,401,817
Totals for 1938 ..	762,717	984,389	474,982	2,222,088	90,477,430
Totals for 1937 ..	778,498	975,228	524,073	2,277,799	88,255,342

The following is a table showing the annual production of coal and the quantity of coal imported since 1912 :—

Year.	Coal produced.	Coal imported.	Total Quantity of Coal produced and imported.	Year.	Coal produced.	Coal imported.	Total Quantity of Coal produced and imported.
	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.
1912 ..	2,177,615	364,359	2,541,974	1926 ..	2,239,999	483,918	2,723,917
1913 ..	1,888,005	468,940	2,356,945	1927 ..	2,366,740	378,090	2,744,830
1914 ..	2,275,614*	518,070	2,793,684*	1928 ..	2,436,753	247,861	2,684,614
1915 ..	2,208,624	353,471	2,562,095	1929 ..	2,535,864	215,656	2,751,520
1916 ..	2,257,135	293,956	2,551,091	1930 ..	2,542,092	157,943	2,700,035
1917 ..	2,068,419	291,597	2,360,016	1931 ..	2,157,756	179,060	2,336,816
1918 ..	2,034,250	255,332	2,289,582	1932 ..	1,842,022	103,531	1,945,553
1919 ..	1,847,848	391,434	2,239,282	1933 ..	1,821,258	99,272	1,920,530
1920 ..	1,843,705	476,343	2,320,048	1934 ..	2,060,315	100,715	2,161,030
1921 ..	1,809,095	822,459	2,631,554	1935 ..	2,115,184	97,398	2,212,582
1922 ..	1,857,819	501,478	2,359,297	1936 ..	2,140,217	111,078	2,251,295
1923 ..	1,969,834	445,792	2,415,626	1937 ..	2,277,799	116,499	2,394,298
1924 ..	2,083,207	674,483	2,757,690	1938 ..	2,222,088	109,206	2,331,294
1925 ..	2,114,995	572,573	2,687,568				

* Includes 21 tons shale.

The sequence of increasing yearly outputs from New Zealand coal-mines was broken in 1938, for during that year 55,711 tons less were produced than in 1937. From the Northern District mines there was a decrease of 15,781 tons and from the Southern District a decrease of 49,091 tons, but the output for 1938 from West Coast mines increased by 9,161 tons over that of 1937.

In the Northern and West Coast districts more men were employed at coal-mining, the increases being 63 men and 115 men respectively, but there were 32 men less employed in and about Southern District mines during 1938 than in 1937.

In the Northern District the output per man, 494 tons, is 32 tons per man less than during 1937, and, in the West Coast District the output per man was 475 tons, or 23 tons per man less than for the previous year. In the Southern District the output per man showed a decrease of 34 tons, being 499 tons per man compared with 533 tons per man in 1937,

The extension of the main or No. 1 drive in the new Hikurangi Coal-mine was, during the early part of the year, severely handicapped by the inflow of water through the thick porous limestone stratum. In June work in this drive was stopped and development then confined to extending, in coal, the No. 2A dip and to the driving of working-places east and west off No. 2A dip. When these workings reached a predetermined spot a place will be driven, in stone, to the rise and will connect with the face of the main drive. The outlook for the mine was very hopeful until, early in November, another serious setback occurred by a large inflow of water at the face of the No. 2A dip which had just reached an upthrow fault. Through this break in the measures the water rushed in at the rate of about 50,000 gallons per hour and quickly flooded all the coal workings and filled the No. 2A dip to within 60 ft. vertically of its brow. The pumps had been covered by the water, but others were brought into use. By the end of the year the water had been lowered about 60 ft. vertically and there still remained 100 ft. vertically to go to reach the break at the face of No. 2A dip. The water which had been lying in the main drive was drained away by the inflow, at the lower level, into No. 2A dip, so work at extending the main drive was resumed. By the end of the year 218 ft. remained to be driven in stone to connect this drive with the coal workings off No. 2A dip.

At the Kamo Mine the stowing of the old workings, under the Government railway, in the No. 2 section was completed in September, 1938. In the No. 4 section, from which at the end of the year all the output was produced, the daily tonnage increased to 200 tons, 84 men being employed. An upthrow fault of about 40 ft. displacement was met to the north, and to the east two faults were met, one being a downthrow of 20 ft. displacement. It was then decided to retreat from that area as the displaced seam could be worked to better advantage from the new No. 3 section, where the main-dip drive has reached the coal seam after being driven 930 ft. from the surface at a grade of 1 in 3.

At the Egmont Tatu Mine a 16 ft. downthrow fault was met in the main-dip drive, and some months elapsed before the extension of the dip was decided upon. In the meantime the extraction of pillars near the outcrop was commenced. The dip drive had just reached the top of the coal-seam on the downthrow side of the fault when the company ceased operations in August, 1938.

From the Pukemiro and Rotowaro Mines most of the output was from pillar-extraction. A new section of workings has been opened up at the Glen Afton Colliery in a portion of the MacDonald State Coal Reserve.

From solid and pillar workings in the MacDonald Mine the output was 217 tons less than during 1937.

Alterations were made in the Renown Mine main-haulage system, and an auxiliary haulage was installed for the No. 2 north section.

At the Rotowaro carbonization plant 39,412 tons of coal were carbonized in 1938, or 524 tons more than in 1937. From the raw coal 22,500 tons of carbonettes were produced; 62,700 gallons of light oil, and 74,790 gallons of heavy oil, together with 36,800 gallons of creosote and 982 tons of pitch.

At the Sockburn plant the output of briquettes, 5,889 tons, was 210 tons less than the output for 1937.

From Messrs. Briquette Ltd.'s plant at Auckland 1,085 tons of briquettes were produced in 1938.

At the new State coal-mine in the Grey District, now called the Strongman Mine, the main drive did not reach the upper coal-seam until early in 1939, for at the close of 1938 there were still 7½ chains to be driven. An air-driven Korfman coal-cutting machine has been purchased for use in this mine. A large concrete bath and change-house is nearing completion near the mine-entrance, and a steel storage-bin and screening-plant is being built at Rapahoe.

At Blackball two dips are being driven in stone to connect with the seam some chains to the dip of the old No. 2 dip workings. The large amount of water flowing into these dips makes progress very slow. It is intended to use electrically-driven coal-cutters in this mine and to convey coal from the faces by belt conveyers.

At the Wallsend Mine an air-driven Korfman coal-cutter is now in use, but development is at present confined to the rope-road extension section and to places east and west off the Slant dip.

In the Dobson Mine development is steadily extending in the Nos. 3 and 4 west sections, the No. 3 east section, and to the dip of the No. 4 west section. The coal-cutter and other machines used in these sections are driven by compressed air and, to improve results, an 8-in-diameter pipe-line has been laid from the surface.

Of the twenty producing co-operative mines in the Grey District the output from nine of them was solely from the extraction of pillars. The production from six mines was from solid work only and from the remaining five mines partly from solid work and partly from pillar-extraction.

With the exception of the Kaitangata Mine and some mines in the Ohai District, there has been very little development work done lately in the Southern District.

About a mile south of the Kaitangata No. 2 Mine a dip is being driven in stone at a grade of 1 in 2½ to intersect a seam proved in the Kaitangata No. 2 Mine. This drive is down 850 ft. and is expected to cut the seam before the 1,000 ft. mark is reached.

In the Linton No. 1 Mine the development has been chiefly to the west, but when approaching the western boundary of the lease the coal became very inferior in quality. Two boreholes were put down to the south of the Linton No. 2 Mine with disappointing results, but boring to the east of the No. 1 Mine is more encouraging, and a new haulage road into that area is under consideration.

The detailed survey of the coal resources of the Grey and Buller coalfields, commenced in 1937, was continued throughout 1938, but the surface examinations were, in 1938, chiefly in the Grey District. Difficulty has been experienced in retaining the services of suitable assistant surveyors and geologists, and some have left for private employment. Consequently the detailed examinations and compilation of data and plans that are essential before reliable estimates can be made have been somewhat retarded. Several meetings of the Coal Survey Committee were held in Wellington and one in Greymouth, the latter being required in an endeavour to find additional areas suitable for working by small co-operative parties of miners. Subsequently some of the selected areas were prospected and bored.

Protective helmets, commonly called "hard hats," are now generally worn by the West Coast and Southern coal-miners, but in the Northern District their use is not as wide as it should be. Several serious accidents were averted during 1938 by the miners wearing "hard hats," and some of the serious accidents would undoubtedly have been fatal ones if "hard hats" had not been worn by the injured men.

Steel-toed boots are not as yet made in New Zealand, and the few which have been imported from England appear to be of too heavy a type for the New Zealand miner. There should be no valid reason why, if there is a demand for them, lighter miners' boots, equipped with saftey toes, cannot be made here.

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

Name of Colliery.	Locality.	Class of Coal.	Output for 1938.	Total Output to 31st December, 1938.	Total Number of Persons ordinarily employed.
			Tons.	Tons.	
Northern District.					
New Kamo	Kamo	Sub-bituminous	26,741	98,920	83
Rotowaro	Rotowaro	Brown	160,463	2,621,693	286
Pukemiro	Pukemiro	"	102,751	2,704,766	206
Wilton	Glen Massey	"	89,557	649,636	163
Glen Afton	Glen Afton	"	74,939	1,851,593	152
MacDonald	Waikokowai	"	144,012	1,002,834	252
Renown	"	"	107,202	980,519	194
Egmont	Tatu	"	13,852	66,366	54
West Coast District.					
Westport-Stockton	Ngakawau	Bituminous	144,890	3,706,356	260
Charming Creek	"	"	24,909	153,054	43
Millerton	Millerton	"	75,560	8,536,038	108
Denniston	Denniston	"	160,895	11,003,694	379
Cascade	Cascade Creek	"	15,976	187,227	23
Hydro	Seddonville	"	10,833	22,745	11
Burke's Creek	Reefton	Brown	20,592	312,877	28
Paparoa	Roa	Semi-bituminous	41,762	888,665	90
Blackball	Blackball	Bituminous	28,259	4,136,135	90
Blackball Creek	"	"	9,869	120,343	24
Liverpool (State)	Rewanui	"	131,915	3,089,233	312
James (State)	Rapahoe	Sub-bituminous	40,675	545,501	99
Dobson	Dobson	Bituminous	65,658	888,868	164
Wallsend	Brunnerton	"	49,605	720,003	126
Southern District.					
Kaitangata	Kaitangata	Brown	124,469	5,695,835	300
Linton (2 collieries)	Ohai	"	106,056	1,431,744	164
Wairaki	"	"	35,738	527,493	68
Mossbank	"	"	26,546	640,389	66
Birchwood	"	"	13,516	221,992	55
Black Lion	"	"	14,982	195,813	20
Kea	"	"	14,083	23,658	8
129 other collieries	All coalfields	Various	345,783	9,511,335	735
Collieries abandoned or suspended, &c.	Various	"	..	27,942,105	..
Totals	..	..	2,222,088	90,477,430	4,563

SECTION II.—PERSONS EMPLOYED.

Inspection District.	Average Number of Persons employed during 1938.		
	Above Ground.	Below Ground.	Total.
Southern	271	680	951
West Coast	581	1,490	2,071
Northern	343	1,198	1,541
Totals, 1938	1,195	3,368	4,563
Totals, 1937	1,129	3,288	4,417

The following statement shows the tons of coal raised, persons employed, lives lost by accidents in or about collieries, &c., to 1938 :—

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 1900	13,444,437	*	*	*	*	*	*	165
1900 ..	1,093,990	617	1,843	2,460	593	3·65	1·62	4
1901 ..	1,239,686	688	2,066	2,754	600	2·42	1·09	3
1902 ..	1,365,040	803	2,082	2,885	655	1·46	0·69	2
1903 ..	1,420,229	717	2,135	2,852	665	2·81	1·40	4
1904 ..	1,537,838	763	2,525	3,288	609	2·60	1·21	4
1905 ..	1,585,756	833	2,436	3,269	651	3·78	1·83	6
1906 ..	1,729,536	1,174	2,518	3,692	687	3·46	1·62	6
1907 ..	1,831,009	1,143	2,767	3,910	662	6·55	3·07	12
1908 ..	1,860,975	992	2,902	3,894	641	2·68	1·28	5
1909 ..	1,911,247	1,159	3,032	4,191	630	3·66	1·67	7
1910 ..	2,197,362	1,136	3,463	4,599	634	7·28	3·48	16
1911 ..	2,066,073	1,365	2,925	4,290	706	6·77	3·26	14
1912 ..	2,177,615	1,130	3,198	4,328	681	4·13	2·08	9
1913 ..	1,888,005	1,053	3,197	4,250	590	3·18	1·41	6
1914 ..	2,275,614	1,176	3,558	4,734	639	21·53	10·35	49†
1915 ..	2,208,624	1,050	3,106	4,156	711	4·07	2·16	9
1916 ..	2,257,135	988	3,000	3,988	752	2·65	1·50	6
1917 ..	2,068,419	1,090	2,893	3,983	715	1·93	1·00	4
1918 ..	2,034,250	1,102	2,892	3,994	703	2·95	1·50	6
1919 ..	1,847,848	1,095	2,849	3,944	648	5·41	2·53	10
1920 ..	1,843,705	1,152	2,926	4,078	630	0·54	0·24	1
1921 ..	1,809,095	1,218	3,149	4,367	574	5·52	2·28	10
1922 ..	1,857,819	1,191	3,365	4,556	552	3·23	1·31	6
1923 ..	1,969,834	1,353	3,647	5,000	540	2·53	1·00	5
1924 ..	2,083,207	1,364	3,505	4,869	594	4·80	2·05	10
1925 ..	2,114,995	1,288	3,489	4,777	606	3·78	1·67	8
1926 ..	2,239,999	1,336	3,823	5,159	586	6·69	2·90	15
1927 ..	2,366,740	1,386	3,988	5,374	593	4·23	1·86	10
1928 ..	2,436,753	1,366	4,010	5,376	608	3·69	1·67	9
1929 ..	2,535,864	1,370	4,127	5,497	614	4·73	2·18	12
1930 ..	2,542,092	1,437	4,430	5,867	574	5·50	2·38	14
1931 ..	2,157,756	1,414	4,331	5,745	498	1·85	0·69	4
1932 ..	1,842,022	1,257	3,379	4,636	545	6·51	2·59	12
1933 ..	1,821,258	1,192	3,194	4,386	570	3·84	1·59	7
1934 ..	2,060,315	1,229	3,249	4,478	634	3·88	1·78	8
1935 ..	2,115,184	1,127	3,104	4,231	681	0·94	0·47	2
1936 ..	2,140,217	1,103	3,154	4,257	678	1·87	0·94	4
1937 ..	2,277,799	1,129	3,288	4,417	693	2·64	1·36	6
1938 ..	2,222,088	1,195	3,368	4,563	659	4·86	2·41	11
Totals ..	90,477,430	..	..	..	..	..	..	501

* For returns for previous years see page 32, Mines Statement, 1921. † Year of Ralph's (Huntly) explosion.

SECTION III.—ACCIDENTS.

The following is a summary of accidents in and about coal-mines during 1938, 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.
Explosions of fire-damp or coal-dust ..	1	1	..	..
Falls of ground	4	4	11	11
Explosives	..	..	1	1
Haulage	1	1	6	6
Miscellaneous—Underground	2	2	6	6
On surface	3	3	..	..
Totals	11	11	24	24

Despite the vigilance of mine officials and the inspection staff, there were eleven fatal accidents in or about New Zealand coal-mines in 1938, and the fatal-accident rate registered the comparatively high average of 2.41 deaths per thousand persons employed, or at the rate of 4·86 per million tons of coal produced.

Two fatalities occurred in the Northern District and, beside a death following hernia caused by a very simple accident, there were six other fatal accidents in West Coast coal-mines. There were two fatal accidents also in Southern District mines in 1938.

Of the eleven fatalities four were due to falls of coal or stone and one was caused by a jig-prop coming out and striking the miner when he was trimming down some top coal.

In the District Inspectors' reports appear short statements concerning each of the fatalities, but some of them call for some further comment.

The two which occurred in the Northern District were very unusual ones and, with a little more care, perhaps both could have been avoided. The machine men in the Renown Mine had been warned not to lift the gate-end boxes on to the coal-cutters, but the practice continued and a faulty earth on one of the boxes completed a set of circumstances which resulted in the death of machine-runner Nicholas Belich. The other Northern District fatality occurred in a colliery screening-plant. No one witnessed it, but it is surmized that the deceased, John Clark, a screen-attendant, went in alongside the main driving-belt and was caught by it and pulled in between two running pulleys.

Two of the fatalities, which occurred in the West Coast District, appear to have been avoidable.

The workmen were at 8 p.m. trimming down loose debris after shots had been fired in a bluff overlooking a traffic road and, when darkness came on, the men ceased and had their lunches. One, however, went beneath loose material which had not been trimmed down and was struck by falling stone.

When acting as fireman-deputy and making the statutory morning inspection of working-places prior to the men entering the mine a manager was seriously burned by an ignition of fire-damp. He died about three weeks later. Had everything been in order the accident would not have occurred. It has since been suggested that persons making such inspections should be equipped with another lamp. Many take in an additional flame safety-lamp and leave it at the entrance to a working-place when that place is being examined. Should the lamp that the examiner is carrying be extinguished, he has to retreat, in the darkness, only to the other lighted lamp.

Twenty-four serious non-fatal accidents were reported to the District Inspectors during 1938. Of the ten which occurred in the West Coast District seven were through falls of stone or coal, and of the six in the Southern District all were due to falls of coal. Only one of the eight accidents in the Northern District was caused by a fall of coal, but three men slipped on rails in Northern coal-mines and suffered serious accidents.

Two men were jammed between mine-tubs in that district, one in a West Coast colliery and one in a Southern District mine.

SECTION IV.—WORKING OF THE COAL-MINES ACT.

(*a*) Permitted Explosives.

(Regulations 233 to 237 inclusive.)

The following is a table showing the quantity of permitted explosives used and the number of shots fired in New Zealand coal-mines during 1938 :—

Inspection District.	Quantity of Permitted Explosives used (lb.).		Number of Shots fired.	Number of Misfired Shots.					Approximate Quantity of Coal produced.
	A2 Monobel.	Samsonite.		By Defective Explosive.	By Defective Detonators.	By Defective Leads.	Other Causes.	Total.	
									Tons.
Northern (*i.e.*, North Island) ..	142,283	2,132	167,397	2	22	6	..	30	692,451
West Coast (of South Island) ..	133,557	126,909	315,451	16	134	121	5	276	981,958
Southern (*i.e.*, Canterbury, Otago, and Southland)	..	93,113	110,701	..	4	9	..	13	323,344
Totals	275,840	222,154	593,549	18	160	136	5	319	1,997,753

(*b*) List of Mines at which Permitted Explosives are used.

The following is a list of mines as at the 31st December, 1938, at which permitted explosives are used :—

Northern Inspection District.

Pukemiro, Pukemiro—Throughout North and South Mines.
Rotowaro, Rotowaro—Throughout No. 1 and No. 3 Mines.
Glen Afton, Glen Afton—All sections of the mine.
MacDonald, Waikokowai—Throughout all sections of the mine.
Waikato Extended Colliery, Huntly—All sections.
Renown, Renown—All sections.
Wilton, Glen Massey—All sections.

West Coast Inspection District.

Wynndale, Murchison.
Mount Burnett, Collingwood.
Puponga, Puponga.
Owen, Owen River.
Brighton, Brighton.
Cardiff, Seddonville.
Charming Creek, Ngakawau.
Cascade, Burnett's Face.
Coal Creek, Seddonville.
Hydro, Seddonville.
Glencrag, Buller Gorge.
Westport Coal Co.'s Denniston mines.
Westport Coal Co.'s Millerton mines.
Westport-Stockton, Ngakawau.
Archer's, Capleston.
Clele, Merrijigs.
Coghlan's, Capleston.
Collins, Murray Creek.
Morrisvale, Reefton.
Defiance, Reefton.
Burke's Creek, Reefton.
Waitahu Colliery, Reefton.
Burnwell (Honey's), (Times Street), Reefton.
Schultz Creek, Twelve Mile.
Hilltop, Ten Mile.
Kaye's, Ten Mile.
Bellbird, Ten Mile.
Hunter's, Ten Mile.
Briandale, Ten Mile.
Cliffside (Moore's), Nine Mile.
Bellvue, Rapahoe.
Cain's, Rapahoe.
Jubilee, Rapahoe.
Baddeley's, Dunollie.
Braehead, Dunollie.
Castlepoint, Dunollie.
Hunter's, Rewanui.
Moody Creek, Dunollie.
New Point Elizabeth, Dunollie.
Fiery Cross, Dunollie.
Smith's, Dunollie.
Old Runanga, Rewanui.
Spark's, Rewanui.
State Collieries (Liverpool and James).
Goldlight, Rewanui.
Blackball, Blackball.
Blackball Creek, Blackball.
Paparoa, Roa.
Dobson, Dobson.
Wallsend, Brunnerton.
Price's, Brighton.

Southern Inspection District.

Kaitangata, Kaitangata.
Wairaki, Ohai.
Birchwood, Ohai.
Linton, Ohai.
Black Diamond, Ohai.
Black Lion, Ohai.
Star, Ohai.

(*c*) List of Mines required by Law to use Safety-lamps.

The following is a list of the mines as at the 31st December, 1938, required by law to use safety-lamps.

Northern Inspection District.

Pukemiro, Pukemiro—Throughout South Mine Section.
Rotowaro, Rotowaro—Throughout No. 1 and No. 3 Mines.
Glen Afton, Glen Afton—Main headings.
Renown, Renown—Nos. 1, 2, 3, and 4 North Sections.

West Coast Inspection District.

Dobson, Dobson.
Spark's, Rewanui.
State Mine (Liverpool No. 2), Rewanui.
Moody Creek, Dunollie.
Old Runanga (No. 2 Section), Rewanui.
Kaye's, Ten Mile.
Paparoa, Roa.
Wallsend, Brunnerton.
Millerton (Old Dip Section), Millerton.
Owen, Owen River.
Strongman, Nine Mile.
Wynndale, Murchison.
Hunter's, Rewanui.

Southern Inspection District.

Kaitangata, Kaitangata.
Wairaki, Ohai.
Birchwood, Ohai.
Linton, Ohai.
Black Diamond, Ohai.
Black Lion, Ohai.
Star, Ohai.

(*d*) Dangerous Occurrences reported.

Of the thirty-seven dangerous occurrences reported during 1938 to the Inspectors of Coal-mines, twenty were of actual fires or of heating in underground workings.

Four were in the Rotowaro Mine, three in the Linton Mine, and three in the McDonald Mine.

There were four ignitions of fire-damp in West Coast collieries and nine reports of accumulations of fire-damp. Owing to a heavy crushing movement in the Mossbank No. 3 Mine the workmen had to be withdrawn and, at two West Coast mines, workmen had to be withdrawn temporarily through inrushes of water.

(*e*) Electricity at Collieries.

(Regulation 243.)

The following is a summary of the annual returns, in accordance with Regulation 243 (*e*), regarding electrical apparatus at collieries :—

Number of collieries at which electrical apparatus is installed	70
Number of continuous-current installations	15
Number of alternating-current installations	56
Number of collieries electrically lighted	21
Number of collieries using electrical ventilating-machines	53
Number of collieries using electrical pumping plants	45
Number of collieries using electrical haulage plants	49
Number of collieries using electrical screening plants	35
Number of collieries using electrical coal-cutting machines	4
Number of collieries using electrical miscellaneous plants	27
Number of collieries using electrical locomotives	1
Total horse-power employed from motors on surface	8,918
Total horse-power employed from motors below ground	4,472

(*f*) Prosecutions.

Twelve informations were laid during 1938 by the Inspectors of Coal-mines for breaches of the Coal-mines Act and the regulations thereunder. Four were against truckers working in a safety-lamp mine and charged with having smoking-material in their possession. Another trucker working at the same mine refused to allow himself to be searched, and he was charged with that offence.

Two mine-owners and two mine-managers were prosecuted, and the other cases were against a deputy, a miner, and a carpenter. The case against the deputy was dismissed on payment of costs, but convictions were recorded in all the other cases.

Accounts of the individual prosecutions are given in the reports of the District Inspectors of Coal-mines.

SECTION V.—LEGISLATION AFFECTING COAL-MINES.

There was no amendment to the Coal-mines Act, 1925, or to the regulations during the year, but preparations are well in hand for a consolidation of the regulations, and that work will soon be completed.

I desire to acknowledge the ready assistance given by the District Inspectors of Coal-mines and their continued endeavour for better and safer mining methods. The Inspector for the Southern District, Mr. Job Hughes, resigned from the position to take charge of the Linton Collieries on 30th June and Mr. J. Hadcroft, one of the two West Coast Inspectors, was transferred to succeed Mr. Hughes. The vacancy on the West Coast was filled by the appointment, on 1st September, of Mr. James McArthur, manager of the Coalbrookdale Colliery.

G. Duggan,
Inspecting Engineer and Chief Inspector of Coal-mines.

ANNEXURE A.

SUMMARY OF REPORTS BY INSPECTORS OF MINES.

NORTHERN INSPECTION DISTRICT (William Barclay, Inspector of Coal-mines).

In compliance with the Coal-mines Act, I have the honour to submit the following report:—

Output of Coal.

The total output of coal from Northern District mines for the year was 762,717 tons, as against 778,498 tons raised in 1937, a decrease of 15,781 tons. Of this total, 696,468 tons were raised in the Waikato field (716,765 tons in 1937), 44,838 tons in North Auckland (41,694 tons in 1937), and 21,411 tons in Taranaki (20,039 tons in 1937).

The average number of men employed below and above ground in production of the yearly output was 1,541, as against 1,478 in 1937, the output of coal per person engaged in the industry being 494·8 tons and 526·7 tons for 1938 and 1937 respectively.

The number of mines in operation decreased by four, these being small mines in North Auckland which closed owing to the thinning or poor quality of the remaining coal, making further work unprofitable. A small mine in the Huntly district and one in the Te Kuiti district were not worked for similar reasons.

Extensive stone-driving was carried out during the year at the Waro and Kamo Mines, and development of outlying areas of coal from the outcrop are being undertaken at the MacDonald, Rotowaro, and Wilton Mines. Generally speaking, mine-development has been kept well ahead of actual requirements.

The large mines were inspected monthly during the year, and several visits paid to each of the smaller mines.

Work at the mines has been regular throughout the year, with the exception of occasional stoppages due to shortage of wagons, breakdowns of plant, &c.

Summary of Operations of each Colliery for the Year 1938.

North Auckland District.

Kamo Coal-mine (Kamo Collieries Ltd., Owners).—No. 4 Stone Dip: This dip was extended through the Old Kamo Mine workings and into 8 ft. of solid coal beyond the Old Kamo boundary. An upthrow of 40 ft. to 50 ft. caused interruption, and an inclined stone-drive 120 ft. long located the seam on the other side of the fault. These workings were abandoned in September owing to thinning of seam, with faulting and stone intrusions. A fault encountered on the east side was proved by driving to be a downthrow of 20 ft. The recovered seam is here 8 ft. thick and a dip driven in the coal to the east has allowed the development of eight working-places. Another fault has been met with by the dip in this direction, and the further extension of the seam will be proved by boring from the surface. A depth of 200 ft. of the Old Kamo Shaft was cleared out and repaired to be used as an intake airway for this section.

No. 2 Section: Stowing of old workings in the top and bottom seams, particularly under the railway reserve to the north of Kamo Station, was proceeded with and was completed in September, stoppings being erected at west end of Puriri and other connecting drives. When stowing, provision was made, by using bulky stowing material in the bottom seam, for the free drainage of water, to prevent impounding and danger to workings to the dip.

No. 3 Stone-drive: This drive was continued to a distance of 930 ft. from the surface at a grade of 1 in 3, and it is estimated that 50 ft. of driving is required to connect with the coal area, previously proved by boring, to the south-east of No. 1 mine workings. A sump has been driven at the face to handle surface water when the coal has been struck, and the face is connected by crosscut to a return airway, which has also been driven from the surface at a grade of 1 in 1. The coal has been proved, by boring, to lie 6 ft. below the drive at the face.

Waro Colliery (Hikurangi Coal Co., Ltd., Owners).—No. 1 Main Stone-drive: During the year this drive was advanced to a total distance of 1,224 ft. from the surface, the grade being increased from 1 in 4 to 1 in $2\frac{1}{2}$ at 937 ft. from the surface. At 1,147 ft. on 8th June, work was suspended owing to a continued heavy inflow of water at the face, making further driving impossible at the time. Work was continued early in December, three shifts being employed at the face, which was now drained by No. 2A dip, and a further 77 ft. has been driven. It is estimated that a distance of 318 ft. has still to be driven on the grade to connect with the coal-seam proved by No. 2A dip.

No. 2A Dip: This dip was driven in the coal-seam 900 ft. from point of commencement at crosscut leading from No. 1 main dip. Sixteen levels were turned off the dip in the coal-seam to the east and two to the west opposite Nos. 9 and 10 levels east. The average grade of the dip has been 1 in 4·7, with local flattenings within 2 chains of present face. A fault was met with at 230 ft. from the crosscut, but was driven through and the seam (6 ft. 6 in.) recovered. The remainder of the distance was driven in undisturbed coal of good quality averaging 7 ft. thick. The face of the dip is 270 ft. beyond the No. 5 bore and is some 365 ft. from the line of projection to No. 2 bore. An analysis of the coal in September is as follows: Water, 5·10; fixed carb., 46·46; vol. hydrocarbons, 44·68; ash, 3·76: total, 100·00.

In spite of haulage difficulties, a daily output of 70 tons had been developed from this section by the beginning of November. At 3 a.m. on 11th November an inrush of water occurred at the face of No. 2A dip, where a step up fault of 5 ft. displacement had been met. The usually impervious roof cover of 10 ft. to 12 ft. sandstone lying between the coal and limestone had been disturbed in the vicinity of the fault, the roof conditions necessitating heavy timbering at the face, and it was through this broken roof that the water evidently drained. The face was standing at 48 ft. beyond No. 16 level east. The 20,000 gallons per hour which had been making at the face of No. 1 main stone-drive ceased at once, leaving the face dry, so it is assumed that the water lying in caves in the limestone between this dip and the face of No. 2A at a much lower level caused the inrush.

Water rose in 2A dip to No. 3E level. The water was held at this level by a 30,000-gallons-per-hour pump, and preparations at once made to install two pumps of a total capacity of 50,000 gallons per hour at No. 2A dip, and a large Pulsometer pump at the face of No. 2 main stone-drive to discharge this water to the surface.

By the end of December the water in No. 2A dip has been lowered 165 ft. on the slope equal to a vertical reduction of 64 ft.

Hikurangi No. 2A Coal-mine (Lease from Hikurangi Coal Co., Ltd.; Lawson and Party).—Coal production at this mine ceased during the year, and the area was abandoned.

The Rocks Area.

Fearnley's Coal-mine (Rocks Area).—Work has been continued regularly at this small mine and a band of marketable fireclay (2 ft. thick) is mined in conjunction with the coal.

Jones and Party (Tauranga Block).—Development work has been continued in the botton seam of the Old Tauranga Block mining area. The seam has not been extensively worked and the party has exposed an area suitable for future working.

Silverdale Colliery (Crown Lease: S. Foot).—Messrs. H. Tipton and party have opened a small mine on the southern end of the Crown Lease No. 258, and have advanced several headings northward in a coal-seam 3 ft. thick. A fault has been encountered on the western boundary of the workings, and the area of workable coal appears to be limited.

McInnes' Coal-mine (Crown Lease: Tunstall and Party).—The mine remained closed throughout the year.

McInnes' Coal-mine (Crown Lease: Mackie and Party).—All attempts to open up a workable seam of coal at this mine resulted in failure, and the workings were abandoned.

Glen Nell Coal-mine (Crown Lease: H. Tipton and Party).—During the year operations on this lease were suspended.

Phœnix Colliery (Crown Lease: McKinlay and Party).—This mine did not operate during the year.

Ruatangata Colliery.—The pillars in the top seam at this coal-mine have been split and sufficient coal in pillars has been left for the permanent support of the surface. The bulk of the output was used by the adjacent brickworks, which is controlled by the same company that runs the mine.

Whareora Coal-mine (Foot and Fox: Owners).—This mine remained closed.

Avoca Coal-mine.—The mine has been worked intermittently during the year, and a small output was won from the new mine section which was commenced lower down the hill, on an area proved by boreholes.

Turnbull and Party.—Operations were suspended during the year due to the unpromising nature of the prospect.

Whau Valley Mine (R. Fox and Party).—The seam to the rise of the dip produced soft, unmarketable coal, and as no improvement was visible operations were suspended.

Ngunguru Fireclay Opencast (Ngunguru Fireclay and Coal Co., Ltd., Owners).—Opencast operations were carried out on a Native lease near Kiripaka, and there was a good demand from Auckland for the product.

Waikato District.

Rotowaro Collieries (Taupiri Coal-mines, Ltd., Owners).—No. 1 Mine: Pillar-extraction was proceeded with in the west haulage, No. 4E, Daylight, and Hill 60 sections, also in Hogg's Jig and Rope End sections. On the west side pillaring was commenced in the New Drive section on pillars formed in the first working nearly twenty years ago. No crushing was in evidence, and the pillars and most of the top coal are being recovered under good working conditions. The seam is 14 ft. to 16 ft. thick and the pillars 30 ft. to 40 ft. square.

Callaghan's Dip Section: Five pairs of miners were employed developing this section in the bottom seam. The section is being developed rapidly by the use of coal-cutting machines. The seam is 12 ft. to 14 ft. thick and rather stony, stone balls being frequently met with in the coal.

A 70 in. S.I. Sirocco fan has been installed on the surface to ventilate the bottom seam workings, a return airway having been driven 270 ft. from the bottom seam at a grade of 1 in 1, flattening towards the fandrift.

No. 3 Mine (bottom seam): Pillar-extraction was continued in Hogg's dip and Moodie's sections, also in Taylor's section. Difficulty was experienced owing to bad roof conditions, necessitating an adequate amount of top coal being left to support the roof during the removal of pillars.

In Moodie's section, part of which lies under a surface stream, pillars were being split, sufficient coal being left to support the surface.

In Brown's section the first working was extended southward.

An accumulation of some 5,000 cubic feet of fire-damp was reported early in June from No. 1 south section, turned off the main east haulage road. The accumulation evidently resulted from falls of roof damaging air stoppings in crosscuts between bords, causing a short circuit in the ventilation and allowing the gas to gather in a rise dead-end bord. It was removed by attention to the stoppings, and the whole area sealed off by fourteen brick stoppings. The section had not been laid out in panels, hence the large number of stoppings now required.

Preparation of a haulage is in hand to connect present screening-plant to the site of a new drive on an outcrop to the north of the present workings and adjacent to the old north workings. Boring has proved an area of 11 ft. to 20 ft. of good coal in this direction.

In September four truckers, found in possession of cigarettes and a safety match during a search conducted in their working-places, were prosecuted and each fined £1 and costs, with a warning from the Magistrate of a much higher penalty should this offence recur. A fifth trucker, who refused to allow himself to be searched, was also fined a similar amount. Though this offence was probably due to inexperience and lack of appreciation of the possible extreme danger to their fellow-workers through their taking such a risk, it illustrates the continued need for extreme care in searches and warnings to prevent the possibility of prohibited articles being taken into mines where ignitions of fire-damp may occur.

The mine D.C. electrical system has been improved by the installation of a three-wire motor-balancer, output 150 amps. at 230 volts.

Oldham acid-type cap lamps have been in use for a number of years, but a change-over has now been made to Edison Model "K" 50 c.p. Alkaline lamps.

Pukemiro Colliery (Pukemiro Collieries, Ltd., Owners).—An output of 500 tons per day was maintained during the year, almost entirely from pillars. In the North Mine section pillar-extraction was continued in the No. 1 west pillars and main west pillar section situated near the Glen Afton boundary.

In the Straight Heading section the seam is 8 ft. to 10 ft. thick, and the remaining pillars are some 26 ft. square only. Some crushing of the pillars and consequent breaking of the roof occurred, necessitating constant attention to renewals of broken timber.

Early in the year the South Mine section was reroaded and reconditioned with a view to working the remaining pillars. Operations in this mine have been suspended for five years, and, owing to the friable nature of the coal in this section, particular care has to be taken to control any signs of heating. Electric safety-lamps are in use throughout this section, but no inflammable gas has been reported during the cleaning-up operations.

Horne's No. 2 Rise Section and Rope End Section on West Side: The coal here is soft and friable, and the seam is affected by numerous small faults which weaken the roof and cause sets to be required instead of props.

Brickyard Section (No. 3W), situated near Glen Afton Township and connected to North Mine section by 50 chains of endless-rope haulage: Pillar-extraction was continued to within a short distance of the main roadways. The seam is stony, and, owing to surface swamp which cannot be completely drained, the management is compelled to split the remaining pillars to dimensions ensuring support of the surface.

Development: Preparations are being made to work an area of coal, included in the Taupiri Mine Leases and lying near the eastern boundary of Pukemiro South Mine.

Glen Afton No. 1 Colliery (Glen Afton Collieries, Ltd., Owners).—Pillaring in K4 pillar section was completed early in the year, the miners being transferred to K1 section, which had been reroaded and reconditioned for extraction of the remaining pillars. Pillaring was continued under good conditions in K1, K2, and K3 pillar sections. The seam is 12 ft. thick, and 1-chain-square pillars are left, with bords and crosscuts 14 ft. wide.

In August the reroading of E section, midway along the main haulage road, was commenced for the extension of the first working through the freehold boundary into an adjacent portion of the MacDonald State Mine Reserve. This section has been sealed off since 1932.

A brick wall on the return airway sealing off entries to F section showed heating on two occasions and was strengthened and raised. It is now gradually cooling. Fire also broke over the concrete wall on the return from H section. The fire was suppressed by water and the wall strengthened at the bottom, heightened, and plastered.

Glen Afton No. 2 Colliery (MacDonald State Coal-mine Reserve under lease to the Glen Afton Collieries, Ltd.).—West Mine Section: Pillaring was continued in E and F pillar sections with development of E left and right panel sections.

In the F pillar sections pillars were extracted from the rise boundary and falls of roof gave a good close, sealing stoppings on the south side which had been crushed and leaky for some time.

North Mine Section: Pillar-extraction under good conditions proceeded in B, B1 right, B1, B2, and B3 left pillar sections. A fair percentage of top coal is won, the seam being 14 ft. to 15 ft. thick.

Development: In the North Mine section the main drive has been extended into an area of proved coal to the north. The drive has passed through an outcrop to the surface and the haulage has been extended across a gully to where the main drive has been continued. The seam here is 20 ft. thick and is inclined slightly to the north. The faces are machine mined, and generally good conditions prevail in the section. Preparations are being made to install a large fan on the return drive recently holed back to the surface from the seam being worked.

Slow progress has been made on the road from the bus stop to the mine-entrance. The formation work is almost complete, but the road is still unmetalled.

Graham Colliery.—Pillar-extraction was continued at this mine, and the work was carried out under safe conditions, no fires occurring in the fallen ground.

Waikato Extended Colliery (Roose Shipping Co., Owners).—A new drive has been commenced and connected to the Old Waikato Mine workings on the north side of the area. The revealed coal-seam, which is 20 ft. thick, is hard and of good quality, and the prospects indicate that a substantial area of coal remains for working.

Huntly Brickworks.—Quarry operations were continued for the production of fireclay for the manufacture of fireclay and other bricks on the property.

Taupiri East Coal-mine (Crown Lease: J. T. Holland).—Two headings from the bottom level have been set away on fixed bearings along the northern boundary of the lease for the purpose of reaching an area belonging to the Auckland University Council and under lease to the mine-owner. The seam is 25 ft. thick and the coal is of good quality and free from stone. A set of screens has been erected for the purpose of complying with section 21 of the Coal-mines Amendment Act, 1937.

Campbell Coal-mine (Crown Lease: Whatawhata).—Operations in the mine dip consisted of splitting the pillars remaining to the rise on the south side. The main headings to the south have passed through stony, faulty coal which is hardly marketable, and the future prospects in this direction are very discouraging.

Glen "A" Potteries Opencast Mine.—Opencast faces have been in operation for the production of fireclay and coal for use in the manufacture of sanitary appliances at works established nearby.

Renown Colliery (Renown Collieries, Ltd., Owners).—No. 2 north heading has been advanced to a distance of 25 chains from the main haulage road, an endless rope having been installed here to deal with the present output of 200 tons per day. The thickness of the seam here is 10 ft. Safety-lamps are in use throughout this section.

No. 3 south heading has been advanced to a point 20 chains beyond No. 3 East level, and 13 chains from this point No. 4 west levels have been set off. These have advanced 5 chains from No. 3 south heading. The thickness of the seam here is 15 ft. A 100 ft. borehole has been put down from the surface in this locality to more effectively deal with the water.

Haulage of coal is now by way of No. 1 south instead of No. 3 south.

Pillar-extraction is proceeding in No. 1 panel to the right of No. 1 south heading, and preparations are well in hand for the extraction of pillars between No. 2 and No. 3 south headings (No. 2 east panels).

The percentage of pillar coal is approximately 35 per cent. and machine coal 65 per cent.

Fifty "Oldham-Wheat" cap lamps of the latest type have been installed. The lamp is fitted with two bulbs, the larger having two independent filaments, each with a life of 300 hours. Candle-power is 25 and distribution of light 130°. The smaller bulb is for emergency use and will supply light for several days. The accumulator is made of moulded hard rubber, which eliminates corrosion and is nearly double the strength of a metal container.

Wilton Colliery (Wilton Collieries, Ltd., Owners).—Pillar-extraction was continued in Tate's dip, Tansfield dip, and Singer's dip sections and Yate's section, Lydon's dip, and No. 3 rise sections. The seam varies in thickness from 4 ft. to 8 ft., and difficult mining conditions were experienced due to jointy fireclay roof and seepage of water from the surface. Particular attention has to be paid to timbering owing to these conditions.

An output of some 450 tons per day was maintained from pillar workings.

No difficulty has been experienced through heating and a high percentage of pillar coal is being won.

An area containing an estimated 300,000 tons of coal has been proved by boring on the Holme's Estate, 30 chains to the west of the company's private siding. A new section has been opened up in this locality, served by 26 chains of endless rope haulage from the company's private railway, with 5 chains surface direct haulage. The seam is 7 ft. to 8 ft. thick.

Taranaki District.

Old Stockman Coal-mine, Mokau.—This small mine is situated twenty-seven miles up the Mokau River. During the year the manager decided to open up a new mine section from the surface, conveniently situated to the west bank of the river and within 1 chain to the north of the old mine-entrance, for the purpose of shortening the haulage and for winning an area of proved coal lying to the east of the old workings. A new drive, 10 ft. wide, has been driven from the surface on level course in a coal-seam 5 ft. thick, which is overlain by a hard stratum of sandstone.

Mangapeehi Coal-mine (Mangapeehi Coal-mining Co., Ltd.: Wayleave from Crown).—The main dip has been extended to within 5 chains of the freehold boundary, and it has travelled in coal throughout from the surface, with the exception of one break of 30 ft. through a faulted area. The average grade is 1 in 4, and it appears to be flattening at the face. The seam is 16 ft. thick, and it is clean and contains no stone-bands.

Egmont Tatu Colliery (Crown Lease: Egmont Collieries, Ltd., Owners).—Development of the No. 2 mine section, opened to the north of the abandoned No. 1 mine section, was proceeded with. The seam is 7 ft. thick with coal of good quality and free from stone, and dips to the south at a grade of 1 in 15. What proved to be a downthrow fault of 16 ft. displacement running in a north-easterly direction was met by the main dip at a distance of some 8 chains from the entrance. An extension of 1½ chains through the disturbed area recovered the displaced seam. The bottom level to the south was extended to the surface to act as a drain level, and a syphon was installed to hold water at the level of the bottom south level.

Pillar-extraction of the area developed to the south of the main drive was commenced, the intention being to pillar from near the outcrop to a line 2½ chains from the main drive. Difficulty was met with due to crushing of pillars when split for roading owing to heavy falls of roof blocking the original roads.

As the mine is in a very isolated locality and living-conditions for the men employed are by no means good it has been found difficult to maintain an adequate staff to work the mine.

The company ceased active operations in August.

Huntly School of Mines.

The mining classes were well supported, some thirty students availing themselves of the opportunity of gaining technical knowledge and of preparing for the examinations held in October and November.

Classes were held three nights weekly at Huntly and one night each at Glen Massey and Rotowaro. Two students were regularly assisted by correspondence.

Fatal Accidents.

On 7th July John Clark, a screen-attendant employed by the Glen Afton Collieries, Ltd., was fatally injured as the result of a fall into the machinery on the Glen Afton screens. Death was due to a fracture of the skull and laceration of the brain.

On 14th September Nicholas Belich, a machineman employed at the Renown Colliery, died as the result of an electric shock sustained whilst he was engaged in lifting a gate-end box.

Serious Non-fatal Accidents.

On 21st February Rua Terewhiti, an employee of the Rotowaro Colliery, sustained a fracture of the spine when he overbalanced and fell off one of the wagons used to convey workmen from the mine to the Rotowaro Station.

On 2nd March D. Carrigan, miner, Renown Colliery, suffered a fracture of the right forearm. He was removing his tools when he slipped on a rail and fell.

On 8th April O. J. Mason, miner, Renown Colliery, sustained contusion of the muscles of his shoulder when he slipped on a rail and struck a prop.

On 22nd April T. Labrum, shiftman, Pukemiro Colliery, received a fracture of the right radius when his wrist was caught and crushed between two skips.

On 20th May J. H. Park, shiftman, Glen Afton No. 1 Colliery, slipped on a rail and fell, fracturing the left radius.

On 30th June A. Swift, shiftman, Pukemiro Colliery, suffered hæmatomo of the scalp and a strain of the neck muscles when his head was caught in the handle-bars of two skips whilst he was uncoupling them.

On 6th July William Lang, miner, Wilton Colliery, sustained a fractured fibula of the right leg due to a fall of roof stone.

On 10th September R. Gair, deputy, Wilton Colliery, was caught by the haulage rope at the rope-drum. His injuries consisted of concussion and several broken ribs.

Dangerous Occurrences (Regulation 82 of the Coal-mines Act, 1925).

On 11th March a heating was found in the gob in F section of the MacDonald Mine. The two small stumps of coal which were affected were filled out, after which everything was quite normal.

On 13th March a large volume of smoke was discovered in the vicinity of No. 4 auxiliary haulage road, Rotowaro No. 1 Mine. Permanent brick stoppings were erected to seal off the affected area.

On 31st March a heating was detected in F section of the MacDonald Mine, the affected area being subsequently sealed off by the erection of four brick stoppings.

On 6th May indications of heating were discovered coming from a fall near a stopping on the return airway of the Renown Colliery, and the area was sealed off.

On 13th August indications of a heating were found in E section of the MacDonald Mine. Two stoppings were erected and the area sealed off.

On 25th August "fire-stink" was discovered in a place in the main rope section, Rotowaro No. 1 Mine, and five stoppings were erected.

On 30th August a heating was discovered in the return airway, near H section of the Glen Afton No. 1 Colliery. This was immediately given attention and the place made secure.

On 13th September the men in the stone-drive section, Rotowaro No. 3 Mine, were withdrawn due to the presence of "fire-stink." This was caused by one of the ventilating-doors having been knocked down by a runaway, thus reducing the quantity of air in that section. When the door was repaired the section was subsequently cleared of gas.

On 24th October the mine-manager of the Rotowaro Colliery advised that a small active fire had been discovered in the goaf of a pillar in the Daylight section, No. 1 Mine. Permanent stoppings were erected and the fire was suppressed.

Prosecutions under the Coal-mines Act, 1925.

On 20th January a deputy was charged with behaving in a violent manner by attempting to strike a trucker. The case was dismissed upon payment of costs by the defendant.

On 24th February a miner was charged with striking a trucker with his closed fist. The defendant was convicted and fined £2, and costs.

On 29th September a carpenter was charged with unlawfully interfering, contrary to section 145 (3) of the Coal-mines Act, 1925, with the fencing and place where a fatal accident occurred. He was convicted and fined £1, costs, 12s.

On 29th September a trucker was charged with refusing to allow himself to be searched for prohibited articles. He was convicted and fined £1, costs 10s.

On 29th September four truckers were charged with having in their possession contrivances for smoking. All were convicted and fined £1 each, costs 10s. each.

WEST COAST INSPECTION DISTRICT (W. Parsonage and J. McArthur, 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 workings of the coal-mines in the West Coast Inspection District. The combined output from the Nelson, Buller, Reefton, and Grey districts was 984,389 tons, as compared with 975,228 tons during 1937, showing an increase of 9,161 tons.

The following summaries show the increases and decreases in output and the number of persons employed during the year as compared with the output and number of persons employed during the year 1937 in the several districts of the Inspection District.

Output.

—	1937.	1938.	Increase.	Decrease.
	Tons.	Tons.	Tons.	Tons.
Nelson District	17,505	16,574	..	931
Buller District	432,378	440,457	8,079	..
Reefton District	44,077	48,225	4,148	..
Grey District	481,268	479,133	..	2,135
	975,228	984,389	12,227	3,066

Net increase in Output = 9,161 tons.

Number of Persons Employed.

—	1937.	1938.	Increase.	Decrease.
Nelson District	50	39	..	11
Buller District	770	852	82	..
Reefton District	92	94	2	..
Grey District	1,044	1,086	42	..
	1,956	2,071	126	11

Net increase in Persons = 115.

REMARKS.

Nelson District.—The cause of the decrease in output in this district was the reduction by 50 per cent. of the persons employed at the Owen Colliery and operations at O'Rourke's Mine having been at a standstill during the whole year.

Buller District.—With the exception of the Cardiff and Cascade Creek Mines, all mines in this district continued to work good time during the year. At the two mines referred to, there was a decrease in output of 3,001 tons and 3,704 tons respectively, yet there was an increase of 8,079 tons from this district.

Reefton District.—The mines in this district worked better time than during the year 1937. This is reflected in an increase of output to the extent of 4,148 tons, with an increase only of two persons employed. The Surprise and Perfection Mines on the Morrisvale lease remained closed during the whole of the year.

Grey District.—Although the number of persons employed in this district shows an increase compared with the number employed during 1937, there was a slight decrease in output. This condition is due chiefly to the reduction of persons employed on coal-production at the Blackball Mine. This mine shows a decrease of 10,168 tons compared with the year 1937, although the number of persons employed was increased by two. Quite a large number of persons have been employed at this mine since 1st April, 1938, constructing two stone tunnels for the purpose of tapping the coal lying to the dip of the old dip workings in the mine. Substantial increases in output were shown at the Dobson and Paparoa Mines, and 50 per cent. of the Co-operative Parties' mines increased their output.

GREYMOUTH DISTRICT.

Liverpool State Colliery, Rewanui.—Morgan Seam: All operations in the Morgan seam have been confined to the area situated to the rise of the main levels to the east and west of the main stone-drive. With the exception of the output from six development places which have operated during the year in No. 3 west bank, the output from the Morgan seam has been obtained from pillar-extraction. All development work to the rise of the main levels has been completed with the exception of a portion of No. 3 west bank. Pillar-extraction is carried out under the straight-line principle. It is intended to commence development to the dip of the main levels in the near future, and, preparatory to commencing, larger-diameter pipes, to carry compressed air, are being installed along the main haulage tunnel and preparations for the installation of an electrically-operated compressor have been made on the surface adjacent to the return airway.

On the 11th August a fire occurred, due to spontaneous heating, in No. 1 bank section, Morgan east. Temporary stoppings were immediately erected to seal off the fire, and later the fire was enclosed within three concrete stoppings. In November the fire revived immediately behind the concrete stopping on the intake side, and it was found necessary to erect a second line of stoppings to seal off the fire permanently. We may also add that stoppings have been erected in all sections of the Morgan seam for the purpose of creating barriers between each section.

Kimbell and Anderson Seams: Development work in the Kimbell west dip is still in progress, while the Anderson dip has been advanced a distance of 8 chains in good-quality coal, the seam lying at a gradient of 1 in 2½. Development work in the Anderson west level ceased during the year owing to the coal to the west becoming dirty and unmarketable and pillar-extraction has been commenced. In the east level, after driving 7½ chains, a fault was encountered. Prospecting through the fault proved the existence of the seam 8 ft. in thickness which contains a band of stone 4 in. in thickness. The greatest portion of the output from the Kimbell and Anderson seams was obtained by pillar-extraction. The haulage facilities in the Kimbell and Anderson seams will be improved as a result of the installation of larger-diameter compressed-air pipes and the installation of the compressor referred to in connection with development work in the Morgan seam. All wood bars that required renewing on the main haulage road during the year have been removed and steel bars substituted.

James State Colliery, Rapahoe.—Coal-mining operations during the year were carried out in both pillar-extraction and solid workings. In No. 1 west section all pillars were extracted to within a safe distance of the main haulage road and the area closed down, while in No. 2 west section pillar-extraction was almost completed at the end of the year, only one pair of miners being employed in the section. Very little work was done in the Cannel Creek section during the year, but pillar-extraction will commence early in 1939. In the new dip section development work has continued. The main headings were extended in an easterly direction and the coal-seam maintained an average thickness of 7 ft. to 8 ft., while the coal is of very good quality. Nos. 1, 2, and 3 levels in this section, coursing in a northerly direction, encountered a fault, and development work in this direction ceased.

No work was done in No. 1 east section for a considerable time, but during the year operations recommenced. The pillars therein are being split and robbed, it being necessary to leave stumps of coal to prevent water entering the mine from the surface.

Strongman State Mine, Nine-mile.—During the year a commencement was made to construct the stone tunnel over the depression in the James Mine main haulage road, which is to be used, in conjunction with the last-named haulage road, to form the haulage road to the Strongman Mine. This tunnel is being driven from both ends, and a total distance of 21·4 chains has been completed, leaving 7·5 chains to complete. It is estimated that this will be completed by the end of March, 1939. The construction of Nos. 3 and 3A tunnels which form a continuation of the James Mine haulage road between Cannel Creek and surface haulage road, coursing along the Nine-mile Creek, has been completed. No. 5 Tunnel, being constructed to tap the coal-seam, has been driven a total distance of 29·9 chains, leaving approximately 2·5 chains to be driven to complete the work, while in the return airway there remains approximately 1·5 chains to be driven. A commencement has also been made to construct a shaft for the purpose of connecting the return airway with the surface. Much work has been done during the year in the laying of 90 lb. to the yard rails on the main haulage road, but a distance of 54 chains is yet to be completed. The rails referred to are making a first-class tram-line on the haulage road. A most modern concrete bathhouse and change-room is in course of construction and almost completed. A commencement has been made in the erection of a new all-steel storage bin and all-steel housing for a modern screening-plant to be used in connection with Strongman Mine and to replace the old wood structure now in use at the James Mine.

Blackball Coal-mines Proprietary, Ltd., Blackball.—The whole output from this mine during the year was won by extracting pillars to the rise of the main level from No. 7 bank and outbye to No. 2 bank. On the 6th December indications of a creep occurred, and heating was taking place in No. 1½ bank at a point approximately 50 yards to the rise of the main level; consequently, operations ceased in the mine. The plant was removed and stoppings erected to seal off the heated area. On the 1st April last a commencement was made to construct two stone tunnels, from the surface south-west of Ford Creek adjacent to the storage bins, for the purpose of tapping the dip coal left behind in the old mine to the dip of No. 2 dip workings. These two tunnels have each been driven approximately 600 ft. After driving approximately 520 ft. a considerable quantity of water was encountered, seriously retarding progress. At the end of the year the return tunnel was 120 ft. from the coal and the main tunnel 240 ft. from the coal. New coal-cutting and conveying machinery is to hand ready for installation in this mine, but, owing to the slow progress in driving the tunnels, it is difficult to state when they will be installed.

Blackball Creek Coal Co., Ltd., Blackball.—This mine is operated on the Blackball Coal-mines Proprietary's property. Operations are confined to the extraction of small pillars of top-seam coal from Nos. 3 and 4 sections. No. 2 section was abandoned during the year. The sections are situated in the old rise workings of the Blackball mine; consequently, no development work can be done.

Briandale Collieries, Ltd., Ten-mile.—The whole output from this mine was won from development work. Early in the year the rise heading, driven immediately inbye of the stone-drive, encountered a fault which seriously interfered with development work. To surmount this difficulty another stone-drive 1¼ chains in length was constructed from the surface to tap the seam on the upthrow side of the fault. Two levels in coal have been driven from the inbye end of the stone tunnel a distance of 5 chains in a north-easterly direction. The coal-seam is 5 ft. in thickness.

Wallsend Colliery (Brunner Collieries, Ltd.), Brunner.—The output from this mine was won from development work in the Rope-road Extension section and the Slant Dip section and the splitting of pillars in Nos. 1, 2, and 3 rise panels. All pillars in Nos. 2 and 3 panels have been sufficiently split, and preparations are being made to seal off both panels. In the north-east corner of No. 1 panel a little solid work has been done adjacent to the fault which has cut off further development to the rise of Nos. 1, 2, and 3 panels, while an air-course has been constructed across the top of the panel. This air-course has been constructed for the purpose of ensuring a constant supply of air to the north-east corner of the panel, where sudden outbursts of gas have occurred on three occasions, causing the withdrawal of all workmen.

Development Work in Rope-road Extension Section: The main headings in this section coursing in a south-westerly direction have now been driven 34 chains in good-quality coal of from 8 ft. to 12 ft. in thickness. The first panel to the rise of these headings has been further developed, and preparations are now being made to open the second panel. In addition to the development to the rise of the main headings, a commencement has been made to drive two slant dips at a point 22 chains inbye. A compressed-air-operated "Korfman" coal-cutting machine has been installed, and it is intended to use this to expedite development work both in the Rope-road Extension headings and the two slant dips.

Development Work in Slant Dip Section: No development work has been done regarding the extension of the slant dip, but development work has continued in a westerly and an easterly direction off the main slant dip, while a panel has been opened on the east side.

The coal in all sections of the mine is of good quality.

Dobson Colliery (Grey Valley Collieries, Ltd.), Dobson.—The whole of the output obtained during the year was from development work in the dip workings.

No. 2 West Section: Early in the year all development work, up to the fault which was encountered in the main level, was completed and operations therein ceased.

No. 3 West Section: All work in this section was confined to the opening-up of panels to the dip of the main level, all work to the rise of the level having been completed. No. 1 panel is almost completely formed into pillars, and No. 2 panel is now being formed. The coal is of good quality and the average thickness is 12 ft. For the purpose of providing better haulage facilities a haulage road is being constructed from No. 1 dip to the foot of the dip in this section on which an endless rope haulage system will be installed. All coal in this section will then be worked to the rise of this level.

No. 4 West Section: Development work in this section has proceeded at a very reasonable rate. The main level has been driven a total distance of 17 chains in good-quality coal, the average thickness of the seam being 12 ft. One panel to the rise of the main level and two panels to the dip are being developed. The total distance developed to the dip of No. 4 level is 14 chains. To facilitate haulage from this section a compressed air-haulage engine has been installed to operate an endless rope haulage system.

No. 4 East Section: During the year very little work has been done in No. 4 east level and the rise workings off same, due to the presence of a number of "feeders" of gas. Consequently, development work has been confined to the dip of the main level. A slant dip has been driven a distance of 7 chains, and when this is farther advanced it is intended to develop panels of work off this dip. The installation of an 8 in. diameter pipe-line for transmission of compressed air has greatly improved the working of compressed-air-driven machines in the extreme inbye end of the workings.

Paparoa Colliery (Paparoa Coal Co., Ltd.), Roa.—This company operated in two seams during the year—viz., No. 1 seam in the aerial section and No. 2 seam in the west level section.

Aerial Section: The new dip heading in this section driven on the north side of the fault encountered in the old dip, has been driven a distance of 15 chains in good-quality coal approximately 15 ft. in thickness. A panel of work has been developed, and at the end of the year eight pairs of miners were employed therein. Should this dip be extended a further 10 chains a connection will be made with previous workings in No. 1 seam, which workings were operated from the main haulage tunnel. It may then be possible to handle the coal from the aerial section by means of the main endless rope system in lieu of by the aerial ropeway at present in use.

West Level Section: The largest proportion of coal obtained from this section was won from pillar-extraction. There is yet a little solid work to complete, and it is anticipated that this will be completed during 1939. During 1937 a drive, partly in stone and partly in coal, was driven a distance of 3 chains for the purpose of tapping the coal to the dip of the main west level, and although the drive tapped the seam, no further work was done during the year under review.

United Brunner Mines, Ltd., Brunner.—No coal-mining operations have been done on this lease for a considerable time previous to December, 1938. However, during December operations recommenced when four men were employed reconditioning the surface tram-line and clearing a fall at the portal of the old Coolgardie Mine. It was the intention of the company to work the property by means of the old Coolgardie level, but this was found to be in such a bad state as to render this method impracticable. Consequently, further work in connection with the old level was abandoned and preparations were made to commence boring with a view to proving as to whether the coal-seam existed at a point adjacent to the head of the surface-inclined tramway. During the year quite a fair quantity of gannister has been quarried off the lease at a point adjacent to the main Brunner–Blackball Road.

Co-operative Mines in Grey District.

Spark and Party's Mine, Rewanui.—At the commencement of the year a stone tunnel was in process of construction to tap a coal-seam at a lower level than the seam in the old mine. During the year the seam was tapped, but as gas was given off freely, it was found to be very difficult to ventilate. Consequently, a commencement was made to construct another stone tunnel to tap the seam. Progress in this tunnel was slow owing to a fairly large quantity of water being encountered. However, the coal-seam was tapped and a connection was made in coal between this tunnel and the one first driven. Coal-production commenced in December and will no doubt continue during the year 1939.

Old Runanga Mine (O'Brien and Party), Rewanui.—Two seams are operated at this mine, Nos. 1 and 2 seams, No. 1 seam being the uppermost. The output obtained during the year was won from both solid workings and pillar-extraction.

No. 1 Seam: Further driving of the main level in this seam has been abandoned owing to the seam thinning and same containing a thick band of stone. No. 1 panel to the rise of the main level has been completely formed into pillars. On the 10th October, 1938, a feeder of gas was encountered, and in consequence the Manager was instructed to introduce safety-lamps to replace naked lights then in use.

No. 2 Seam: All development work is done in this seam, and pillar-extraction has commenced immediately under an area from which the upper seam has been extracted.

Electric safety-lamps are in use in both seams.

Goldlight Colliery (Williams and Party), Rewanui.—This mine is fast approaching total exhaustion. The output for the year was won from pillar-extraction. With a view to proving as to whether the seam existed on another portion of the lease, boring was resorted to but, as yet, without success.

Moody Creek Mine (Simpson and Party), Dunollie.—The total output from this mine was won from development work. All development to the rise of the main level has been completed. Consequently, all development work is now confined to dip workings. No. 1 dip, known as Wilson's dip, has been driven a distance of 5 chains, and the seam at the face is 9 ft. in thickness and of good quality. However, owing to the presence of faults, development to the right and left of the dip presents difficulties.

New Point Elizabeth Mine (Guy and Party), Dunollie.—The output from this mine was obtained chiefly from development work. The main-rise heading has been driven a distance of 18 chains. At this point clays and gravels were encountered. Development work to the right and left near the head of the heading is somewhat restricted owing to the presence of faults and the nearness of the hill escarpment to the heading. Indications are that the development work will soon be completed and pillar-extraction resorted to.

Fiery Cross Mine (Currie and Party), Dunollie.—The output from this mine was won from pillar-extraction. There are only a few pillars to be extracted, and it is estimated that the mine will be fully exhausted by the end of June, 1939.

Bend Creek Mine (Baddeley and Party), Dunollie.—The output obtained from this mine was won from pillar-extraction. All development work in the mine has been completed. Some prospecting, however, has been done on a new lease adjacent to the present surface tram-line. Results are encouraging, and a commencement has been made to construct an inclined surface tramway to connect the present tramway with the prospecting-drive.

Castlepoint Mine, Dunollie.—The output from this mine was won partly from development work and partly from pillar-extraction. Development work continued during the greater portion of the year by advancing the main level. However, when this had been driven 40 chains a fault was encountered and driving was abandoned. Development work is now confined to the rise of the main-level inbye of the Crosscut section. Pillar-extraction is taking place in the last-named section.

Hilltop Mine (Armstrong and Party), Ten-mile.—The output from this mine was won from pillar-extraction in the dip workings and the splitting and robbing of pillars situated near the outcrop. Complete extraction of the pillars near the outcrop is inadvisable owing to possible danger due to slips from the cliff immediately over the mine-entrance. The mine is approaching total exhaustion, but it is the intention of the party to develop a seam underlying the seam now being worked.

Hunter and Party's Mine (Late Brady's), Ten-mile.—Development work has continued during the year, the total output having been won from this work. The main dip has been driven 8 chains in a southerly direction. At this point an upthrow fault was encountered. At the end of the year prospecting through the fault had not been commenced, but it is intended to do so at a later date. In the meantime development work is proceeding to the east of the dip. The coal-seam is of good quality and is 10 ft. in thickness.

Kaye and Party's Mine, Ten-mile.—The output from this mine was won from development work in the dip workings. The dip has been extended and levels driven east and west off the dip. At the face of No. 1 level east 5 chains inbye an upthrow fault was encountered. A little prospecting was done at the fault, but work was temporarily abandoned before the seam was tapped on the upthrow side. On the 3rd August last CH_4 was detected in this mine and safety-lamps were introduced and are still used.

Hunter and Party's Mine, Dunollie.—Almost the whole output from this mine has been won from development work to the dip of the main level, where the coal-seam is of good quality but only 3 ft. 6 in. in thickness. The dip has been driven 5½ chains, but, owing to the seam thinning below 3 ft. 6 in., driving was abandoned. Levels off the dip advancing in a northerly direction have been driven 6 chains. There are still a few pillars to be extracted from the rise of the main level, but they are to be left until the workings to the dip are completed.

Schultz Creek Mine (Marshall and Party), Twelve-mile.—The output from this mine was won from pillar-extraction. The coal is of good quality, but the seam is only 3 ft. in thickness. The borehole, which the party began to sink in 1937 adjacent to the fault in the main level, has not been persevered with. Prospecting around the hill beyond the fault proved that the seam was so thin as to render profitable working impossible, hence the abandonment of boring operations.

Dennehy's Mine, Twelve-mile.—This mine did not operate during the year.

Cain's Mine, Rapahoe.—The larger portion of the output from this mine was won from pillar-extraction in the old mine. Some prospecting has been done, and is still in progress, in a small area lying between the old mine workings and the No. 1 west section of the James Mine. Results of the prospecting have not been very encouraging, but it is still probable that workable coal will be tapped in the area.

Bellbird Mine (Fauth and Party), Ten-mile.—The whole of the output from this mine was won from pillar-extraction, in Nos. 1, 2 and 3 levels east of the dip. Development work has still to be done in No. 6 level. When this level has been driven to the fault encountered in No. 5 level it is intended to prospect through the fault. The seam in this mine is of good quality and is 9 ft. in thickness.

Bellvue Mine (Hadcroft and Party), Rapahoe.—The output from this mine during the year has been won from pillar-extraction. All development work in the present mine has been completed, but there remains a portion of this class of work to be done in a small area adjacent to the present workings.

Jubilee Mine (Pinn and Party), Rapahoe.—This party has operated in three small areas during the year. The old mine was fully exhausted early in the year, and a commencement was made to develop a small area adjoining the Bellvue Mine lease. Prospects in this area were disappointing owing to encountering a fault after driving the main level 1 chain. Work was then commenced in an old area near the bins which contained a few pillars of coal. At the end of the year pillar-extraction was in progress both in the area adjacent to Bellvue Mine and the old area.

Cliffside Mine (Moore and Party), Nine-mile.—The output from this mine during the year was won from pillar workings and development work. All pillars have been extracted from Nos. 2, 3 and 4 sections, and No. 1 section is now being further developed. An upthrow fault was encountered in the main level, and this fault retarded development work somewhat. However, the throw of the fault was proved and a stone-drive constructed which tapped a good seam of coal 16 ft. in thickness. A borehole was sunk by the Mines Department on the lease to the dip of the present workings, and this proved the existence of a good workable coal-seam.

Smith and Party's mine, Dunollie.—The output obtained during the year was won from pillar-extraction in Nos. 1 and 2 levels. The coal seam is 4 ft. 6 in. in thickness, and the coal is of good quality.

Brachead Mine (Boote and Party), Dunollie.—The output during the year was principally won from development work to the dip of the main level. The main dip has been driven 11 chains, and the coal-seam at the face is 7 ft. 6 in. in thickness and of good quality. The coal-seam in the levels east and west of the dip varies from 5 ft. 6 in. to 9 ft. in thickness. During the latter part of the year a more substantial electrically-operated haulage winch was installed at the dip head.

Remarks on Co-operative Mines in Grey District.

Apart from the Fiery Cross, Goldlight, and Jubilee Mines, all co-operative mines have a reasonable life. With a view to finding suitable areas for parties who totally exhaust their present leases, the Mines Department is conducting geological surveys of a few areas on the State Coal-mines Reserve, while boring has been done on an area situated between the Nine-mile and Ten-mile Creeks adjacent to the Greymouth–Westport highway (coastal route).

REEFTON DISTRICT.

Archer's Mines, Capleston.—Two mines are operated by Mr. Archer, these mines being known as the Top Mine and Bottom Mine.

In the Top Mine development work has continued on the dip workings in No. 1 seam. A large "roll" was encountered at the face of the dip and a stone-drive is in the course of construction to penetrate this.

In the Bottom Mine development work was continued on the north side of the stone tunnel. During the latter part of the year further driving in the main level was abandoned owing to same approaching a creek and the coal becoming very inferior in quality. Pillar-extraction has now commenced.

Coghlan's Mine, Capleston.—Practically the whole of the output from this mine has been won from development work in what is known as the Smithy level section. Two levels are being pushed ahead into the hill and pillars formed to the rise of these. The coal-seam at the faces is 7 ft. in thickness, and the coal is of good quality.

Waitahu Mine (A. D. Williams), Reefton.—During a portion of the year three parties operated on this property, but, owing to faulted country and inferior quality coal being encountered in one section, one party abandoned operations and joined with one of the existing parties.

In what is known as the Top Mine, development levels have been driven approximately 12 chains. The coal-seam is 7 ft. in thickness, and the coal is of good quality. In what is known as Kinley's Mine, two levels have been driven 6½ chains. The coal-seam is 7 ft. in thickness, and the coal is of good quality.

Venture Mine (Old Birchwood Mine), Reefton.—Coal was not produced from this mine during the year. The mine is now definitely closed.

Morrisvale Collieries, Reefton.—Perfection Mine: Coal was not produced from this mine during the year. At the latter end of 1937 a fire occurred in this mine, and a dam has been erected at the entrance.

Surprise Mine: This mine did not operate during the year and is now lying full of water.

Pyramid Mine: This is a small mine situated on the Morrisvale lease 12 chains north-east of the Perfection Mine, and is operated by a party of miners. Operations commenced at the outcrop and a pair of headings driven 8 chains to the rise. Development work has also been done to the east and west of these headings. Work east and west, however, is somewhat restricted due to the coal outcropping near to the headings on the east side and the presence of the Perfection Mine fire on the west side. It is the intention of the party to construct a stone tunnel for the purpose of tapping the seam at a lower level than the present mine entrance.

Burke's Creek Collieries, Ltd., Reefton.—The larger portion of the output from this mine during the year was won from pillar-extraction in No. 3 panel and a small area inbye of No. 3 panel. The small area referred to has been exhausted and sealed off. There is still a little development work to be done in No. 3 panel.

During the year a slant dip was driven 5½ chains from a point on No. 2 level approximately 4 chains inbye of the main dip. A level has been commenced off this dip for the purpose of reaching a point in line with the main dip. When this point is reached an incline will be commenced to form a continuation of the main dip. Otherwise, the main dip has not yet been extended.

Peerless Mine (Williams and Party), (Burke's Creek Lease), Reefton.—This mine is operated by a party of coal-miners on a small portion of the lease held by the Burke's Creek Coal Co. The output for the year has been won from pillar-extraction. There is no further development work possible on the area.

Burnwell Mine (D. Hamill), Reefton.—This mine is situated adjacent to the town of Reefton. The output was won from a little prospecting-work to the rise of the main level. No. 4 seam is operated, and there has been a fair demand for this coal during the year. However, there has not been any serious attempt made to properly develop the mine.

Times Street Mine (Old Terrace Mine), Reefton.—Coal was not produced from this mine during the year. A little prospecting has been done with a view to locating No. 2 seam, but as yet without success.

Phoenix and Venus Mines (N. Collins), Murray Creek.—The output for the year was won from the extraction of small strips of coal bordering the fire in the Venus Mine. During the latter part of the year a commencement was made to operate the Phoenix Mine again, but, owing to the quality of the coal, prospects do not look bright.

Defiance Mine (McClatchie and Co., Ltd., Christchurch), Late O'Brien and Party, Murray Creek.—The output for the year was won from development work in what is known as the Waterfall section. Some development work has also been done north of the old mine workings. The coal in this area is of fair quality and the seam is 7 ft. in thickness.

Clele Mine (Alborn and Party), Merrijigs.—The output for the year was won from development work and a small amount of pillar-extraction in No. 2 mine. Numerous difficulties have been experienced in the development of this mine due to the faulted nature of the country. The coal produced is of good quality.

White Rose Mine (H. and S. Griggs, Late W. Osborn), Merrijigs.—Only a small output was won from this mine during the year. The old mine was abandoned at the end of 1937, and during the present year prospecting and development work has been done on another portion of the lease. A dip has been sunk, but after further prospecting it has been decided to tap the foot of the dip with another drive.

BULLER DISTRICT.

Mitchell's Mine, Charleston.—Coal was not produced from this mine during the year, but operations will recommence during 1939.

Bowater and Bryan's Mine, Charleston.—This mine is worked by the opencast method. Stripping and the loading of coal is done by hand labour and no attempt has been made to seriously develop the property on modern lines.

Warne's Mine, Charleston.—Only 8 tons of coal was produced during the year, this being used for domestic purposes.

Powell's Mine, Charleston.—This mine is worked by the opencast method and is only worked on a small scale, 219 tons being produced during the year.

Price's Freehold, Brighton.—During the year a few tons of coal were produced for the owner's domestic use.

Brighton Coal-mines, Ltd., Brighton.—During the year 516 tons of coal were won from development work and the coal was disposed of locally. No coal has been flumed from the mainland to Seal Island for shipment. Some difficulty has been experienced with the flume between the mainland and the island, and, with a view to overcoming this, a tower of steel 95 ft. high has been built to support a portion of the suspended flume. Improvements have also been made to the storage bins on the island and to the berthing arrangements. With the completion of these improvements it is expected that fluming of coal for shipment will recommence.

Rocklands Mine (J. P. Burley), Buller Gorge.—All development work in this mine is completed, and the output for the year was won from pillar-extraction. During the year new bins, screen, and loading-bank were erected, and these have considerably improved the handling and screening of the coal.

Glencrag Mine (Forsyth and Bateson), Buller Gorge.—The output for the year from this mine was won from development work, no pillars yet having been extracted. During the year the owners have constructed 9 chains of road from the Reefton–Westport main highway to connect with the proposed new bins and screens at the mine entrance. A distance of 3 chains of road is yet to be completed. When this is done cheaper and better means of handling and screening the coal will result.

Coal Creek Mine (McGuire and Party), Seddonville.—The output from this mine for the year was won from the filling of loose and fallen coal on the main level. The cleaning up and retimbering of the main level has been done to within one chain of the solid coal. When completed driving will commence into virgin country. During the year a new entrance was made at this mine, which resulted in better facilities for the handling of the coal.

Glasgow Mine (Steele and Party), Seddonville.—No coal was produced from this mine during the year.

Cardiff Coal Co., Ltd., Mokihinui.—The output for the year was produced from development work. Two headings, together with cut-throughs, have been driven in a south-westerly direction towards an area proved by boreholes to contain 12 ft. of coal. In July a defect developed in the boiler used to generate steam, which resulted in the boiler being condemned. Operations in the mine then ceased and the mine remains closed.

Hydro Coal-mines, Ltd., Seddonville.—Almost the whole of the output during the year was won from pillar-extraction on the south-east side of the main tunnel. During the year a stone tunnel, 3½ chains long, was driven to the west of the main tunnel for the purpose of tapping the coal-seam in the Cave area. This area was worked some years ago, and when it was tapped with the stone-drive referred to it was found that the roof had fallen very badly and the small pillars of coal were badly crushed. Prospects in this area do not look bright. For the purpose of providing ventilation for the Cave area a fan, operated by a Diesel engine, has been installed.

Charming Creek - Westport Coal Co., Ltd., Ngakawau.—The output from the mine during the year was won from development work in the main heading section of the mine. The solid work in No. 1 panel west has been completed, and No. 2 panel west is being opened up. Development work was continued in the main heading. The coal-seam is approximately 20 ft. in thickness and the coal is of good quality. During the year a main-and-tail haulage system was installed to haul the coal from the head of the old dip to the surface. At the end of the year preparations were being made to alter the gauge of the tram-lines underground from 3 ft. 6 in. to 2 ft. so that small trucks may be used and the large trucks transferred for use on the surface tram-line.

Westport Main Mine (Westport-Granity Coal-mines, Ltd.), Granity.—No work of any description has been done at this mine during the year.

Westport-Cascade Mine, Cascade Creek.—Three sections have been worked in different portions of the lease during the year at this mine—*i.e.*, Moynihan's, Top Mine, and Durkin's South sections. All development work is completed in Moynihan's section and Top Mine section, and pillar-extraction is taking place. Prospecting on the south side of the creek was successful, and Durkin's South section has been developed and five places are operated therein. The greater portion of the output was won from pillar-extraction.

Westport Coal Co., Ltd., Denniston Mines.—Ironbridge Mine: The total output for the year from this mine was won from pillar-extraction in Nos. 2 and 4 sections and Kruger's old section. During the latter part of the year a dip-stone tunnel commencing on the level adjacent to Kiwi Sheets was constructed to tap the bottom seam in what is known as Young's section, and two pairs of miners were employed here repairing the roadways preparatory to commencing pillar-extraction. The work in connection with the dewatering of Beardmore's dip, which was in progress at the end of the previous year, has been abandoned.

Coalbrookdale Mine: Almost all the output from this mine was won from pillar-extraction. The solid work in the old Waterloo section was completed and pillar-extraction commenced. Operations in the Whareatea Extended, Cascade Mine, Birchall's section, Steps section, and the Waterloo dip section were confined to pillar-extraction. During the latter part of the year a commencement was made to reopen Forsyth's section, which has been closed for a number of years.

During the year the endless-rope-haulage system coursing from the surface to the Whareatea Extended Mine was shortened to terminate at Hawkins' Junction, and a separate haulage system installed from the last-named point to the Whareatea Extended Mine. Therefore there are now separate haulage systems from Hawkins' Junction to the Extended Mine and Hawkins' section respectively, both feeding on to the main haulage system. This change has greatly improved haulage facilities; consequently, a larger output may now be dealt with. 10,796 tons of coal was machine-mined at the colliery.

Westport Coal Co., Ltd., Millerton Mine.—Almost the whole output from this mine was won from the method adopted of partially extracting pillars in the third, fifth, and sixth west sections of the Mine Creek Mine. During the second half of the year a commencement was made to reopen a pillar area on the Mangatina rope-road. An electrically-operated haulage machine of 22 h.p. was installed for haulage purposes from this section, and three pairs of miners are now employed therein. A commencement has also been made to reopen the old dip section, and workmen are now engaged repairing the main haulage road into the section in readiness for coal-production. The work of dividing the Mine Creek Mine into panels by erecting concrete stoppings to form barriers was continued throughout the year. It is pleasing to report that a new stable has been erected near the mine-entrance to house the mine horses during the week-ends. Previously the horses were housed underground all the year with the exception of the Christmas holidays. Spontaneous heating took place in panel K, sixth west section, and this was sealed off. Heating also took place in the worked-out panel D in the third west section. This heating seriously developed and extended to panel E and caused this panel to be sealed off also.

Westport-Stockton Coal Co., Ltd., Ngakawau.—The larger portion of the output from this mine was won from pillar-extraction. During the year pillar-extraction was in operation in the following sections: New East dip, J dip, South-east dip, South-west section, Old West section and No. 2 dip, while development work was carried out in the New East straight, South-east dip, and the West dip sections. In the West dip section where development work has been in progress on the downthrow side of a fault, which the management term the

"Webb" fault, further troubled country has been encountered. The seam has thinned to an unworkable thickness, and all development work in a north-westerly direction has ceased. The management has contemplated sinking a borehole from the surface in the area beyond the point where the coal has thinned to prove if coal of a workable thickness exists. Should the seam exist, then a stone tunnel would be driven through the troubled country from the West dip workings. However, nothing further has been done regarding boring.

Watson's Mine, Karamea.—During the year 18 tons of coal were produced from this mine for domestic purposes.

Nelson District.

Puponga Mine, Puponga.—The output from this mine during the year was won from pillar-extraction. No development work of any description has been undertaken since September, 1937, when the borehole sunk to the dip of the old mine workings was completed. This borehole proved the existence of a seam of coal 5 ft. in thickness in an area that may be worked in conjunction with the old Puponga Mine.

Mount Burnett Mine, Collingwood.—The output from this mine during the year has been won from development work. Three levels have been driven in the seam on the south side of the fault a distance of 15 chains. The coal has been of fair quality, but at the end of the year the coal at the face of the level had thinned to 2 ft. 6 in. and is interspersed with bands of splint. It is very difficult to separate the splint from the coal, hence difficulty is experienced in marketing the product. It is questionable if further development will be done to the south.

North Cape Syndicate, Onekaka.—This syndicate commenced operations about the middle of the year on a seam of coal on freehold property at Onekaka approximately 12 chains from the Old North Cape Mine, and 44 tons of coal were produced. The mine was abandoned.

Motupipi Mine (Winter's), Takaka.—This mine is worked opencast and is situated on the beach. The seam is overlain with approximately 3 ft. of sand and mud. The coal is of fair quality and meets local demands.

Abbotsford Mine (Irvine's), Takaka.—Coal was not produced from this mine during the year.

Owen Colliery, Owen River, Murchison.—This mine is operated under the double-stall system of working. The output for the year was won from the sinking of No. 2 dip and the driving of stalls east and west off the dip. Coal-production has not taken place from Nos. 1, 2, and 3 stalls west during the year, but preparations are being made to cut off these stalls with No. 3 dip, and when this work is done production from the stalls mentioned will recommence.

O'Rourke's Mine, Murchison.—No work of any description was done at this mine during the year, but it is anticipated that coal-production will recommence early in January, 1939.

Wynndale Mine, Murchison.—Bottom Mine: The output from this mine during the year was won from pillar-extraction on the north side and development work on the south side. Pillar-extraction from the north side is completed, while the only development now to be done on the south side is the driving of the bottom level a further 5 chains to 6 chains. The two higher levels have been driven a distance of 15 chains and have encountered faulted country; therefore, development work in these levels has ceased.

Top Mine: No work has been done in this mine during the year. At the end of 1937 the seam thinned and the mine was abandoned.

Clarke Mine (S. Hartshorne), Baton.—The output of coal during the year from this mine was won from development work. The new dip has now been driven 4½ chains, and the seam, which is steeply inclined, is 12 ft. in thickness and the coal is of better quality than formerly. During the last three months of the year improvements have been made regarding better facilities for screening and the haulage of coal.

Broxburn Mine (Broxburn Coal Co.), Baton.—A small quantity of coal was produced from this mine during the year. The coal is of poor quality. Consequently, difficulty was experienced in marketing the product, and the mine closed down during the second half of the year.

Schools of Mines.

During the year interest in the Schools of Mines in the West Coast district was maintained. Classes, under the jurisdiction of the Directors of the Schools of Mines at Westport, Reefton, and Runanga, are held in localities to suit the requirements of all students residing in the mining townships, and all subjects relative to mining are taught. Therefore, students are instructed so as to be able to present themselves as candidates for the annual mining examinations. Classes are held by the Westport School of Mines at Westport, Denniston, Granity, and Stockton; by the Reefton School of Mines at Reefton, Blackball, Wallsend, and Waiuta; and by the Runanga School of Mines at Runanga.

Rescue-station.

During the year fair progress has been made in the erection of a very fine building at Dobson to be used as a rescue-station, where persons will be trained in the use of self-contained breathing-apparatus and in rescue work. It is anticipated that this building will be completed and ready for occupation early in March, 1939.

Self-contained breathing-apparatus is also kept and maintained, together with all necessary accessories, at the Liverpool Colliery, and three rescue brigades have been trained and kept in practice there.

Fatal Accidents.

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

On 6th January, 1938, Robert Shortt, miner, employed at James Extended Mine (New State Mine) Nine-mile, was killed on the new road to the mine. A washout had occurred on the road after flooding, and Shortt was one of the men employed on the back shift repairing the road. At 8 p.m. four shots were fired in the bluff above the road. After having a meal Shortt and another workman went up the face to trim the shots, but as darkness came on the work was not completed, and they decided to work on the road level. A large stone which was on the road, required shooting, and a shot was bored and charged. Before firing, Shortt went to put his car, which was on the main road side of the washout, a little further from the shot. Shortt returned, and when directly beneath where the four shots were fired at 8 p.m. a fall occurred, causing serious injuries to Shortt, from which he succumbed three hours later.

On 11th February, 1938, Robert Knight, miner, Old Runanga Co-operative Mine, Rewanui, was killed instantaneously by a large fall of roof stone while engaged on pillar-extraction.

On 5th May, 1938, Timothy Joseph Patrick Gallagher, miner, Liverpool Colliery, Rewanui, while engaged taking down top coal, was struck by a jig prop, which pulled out at the foot, causing fractured skull and brain injuries, from which he died the following day.

On 20th May, 1938, George Blacklock, miner, Liverpool Colliery, slipped on a flat sheet, sustaining an inguinal hernia. He was operated on at the Grey Hospital, but died on the 21st July as a result of complications which developed after the operation.

On 23rd August, 1938, Robert Adamson McKinlay, trucker, Millerton Mine, Granity, died from shock, fractured leg, and abrasions following a fall of roof coal on a trucking road. McKinlay was in the act of entering a working-place for a full box of coal when the fall occurred.

On 20th September, 1938, Thomas Nicholson, trucker, Liverpool Colliery, Rewanui, while he was having lunch, was struck by a fall of side coal in No. 4 east bank section, Morgan seam, and sustained a fractured spine. On the 19th December Nicholson died in the hospital as the result of this injury.

On 2nd December, 1938, Albert Louis Smithson, mine-manager, Hunter and Party's Mine, Rewanui, was seriously burned as the result of a gas-ignition in the mine. Smithson succumbed to his injuries on the 26th December. The accident occurred at approximately 7.20 a.m. on the 2nd December when Smithson was making his usual morning inspection previous to the workmen entering the mine.

SERIOUS NON-FATAL ACCIDENTS.

Ten serious non-fatal accidents occurred during the year as follows :—

On 25th January, 1938, Horace Willman, miner, Charming Creek Mine, Ngakawau, received three fractured ribs when a fall of stone and coal occurred while he was working at the face.

On 13th May, 1938, Albert Goddard, miner, Stockton Mine, Ngakawau, received severe bruises and abrasions over the body, extensive lacerated wound of leg, and fractured ribs when buried by a fall of top coal while he was in the act of setting a prop.

On 16th June, 1938, Peter McCann, miner, Denniston Colliery, Denniston, while sitting down having his lunch, was struck on the ankle by a small piece of stone and received a small fracture of the right fibula.

On 22nd June, 1938, E. Hale, deputy, Charming Creek Mine, Ngakawau, received a fractured right leg when struck by a falling bar.

On 26th August, 1938, S. Kelly, miner, Ironbridge Mine (Denniston Colliery), Denniston, whilst pushing out a full truck, approximately ½ cwt. of coal fell from the roof and struck him, causing a fractured right upper arm.

On 8th September, 1938, William Spence, rope-road worker, Wallsend Mine, Brunnerton, sustained a fractured left arm above the wrist. He was apparently pushing a truck backwards and his arm was caught between the moving truck and a stationary truck.

On 13th September, 1938, John Henry Oates, trucker, Clele Mine (Alborn and party), Reefton, sustained a fractured left tibia and fibula with extensive bruises. He was struck by a full truck at the bottom of the jig.

On 20th September, 1938, Michael Meadowcroft, horse-driver, Paparoa Mine, Roa, jammed his foot between a derailed truck and some timber which was piled at the side of the road. He received a fractured left fibula above the ankle.

On 16th November, 1938, T. W. Nicholson, miner, Liverpool Mine, Rewanui, received fractured right wrist and right leg above the ankle and severe bruises. While preparing to set a prop under the top coal, the coal (without support) fell towards him, and a piece 60 lb. in weight struck his chest and small coal buried him to the waist.

On 18th November, 1938, J. Fitzsimmons, miner, Stockton Mine, Ngakawau, was struck by a fall of top coal while engaged on pillar-extraction. He sustained a compound fracture of the right leg above the ankle and extensive bruises to chest and right ribs.

DANGEROUS OCCURRENCES IN COAL-MINES.—(Regulation 82, Coal-mines Act).

Moynihan's Old Workings, Reefton.—As a result of a notification that an outcrop of coal was burning near what is known as Moynihan's Old Working's, the area, which is situated on the south side of Boatman's River alongside the Cronadun–Capleston Road, was inspected on the 7th and 15th January, 1938. Near the eastern outcrop of the old workings there is an outcrop of a small seam of coal in a hill. The ferns on the hillside had been burned, and this had evidently set fire to the small outcrop. On the 19th April Mr. E. Cohen, of Capleston, advised that he had extinguished the fire.

Burnwell Mine (D. Hamill), Reefton.—Notification was received from Mr. D. Hamill, dated 1st February, 1938, that he was suspicious that heating was taking place in one of the places off the main level. The mine was inspected on the 8th February, and it was found that heating was definitely taking place in an old bord north of the main level where a large fall had occurred. The heating was giving off CO and CO_2. The mine-manager, in accordance with instructions, erected a stopping which proved effective, and the mine was cleared of noxious gases.

Paparoa Colliery, Roa.—On 28th February, 1938, the mine-manager notified that an inrush of water had occurred in Stenhouse's place three days previously. The water had come through the stone roof evidently from an area where pillars had been extracted in the aerial section. The place was approximately 8 chains distant from these workings and the area between was all solid coal. The flow gradually diminished and eventually ceased.

Millerton Colliery, Granity.—On 28th February, 1938, notification was received by telegram that a serious outbreak of fire had occurred in Mine Creek Mine, Millerton. The fire broke out in worked-out panel D, which is in the third west section. The panel was sealed off. However, the fire burned over a stopping and extended to panel E, and that panel had to be sealed off also.

Main Drive into Strongman Mine, Nine-mile.—On the 3rd March, 1938, the superintendent notified that gas was ignited on the 1st March in the Main Drive into the Strongman Mine. One of the workman ignited, with a naked light, a blower of gas that was given off from the floor. Safety-lamps were then installed.

Stockton Colliery, Ngakawau.—On 30th March, 1938, the mine-manager notified that an inrush of surface water had occurred in the new east section due to heavy rains. A 20 in. concrete stopping was put in close to the break to the surface to prevent any more water coming from this particular place.

Spark and Party's Mine, Rewanui.—On 2nd April, 1938, the mine-manager reported that a slight accident had happened to a workman who had his hands burned when he was lighting a cigarette at the fan-exhaust. The fan had been stopped for four hours previous to the accident owing to a breakdown. There were no witnesses to the accident.

Wallsend Colliery, Wallsend.—On 26th April, 1938, the mine-manager notified that during his inspection of the main headings, 4th panel and 3rd panel, a large accumulation of CH_4 was discovered, 6 chains of drive in the 3rd panel being fouled. A stopping was found to be damaged by a fall of side coal. The workmen, with the exception of those required to clear the gas, were withdrawn from the mine. The accumulation was cleared at 8.30 p.m.

Millerton Colliery, Granity.—On the 4th May, 1938, the mine-manager reported that evidence of spontaneous combustion was discovered in panel K, sixth west section, the previous day. The panel was closed off and everything made safe.

Wallsend Colliery, Wallsend.—On the 14th June, 1938, the mine-manager reported that the morning deputy had discovered an accumulation of gas in the 1st panel (5,000 cubic feet of 4 per cent. mixture). At 7.15 a.m. the underviewer examined the place and, as the gas could not be cleared in time, the shift was not allowed to start. It was later found that a stopping had been damaged by a fall of side coal and this had reduced the amount of air circulating in the top corner of No. 1 panel, where a heavy gas-feeder had been troublesome for some time previously. A new stopping was erected and the place cleared of gas.

Liverpool Colliery, Rewanui.—The mine-manager notified on the 19th July, 1938, that two workmen had been withdrawn from their working-place in Kimbell west dip on the previous day. A small feeder of gas coming from a parting along the roof could not be shifted. The place was rising very steeply and approaching a fault-line.

Kaye and Party's Mine, Ten-mile.—On 3rd August, 1938, while inspecting the prospecting rise in No. 1 level with the mine-manger, CH_4 was detected on the safety-lamp (estimated quantity 375 cubic feet). This place had been abandoned on the 29th July and fenced off. The manager stated that he had found a very small quantity of gas that day which had been removed, but had not been reported. The accumulation was on the return side of all the workmen and the nearest working-face was 5 chains distant on the intake side. All workmen were using naked lights. As the result of finding CH_4, all the workmen were withdrawn and the manager was instructed that only safety-lamps must be used in future. This instruction has been carried out.

Liverpool Colliery Rewanui.—On 11th August, 1938, notification was received that a fire had occurred in No. 1 east section, Morgan seam. An inspection was made the next day in company with the superintendent and mine-manager. The fire had been discovered at the head of No. 1 east bank near the goaf by the examining deputy during his inspection before the commencement of work. Temporary stoppings were erected to seal off the fire, and these were later enclosed within three concrete stoppings. On completion of the concrete stoppings a start was made to extract pillars in order to enlarge the goaf on the return side of the fire. Work was carried on for a period of two months, when the intake stopping showed signs of heating. Coal-production was suspended and a line of temporary wooden stoppings erected around the fire area. All stoppings were built of wood, which will later be reinforced with concrete.

Wallsend Colliery, Wallsend.—On 20th September, 1938, the mine-manager notified that owing to a heavy gas-feeder fouling the north-east corner of No. 1 panel the men were not permitted to enter the mine. The accumulation was not removed until approximately 9 a.m. on the morning of the 21st, and consequently the mine did not work on the 20th and 21st September.

Paparoa Colliery, Roa.—The mine-manager notified on the 28th September, 1938, that on the previous day, the day shift deputy had reported traces of fire-damp in the Aerial section. The manager was immediately instructed that no lamp or light other than a safety-lamp must be used in that section in future. Electric safety-lamps were installed, and the day shift deputy reported 40 cubic feet gas in the same place on the next day.

Wynndale Mine, Murchison.—On the 22nd October, 1938, the owner of this mine notified that he and the mine-manager had sustained slight burns to the face and arms as the result of an ignition of gas. Instructions were issued by telegram that no alteration must be made at the mine until the Inspector of Coal-mines had inspected the place and no light other than a safety-lamp must be used. When interviewed the next day the manager stated that on the 21st October, between 7.30 a.m. and 8 a.m., he examined the mine and found it in good order and free from gas. He then proceeded to the surface, made his report, and passed in the workmen. Shortly after 8 a.m. he and the owner entered the mine for the purpose of producing coal from No. 3 level. When they reached the working-face at approximately 8.20 a.m. with naked lights which were in use at the mine, the ignition took place immediately. Instructions were therefore issued that only safety-lamps must be used in future and that a fan must be installed at the mine before operations recommenced. Safety-lamps are now used and a fan has been installed.

Wallsend Colliery, Wallsend.—On the 1st November, 1938, the mine-manager notified that the morning examining deputy had discovered an accumulation of gas in the top corner of No. 1 panel (the place where a former accumulation had occurred on 20th September). The workmen were not allowed to enter the mine. The gas was cleared during the day.

Dobson Colliery, Dobson.—On 8th November, 1938, notification was made that on the previous day a very strong feeder of gas was met with in the east side dip giving 2 per cent. of gas in the general body of the return air. All workmen were immediately withdrawn and the section fenced off.

Wallsend Colliery, Wallsend.—On 24th November, 1938, a notification was received that the examining deputy reported 200 ft. of gas in the top corner of No. 1 panel due to a screen being left open the previous shift when timber repairs were being done, and that the gas was clearing. Later the gas increased, and the workmen adjacent were withdrawn. The feeder was finally cleared at 8 p.m.

Hunter and Party's Mine, Rewanui.—On 2nd December, 1938, notification was received that an explosion had occurred and that the mine-manager had been severely burned. An inspection was immediately made when it was found that an ignition of gas had taken place at approximately 7.20 a.m. while the manager was making his morning inspection. A small quantity of gas appeared to have accumulated during the night and the manager evidently inspected the working-place with a naked light instead of a safety-lamp and ignited the gas. The working-place was very low, and this probably accounted for the severe burning received. Instructions were issued that only safety-lamps must be used in the mine in future. The manager was taken to the hospital suffering from shock and succumbed to his injuries on the 26th December. Safety-lamps are now in use at the mine.

Blackball Colliery, Blackball.—At the request of the manager, this mine was visited on the 12th December, 1938, for the purpose of making an inspection to ascertain whether coal-production could continue in safety. On the 6th December all workmen had been withdrawn from the mine by the manager on account of extraordinary crush on the small pillars and a definite creep developing, and, in addition, spontaneous heating was observed. Upon inspecting the mine it was apparent that should operations continue there was danger of serious accidents and the loss of valuable plant. The plant was then taken out of the mine. The manager agreed to erect eight stoppings in the main intake and return airways to seal off the heated area.

Prosecutions under the Coal-mines Act, 1925.

Four informations were laid during the year. One was withdrawn, and three convictions were recorded as follows:—

A mine-owner was charged under section 81 (1) of the Coal-mines Act, 1925, with failure to furnish a half-yearly coal output return, together with number of men employed above and below ground. This information was withdrawn on receipt of the return.

An information was laid under section 128 (2) of the Coal-mines Act, 1925, against a mine-manager (being a fireman-deputy) for failure to make a full and accurate report of the inspection of the mine, he not having reported finding a quantity of inflammable gas in a working-place. He was convicted and fined £3 and costs.

A mine-owner was charged with failure to keep at the office of the mine a full and accurate plan of the workings of the mine showing the workings, boundaries, &c., as required by section 79 (1) of the Coal-mines Act, 1925, as amended by section 11 (1) of the Coal-mines Amendment Act, 1937. He was convicted and fined £2 and costs.

A mine-manager was charged with failure to provide an adequate signalling-appliance on a jig as required by section 121 (7) of the Coal-mines Act, 1925. He was convicted and fined £2 and costs. This prosecution arose out of circumstances regarding an accident at the mine causing serious injuries to a workman.

General Remarks.

The interest in safety precautions has been fairly well maintained, but we feel that more could be done by underground officials to reduce the number of accidents in mines, by means of educating persons under their charge as to the causes and prevention of accidents. This information could be given to workmen by the officials during their visits to the roadways and working-faces, and same would tend to reduce the carelessness which is at times shown by workmen.

We are pleased to report that there has been a further increase in the use of "hard hats" by both truckers and miners, and we are again able to state that in several cases serious accidents have been prevented by the use of these hats.

SOUTHERN INSPECTION DISTRICT (J. HADCROFT, Inspector of Coal-mines).

I have the honour to submit my annual report covering the mining activities in the Southern District for 1938 :—

The total output for the district, which includes Canterbury, North Otago, Central Otago, South Otago, and Southland, was 474,982 tons, which was a decrease from the previous year of 49,091 tons.

The following summary shows the output and number of men employed during the year, and also the changes in these from the previous year :—

Output Returns.

District.	1937.	1938.	Increase.	Decrease.
	Tons.	Tons.	Tons.	Tons.
Canterbury	22,580	19,639	..	2,941
North Otago	13,647	12,064	..	1,583
Central Otago	4,777	3,982	..	795
South Otago	191,116	172,343	..	18,773
Southland	291,953	266,954	..	24,999
Totals	524,073	474,982	..	49,091

Net decrease, 49,091 tons.

Number of Men Employed.

District.	1937.	1938.	Increase.	Decrease.
Canterbury	61	57	..	4
North Otago	34	27	..	7
Central Otago	20	16	..	4
South Otago	387	392	5	..
Southland	481	459	..	22
Totals	983	951	5	37

Net decrease, 32 men.

Canterbury District.—The output from this district for 1938 was 2,941 tons less than for 1937, and very little development work was done at any of the mines.

North Otago District.—There were practically no changes in this district.

Central Otago District.—Most of the mines are opencast, and there were very few changes in this district.

South Otago District.—This district shows a considerable drop in output compared with the previous year. This is not the result of any mining difficulty, but is rather a matter of finding markets for the coal. With the exception of Kaitangata, where some development and prospecting work has been done, little development is being carried out to take the place of the present workings, which are nearly all on pillar-extraction.

Southland District.—The output from the Southland mines was 24,999 tons less than during 1937. For some years past the development was far behind what it should have been and has caused much concern. However, it is pleasing to report that a good deal of prospecting, boring, and driving have been done in this district during the year and, in most cases, the results have been very encouraging, particularly in the Linton, Wairaki, and Mossbank Mines. The outlook for the future of this district is much better than it has been for some years past.

The safety precautions connected with coal-mining generally have been well carried out. The use of "hard hats" is steadily increasing, particularly in the high working-places in the larger mines.

During the year mining classes have been continued at the Ohai School of Mines and candidates prepared for examinations for certificates under the Coal-mines Act.

CANTERBURY MINES.

Bonanza Mine.—Development was continued on the south-west side of the dip to a distance of approximately 10 chains, when the coal thinned and development work was stopped. The greater part of the output for the year has been won from pillar-extraction.

Clearview Mine.—The main dip has been driven to a distance of 3 chains from the surface, and two levels are being driven, from near the bottom of the dip, on the strike of the seam. The north-east level has been driven 8 chains and the south-west level 5 chains. During the year a steam-engine and a 10 h.p. generator have been installed and electric power is now used for pumping.

Lucknow Clay-mine (Homebush Brick and Tile Co.).—This mine is being worked intermittently from the south-west level.

Klondyke Mine.—The three levels, being driven in a north-east direction, have been stopped temporarily owing to the coal-seam getting thinner. The levels have been driven approximately 22 chains from the dip and the coal at the face is 10 ft. thick and very steeply inclined. The main dip has been developed a further 6 chains and levels broken away on both sides. The coal has maintained its thickness and quantity, and the grade of the seam has eased from 60° to 50° in the portion of the dip development. There has been a reduction in the number of men employed at this mine owing to shortage of trade.

Yukon Mine.—A little development is being done in a 3 ft. seam of coal, which is one of the upper seams of the area previously worked by the Bush Gully Mine.

Bush Gully Mine.—No mining has been done this year.

Homebush Clay-mine.—A small amount of clay has been won from opencast workings.

Homebush Mine.—Very little mining has been done on this area. The coal-seam is very thin in ground which is heavy and waterlogged.

Sheffield Clay-mine.—Two places are being worked intermittently in a south-westerly direction from the bottom of the dip, and are being driven 6 ft. high by 6 ft. wide.

Malvern Mine.—A dip drive has been driven a distance of 4 chains in the coal-seam, which is steeply inclined. Two levels are being developed from the bottom of the dip, one to the south and the other to the north. A portable steam-engine is used for haulage and a steam-pump for pumping.

Sandown Mine.—The main dip drive was continued to a distance of 3 chains from the surface, and two levels are being driven in a westerly direction, the distance from the dip to the face being 7 chains. The coal-seam is 10 ft. thick and of fairly good quality. The grade of the seam is 1 in 1.

Steventon Mine.—The original main haulage dip, which was on a grade of 1 in 2, has been abandoned, and a new crosscut dip has been driven in an easterly direction, 9 chains in length. This has reduced the grade of the main dip haulage to 1 in 3½. Levels are being developed from the bottom of this dip. The level to the south-west struck a fault which it is proposed to prove at a later date, as it is anticipated to be only a small displacement.

Sunnydale Mine.—Only a small amount of clay has been won from this mine. No coal-mining has been carried out.

Blackburn Mine.—Most of the output from this mine has been won from pillar-extraction, which has been carried out in a workmanlike manner. The remaining coal on this block is very limited. A prospecting-drive was put through the fault in the old mine near the end of the year, and coal of good quality was located.

Mount Somers Coal-mine.—There has been a little development done east and west of the main level. A small area, which had been sealed to prevent heating, was opened up and a small amount of pillar coal has been taken out. Natural ventilation has proved adequate.

Woodbank Mine.—Mining operations have been resumed and a new mine is being opened up. A dip drive, on a grade of 1 in 3, has picked up the coal 1 chain from the surface. The coal-seam is 20 ft. thick, and it is at a grade of 1 in 3. Electric power is being used for hauling and pumping.

North Otago Mines.

Airedale Mine.—The major portion of the output from this mine has been won from pillar-extraction, there being only a little development done at the beginning of the year. The development places encountered soft coal and pillar-extraction was then commenced.

St. Andrews Mine.—In the north-east dip area a little development was done, when the coal-seam became split with stone-bands and was somewhat faulted. Development was then stopped on this area and pillar-extraction started. A little development is being done in the rise section in a westerly direction.

Ngapara Mine.—No development work has been done during the year, the output having been won from pillar-extraction in the north-west area.

Shag Point Mine (McLean's).—The extraction of the pillars left by the old company has been completed and the mine closed down. A small area of coal, 3 ft. in thickness to the rise of the old mine, has been developed. The main level in the west has been driven 6 chains, the coal maintaining its original thickness. The working-places are being driven 12 ft. wide and partly stowed with the roof stone, which is being taken down to make the necessary height for the trucking roads.

Shag Point Mine (McLaren's).—The main dip, which is driven in a westerly direction and on the full dip of the seam, has been continued to a distance of 18 chains from the mine-entrance and is still in good-quality coal, 7 ft. in thickness. Levels are being developed to the north and south.

Willett's Mine.—All the coal from this mine has been obtained from pillar-extraction.

Rockvale Mine.—No development work has been done at this mine, the whole of the output having been won from pillar-extraction. The manager estimates that there remains only approximately 1,000 tons of coal to completely exhaust this mine's workings.

Otago Central Mines.

Shepherds Creek Mine (Bannockburn).—Development to the north was stopped. The floor is heaving very badly. The lower level of a pair of levels being driven in a southerly direction proved the coal to be of good quality and 8 ft. thick to the parting. During July the roof broke in the upper of the two levels, causing an inrush of water of about 1,000 gallons per minute, which filled the lower workings with water and sand. A pump was installed at 200 ft. from the dip face and pillar-extraction started inbye from this level.

Cairnmuir Mine.—This mine has been closed for the greater part of the year. The coal-seam is only 5 ft. thick, the upper 2 ft. being inferior and unsaleable. It is not likely that any further mining will be carried on at this mine.

Nevis Crossing Pit.—A small amount of coal was won opencast during the first half of the year.

Nevis Mine (Fache's).—Opencast operations have been continued during the year. This mine supplies a nearby dredge, which is steam-operated. The coal at present is of very poor quality and contains numerous clay-bands.

Oturehua Pit.—This pit is worked intermittently. The coal is being worked only from 6 ft. to 7 ft. high, stripping averaging 4 ft.

Blackstone Hill Pit.—No coal has been mined during the year.

Idaburn Pit.—This pit has been worked fairly well during the year and is being developed in a southerly direction. The coal is 20 ft. in thickness. The stripping, which is 9 ft. thick, is being kept well back from the coal-face.

Parfit's Pit.—No coal has been mined during the year.

Cambrian Pit.—No coal has been mined this year, and the plant has been dismantled.

Coal Creek Mine.—Work has been continued in this opencast pit, the stripping being sluiced off the coal-seam and kept well back from the face.

South Otago Mines.

Freeman's Mine.—The few remaining pillars have been extracted and the mine was closed down on 30th April, 1938.

New Fernhill Mine.—Some coal is being won from the splitting of pillars in the north-east side of the main dip. The pillars cannot be extracted, being directly beneath a surface swamp. A little development is being done in a small area to the dip of the splitting and on the east side of the Abbotsford–Wingatui Road.

Jubilee Mine.—The main dip section is stopped and the pillars have been worked back to a point 3 chains from the dip bottom. A crosscut dip is being driven in a north-east direction and is still in good-quality coal. At present the available coal is only about 10 chains in width, but should become wider as the dip workings are advanced. Development in this direction should open up a good area of coal. During the year "Polar Samsonite" has been introduced for shooting coal, and has proved quite successful.

Hodson's Mine.—Pillar splitting and robbing have now been completed to within 5 chains of the mine-entrance. A very small area is being developed to the south from the present dip bottom. The life of this mine appears to be very limited.

Brightglow Mine.—This mine was not working during the year.

McColl's Mine.—The small output from this mine is won from pillar-extraction.

Saddle Hill Mine.—No coal-winning has been done during the year.

Fairfield Colliery.—The greater portion of the output of this mine has been won from pillar splitting and extraction in the top seam. The bottom seam has not yet been opened. Towards the latter part of the year a little development has been done in the area which had been stopped previously, the quality of the seam showing an improvement. This work is being continued.

Willowbank Mine.—An area of good-quality coal has been developed from the south crosscut dip. This development work is on one side, approaching a volcanic intrusion and on the other side, the old mine workings, consequently further development in this section is very limited.

East Taieri Mine.—Development was pushed ahead through the old workings, which now appear to be definitely passed, and there appears to be every chance of opening up a new area in good coal. Special care will need to be taken of the new haulage road, as the splitting of the pillars has weakened the roof-support. If the ground is not well timbered it will, in all probability, commence to creep. If this happens it will be very difficult to open up the new area.

Burnwell Mine.—No work has been done during the year.

Eskvale Mine.—There has been no development work done at this mine, all the coal being won by pillar-extraction.

Elliotvale Mine.—Pillar-extraction in the upper portion of the workings has been stopped and the dip has been driven another 200 ft. Developing levels are being driven on both sides of the dip. The coal-seam in this area contains a stone-band, varying in thickness to a maximum of 1 ft.

Kai Point Mine.—The work of extracting pillars in the old mine has been completed and the mine was closed down on 5th December. A new mine has been started about 20 chains to the west of the old mine. A short level drive picked up the seam near the outcrop, the thickness of which is not yet known. The quality of the coal appeared to be quite good.

Benhar Mine.—There has been very little development during the year, the greater part of the output having been won from the pillars and head coal on the north side of the main dip. A little development has been done on the south side, where the coal-seam has maintained its thickness and quality.

Taratu Mine.—No mining, apart from the production of sufficient coal to generate power for pumping, has been done. Sufficient staff is employed to keep the mine and plant in fair working-order. This position has existed since September, 1936.

Lakeside Mine.—There has been no development work done at this mine, the whole of the output being won by pillar and head-coal extraction.

Wangaloa Mine.—Development has been carried on to the west of the main dip. The bottom west level has been driven 6 chains, and is in good quality coal 25 ft. thick.

Kaituna Mine.—No mining operations were carried out during the year.

Kaitangata Mine.—During the year the work of extracting pillars in the old No. 2 seam was completed and the area sealed off. The operations carried out are as follows:—

No. 2 East Side: The upper seam has been developed and an area of good coal made available for pillar-extraction. This seam is of an average thickness of 8 ft., and practically all the seam is being won. The main heading to the east in this area was driven a distance of 810 ft., but the coal-seam gradually thinned and finally pinched out altogether.

No. 3 East Section: A considerable amount of driving was done, but the greater part of the seam was found to be inferior in quality.

West Section: Pillar-extraction has been carried out and, in one part of this section, the seam was proved to be over 30 ft. in thickness.

Main South West Dip: This dip has been driven a distance of 750 ft. in good-quality coal, and the levels to the north have been driven 700 ft. The prospects in this seam are very favourable, although the gradient, which is 1 in 2, may present some difficulties.

Samson's Seam: Development has been carried on in this area, which is between the north-west dip and the old workings. The seam is 25 ft. thick. Some pillaring is being done also.

Prospecting: About a mile to the south of the present mine a stone-drive is being put down to the east on a grade of 1 in 2½, in an attempt to pick up the coal-seam which was proved by the main dip in the west section. The drive is now down 850 ft. and, if successful, it is proposed to use it as an aircourse for development work, which will be done west of the main fault.

Southland Mines.

Hakatere Mine.—Development work is being continued in a small way in a northerly direction. The main level face is now 8 chains from the mine entrance and cut-throughs are being driven every 40 ft.

Waimumu Pit.—Opencast operations are still being carried out along lines similar to previous years. The seam is very thick and is worked in two lifts.

Otikerama Mine.—All the coal has been won by pillar-extraction, no development having been done. The life of this mine is very limited.

Croydon Pit.—This opencast mine has been worked only intermittently. The coal at the face is fully 30 ft. thick.

Beattie Coster Mine.—Opencast mining has been continued through the year. The work in the present area is very limited, and arrangements are in hand for opening up a fresh area 33 chains from the present pit.

Green's Mine.—A small amount of development work was done in the first part of the year in the crosscut dip section, but later the pillars were split and robbed up to the top of the crosscut dip. The pump was taken out and the water allowed to rise to a point approximately 6 chains from the mine-entrance. Arrangements are in hand to carry on further development in a southerly direction. The levels on this side have been driven 10 chains from the main dip.

Boghead Mine.—The main dip was continued to a distance of 11 chains in a westerly direction from the mine-entrance, and development is being carried out from two levels, one north and one south. The north level has been driven 10 chains, and the south level 6 chains.

Glenlee Mine.—All the work done at this mine has been on development. A main level and companion level are being developed in a northerly direction. The main level is now in 50 yards.

Springfield Pit (Gore).—No work was carried out at this mine.

Ota Creek Pit.—This is a small opencast pit and has been worked intermittently.

Waimumu Terrace Pit.—Coal was mined from this opencast pit during the first half of the year only.

Raby Pit.—Opencast work has been carried on at this pit; the coal being worked here is 20 ft. thick.

Coster's Pit.—Opencast workings are being carried on here in a small way.

Kea Pit.—These workings are opencast. The coal is 14 ft. thick and the stripping 8 ft. thick. The stripping is from 2 chains to 3 chains back from the working-face.

Titapua Pit.—The coal in this opencast pit is 12 ft. thick, with 6 ft. of stripping.

Landslip Pit.—No work has been carried out at this pit during the year.

Argyle Pit.—At these opencast workings the tail-race has been made deeper with a view to mining coal at a little lower level.

Diamond Pit (Asher's Siding).—This is an opencast pit. The working-face is advancing in a westerly direction, and the stripping of the overburden is being kept well ahead of coal-winning.

Orepuki Pit.—A small amount of opencast work is being carried out.

Princhester Creek Mine.—Most of the year has been spent in prospecting, but without satisfactory results.

Lynwood Pit (Te Anau).—This pit was not working during the year.

Terrace Mine (Kingston Crossing).—This mine closed on 29th May, 1937. No work was carried out during the year.

Star Mine.—Nearly all the output from this mine has been won from pillar-extraction. The roof conditions are not good, but the pillars are working back fairly well. The pillars have been worked back to the level 5 chains from the mine-entrance. Some prospecting has been done by boring, and a seam of coal has been located to the east of the present mine workings.

Birchwood Mine.—Production of coal from this mine was stopped from March to August to allow the installation of electricity for haulage and ventilation. During this period, whilst the mine was stopped, three sections of the main dip were enlarged, the roof being supported by steel arches. The output was won from both development work and pillar-extraction. The main dip was stopped against a fault running in a north-west direction. A slant dip almost parallel with the fault has been started, and is being driven in 11 ft. of good-quality coal. Pillar-extraction is being carried out in the No. 3 east section, and development is being carried on in the No. 3 west section.

Black Diamond Mine.—The whole of the output from the mine has been obtained from pillar-extraction. The practice of building stoppings ahead of the pillar-extraction is still being carried out.

Black Lion Mine.—The greater part of the output has been won from pillar-extraction in the north-east section. An area to the north-west of the main dip heading is also being developed.

Mossbank No. 1 Mine.—All the possible coal having been won from this mine, it was closed on 10th November, 1938. A small area of top-seam coal in the rise side of No. 3 mine is being developed to maintain the output until the new mine is opened up. Two new drives are being driven to open up a new mine, the area over half a mile to the south having been bored. The main drive is expected to strike the coal-seam at approximately 850 ft. The main drive has now been driven 670 ft.

Wairaki Mine.—The major portion of the coal won for the year was from development work, only one section being on pillar-extraction. The No. 3 east dip was driven to a distance of 10 chains and encountered faulty and soft coal. Faults were encountered also on both sides of this dip. As these workings are close to the boundary no more development will be attempted here. Development is being carried on in the No. 1 east section and pillars are being extracted in the No. 2 east section. The boreholes which were put down and reported on last year were so encouraging that a stone-dip drive has been driven from the No. 3 east level and towards the No. 2 borehole, dipping at a grade of 1 in 5. The drive was carried to a distance of 4½ chains, when it cut the coal-seam, which appears to be very good quality. The prospects look very good for this new area.

Linton No. 1 Mine.—During the year development work has been carried on in the No. 7 section, and a stone-drive has been driven into the area from the bottom of which a pair of developing headings will be driven to open up this area. In the No. 8 section development was continued in a westerly direction and towards the Birchwood lease. In this direction the coal-seam became very inferior in quality and is unsaleable. Pillar-extraction has been continued in the Nos. 3, 5, and 6 sections, the "gallery" system of pillaring being adopted.

Linton No. 2 Mine.—This mine is fast approaching the end of its life, and pillar-extraction has been the only source of output. Some success is being gained from the effort which is being made to increase the percentage of extraction from this mine. The surface fire, which has menaced the mine for some time, has been kept in check throughout the year.

Prospecting.—Boring operations have been continued and two boreholes have been put down in the area south of No. 2 mine. The result of this work was somewhat disappointing, and operations have been suspended in the meantime. Boring has been carried out to the east of No. 1 mine, and it is intended to commence a drive from the surface into this area after the necessary data has been obtained.

Fatal Accidents.

On 26th July John Humphreys, a miner, fifty-six years old, was instantly killed by a fall of stone in his working-place in the Star Mine at Ohai. He was preparing to take off some side coal and was setting a 6 ft. prop when a block of stone, of about 30 cwt., fell, swinging out the prop and dropping on to him.

On 8th September Ronald S. Forrest, a youth not quite fifteen years old, was killed by being crushed between two railway wagons near the Kaitangata Mine screening-plant. He was lowering a loaded wagon along the line and after putting down the brake he had jumped on to take a better hold. The wagon was about five yards from another wagon standing on another line, and it is assumed that he leaned over and was struck by that wagon and crushed between it and the one on which he had been travelling. As a result of this fatality it is proposed to make it illegal for any person under the age of eighteen years to be in charge of moving wagons.

Serious Non-fatal Accidents.

On 13th January William Marshall, manager under a permit of the Rockvale Coal-mine at Herbert, sustained a fractured wrist and eye injury when firing a shot. He lit the fuse and left the place, but, thinking the fuse had not ignited, he returned, and then the shot went off.

On 25th February while completing a split through a pillar in the Linton No. 2 mine, William Taylor was struck by a large piece of coal which fell from the inbye lip. He sustained fractured ribs and scapula.

On 12th July a surface hand, Douglas Wilson, sixteen years of age, sustained a fractured left arm when it was jammed between two mine trucks.

While Ian Talbot was filling a mine truck in his pillar place in the Linton Mine on 17th August, several large pieces of coal burst from the rib of the place from a height of about 10 ft. and striking his left leg, fractured it.

On 27th September, while trimming down loose coal after a shot had been fired in the "tops" in his working-place in the Kaitangata Mine, James Carroll was struck by a large piece of falling coal. He sustained a fractured skull and jaw.

On 30th November Richard Kyle, a miner working in the Kaitangata Mine, sustained a cracked lower lumbar vertebra.

List of Dangerous Occurrences.

Kaitangata Mine.—29th January, 1938: On that date the examining deputy found smoke on the horse road entering No. 1 east section. On investigation he found the smoke was issuing from a break on the edge of a pillar at the corner of a stopping separating the intake from the return. As a good supply of water was available the fire was promptly dealt with and the heated coal filled away. A new block stopping was also built.

Mossbank Mine.—7th April, 1938: Fire in sump of old dip mine. Smoke was observed coming from the mine-mouth on this date, and on investigation flames were observed coming from the sump. A temporary stopping was erected below the pump and the area sealed the same day. An examination made on the day previous showed no indication of fire.

Mossbank Mine.—19th April, 1938: Fire was discovered in the new dip workings on the date mentioned, and on investigation it appeared that the fire had eaten its way through from the old dip workings. The area was effectively sealed thirty-six hours after the discovery was made.

Linton Mine.—15th August, 1938: Heating occurred in the Linton No. 2 Mine. The heated area was closed off and effectively sealed the same day.

Linton Mine.—8th September, 1938: Heating was discovered in the No. 1 north section of No. 2 Mine, and the area was effectively sealed off and made safe.

Linton Mine.—12th September, 1938: Heating was discovered in the No. 3 section of No. 1 Mine, and the area was effectively sealed off and made safe.

Mossbank Mine.—17th October, 1938: Signs of caving-in of the dip of Mossbank No. 3 Mine. The mine-manager made a careful investigation of the locality and concluded that it would be advisable to stop any further work being done in this mine. The men and plant were withdrawn.

Prosecutions.

There were no prosecutions during the year.

ANNEXURE B.

STATISTICS OF WORKINGS IN COAL-MINES, 1938.

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 (Bituminous, Sub-bituminous, or Lignite).	Number of Seams worked.	Thickness of Coal-seams.	Thickness worked.	System of Underground Working.	Number of Winding-shafts.	Depth of Shaft or Length of Stone Drive (if any) to reach Coal-seam.	Total Output for 1938.	Total Output to 31st December, 1937.	Total Output to 31st December, 1938.	Number of Persons ordinarily employed.			Means of Ventilation.
															Above.	Below.	Total.	
NORTHERN INSPECTION DISTRICT.																		
												Tons.	Tons.	Tons.				
Hikurangi District.																		
Waro, Hikurangi	Freehold ..	C. Hunter (1st C.)..	Waro Coal-mines, Ltd., Auckland	4	Sub-bituminous	1	4′ to 8′	All ..	Bord and pillar ..	D. 1,000′ ..		9,573	29,934	39,507	18	42	60	Fan (1).
Ruatangata, Kamo	,, ..	G. Cross (2nd C.) ..	Kamo Potteries, Ltd., Whangarei	18	Ditto ..	2	6′ ..	5′ 6″ ..	Ditto	..	..	3,050	49,453	52,503	1	7	8	Natural.
Fearnley's, Waro	,, ..	J. Spiers (D.) ..	Speirs and party, Hikurangi ..	9	,, ..	1	1′ to 4′	All ..	,, ...	..	..	1,257	16,765	18,022	..	2	2	,,
Glen Nell, Hikurangi	Crown lease ..	H. Tipton (2nd C.)	Tipton and party, Hikurangi ..	13½	,, ..	1	3′ ..	,, ..	,, ...	..	..	215	23,864	24,079	6	1	7	,,
McInnes's, Hikurangi	,, ..	J. Hamilton (D.) ..	J. R. McInnes and party, Hikurangi	2½	,, ..	1	4′ 6″ ..	,, ..	,, ...	..	..	106	1,280	1,386	..	3	3	,,
New Kamo, Kamo	Crown lease and freehold	J. Makinson (1st C.)	Kamo Collieries, Ltd., Whangarei	4½	,, ..	1	18′ ..	7′ ..	,, ...	..	D. 450′ ..	26,741	72,179	98,920	22	61	83	Fans (2).
Tauranga Block, Hikurangi ..	Freehold ..	H. Tipton (2nd C.)	J. Jones, Hikurangi	4½	,, ..	1	2′ 6″ ..	All ..	,, ...	..	..	1,535	3,573	5,108	..	5	5	Natural.
Turnbull's, Hikurangi	,, ..	M. C. Turnbull (D.)	Turnbull and party, Hikurangi ..	2	,, ..	1	2′ 6″ to 4′	,, ..	,, ...	..	..	89	1,715	1,804	..	2	2	,,
Whau Valley, Whangarei ..	,, ..	R. Fox (1st C.) ..	R. Fox, Otongarei Road, Whangarei	¾	,, ..	1	4′ ..	,, ..	,, ...	..	..	130	280	410	..	2	2	,,
Silverdale, Hikurangi	Crown lease ..	H. Tipton (2nd C.)	S. G. Foot, Hikurangi	17½	,, ..	1	3′ to 5′	3′ ..	,, ...	..	..	1,822	45,668	47,490	1	6	7	,,
Whareora, Hikurangi	Freehold ..	R. Fox (1st C.) ..	R. Fox and party, Whangarei ..	8	,, ..	1	5′ ..	All ..	,, ...	..	..	20	5,923	5,943	..	1	1	,,
Avoca, Tangowahine	,, ..	S. G. Foot (U.) ..	S. G. Foot, Hikurangi	9½	,, ..	1	8′ ..	,, ..	,, ...	..	..	300	8,998	9,298	3	..	3	,,
Waikato District.																		
Rotowaro, Rotowaro	Crown lease and freehold	J. Smith (1st C.) ..	Taupiri Coal-mines, Ltd., Auckland	21	Brown ..	2	7′ to 15′	All ..	Bord and pillar ..	D. 1,600′ ..		160,463	2,461,230	2,621,693	62	224	286	Fans (3).
Pukemiro, Pukemiro	Freehold ..	A. Burt (1st C.) ..	Pukemiro Collieries, Ltd., Auckland	23	,, ..	1	4′ to 18′	4′ to 14′ ..	Ditto	..	..	102,751	2,602,015	2,704,766	48	158	206	Fans (2).
Wilton, Glen Massey	,, ..	T. Andrews (1st C.)	Wilton Collieries, Ltd., Auckland	8	,, ..	1	7′ to 12′	5′ to 9′ ..	,, ...	..	..	89,557	560,079	649,636	31	132	163	,,
Waikato Extended, Huntly West	,, ..	J. Honey (U.) ..	Roose Shipping Co., Ltd., Mercer	22	,, ..	1	16′ ..	14′ ..	,, ...	..	..	3,130	110,188	113,318	2	3	5	Natural.
Glen Afton No. 1, Glen Afton ..	Crown lease and freehold	C. Blackburn (1st C.)	Glen Afton Collieries, Ltd., Auckland	18	,, ..	1	4′ to 16′	9′ ..	,, ...	..	..	74,939	1,776,654	1,851,593	25	127	152	Fan (1).
MacDonald, Waikokowai ..	Crown lease ..	,,	Ditto	8	,, ..	1	6′ to 20′	9′ to 14′ ..	,, ...	..	..	144,012	858,822	1,002,834	48	204	252	,,
Taupiri East, Kimihia ..	,, ..	P. Peattie (2nd C.)	Holland and party, Huntly ..	17	,, ..	1	10′ to 15′	12′ ..	,, ...	..	..	3,233	30,102	33,335	1	4	5	Natural.
Whatawhata Campbell, Whatawhata	,, ..	A. Penman (1st C.)	Whatawhata Campbell Coal Co., Ltd., Hamilton	17	,, ..	1	12′ ..	8′ ..	,, ...	..	..	5,187	68,552	73,739	5	4	9	,,
Renown, Renown	Freehold ..	T. Geddes (1st C.)..	Renown Collieries, Ltd., Auckland	11	,, ..	2	15′ ..	7′ to 9′ ..	,, ...	..	..	107,202	873,317	980,519	46	148	194	Fan (1).
Graham, Glen Afton	,, ..	J. Tweedie (2nd C.)	Graham Coal Co., Glen Afton ..	15	,, ..	1	3′ to 6′	4′ ..	,, ...	..	..	5,094	133,214	138,308	1	11	12	,,
Glen "A" Potteries, Glen Afton	,, ..	J. Howie (P.) ..	Taranaki Brick and Land Co., New Plymouth	2¼	,, ..	1	5′ to 12′	All ..	,, ...	..	..	748	428	1,176	1	..	1	Natural.
Te Waro, Raurimu	,, ..	J. Spence (2nd C.)..	J. Spence, Raurimu	1	,, ..	1	5′ ..	5′ ..	,, ...	..	..	75	..	75	2	..	2	,,
Dally's, Te Awamutu	Crown lease ..	T. Burt (U.) ..	C. Y. Dally, Oparau, Te Awamutu	1	,, ..	1	7′ ..	6′ ..	,, ...	..	..	77	..	77	1	1	2	,,
Taranaki District.																		
Egmont, Tatu	Crown lease ..	A. W. Whittleston (1st C.)	Egmont Collieries, Ltd., Stratford	4	Brown ..	1	6′ to 10′	All ..	Bord and pillar ..	..	..	13,852	52,514	66,366	15	39	54	Fan (1).
Old Stockman, Mokau.. ..	Freehold ..	H. Jones (D.) ..	Chambers Bros., Havelock ..	18	,, ..	1	4′ 6″ ..	,, ..	Ditto	..	..	907	8,562	9,469	1	2	3	Natural.
Mangapeehi, Mangapeehi ..	Crown lease ..	J. Gillick (1st C.) ..	Mangapeehi Coal-mining Co., Ltd., Mangapeehi	4½	,, ..	1	14′ ..	7′ ..	,, ...	..	..	6,652	15,708	22,360	3	9	12	Fan (1).
Outputs of collieries, included in previous statements, at which operations have been abandoned or suspended				..	..	..	..	..	..	..	..	..	12,310,103	12,310,103	..	..	..	..

STATISTICS OF WORKINGS IN COAL-MINES, 1938—*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 (Bituminous, Sub-bituminous, or Lignite).	Number of Seams worked.	Thickness of Coal-seams	Thickness worked.	System of Underground Working.	Number of Winding-shafts.	Depth of Shaft or Length of Stone Drive (if any) to reach Coal-seam.	Total Output for 1938.	Total Output to 31st December, 1937.	Total Output to 31st December, 1938.	Number of Persons ordinarily employed.			Means of Ventilation.
															Above.	Below.	Total.	
							WEST COAST INSPECTION DISTRICT.											
Nelson District.												Tons.	Tons.	Tons.				
Motupipi, Motupipi	Crown lease	D. Winter (P.)	J. and D. Winter, Motupipi	11	Lignite	1	4′	Full	Opencast			102	1,428	1,530	2	..	2	Open.
Clarke, Baton	,,	S. Hartshorne (P.)	S. Hartshorne, Tapawera	7½	Bituminous	1	11′	,,	Bord and pillar			632	2,268	2,900	..	2	2	Natural.
Coker's, Baton	Freehold	P. McGlen (P.)	Broxburn Coal Co., Ltd., Wellington	2	,,	1	4′	,,	Ditto			16	14	30	..	2	2	,,
Wynndale, Murchison	Crown lease	J. Mitchell (D.)	G. and A. H. Wynn, Murchison	6	Sub-bituminous	1	6′ to 7′	,,	,,			2,220	13,968	16,188	1	4	5	Fan.
Mount Burnett, Collingwood	,,	W. A. Hansen (D.)	Chambers Bros., Hastings	9	Ditto	1	5′	,,	,,		2 ch.	2,553	30,399	32,952	2	5	7	Natural.
Puponga, Puponga	,,	A. J. McHardy (2nd C.)	Puponga Coal-mines, Ltd., Puponga	35	,,	1	5′ to 5½′	,,	,,		1 ch.	8,197	389,484	397,681	3	8	11	Fan.
North Cape, Onekaka	Freehold	A. Thomson (1st C.)	North Cape Syndicate, Onekaka	½	,,	1	2′	,,	,,			44	..	44	..	2	2	Natural.
Owen, Owen River	Crown lease	W. Hawthorn (D.)	Owen Collieries, Ltd., Nelson	9	,,	1	4′ to 6′	,,	Double stall		4 ch.	2,810	25,473	28,283	2	6	8	Fan.
Buller District.																		
Bowater, and Bryan's, Charleston	Crown lease	F. M. Mitchell (P.)	Bowater and Bryan, Ltd., Westport	8½	Lignite	1	1′ to 30′	8′	Opencast			265	1,917	2,182	1	..	1	Open.
Brighton, Fox River	,,	Andrew Hunter (P.)	Brighton Coal-mines, Ltd., Brighton	6	,,	1	12′ to 16′	8′	Bord and pillar			516	1,748	2,264	..	3	3	Natural.
Price's, Brighton	Freehold	T. L. Price	Price Bros., Tiromoana	5	,,	1	16′	7′	Ditto			18	696	714	..	2	2	,,
Cardiff, Mokihinui	Crown lease	J. Simpson (D.)	Cardiff Coal Co., Ltd., Westport	3½	Bituminous	1	8′ to 12′	9′	,,		1 ch.	2,421	13,235	15,656	3	5	8	Fan.
Cascade, Cascade Creek	,,	W. Brown (1st C.)	Cascade-Westport Coal Co., Ltd., Westport	12	,,	1	20′ to 40′	8′	,,			15,976	171,251	187,227	11	12	23	Natural.
Charming Creek, Ngakawau	,,	R. J. Wearn (1st C.)	Charming Creek - Westport Coal Co., Ltd., Westport	11	,,	1	8′ to 20′	10′	,,		20 ch.	24,909	128,145	153,054	16	27	43	Fan.
Coal Creek, Seddonville	,,	T. Quinn (D.)	Coal Creek Mining Party, Seddonville	21	,,	1	6′ to 40′	7′	,,			1,923	101,115	103,038	1	3	4	,,
Hydro, Seddonville	,,	G. H. Gaskell (2nd C.)	Hydro Coal Mines, Ltd., Westport	3	,,	1	4′ to 17′	Full	,,		23 ch.	10,833	11,912	22,745	2	9	11	,,
Powell's, Charleston	,,	D. Tennant (P.)	J. H. Powell, Charleston	10	Lignite	1	30′	7′	Opencast			219	280	499	1	..	1	Natural.
Warne's, Charleston	,,	G. N. Warne (P.)	G. N. Warne, Charleston	13	,,	1	24′	6′	,,			8	121	129	1	..	1	,,
Rocklands, Buller Gorge	,,	N. B. Paine (P.)	J. P. Burley, Berlins	36	Brown	1	27′	8′	Bord and pillar			1,232	12,183	13,415	..	4	4	,,
Glencrag, Buller Gorge	,,	N. Forsyth (2nd C.)	Forsyth and Bateson, Westport	15	,,	1	20′ to 40′	10′	Ditto			772	4,590	5,362	..	2	2	,,
Penberth's, Buller Gorge	Crown prospecting license	J. Penberth	Penberth and Chester, Seddonville	½	,,	1	20′					2	..	2	..	1	1	,,
Denniston, Denniston	Crown lease	A. Openshaw and J. Adamson (1st C.)	Westport Coal Co., Ltd., Dunedin	58	Bituminous	7	3′ to 30′	Full	Bord and pillar			160,895	10,842,799	11,003,694	131	248	379	Fans.
Millerton, Granity	,,	O. J. Davis (1st C.)	Ditto	47	,,	1	4′ to 40′	12′	Ditto		78 ch.	75,560	8,460,478	8,536,038	30	78	108	Fan.
Westport-Stockton, Ngakawau	,,	T. McGhie (1st C.)	Westport-Stockton Coal Co., Ltd., Christchurch	30	,,	3	4′ to 20′	10′	,,			144,890	3,561,466	3,706,356	85	175	260	,,
Watson's, Karamea	,,	A. J. Watson	A. J. and H. Watson, Karamea	2	Lignite	1	10′	Full	Opencast			18	93	111	1	..	1	Natural.
Reefton District.																		
Archer's, Capleston	Crown lease and freehold	F. W. Archer (2nd C.)	F. W. Archer, Reefton	43	Brown	2	9′ to 12′	8′ to 11′	Bord and pillar		400′	5,099	78,733	83,832	3	10	13	Natural.
Burke's Creek, Burke's Creek	Crown lease	C. D. Buist (1st C.)	Burke's Creek Colliery, Ltd., Wellington	37	,,	1	8′ to 12′	9′	Ditto			20,592	292,285	312,877	10	18	28	Fan.
Clele, Merrijigs	,,	R. V. Alborn (2nd C.)	V. W. Alborn and party, Reefton	52	,,	1	5′	Full	,,		40′	6,401	75,599	82,000	3	9	12	Natural.
Coghlan's, Capleston	Freehold	E. Cohen (D.)	John Coghlan, Reefton	41	,,	1	12′	8½′	,,		12 ch.	1,938	34,895	36,833	1	5	6	,,
Collins, Murray Creek	Crown lease	N. Collins (P.)	N. Collins, Reefton	46	,,	1	15′	10′	,,			543	63,090	63,633	1	1	2	,,
Defiance, Murray Creek	,,	G. Turner (2nd C.)	McClatchie and Co., Ltd., Christchurch	10	,,	1	5′	Full	,,			3,184	10,614	13,798	2	8	10	,,
Morrisvale, Reefton	,,	C. Curtis (2nd C.)	W. J. Morris, Reefton	26	,,	1	14′	8′	,,		1 ch.	5,722	153,377	159,099	1	7	8	,,
Burnwell, Reefton	,,	D. Hamill (D.)	D. Hamill, Reefton	10	,,	1	30′	9′	,,		1½ ch.	495	4,571	5,066	..	3	3	,,
Waitahu, Reefton	,,	A. D. Williams (1st C.)	A. D. Williams, Reefton	29	,,	2	6′ and 6½′	Full	,,			3,957	13,690	17,647	3	7	10	Fan.
White Rose, Merrijigs	,,	S. Griggs (D.)	H. and S. Griggs, Reefton	15	,,	1	4	Full	,,			294	877	1,171	..	2	2	Natural.

Greymouth District.

Baddeley's, Bend Creek ..	State reserve	R. Barker (U.) ..	Baddeley and party, Runanga ..	18	Sub-bituminous	1	7′ ..	Full ..	Bord and pillar	.. ..	6,583	66,499	73,082	2	5	7	Natural.
Bellbird, Ten-mile	,,	F. Fauth (D.) ..	Fauth and party, Greymouth ..	11	Ditto ..	1	8′ ..	,, ..	Ditto ..	.. ..	3,940	32,248	36,188	1	3	4	Fan.
Bellvue, Rapahoe	,, ..	H. Hadcroft (U.) ..	Bellvue Mines, Ltd., Greymouth	12	,, ..	1	6′ ..	,, ..	,, ..	.. ..	5,821	71,072	76,893	1	8	9	,,
Blackball, Blackball	Freehold ..	J. G. Quinn (1st C.)	Blackball Coal-mines Pty., Ltd., Christchurch	47	Bituminous	2	17′ ..	15′ ..	,, ..	.. 19 ch. ..	28,259	4,107,876	4,136,135	40	50	90	,,
Blackball Creek, Blackball ..	,, ..	,,	Blackball Creek Coal Co., Ltd., Blackball	7½	,,	2	17′ ..	15′ ..	,, ..	.. ..	9,869	110,474	120,343	8	16	24	,,
Hunter's, Ten-mile	State Reserve	J.M.Williams(2ndC.)	Hunter and party, Greymouth ..	6	Sub-bituminous	1	7′ ..	Full ..	,, ..	.. ..	6,117	9,848	15,965	2	7	9	,,
Braehead, Dunollie	,,	J.W.Patterson(2ndC.)	Boote and party, Dunollie ..	18	Ditto ..	1	7′ ..	,, ..	,, ..	.. 14½ ch. ..	8,574	106,248	114,822	3	13	16	,,
Briandale, Ten-mile	Crown lease ..	T. Howard (1st C.)	Briandale Collieries, Ltd., Christchurch	12	,, ..	1	8′ ..	,, ..	,, ..	.. 1½ ch. ..	2,075	82,341	84,416	3	4	7	Natural.
Wallsend, Brunnerton ...	Crown lease and freehold	G. Smith (1st C.) ..	Brunner Collieries, Ltd., Wellington	15	Bituminous	1	18′ ..	8′ to 10′ ..	,, ..	2 650′ each ..	49,605	670,398	720,003	26	100	126	Fan.
Cain's, Rapahoe	State Reserve	S. Hewison (2nd C.)	E. Cain Rapahoe	14	Sub-bituminous	1	5′ ..	Full ..	,, ..	.. ..	1,960	12,034	13,994	1	4	5	,,
Castlepoint, Dunollie	,,	J. Neilson (1st C.)	Castlepoint Co-operative party, Runanga	12	Ditto ..	1	4′ ..	,, ..	,, ..	.. ..	8,190	78,073	86,263	1	10	11	,,
Dobson, Dobson	Crown lease and freehold	H. Brady (1st C.) ..	Grey Valley Collieries Ltd., Christchurch	16	Bituminous	1	9′ to 16′	9′ ..	,, ..	.. 18 ch. ..	65,658	823,210	888,868	29	135	164	,,
Fiery Cross, Dunollie	State reserve	J. Sharp (U.) ..	Currie and party, Greymouth ..	10	Sub-bituminous	1	6′ ..	Full ..	,, ..	.. ..	6,571	42,099	48,670	2	7	9	,,
Goldlight, Rewanui	,,	R. Ewen (U.) ..	Williams and party, Runanga ..	11	Ditto ..	1	7′ ..	,, ..	,, ..	.. 4 ch. ..	7,617	78,030	85,647	1	7	8	,,
Hilltop, Ten-mile	,,	V. Armstrong (1st C.)	Armstrong and party, Runanga	8	,, ..	1	11′ to 14′	11′ ..	,, ..	.. ..	5,999	59,383	65,382	2	5	7	,,
Kaye's, Ten-mile	,,	W. Hughes (D.) ..	Kaye and party, Dunollie ..	4	,, ..	1	10′ ..	Full ..	,, ..	.. ..	3,846	7,316	11,162	2	5	7	,,
Hunter's, Rewanui	,,	A. Hill (D.) ..	Hunter and party, Greymouth ..	18	,, ..	1	3½ ..	,, ..	,, ..	.. ..	4,197	92,511	96,708	2	5	7	,,
Jubilee, Rapahoe	,,	J. Strang (U.) ..	Jubilee Co-operative party, Runanga	11	,, ..	1	7′ ..	,, ..	,, ..	.. ..	3,505	32,660	36,165	1	5	6	Natural.
Moody Creek, Dunollie ..	,,	J. Queen (2nd C.) ..	Moody Creek Co-operative party, Runanga	16	,, ..	1	9′ ..	,, ..	,, ..	.. ..	5,526	74,191	79,717	2	8	10	Fan.
Cliffside, Nine-mile	,,	J. Gourlay (D.) ..	Moore and party, Greymouth ..	3½	,, ..	1	13′ ..	9′ ..	,, ..	.. 1 ch. ..	3,387	9,786	13,173	3	4	7	Natural
New Point Elizabeth, Dunollie ..	,,	J. Dymond (2nd C.)	New Point Elizabeth Co-operative party, Greymouth	12	,, ..	1	8′ to 15′	8′ to 10′ ..	,, ..	.. ..	9,656	86,803	96,459	2	12	14	Fan.
Old Runanga, Rewanui ..	,,	J. W. Smith (2nd C.)	Old Runanga Co-operative party, Runanga	12	,, ..	2	4′ and 6′	Full ..	,, ..	.. ..	8,350	66,568	74,918	3	13	16	,,
Paparoa, Roa	Crown lease ..	A. O'Donnell (1st C.)	Paparoa Coal Co., Ltd., Wellington	30	Semi-bituminous	2	{8′ to 12′ / 8′ to 25′}	,, ..	,, ..	.. 48½ and 15 ch.	41,762	846,903	888,665	24	66	90	Fans.
Schultz Creek, Twelve-mile ..	,, ..	D. Cameron (D.) ..	Marshall and party, Twelve-mile	14	Sub-bituminous	1	2½ ..	,, ..	,, ..	.. ..	2,546	36,070	38,616	..	4	4	Natural.
Smith's, Dunollie	State Reserve	A. Ferguson (2nd C.)	Smith and party, Runanga ..	18	Ditto ..	1	5′ ..	,, ..	,, ..	.. ..	6,860	90,221	97,081	2	10	12	Fan.
James, Rapahoe	,,	R. T. H. Dale (1st C.)	New Zealand Government, Wellington	16	,, ..	1	4′ to 8′	,, ..	,, ..	.. 15 ch. ..	40,675	504,826	545,501	22	77	99	,,
Liverpool, Rewanui	,,	A. Smith (1st C.) ..	Ditto	26	Bituminous	3	8′ to 34′	8′ ..	,, ..	.. 36 ch. ..	131,915	2,957,318	3,089,233	77	235	312	,,
Spark's, Rewanui	,, ..	J. Unwin (D.) ..	Spark and party, Runanga ..	16	,,	1	24′ ..	9′ ..	,, ..	.. 3½ ch. ..	70	47,883	47,953	2	4	6	,,
Output of collieries, included in previous statements, at which operations have been abandoned or suspended											..	8,143,198	8,143,198	..	..	..	..

SOUTHERN INSPECTION DISTRICT.

Canterbury District.

Homebush, Glentunnel ..	Freehold ..	W. G. Smith (D.) ..	W. G. Smith, Glentunnel ..	65	Lignite ..	1	3′ ..	All ..	Bord and pillar	.. ..	358	365,121	365,479	1	1	2	Natural.
Clearview, Glenroy	,, ..	P. T. Lemming (D.)	Clearview Coal Co., Ltd., Glenroy	19	,, ..	1	10′ ..	7′ ..	Ditto ..	.. D. 30′ ..	1,768	31,231	32,999	1	4	5	,,
Klondyke, Bush Gully	,, ..	M. Fowler (2nd C.)	Klondyke Collieries, Ltd., Coalgate	10	,, ..	1	20′ to 30′	8′ ..	,, ..	.. D. 75′ ..	5,973	38,918	44,891	3	11	14	Fan.
Bonanza, Sheffield	,, ..	E. Charles (2nd C.)	A. Charles, Coalgate	7½	,, ..	1	7′ ..	All ..	,, ..	.. D. 30′ ..	1,700	10,063	11,763	1	5	6	,,
Tripp's, Mount Somers ..	,, ..	M. Menaglio (D.) ..	Mount Somers Mines, Ltd., Christchurch	72	,, ..	2	9′ to 13′	,, ..	,, ..	.. D. 150′ ..	2,375	103,225	105,600	1	5	6	Natural.
Blackburn, Mount Somers ..	Crown lease ..	R. R. Beckley (D.)	Blackburn Coal Co., Ltd., Ashburton	9	,, ..	1	15′ ..	8′ ..	,, ..	.. D. 60′ ..	3,186	18,970	22,156	1	4	5	,,
Woodbank, Albury	Crown lease under Lands Act	J. H. Smillie (P.) ..	J. H. Smillie, Albury	14	,, ..	1	27′ ..	8′ ..	,, ..	.. D. 60′ ..	108	9,880	9,988	1	4	5	,,
Steventon, Whitecliffs ..	Freehold ..	H. J. Robb (D.) ..	H. J. Robb, Whitecliffs ..	9½	,, ..	1	6′ to 7′ 6″	5′ to 6′ ..	,, ..	.. D. 66′ ..	2,745	20,033	22,778	1	5	6	Fan.
Sandown, Sheffield	,, ..	D. McQueen (D.) ..	D. McQueen, Sheffield	2	,, ..	1	10′ ..	8′ ..	,, ..	.. D. 82′ ..	667	779	1,446	1	2	3	Natural.
Yukon, Coalgate	,, ..	A. J. Clark (D.) ..	S. Smith and E. G. Watson, Coalgate	23	,, ..	1	3′ ..	All ..	,, ..	.. D. 30′ ..	131	836	967	..	2	2	,,
Malvern, Sheffield	,, ..	P. Hart (P.) ..	A. Taylor, Waddington, Sheffield	1	,, ..	1	6′ ..	,, ..	,, ..	.. D. 270′ ..	628	160	788	1	2	3	,,

STATISTICS OF WORKINGS IN COAL-MINES, 1938—*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 (Bituminous, Sub-bituminous, or Lignite).	Number of Seams worked.	Thickness of Coal-seams.	Thickness worked.	System of Underground Working.	Number of Winding-shafts.	Depth of Shaft or Length of Stone Drive (if any) to reach Coal-seam.	Total Output for 1938.	Total Output to 31st December, 1937.	Total Output to 31st December, 1938.	Number of Persons ordinarily employed.			Means of Ventilation.
															Above.	Below.	Total.	
							SOUTHERN INSPECTION DISTRICT—*continued.*					Tons.	Tons.	Tons.				
North Otago.																		
Airedale, Papakaio	Crown lease	E. Roberts (U.)	Airedale Coal Co., Ltd., Oamaru	12	Lignite	1	10′	7′	Bord and pillar		D. 330′	4,856	37,008	41,864	1	6	7	Fan.
St. Andrews, Papakaio	Freehold	J. H. Nimmo (D.)	J. H. Nimmo, Peebles	59	,,	1	6′ to 7′	6′	Ditto		D. 231′	1,294	83,547	84,841	1	2	3	,,
Willetts, Airedale	Freehold and Crown lease	R. McVie (D.)	G. H. Willetts, Airedale	6	,,	1	10′	6′	,,		D. 40′	1,122	5,858	6,980	1	2	3	Natural.
Ngapara, Ngapara	Freehold	W. Nimmo (U.)	W. Nimmo, Ngapara	60	,,	1	25′	8′ to 10′	,,		D. 50′	669	51,050	51,719	1	2	3	Fan.
Shag Point (Old), Shag Point	Crown lease	W. McLaren (D.)	W. McLaren, Shag Point	24	Brown	1	6′	All	,,		D. 120′	2,487	435,583	438,070	3	3	6	Natural.
Shag Point, Shag Point	Freehold	A. K. McLean (U.)	A. K. McLean, Shag Point	30	,,	1	3′	,,	,,		D. 50′	1,050	339,791	340,841	1	2	3	,,
Rockvale, Herbert	,,	D. R. Gaudion (D.)	W. Marshall, Herbert	4	Lignite	1	7′	6′	,,		D. 9 ch.	586	784	1,370	..	2	2	,,
Central Otago.																		
Idaburn, Oturehua	Freehold	R. Barber (D.)	R. Barber, Oturehua	68	,,	1	40′	25′	Opencast			730	61,643	62,373	2	..	2	Open.
Oturehua, Oturehua	Crown lease	A. Brown (P.)	J. R. and A. Becker	44	,,	1	7′	All	,,			55	8,639	8,694	2	..	2	,,
McPherson's, Coal Creek Flat	,,	N. Harliwich (P.)	N. Harliwich, Coal Creek Flat	68	,,	1	14′	,,	,,			875	112,805	113,680	1	..	1	,,
Shepherd's Creek, Bannockburn	,,	J. Hodson (2nd C.)	J. Hodson, Bannockburn	61	,,	1	7′ to 20′	7′ to 10′	Bord and pillar		D. 100′	1,768	139,433	141,201	1	3	4	Fan.
Fache's, Nevis	,,	A. J. Graham (P.)	S. C. Fache, Nevis	5	,,	5	50′	20′	Opencast			403	1,689	2,092	2	..	2	Open.
Cairnmuir, Cromwell	Freehold and Crown lease	G. Crabbe (D.)	Cairnmuir Coal Co., Ltd., Cromwell	4	,,	1	5′ 6″	All	Bord and pillar			130	466	596	2	3	5	Natural.
Nevis Crossing, Nevis	Crown lease	R. Ritchie (P.)	R. Ritchie, Nevis	34	,,	1	60′	,,	Opencast			15	18,450	18,465	1	..	1	Open.
Parfit's, Upper Idaburn	,,	I. J. Parfit (P.)	I. J. Parfit, Naseby	11	,,	1	10′	,,	,,			6	1,364	1,370	1	..	1	,,
South Otago.																		
Freeman's, Abbotsford	Freehold	R. Anderson (D.)	Freeman's Coal Co., Green Island	58	,,	1	12′ to 15′	All	Bord and pillar		D. 100′	476	638,691	639,167	1	2	3	Fan.
Jubilee, Saddle Hill	,,	F. Barclay (2nd C.)	Jubilee Coal Co., Ltd., Dunedin	41	,,	1	6′ to 9′	5′ to 6′	Ditto		D. 200′	8,376	625,815	634,191	4	13	17	,,
New Fernhill, Abbotsford	,,	D. Kerr (U.)	New Fernhill Coal Co., Ltd., Dunedin	6	,,	1	8′ to 14′	6′	,,		D. 300′	3,714	19,417	23,131	1	6	7	,,
Fairfield, Fairfield	,,	J. G. Barclay (U.)	Fairfield Coal Co., Ltd., Dunedin	6	,,	1	8′	6′	,,		D. 650′	2,880	13,000	15,880	1	7	8	,,
Brighton, Brighton	,,	N. McColl (P.)	N. McColl, Brighton	23	,,	1	5′	5′	,,		D. 150′	208	12,509	12,717	..	2	2	,,
East Taieri, East Taieri	,,	J. Dunlop (D.)	J. Dunery and A. Birley, East Taieri	19	,,	1	12′	6′	,,		D. 100′	1,591	47,661	49,252	1	4	5	,,
Willowbank, Riccarton	,,	N. Smith (D.)	G. Scurr and Co., Ltd., Mosgiel	18	,,	1	9′	6′	,,		D. 200′	5,087	75,191	80,278	2	6	8	,,
Taratu, Lovell's Flat	,,	W. Sneddon (D.)	Sir P. R. Sargood, Dunedin	37	,,	1	8′ to 25′	7′ to 8′	,,		D. 400′	155	792,649	792,804	1	1	2	,,
Elliotvale, Milton	,,	M. Welsh (U.)	Elliotvale Collieries, Ltd., Dunedin	9	,,	1	28′	7′	,,		D. 40′	7,045	27,344	34,389	4	6	10	,,
Eskvale, Milton	,,	J. Cooper (D.)	A. J. Birley, Milton	8	,,	1	14′	All	,,			2,552	14,143	16,695	1	4	5	Natural.
Benhar, Stirling	,,	J. Walls (2nd C.)	McSkimming and Son, Ltd., Benhar	75	,,	3	14′	10′	,,		D. 100′	7,418	333,535	340,953	1	7	8	Fan.
Lakeside, Kaitangata	,,	J. Kyle (D.)	Lakeside Collieries (Kaitangata), Ltd., Dunedin	28	,,	1	20′	7′	,,		D. 200′	1,056	19,582	20,638	1	2	3	,,
Wangaloa, Kaitangata	Crown lease	J. Prescott (D.)	J. Prescott, Kaitangata	16	,,	1	12′ to 20′	7′	,,		D. 363′	1,657	14,610	16,267	1	3	4	Natural.
Kaitangata, Kaitangata	Freehold and Crown lease	F. Carson (1st C.)	Kaitangata Coal Co., Ltd., Kaitangata	62	Brown	2	20′ and 8′	All	,,		D. 858′	124,469	5,571,366	5,695,835	80	220	300	Fan.
Kai Point, Kaitangata	Freehold	S. Newburn (2nd C.)	S. Newburn, Kaitangata	11	,,	1	20′	7′	,,		D. 30′	613	8,350	8,963	1	1	2	Natural.
Hodson's, Fairfield	,,	J. L. Baird (U.)	Hodson's Coal Co., Green Island	7	Lignite	1	6′	5′	,,		D. 99′	5,046	26,293	31,339	2	6	8	Fan.
Southland District.																		
Green's, Gore	Freehold	W. Johnson	W. J. Barclay, Gore	50	Lignite	1	20′	10′	Bord and pillar		D. 210′	3,502	403,824	407,326	1	4	5	Fan.
Croydon, Gore	,,	J. Miller (P.)	J. Miller, East Gore	23	,,	1	30′	All	Opencast			1,449	32,077	33,526	2	..	2	Open.
Otikerama, Otikerama	,,	F. Kubala (P.)	Mrs. F. Hoffman, Gore	49	,,	1	20′	10′	Bord and pillar			2,744	61,578	64,322	1	3	4	Natural.
Waimumu, Waimumu	,,	F. W. Burton (P.)	Waimumu Coal Co., Ltd., Gore	10	,,	1	30′	25′	Opencast			6,098	24,127	30,225	4	..	4	Open.
Glenlee, Waikaka	,,	J. G. Burgess (P.)	F. W. Edge, Waikaka	45	,,	1	14′	8′	Bord and pillar		D. 9′	1,062	41,395	42,457	..	2	2	Fan.
Argyle, Waikaka	Crown lease	T. Woodward (P.)	T. Woodward, Waikaia	47	,,	1	12′	All	Opencast			180	13,687	13,867	1	..	1	Open.
Boghead, Mataura	Freehold	J. Dee (P.)	C. E. Rowe, Mataura	33	,,	1	22′	10′	Bord and pillar			3,827	123,380	127,207	1	3	4	Fan.

Mataura Lignite, Mataura ..	Freehold ..	J. T. Pearson (P.) ..	Beattie Coster and Co., Ltd., Mataura	62	Lignite ..	1	16′ ..	All ..	Opencast ..	..	4,311	406,901	411,212	4	..	4	Open.
Ota Creek, Wyndham	Crown lease ..	E. Genge (P.) ..	E. Genge, Wyndham	58	,, ..	1	8′ ..	,, ..	,, ..	..	494	33,887	34,381	1	..	1	,,
Princhester Creek, The Key ..	,, ..	J. A. Denton (P.) ..	J. A. Denton, Lumsden ..	36	Brown ..	1	3′ ..	,, ..	,, ..	..	6	4,287	4,293	1	..	1	,,
Black Diamond, Nightcaps ..	,, ..	R. McDonald (2nd C.)	Black Diamond Coal Co., Ltd., Nightcaps	23	,, ..	1	25′ ..	,, ..	Bord and pillar ..	..	8,657	269,460	278,117	5	10	15	Fan.
Birchwood, Ohai	,, ..	J. Lewis (1st C.) ..	Birchwood Coal Co., Ltd., Dunedin	15	,, ..	1	9′ to 25′	6′ to 8′ ..	Ditto	D. 1,100′ ..	13,516	208,476	221,992	13	42	55	,,
Black Lion, Ohai	,, ..	E. Mason (2nd C.)	Black Lion Coal Co., Ltd., Benhar	17	,, ..	1	18′ ..	8′ ..	,, ...	264′ ..	14,982	180,831	195,813	5	15	20	,,
Mossbank, Ohai	,, ..	J. Mosley (1st C.) ..	Mossbank Coal Co., Ltd., Invercargill	24	,, ..	2	8′ and 20′	12′ ..	,, ...	400′ ..	26,546	613,843	640,389	19	47	66	,,
Wairaki, Ohai	Crown lease and freehold	T. Young (1st C.) ..	Wairaki Coal Co., Ltd., Invercargill	25	,, ..	1	7′ to 22′	All ..	,, ...	..	35,738	491,755	527,493	15	53	68	,,
Linton, Ohai	Crown lease ..	Job Hughes (1st C.)	Linton Coal Co., Ltd., Invercargill	23	,, ..	1	30′ to 40′	,, ..	,, ..	..	106,056	1,325,688	1,431,744	37	127	164	,,
,, ...	Freehold ..	,, ..	,,	8½	,, ..	1	30′ to 40′	,, ..	,, ..	..							
Star, Ohai	,, ..	J. C. Griffen (2nd C.)	Star Coal Co., Ltd., Ohai ..	7	,, ..	1	6′ to 8′ ..	,, ..	,, ...	100′	10,184	50,761	60,945	6	13	19	,,
Waimeamea, Orepuki	Crown lease ..	J. L. Henderson (P.)	J. L. Hennessey, Orepuki ..	33	Lignite ..	4	15′ ..	13′ ..	Opencast ..	..	204	38,068	38,272	2	..	2	Open.
Raby, Gore	Freehold ..	J. S. Wilks (P.) ..	J. S. Wilks, Gore	5	,, ..	1	20′ ..	All ..	,, ...	..	3,622	8,442	12,064	2	..	2	,,
Titapua, Mataura	,, ..	A. W. Coster (P.) ..	P. Larking, Mataura	4	,, ..	1	8′ to 10′	,, ..	,, ...	..	6,117	16,014	22,131	5	..	5	,,
Coster's, Edendale	,, ..	D. A. Coster (P.) ..	D. A. Coster, Mataura ..	2¼	,, ..	1	7′ ..	,, ..	,, ...	..	1,402	1,132	2,534	2	..	2	,,
Kea, Mataura	,, ..	T. Gaudion (P.) ..	P. Larking, Mataura	2¼	,, ..	1	16′ ..	,, ..	,, ...	..	14,083	9,575	23,658	8	..	8	,,
Hakatere, Waimumu	,, ..	J. Buchols (D.) ..	Hakatere Coal Co., Waimumu ..	4	,, ..	1	18′ ..	10′ ..	Bord and pillar ..	..	870	4,535	5,405	1	1	2	Natural.
Waimumu Terrace, Waimumu ..	,, ..	R. Haywood (P.) ..	R. Haywood, Mataura ..	2	,, ..	1	12′ ..	All ..	Opencast ..	..	324	859	1,183	1	..	1	Open.
Diamond Lignite, Asher's Siding	Crown lease ..	A. McMillan (P.) ..	S. McMillan, Invercargill ..	36	,, ..	1	36′ ..	,, ..	,, ...	..	980	43,652	44,632	2	..	2	,,
Output of collieries, included in previous statements, at which operations are abandoned or suspended											..	7,488,804	7,488,804	..	..	..	..
Totals, Southern District, South Island											474,982	22,034,520	22,509,502	271	680	951	
Totals, West Coast District, South Island											984,389	43,848,817	44,833,206	581	1,490	2,071	
Totals, Northern District, North Island											762,717	22,075,331	22,838,048	343	1,198	1,541	
Grand totals											2,222,088	87,958,668	90,180,756	1,195	3,368	4,563	
Output of collieries prior to 1890 not included in above statement											..	..	296,653				
Shale exported, 1914											..	..	21				
													90,477,430				

APPENDIX C.

REPORT OF BOARDS OF EXAMINERS.

Geological Survey Office,
Wellington, 17th May, 1939.

SIR,—

On behalf of the Boards of Examiners under the Mining and Coal-mines Acts, I have the honour to submit the following brief report on the work of the Boards during 1938 :—

Coal-mines Act.—The annual examinations of candidates for mine-managers' certificates under the Coal-mines Act, 1925, were held at Huntly, Reefton, Westport, Greymouth, and Dunedin on the 18th October and two following days. In addition, three candidates (one each at Westport, Greymouth, and Huntly) were examined for mine-surveyors' certificates.

Examinations for candidates who desired to obtain underviewers' and firemen-deputies' certificates were held at Dunedin on the 11th and 12th October ; at Huntly on the 8th and 9th November ; at Greymouth on the 17th and 18th November ; and at Westport on the 24th and 25th November.

Two special examinations were conducted during the year, one at Ohai on the 31st March for three candidates who held partial passes for firemen-deputies' certificates, and one at Greymouth on the 30th May for a candidate who held a partial pass for underviewer's certificate.

The total number of candidates sitting the various examinations under the Coal-mines Act was eighty-four, a decrease of one as compared with the previous year.

Ninety gas-testing certificates were issued to candidates during 1938, while one hundred and seventy-five candidates whose certificates were more than five years old were re-examined in gas-testing and their certificates endorsed to that effect.

During the year the Board adopted a uniform standard for the examination for gas-testing certificates.

Pursuant to section 6 of the Coal-mines Amendment Act, 1937, thirty-one underviewers' and seventy-eight firemen-deputies' certificates were endorsed by the Inspectors of Mines.

Messrs. J. C. Brown, W. Carson, and J. Watson, whose terms as members of the Board had expired, were reappointed by His Excellency the Governor-General for a further term of three years from the 1st January, 1938.

The question of reciprocity with Western Australia as regards colliery-managers' certificates issued after examination was dealt with by the Board and the Board of Examiners for that State was advised that their certificates would be accepted subject in every case to the holder complying with the provisions of the Coal-mines Act regarding certificates by exchange and passing an examination in first aid and law.

Mining Act.—Examinations for mine-managers' certificates under the Mining Act, 1926, were held at Waihi and Reefton on the same dates as the examinations of candidates for similar certificates under the Coal-mines Act. In addition, two candidates were examined at Waihi for battery superintendents' certificates, while examinations for dredgemasters' certificates were held at Greymouth and Dunedin on the 23rd November.

A special examination was conducted at Reefton on the 28th April for two candidates who held partial passes for battery superintendents' certificates.

The total number of candidates sitting the several examinations under the Mining Act was seventeen, the same number as for the previous year.

Pursuant to section 23, Mining Amendment Act, 1936, providing for the appointment to the Board of an additional member holding a Class A Dredgemaster's Certificate, His Excellency the Governor-General duly appointed Mr. S. Chapman as a member of the Board for a term of three years from the 1st May, 1938. Messrs. J. F. Downey, J. R. Noble, and J. L. Gilmour, whose terms as members of the Board had expired during the year, were reappointed by His Excellency for a further term of three years.

By the Petroleum Act, 1937, the provisions of the Mining Act, 1926, relating to prospecting and mining for and the storage of petroleum and other mineral oils and of natural gas were repealed, and, consequent upon such repeal, the relative regulations (including provision for the issue by the Board of service permits as oil-well managers) were revoked. Provision for the issue by the Board of similar permits has been made in the Petroleum Regulations recently issued, as well as for the right of the holder of a permit under the Mining Act to exchange his permit for a similar permit under the Petroleum Act.

General.—A number of certified copies of certificates lost or destroyed were, on application, granted by both Boards, which also dealt with a considerable number of matters arising out of application for and issue of certificates, none of which, however, calls for special mention.

The following is a summary of the various examinations and the results obtained :—

Act and Examination.	Number of Candidates.			Number of Certificates issued.	
	Examined.	Passed.	Partial Pass.	By Examination.	By Recognized Credentials.
1. *Coal-mines Act, 1925*—					
Mine-manager's certificate—					
(*a*) First class—					
Written examination ..	13	7	2	7	..
Oral examination ..	*9				
(*b*) Second class—					
Written examination ..	†3	4	..	4	..
Oral examination ..	‡2				
Underviewer's certificate ..	18	8	4	8	..
Fireman-deputy's certificate ..	47	28§	13	28	..
Mine-surveyor's certificate—					
Written examination	3	1	..	1	..
Oral examination	1				
2. *Mining Act, 1926*—					
Mine-manager's certificate—					
(*a*) First class—					
Written examination ..	4	2	3	2	..
Oral examination ..	‡5				
(*b*) Second class—					
Written examination ..	1	1	..	1	..
Oral examination ..	1				
Battery superintendent's certificate—					
Written examination	‖4	3	..	3	..
Oral examination	3				
Dredgemaster's certificate—					
Class A	2	2	..	2	..
Class B	6	3	..	3	..
Class B (by exchange)	..	..	..	..	..

* Includes five candidates who had previously passed the written examination. † Includes two candidates who had previously passed the oral examination. ‡ Includes one candidate who had previously passed the written examination. § Includes four candidates who last year were credited with partial passes pending the production of certain certificates. ‖ Includes one candidate who had previously passed the oral examination.

A list of certificates issued since my last report is appended.

COAL-MINES ACT, 1925.

First-class Mine-managers' Certificates.

Issued after Examination.—Adamson, James, Runanga ; Lockington, Francis Edward, Wallsend ; McLelland, James Thomson, Ohai ; McMillan, Albert Edward, Ohai ; Marshall, Robert, Dobson ; Outhwaite, Percy Moston, Runanga ; Quinn, Harry, Blackball.

Second-class Mine-managers' Certificates.

Issued after Examination.—Baird, John, Taylorville ; Corden, Ernest, Burnett's Face ; Peattie, Peter Thompson, Huntly ; Queen, John Joseph, Burnett's Face.

Mine Surveyor's Certificate.

Issued after Examination.—Outhwaite, Percy Moston, Runanga.

Underviewers' Certificates.

Issued after Examination.—Anderson, Robert, Rewanui, Greymouth ; Bland, David Edger, Pukemiro ; Blyth, William, Millerton ; Bowman, Robert James, Taylorville, Brunnerton ; Croad, Allan Norman Sinclair, Dobson ; Glendenning, Thomas, Runanga ; Robb, Henry James, Whitecliffs ; Turner, Joseph Frederick, Huntly.

FIREMEN-DEPUTIES' CERTIFICATES.

Issued after Examination.—Adcock, Robert Henry, Ohai; Allan, Andrew Baxter, Rotowaro; Burrell, Horace Joseph, Ohai; Critchley, Frank, Dunollie; Findlay, James, Reefton; Graham, Thomas Thomson, Mt. Somers; Griggs, Stanley Charles, Reefton; Hornby, Joseph, Ohai; Johnston, Alexander, Glen Afton; Keown, George Joseph Kennedy, Rapahoe; Lawson, Thomas, Denniston; Lowrey, Alexander Smith, Ohai; Lowrey, John Hadden, Ohai; McCormack, Patrick John, Cronadun; McDonald, Kenneth Lancelot, Runanga; McDowell, William, Dunedin; Mair, James, Ohai; Massey, James, Runanga; Medlin, James Augustine, Dunollie; Mitchell, Albert Frederick, Glentunnel; Mollison, Richard Phipps, Reefton; Porteous, George James, Wallsend, Brunnerton; Rollerson, Edward Francis, Reefton; Saul, Herbert, Pukemiro Junction; Stanniford, Robert, Kaitangata; Tallentire, James Whiteside, Runanga; Turner, Joseph Frederick, Huntly; Weaver, Joseph, Huntly.

MINING ACT, 1926.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES.

Issued after Examination.—Marshall, Frank William, Waiuta; Sanderson, Frank Leonard, Waiuta.

SECOND-CLASS MINE-MANAGER'S CERTIFICATE.

Issued after Examination.—Dunlop, Robert Basil, Karangahake.

BATTERY SUPERINTENDENTS' CERTIFICATES.

Issued after Examination.—Buckley, Laurie Edward, Waihi; Flannigan, Thomas Francis, Big River, Reefton; Horne, Philip Desmond, Waikino.

DREDGEMASTERS' CLASS A CERTIFICATES.

Issued after Examination.—Hepburn, Wallace Bourke, Alexandra; Peyton, Stanley Lees, Murchison.

DREDGEMASTERS' CLASS B CERTIFICATES.

Issued after Examination.—Hay, Matthew Arawa, Hokitika; Horrack, John William, Blaketown, Greymouth; Jensen, Carl, Gillespie's Beach.

Lists of certificate-holders up to the end of 1938 are attached.

I have, &c.,
J. HENDERSON,
Chairman of Boards.

The Under-Secretary, Mines Department, Wellington.

LIST OF MINE-MANAGERS, BATTERY SUPERINTENDENTS, AND DREDGEMASTERS WHO HOLD CERTIFICATES UNDER THE MINING ACTS.

First-class Mine-managers' Certificates.

Certificates of Service issued under the Mining Act, 1886, without Examination.

Bennett, J., Alexandra.
Cameron, A., Macetown.
Chapman, J. A., Dunedin
Frewen, J. B., Queenstown.
Glass, W. M., Naseby.
Jenkins, M., Wakatipu.
Johnstone, H., Bluespur.
McIntosh, D., Bluespur.
*Morrisby, A. A., Glenorchy.
Newman, W., Naseby.
Porter, J., Waipori.
Sturm, A., Waipori.
Wearne, T., Endeavour Inlet.
Young, G., Skipper's.

Issued after Examination under the Mining Act, 1886, and Amendment Acts.

*Donaldson, W., Otago.
*Fleming, M., Thames.
Harris, W., Thames.
Hornick, M., Thames.
Hosking, G. F., Auckland.
Logan, H. F., Wellington.
Mouat, W. G., Dunedin.
Watkins, W. E., Reefton.

Issued on Production of Certificate from a Recognized Authority outside the Dominion under the Mining Acts, 1886, 1891, 1898, 1905, 1908, 1913, and 1926.

Beckwith, L. H., Wellington.
*†Cock, J., jun., Ross.
Cock, W., Waiomio.
Datson, J., Manaia.
Dodd, William, Milton.
*Godden, Frederick William Ross, Reefton.
Griffiths, A. P., Auckland.
Hailey, R. C., Dunedin.
Hall, E. K., Reefton.
*Lake, J. V., Reefton.
McKenna, Thomas, Dunedin.
Rich, F. A., Auckland.
*Spencer, Ernest William, Reefton.
Williams, W. H., Auckland.

Issued after Examination under the Mining Act, 1891.

*Agnew, J. A., Thames.
Bennett, E. P., Thames.
Bradley, R. J. H., Te Puke.
Gilmour, J. L., Thames.
Keam, P. E., Thames.
*McDermott, C., Thames.
*McDermott, J., Thames.
McDermott, W., Thames.
McGregor, W. T., Thames.
McKenzie, H. J., Coromandel.
McPeake, J., Thames.
Robertson, D. B., Stafford.
*Russell, Murray, Dunedin.
Shepherd, H. F., Thames.
*Stanford, W. J., Macetown.
Vialoux, F., Coromandel.
White, G. H., Thames.

Issued after Examination under the Mining Acts, 1898, 1905, 1908, and 1926.

Allen, Henry, Waihi.
Autridge, L. E., Thames.
Baker, S. G., Thames.
Barker, B., Thames.
Bell, O., Waihi.
Bishop, Thomas Otto, Skipper's.
Blenkhorn, C., Coromandel.
Bolitho, Joseph, Reefton.
Bower, J. W., Coromandel.
*Broad, R., Waihi.
Buddle, Frank, Coromandel.
*Bull, C. W., Waihi.
Caisley, John, Karangahake.
*Calvert, F. C., Waihi.
Clouston, R. E., Kaitangata.
Collier, E., Reefton.
Cooper, J. H., Thames.
Cooper, Thornhill, Waihi.
Cornes, J. G., Waihi.
Downey, J. F., Reefton.
Dutton, W. F., Waihi.
*Evered, N. J., Waihi.
Fry, S., Waimangaroa.
George, M. T., Waihi.
Goldsworthy, W., Coromandel.
Gordon, H. T., Sawyer's Bay, Dunedin.
*Gudgeon, C. W., Macrae's.
Hall, W. J., Waiuta.
Hitchcock, W. E., Barewood.
Hogg, Tasman Rangi, Waiuta.
Kingsford, C., Waihi.
Langdon, H., Waihi.
Latour, H. A. de, Waihi.
Lewis, Ralph Reginald, Waihi.
Lowes, G. W., Reefton.
Lowrie, A. F., Waihi.
Mackie, Portland George A., Waihi.
McConachie, W. J., Waihi.
MacLaren, J. A. J., Coromandel.
Marshall, F. W., Waiuta.
McMahon, T., Reefton.
McMillan, T., Waihi.
Morrison, William, Waihi.
Moye, Michael, Reefton.
O'Shea, J., Reefton.
Robinson, A. E., Waihi.
Ruffin, R. C., Reefton.
*Rutherford, R. A., Waiuta.
Sanderson, F. L., Waiuta.
Scoble, E. J., Waihi.
Smith, Walter, Karangahake.
Stewart, F., Waihi.
Stewart, R. A., Reefton.
Sullivan, T., Reefton.
*Thomson, G. W., Dunedin.
*Thomson, J. R., Waihi.
Thomson, Thomas, Waihi.
Thorne, G. M., Waihi.
*Tucker, E. S., Coromandel.
Turner, A. W., Lawrence.
*Turner, G. W. E., Reefton.
*Ulrich, G. A. C., Waihi.
Waite, A. E., Waihi.
Walker, A. J., Waihi.
Watson, J. L., Thames.
*Watt, L. I., Waiuta.
*Weir, Thomas, Waihi.
*Williams, Evan, Waihi.
*Williams, John, Waihi.
Wotherspoon, James, Waihi.

Issued under Section 313 of the Mining Act, 1891.

Rickard, John, Thames.
Snow, Thomas, Huntly.
Thomas, James, Thames.
White, John S., Karangahake.

Certificates of Competency granted to Holders of Provisional Warrants under Section 32 of the Mining Act Amendment Act, 1896.

Cornes, C. A., jun., Karangahake.
Draffin, Samuel, Waitekauri.

Issued to Inspector of Mines by virtue of Office under the Mining Acts, 1886, 1891, and 1898.

Green, E. R., Dunedin.

* Out of New Zealand. † Alluvial.

SECOND-CLASS MINE-MANAGERS' CERTIFICATES.

Certificates of Service issued under the Mining Act, 1891.

*Agnew, J. A., Coromandel.
Blair, Thomas, Kuaotunu.
Brown, John, Macrae's.
Byrne, John, Karangahake.
Dobson, John Allen, Kuaotunu.
Edwards, George, Westport.
Guthrie, John, Wellington.
Hardman, James Edward, Thames.
Johnstone, William, Collingwood.
Mackay, William, Nenthorn.
Rickard, John, Thames.
Shaw, James, Karangahake.
Thomas, James, Thames.

Issued after Examination under the Mining Acts, 1891, 1898, 1908, and 1926.

Benney, J., jun., Paeroa.
Cahill, T. M., Upper Kuaotunu.
Dunkin, T., Coromandel.
Dunlop, R. B., Karangahake.
Patterson, William James, Driving Creek, Coromandel.
White, F. H., Kuaotunu.

Certificates of Competency granted to Holders of Provisional Warrants under Section 32 of the Mining Act Amendment Act, 1896.

Allen, W. J., Coromandel.
*Barney, Montague T., Waitekauri.
Collins, Charles, Waitekauri.
Gardner, James, Waimangaroa.
Howe, Albion S., Waitekauri.
Johnson, Frank H., Collingwood.
Murphy, Joseph, Coromandel.
O'Brien, John, Westport.
Prescott, Arthur J., Coromandel.
Ruffin, Richard, Manaia, Coromandel.

Certificates of Service issued under the Mining Amendment Act, 1910.

Adams, Albert Augustine, Thames.
*Adams, R. W., Thames.
Brabyn, John, Clarendon.
Butcher, F. J., Waitekauri.
Gillan, Thomas, Thames.
Grace, Pierce, Waitekauri.
Hansen, Charles Hans, Puketui.
Hayes, James, Thames.
Iles, E. J., Bannockburn.
Inglis, Robert, Kuaotunu.
Lynch, James, Glenorchy.
McKenzie, D., Georgetown.
Reid, George, Glenorchy.
Reynolds, Edmond Francis, Coromandel.

ALLUVIAL MINE-MANAGER'S CERTIFICATE.

Certificate of Service issued under the Mining Act, 1908.

Toole, William Hopwood, St. Bathan's.

BATTERY SUPERINTENDENTS' CERTIFICATES.

Issued under the Mining Act Amendment Act, 1894, without undergoing Examination.

Aitken, R. M., Reefton.
*Banks, Edwin Gripper, Waihi.
McKenna, T. N., Tararu.
McLellan, William, Waitekauri.
Noble, James R., Karangahake.
Park, James, Thames.
Shepherd, Henry Franklin, Waihi.
Sims, C. F., Tararu.

Issued after Examination under the Mining Act Amendment Act, 1894.

Adams, A. A., Thames.
*Allen, F. B., Thames.
Allom, H. O., Thames.
Ansley, Comyn, Paeroa.
Ansley, Walter, Thames.
Banks, J. H., Waihi.
Bowers, W., Thames.
Brown, A. E., Thames.
*Day, A. T., Thames.
Dixon, Clement, Waihi.
*Gray, J. W., Waihi.
Lee, J. W., Reefton.
Noakes, H. L., Waihi.
*Stafford, B. H., Waihi.
Thorpe, A. H., Thames.
Vercoe, R. B., Thames.
*Williams, A. G. R., Thames.

Issued after Examination under the Mining Acts, 1898, 1905, 1908, and 1926.

Adams, J. H., Thames.
Adams, Richard W., Tararu, Thames.
Airey, Hubert, Karangahake.
*Allen, D. V., Thames.
*Allen, H. E., Wellington.
Anderson, David, Waihi.
Andrews, T. T., Waihi.
Auld, J. B., Crushington.
Baker, W. H., Thames
*Banks, C. A., Waihi.
*Banks, E. J., Thames.
Banks, J. G., Waikino.
Bell, Oswald, Waihi.
*Bidlake, A. E., Waiomio.
Bird, A. W., Thames.
Bishop, T. O., Reefton.
Blackadder, William, Crushington.
Bradley, R. J. H., Karangahake.
Brown, F. M., Karangahake.
Buckley, L. E., Waihi.
Bush, E. F., Parawai.
Bush, George Arthur, Karangahake.
Bush, H. R., Thames.
*Campbell, Colin, Thames.
Carless, Noel, Waihi.
Carter, Harry Francis, Waihi.
Chappell, G. A., Karangahake.
Clark, John L., Waihi.
Clarke, Thomas, Waihi.
Clifton, Leslie, Waikino.
Cowles, R. K., Crushington.
Crawford, H., Macrae's.
Crompton, H., Maratoto.
Croucher, Herbert, Waihi.
Dawson, B., Ellerslie.
Donnelly, Thomas, Waihi.
Donovan, Willie, Waikino.
*Eaton-Turner, Geoffrey William, Waihi.
Ellery, W. V., Waiuta.
*Evans, J., Waihi.
Ewen, H. F., Auckland.
Fletcher, H. T., Katikati.
Flannigan, T. F., Big River, Reefton.
Fry, Sidney, Westport.
*Gibson, William, Waihi.
*Gilpin, J., Waihi.
Gilooly, T., Roxburgh.
*Gow, E. A., Crushington.
Gwilliam, Benjamin, Karangahake.
Halliwell, L. V., Karangahake.
Hargreaves, E. P., Waihi.
Hay, Adam, Karangahake.
Hazard, T. R. C., Waitekauri.
*Hogg, B., Karangahake.
Hogg, T. R., Karangahake.
Horne, P. D., Waikino.
Hoyle, H. E., Thames.
Hutchison, R. M., Karangahake.
*Johnson, Edward, Waihi.
Jones, J. W., Waikino.
Jones, R. D., Karangahake.
*Keoghan, J. A., Waihi.
Kidd, R. B., Waitekauri.
Kingsford, A., Karangahake.
Kingsford, C., Waihi.
Kitching, L. J., Thames.
Launder, G. H., Waitekauri.
Lawless, L. J., Paeroa.
Lawn, H., Reefton.
Littlejohn, W. D., Karangahake.
Mann, C., Westport.
Maxwell, W. L., Waihi.
*McDonall, P. H., Waihi.
McEwin, J. A., Reefton.
McKinlay, John, Waihi.
McNeil, A. R., Karangahake.
McPadden, J., Coromandel.
*Melrose, P., Waihi.
Metcalfe, G. H., Karangahake.
*Morgan, Robert James, Waihi.
Moyle, W. T., Upper Tairua.
*Orbell, G. S., Waikouaiti.
*Orr, F. S., Waiuta.
Paltridge, F., Thames.
*Penseler, W. H. A., Dunedin.
Pond, H. C., Auckland.
Quintrell, Sidney B., Waiuta.
Reynolds, E. A., Auckland.
Roberts, H. C., Waihi.
Rollinson, H. G. V. B., Waikino.
Rosewarne, R. H., Thames.
Royse, W. G., Reefton.
Sanderson, F. L., Waiuta.
Sanford, A. G., Waihi.
Saunders, A. J., Waiuta.
Shaw, D. S., Waikino.
Shaw, L. J., Waikino.
*Stephens, H., Dunedin.
Sutherland, J. A., Reefton.
*Thomson, G. W., Bendigo.
*Thurlow, J. R., Coromandel.
Tomlinson, A., Karangahake.
Tomlinson, W. F., Dunedin.
*Ulrich, G. A. C., Komata.
Ulrich, Herstall, Whangapoua.
Walker, Alfred James Dickson, Waihi
Walsh, Arthur James, Waihi.
Watson, A. B., Waitekauri.
Watson, A. P., Crushington.
Watson, J. P., Reefton.
Watson, J. R., Reefton.
Watson, W. A., Crushington.
Wearne, W., Reefton.
White, A. S. H., Karangahake.
*White, E. D., Karangahake.
Williams, A. C., Waihi.
Williams, James, Reefton.
Williams, Joseph, Reefton.
*Williams, William Eustace, Waihi.
Wilson, A. P., Crushington.

* Out of New Zealand.

DREDGEMASTERS' CERTIFICATES.

Issued without Examination under the Mining Act, 1898, and Amendment Acts, 1901 and 1902.

Anderson, L. C., Alexandra.
Andrews, Ralph, Canvastown.
Baker, J. R., Alexandra.
Ballantyne, D., Miller's Flat.
Barnes, T. J., Beaumont.
Bradley, Neil, Alexandra.
Bennett, George, Gore.
Bennett, James, Kumara.
Brand, Peter, Waikaka.
Brennan, Phillip, Palmerston South.
Bremner, A. P., Lower Shotover.
Brice, William H., Cromwell.
Bringans, D., Alexandra.
Brown, T. G., Ahaura.
Bunting, James, Murchison.
Butler, Ewen, Roxburgh.
Butler, M. J., Kanieri.
Cameron, Samuel, Alexandra.
Clarke, Edward, Port Chalmers.
Compton, Albert, Dobson.
Cormack, W., Greymouth.
Cornish, J. T., Miller's Flat.
Coutts, Henry, Miller's Flat.
Cowan, Alexander, Stillwater.
Crookston, W. L., Three - channel Flat.
Cumming, J. C., Beaumont.
Cutton, W. H., Dunedin.
Deniston, R. A., Cromwell.
Donaldson, J. G. A., Greenstone.
Faithful, William, Greymouth.
Foohy, J. M., Alexandra.
Gibb, William, Croydon Siding.
Gibson, A., Island Block.
Graham, J. M., Gore.
Grogan, William A., Miller's Flat.
*Hedley, A., Cromwell.
Herbert, J., Beaumont.
Hewitt, James, Clyde.
Hoskins, Thomas, Maori Point.
Hoy, Samuel, Alexandra.
Inwood, W. J., Rocklands Beach.
Johnston, E. A., Alexandra.
Johnstone, Alexander, Cromwell.
Kitto, Edward T., Miller's Flat.
Kitto, Francis, Lowburn.
Kitto, J., Lowburn Ferry.
*Ledingham, J., Bannockburn.
Lee, George, Collingwood.
Lidicoat, R. H., Fern Flat.
Luke, S. J., Alexandra.
Magnus, A., Roxburgh.
Magnus, Olaf, Christchurch.
Mailer, John, Stillwater.
Maitland, A. E., Miller's Flat.
McClure, F. C., Rongahere.
McCormack, D., Kanieri.
McDonald, E. A., Waitiri.
McDonald, J., Sofala.
McDonald, John, Cromwell.
McGeorge, Alexander, Dunedin.
McGregor, D., Kanieri.
McGregor, G. R., Alexandra.
McIntosh, D. J., Lowburn Ferry.
*McLean, D., Waitiri.
McMath, D. C., Ross.
*McMath, Thomas, Alexandra.
Mills, Edward, Murchison.
Mitchell, D. A., Dunedin.
Morel, C. G., Inangahua Junction.
Morris, G. C., Cromwell.
Murray, D., Clyde.
Murray, Madget, Cromwell.
Neilson, S., Miller's Flat.
O'Leary, D., Waiau.
Olsen, Charles, Roxburgh.
Parsons, J. D., jun., Clyde.
Percy, John, Clyde.
Perkins, A. C., Dunedin.
Pettigrew, George, Nelson Creek.
Poulter, G. W., Alexandra.
Pringle, John, Miller's Flat.
Ray, J. C., Totara Flat.
Reeder, Philip, Bald Hill Flat.
Rennie, Andrew, Roxburgh.
Ross, Alexander, Cromwell.
Ross, Robert, Alexandra.
Richmond, J., Gibbston.
Ritchie, J. S., Waitiri.
Sanders, H. P., Clyde.
*Sanders, John, Cromwell.
Schaumann, H., Alexandra.
Scott, M. G., Alexandra.
Scott, Robert, Capleston.
Shore, William, Gore.
Simonsen, Charles, Alexandra.
Sligo, N. K., Ahaura.
Steel, Archibald, Kawarau Gorge.
Steel, Thomas, Dunedin.
Templeton, Ivie, Rongahere.
Thompson, T., Miller's Flat.
*Troy, G. C., Cromwell.
Turnbull, W. D., Canvastown.
Tyson, John, Rongahere.
Von Haast, J. H., Clyde.
Wallace, John A., Miller's Flat.
Weaver, Charles, Alexandra.
Williamson, R., Miller's Flat.
Williamson, Walter, Miller's Flat.
Wood, R. M., Cromwell.
Woodhouse, W. S., Roxburgh.
Young, Andrew, jun., Roxburgh.

Issued after Examinaion under the Mining Acts, 1898, 1901, 1902, 1905, and 1908.

Anderson, Andrew, Alexandra South.
Anderson, G. B., Roxburgh.
Archer, D. J., Ngakawau.
Baird, William G., Clyde.
Bate, H. T. G., Greymouth.
Beaufort, William Vincent, Roxburgh.
Bishop, Hugh Arthur, Collingwood.
Blair, G., Abbotsford.
Borthwick, Robert, Alexandra.
*Bourke, John, Clyde.
*Brent, C. D., Cromwell.
Briggans, Thomas, Alexandra.
Briggans, William, Alexandra.
*Bruce, J. A., Kawarau Gorge.
Burley, J. P., Westport.
Burn ide, Walter, Alexandra.
Burton, A. P., Miller's Flat.
Callaghan, E., Three-channel Flat.
Campbell, G. W. T., Alexandra.
Carnegy, A., Three-channel Flat.
Carr, W., Alexandra.
Carter, W. W., Sandy Point.
Clark, D., Callaghan's Creek.
Clarke, R. S. B., Alexandra South.
Coup, George, Albert Town.
Cox, R. D., Alexandra.
Craig, D. A., Shag Point.
Curno, C. B., Alexandra.
Dalton, J. R., Three-channel Flat.
Dalzell, T. L., Cromwell.
Donaldson, John, Lawrence.
Downie, Henry, Totara Flat.
Eaton, Edgar W., Alexandra.
Elder, D. D., Roxburgh.
Fache, S. C., Gore.
Farmer, Nathan C., Miller's Flat.
Farquharson, George, Alexandra.
Filippi, S. de, Westport.
Findley, David, Dunedin.
Fisher, Hurtle, Miller's Flat.
Foley, S., Lowburn Ferry.
Forno, D., Inangahua Junction.
Fraser, W. J., Roxburgh.
French, T. E. K., Three-channel Flat.
Gibson, William H., Cromwell.
Gillooly, Thomas, Roxburgh.
Graham, Thomas Arthur, Gore.
Gunn, W. E., Beaumont.
Guy, Donald, Cobden.
*Guyton, James, Dunedin.
Hanning, C. J., Clyde.
Hansen, H. C., Three-channel Flat.
Harden, J., Stafford.
Harliwich, Matthew, Roxburgh.
Hepburn, D. O., Alexandra.
Hewetson, Sydney, Nelson Creek.
Holden, Charles, jun., Cromwell.
Holden, John, Cromwell.
Hughes, John L., Miller's Flat.
Johnston, John, Maori Gully.
Johnston, Louis, Beaumont.
Jones, David Rowland, Island Block.
Jones, T. R., Miller's Flat.
Junker, Frank J., Berlin's.
Kean, F. F., Waikaka.
Kellett, C. H., Dunedin.
Kennedy, A., Ophir.
Kitto, Henry, Alexandra South.
Kitto, John, Clyde.
Linney, William, Island Block.
Livingstone, D., Alexandra.
Lloyd, Arthur, Inangahua Junction.
Lloyd, Hubert, Lyell.
MacDonald, C. J., Cromwell.
MacGinnis, J. A., Cromwell.
MacGinnis, M. P., Alexandra.
MacLaren, John, Alexandra.
Marklund, C. O., Lowburn Ferry.
Mathews, James Hulbert, Miller's Flat.
Matthews, A. A., Three-channel Flat.
Mayne, W. C., Nelson Creek.
McCallum, W. S., Alexandra.
McDonald, C. J., Waitiri.
McDonald, G., Alexandra.
McGregor, Dougald S., Alexandra.
McKenzie, John, Roxburgh.
McKinnon, John, Alexandra.
Melvin, J. R., Roxburgh.
Merchant, Isaiah, Clyde.
Milne, John A., Roxburgh.
Moffit, R. W., Miller's Flat.
Mollison, William, Stillwater.
Moncrieff, Henry, Miller's Flat.
Monson, C. H., Miller's Flat.
Morel, A. E., Noble's.
Morel, L. H., Inangahua Junction.
*Morgan, Harold, Roxburgh.
Morgan, John, Alexandra.
Morris, V., Cromwell.
Mouat, W. G., Greymouth.
Munro, C. T., Waitiri.
Munro, Hugh, Alexandra South.
Munro, R. F., Ross.
Murray, H. B., Cromwell.
Murray, Robert John, Canvastown.
Nelson, Edgar, Brunnerton.
Nelson, George L., Brunnerton.
Newick, Albion Edgar Charles, Bannockburn.
Nicholson, Charles S. G., Mataura.
Noble, William, Alexandra.
Omond, Thomas, Nevis.
Orkney, H. E., Cromwell.
Orr, H. T., Cromwell.
Orr, William W., Cromwell.
Parker, P. R., Roxburgh.
Paterson, J. B., Miller's Flat.
Patterson, J., Clyde.
*Plumb, E. H., Maori Point.
Rait, Hume, Albert Town.
Ray, J. F., Bannockburn.
Ray, Robert Marshall, Bannockburn.
Reiderer, Edward, Cromwell.
Roberts, G., Three-channel Flat.
Robertson, D. J., Alexandra.
Robertson, W. R., Alexandra.
Rooney, J. B., Roxburgh.
Rumble, Charles, Ngahere.
Rumble, Joseph, Miller's Flat.
Sanders, W. J., Ahaura.
Saunders, C. E., Cromwell.
Sawle, J., Cromwell.
Sawyer, J. F., Alexandra.
Sherwood, T. W., Greymouth.
Simpson, Edward Robert, Cromwell.
Sparrow, J. A., Upper Nevis.
Steele, Thomas, Alexandra.
Steele, W. H., Miller's Flat.
Taylor, Alexander, Alexandra.
Taylor, J. T., Dunedin.
Theyers, C., Alexandra.
Theyers, J. W., Alexandra.
Vickerman, E. M., Cromwell.
Walker, J. J., Alexandra South.
Wasserbrenner, M., Alexandra.
Wathen, James, Miller's Flat.
Watson, E. H., Collingwood.
Weir, R., Gore.
*Weir, T. R., Cromwell.
Weir, W., Nevis.
Wescombe, Alfred L., Island Block.
Westcott, P. A., Miller's Flat.
Williams, Frederick, Alexandra.
Wilson, George, Marsden.
Wilson, Stephen L., Inangahua Junction.
Woodhouse, F., Bannockburn.
Wylde, G. R., Inangahua Junction.

* Out of New Zealand.

DREDGEMASTERS' CERTIFICATES UNDER THE MINING ACT.

Endorsed as Class A Certificates under Section 11 (6) of the Mining Amendment Act, 1927.

French, Thomas Edward Kerswell, Murchison.
Gillooly, Thomas, Roxburgh.
Mitchell, David Alexander, Okarito.
Mouat, William Gilbert, Howard, via Nelson.

MINING AMENDMENT ACT, 1927.

Dredgemasters' Class A Certificates (issued after Examination).

Anderson, Edward Thomas, Dunedin.
Chapman, Samuel, Christchurch.
Foley, Edward, Westbrook, Kumara.
Gillooly, T. B., jun., Murchison.
Hamer, Frederick Robert, Cardrona.
Hawley, J. W. T., Murchison.
Hepburn, W. B., Alexandra.
Holden, A., Murchison.
*Lyon, S. G., Murchison.
McFelin, F., Queenstown.
Matheson, A. N., Cromwell.
Orr, William James, Murchison.
Peyton, S. L., Murchison.
Speed, R. O., Murchison.
Tohill, J., Christchurch.
Werner, H. J., Alexandra.
Williamson, Andrew, Cromwell.

Dredgemasters' Class B Certificates (issued after Examination).

Anderson, J. A., Invercargill.
Archer, A. D., Hokitika.
Archer, R. J., Ikamatua.
Browne, E., Hokitika.
Buckland, H. J., Cronadun.
Caithness, A. J., Kokiri.
Caithness, D., Upper Nevis.
Cook, A. Y., Waimumu.
Cummings, W., Fleming.
Curnow, N., Nelson Creek.
Fanning, F. E., Kororo.
Fischer, A., Ngahere
Gillooly, T. B., jun., Murchison.
Gollop, C. E., Kokiri.
Griffin, J. P., Hokitika.
Hay, M. A., Hokitika.
Hepburn, W. B., Okarito.
Horrack, J. W., Greymouth.
*Hurst, T. E., Barrytown.
Jellie, D. C., Stafford.
Jensen, C., Gillespie's Beach.
Keith, A., Ngahere.
*Lynch, J. A., Dunedin.
Mitchell, S. D., Barrytown.
Marslin, W., Dunedin.
McAlpine, W. H., Mawheraiti.
McKay, W. G., Greymouth.
McPherson, B. B., Reefton.
McRae, D., Ngahere.
Poole, R. S., Greymouth.
Samson, A. J., Hokitika.
Smith, P. D., Christchurch.
Sutherland, D., Gillespie's Beach.
Tibbles, G. J., Ikamatua.
Turner, E. T., Atarau.
Williamson, J., Dunedin.

Dredgemasters' Class B Service Certificates.

Jones, F., Nevis.
Lewis, F. B.,Hokitika.
O'Brien, W., Naseby.
Pettigrew, D. M., Hokitika.
*Speed, R. O., Wellington.

Issued on Production of Certificate from a Recognized Authority outside the Dominion.

*Bridson, T. Haldane.
*Lyon, S. G., Murchison.
Pearson, G. A., Parawa.
Smail, R. L., Freshford.
Walker, A., Caversham, Dunedin.

OIL-WELL MANAGERS' SERVICE PERMITS.

Issued under the Regulations under the Mining Acts, 1908 and 1926.

Belcher, W. T., New Plymouth.
Bender, Elmore William, New Plymouth.
Bisset, G., Glen Massey.
Brown, N. I. W., Kauana.
Cristensen, N., New Plymouth.
*Davis, James Amos, Kotuku.
*Hart, S. P., Gisborne.
Hanchman, J. E. W., New Plymouth.
Huse, William C. E., New Plymouth.
Launder, R. H., New Plymouth.
McKay, J., Motukawa.
O'Dowda, B. C., New Plymouth.
Pedersen, Krysfeldt Emar, Murchison.
Rawlinson, J. W., New Plymouth.
Rutherford, A. E., New Plymouth.
*Shipley, Edward Lester, New Plymouth.
Taylor, Charles Norman, Island Bay, Wellington.
*Thompson, J. R., Morere.
*Thompson, Perry Delorm, Tokomaru Bay, Gisborne.
*Tynan, D. J., New Plymouth.
*Venneman, John Fred, New Plymouth.
*Wittekin, Ralph Oscar, New Plymouth.

* Out of New Zealand.

LIST OF PERSONS WHO HOLD CERTIFICATES UNDER THE COAL-MINES ACTS.

First-class Mine-managers' Certificates.

Issued under the Coal-mines Acts, 1886 and 1891.

Aitken, T., Wendon.
Love, A., Whangarei.
May, J., Greymouth.
Moore, W. J., Springfield.
Ord, J., Huntly.
Reed, F., Westport.
Smith, A. E., Nelson.
Smith, T. F., Nelson.
Sneddon, J., Mosgiel.
Taylor, E. B., Huntly.
Thompson, A., White Cliffs.

Issued under the Coal-mines Acts, 1886, 1891, 1905, 1908, and 1925, after Examination.

Adamson, J., Runanga.
Armitage, F. W., Auckland.
Armstrong, J., Brunnerton.
Armstrong, Valentine, Runanga.
Barclay, T., Kaitangata.
Baxendale, James, Reefton.
Bishop, T. O., Reefton.
Brown, J. C., Denniston.
Buist, Charles David, Roa.
Burt, A., Waihi.
Campbell, Peter, Fairfield.
Carson, Frederick, Kaitangata.
Carson, W., Kaitangata.
Colligan, A., Nightcaps.
Crockett, S., Millerton.
Crowe, W., Ngakawau.
Dale, R. T. H., Runanga.
Davies, W. C., Huntly.
Davis, O. J., Runanga.
*Dixon, C. W., Granity.
Dixon, W., Kaitangata.
Dromgool, A. A. W., Pukemiro.
Duggan, George, Burnett's Face.
Dunn, Andrew, Denniston.
Fleming, J., Kaitangata.
Fox, R. A., Denniston.
Forsyth, Matthew, Denniston.
Fry, Sydney, Waimangaroa.
Gibson, John, Westport.
Gillanders, A., Shag Point.
Gilbert, George, Millerton.
Glendenning, J. W., Dobson.
Green, E. R., Abbotsford.
Hadcroft, John, Puponga.
Hall, R., Petone.
Hamilton, J. S., Burnett's Face.
Hewitson, W. E. G., Burnett's Face.
Heycock, C. R., Nightcaps.
Heyes, Thomas, Kaitangata.
Hosking, G. F., Auckland.
Hughes, Job, Puponga.
Jebson, D., Canterbury.
Jones, T., Kimihia.
King, T., Granity.
*Langford, J. N., Ohai.
Leitch, W., Blackball.
Lewis, James Edwin, Ohai.
Lockington, F. E., Wallsend.
Lowes, George Wall, Reefton.
Makinson, Job, Huntly.
Marshall, R., Dobson.
McCaffrey, Patrick, Ferntown.
McGeachie, J., Mokau.
McLean, M., Ngakawau.
McLelland, James, Kaitangata.
McLelland, J. T., Ohai.
McMillan, A. E., Ohai.
McMillan, Thomas, Black's Point, Reefton.
Milligan, N., Westport.
Molony, C. V. P., Pukemiro Junction.
Mosley, J. T., Kaitangata.
Neilson, James, Blackball.
Newton, James, Brunnerton.
O'Donnell, Alphonsus, Roa.
Openshaw, A., Burnett's Face.
Outhwaite, P. M., Runanga.
Parsonage, W., Runanga.
Pendleton, Samuel, Blackball.
Penman, A., Huntly.
*Penseler, W. H. A., Huntly.
Quinn, H., Blackball.
Reid, William Taylor, New Lynn, Auckland.
Schoen, R. H., Ohai.
Scoble, E. J., Waihi.
Smith, Albert, Denniston.
Smith, George, Denniston.
Smith, George, Fairfield.
Smith, Joseph, Denniston.
Strongman, C., Ngakawau.
*Talbot, H., Brunnerton.
Tattley, E. W., Huntly.
Taylor, A. H., Waikato.
Thomson, Thomas, Denniston.
Turner, G. F., Shag Point.
Watson, J. R., Huntly.
Wearn, R. J., Collingwood.
Westfield, C. H., Fairfield.
Whittlestone, A. W., Shag Point.
Young, T., Dunedin.

Issued under the Coal-mines Act, 1886, on Production of English Certificate.

Black, T. H., Waipori.
Hodgson, J. W., Ross.
Reed, F., Wellington.

Issued under the Coal-mines Acts of 1891, 1905, 1908, and 1925, on Production of Certificate from a Recognized Authority outside the Dominion.

Andrews, T. L., Rotowaro.
*Armstrong, John Eagleston, Stockton.
Blackbourn, C., Greymouth.
Brady, H., Dunedin.
*Broadhead, A. K., Ngakawau.
Brown, W., Blackball.
Clark, W., Blackball.
Davidson, Gavin, Blackball.
*Davies, D. J., Ngakawau.
Frame, Joseph, Kaitangata.
*Gascoigne, Errington, Huntly.
Geddes, Thomas, Ohai.
Gillick, J., Kaitangata.
Goold, A. L., Auckland.
Howard, T., Runanga.
Hunter, Peter, Ngakawau.
Hunter, Charles, Pukemiro.
Irvine, James, Dunedin.
James, Isaac Angelo, Westport.
Kane, D., Denniston.
Kirkwood, D., Coromandel.
Lamont, J., Devonport.
Lewis, W., Blackball.
Mark, W. S., Kaitangata.
McArthur, J., Granity.
McAvoy, H., Christchurch.
McGhie, Thomas, Stockton.
Morris, A., Huntly.
*Murray, Robert, Nightcaps.
Quinn, John Graham, Seddonville.
Robins, George Edmund, New Plymouth.
Ross, John, Dunedin.
Rosser, Thomas, Pukemiro.
Spence, John, Huntly.
*Thompson, Cyril, Brunnerton.
Watson, James, Greymouth.
Watson, John, Blackball.
Williams, Alfred David, Reefton.
Woods, William, Mokihinui.

Second-class Mine-managers' Certificates.

Issued under the Coal-mines Act, 1891.

Elliot, Joseph, Coal Creek.
Lobb, Joseph, Mokau.
McLaren, J. M., Thames.
Radcliffe, William, Reefton.
Sara, James, Reefton.
Thomas, James, Springfield.
Willetts, John Morris, Papakaio.
Young, William, Waimangaroa.

* Left New Zealand.

SECOND-CLASS MINE-MANAGERS' CERTIFICATES—*continued.*

Issued under the Coal-mines Acts, 1886, 1891, 1905, 1908, and 1925, after Examination.

Adamson, J., Greymouth.
Alborn, R. V., Reefton.
Allan, J., Brunner.
Archer, Frederick William, Stockton.
Austin, W. B., Sheffield.
Baird, J., Taylorville.
Ball, A., Kimihia
Banks, J. L., Reefton.
Barclay, Fred, Fairfield.
Barclay, T., Kaitangata.
*Barlow, E. J., Hikurangi.
Barnes, A. E., Shag Point.
Blair, R., Glen Massey.
Brazier, C. J., jun., Ohai.
Brennan, John, Kaitangata.
Broome, J., jun., Gore.
Brown, Robert, Kaitangata.
Buchanan, William, Ohai.
Burleigh, James Barr, Taratu.
Cadman, J., Hikurangi.
Cain, Alexander, Kaitangata.
Campbell, Peter, Fairfield.
Charles, E., Glentunnel.
Chippendale, John Samuel, Stockton.
Christie, James, Saddle Hill.
Coan, Ralph Charles, Rotowaro.
Colligan, Andrew, Nightcaps.
Cook, Leonard Cyril, Runanga.
Coppersmith, A., Denniston.
Corden, E., Burnett's Face.
Craig, John, Coal Creek Flat.
Crockett, S., Millerton.
Crump, R., Huntly.
Cunningham, J., Hikurangi.
Curren, V., Pukemiro Junction.
Currie, W. N., Pukemiro.
Curtis, C. D., Reefton.
Dale, E. G., Kaitangata.
Davies, W. C., Huntly.
Dixon, W., jun., Kaitangata.
Duffy, Frank, Burnett's Face.
Duncan, J. E., Kaitangata.
Duncan, John, Lovell's Flat.
Dymond, John, Millerton.
Farnworth, W., Dunollie.
Ferguson, A., Kaitangata.
Ferguson, G., Roa.
Fleming, R., Huntly.
Forsyth, Neil, Westport.
Fowler, Murray, Rapahoe.
Fox., R. A., Blackball.
Fox, Sidney Arthur, Stockton.
Gaskell, G., Westport.
Godden, R. L., Pukemiro.
Grierson, Joseph, Renown, Huntly.
Griffin, James C., Kaitangata.
Harris, A., Saddle Hill.
Hector, W., Runanga.
Hewison, S., Dunollie.
Hewitson, W. E. G., Burnett's Face.
Heycock, C. R., Nightcaps.
Heyes, T., Kaitangata.
Hodson, John, jun., Bannockburn.
Hughes, Job., Roa.
Hunter, A., Southland.
James, Isaac, Kaitangata.
Johnson, E., Pukemiro.
Johnston, W., Pukemiro.
Jones, Ernest George, Millerton.
Jones, H., Huntly.
Kells, F. H., Denniston.
*Kelly, J., Runanga.
Lees, T. W., Glen Massey.
Leonard, James William, Huntly.
Lewis, David, Puponga.
Lewis, J., Nightcaps.
Lindsay, J. B., Orepuki.
Lockington, F. E., Burnett's Face.
Mackay, Donald, Ohai.
Marshall, R., Dobson.
Makinson, Job, Huntly.
Mason, Edward, Nightcaps.
Mason, James, jun., Nightcaps.
McAllister, Neil, Kaitangata.
McCormick, Thomas, Reefton.
McDonald, R., Milton.
McIlwain, John, Denniston.
McLean, R., Reefton.
McLelland, A. C., Kaitangata.
McLelland, J., Kaitangata.
Mills, Walter, Huntly.
Monaghan, Henry, Millerton.
Morganty, Louis, Ngakawau.
Mosley, J. T., Stirling.
Neilson, J., Runanga.
Neilson, Moffat, Abbotsford.
Newburn, S., Kaitangata.
Nicholson, David, Huntly West.
Nimmo, A., Ngapara.
Openshaw, Arnold, Westport.
Orr, Hugh, Fairfield.
O'Rourke, William, Granity.
Outhwaite, P. M., Greymouth.
Parcell, W., jun., Bannockburn.
Parfitt, William, Millerton.
Patterson, J. W., Burke's Creek.
Peattie, P. T., Huntly.
Penman, C. P., Kaitangata.
Penman, J., Hikurangi.
Price, F. J., Burnett's Face.
Queen, J. J., Burnett's Face.
Quinn, H., Blackball.
Roberts, John Russell, Stockton.
Robertson, J., Nightcaps.
Scoble, E. J., Blackball.
Smith, Frederick, Rotowaro.
Smith, J. W., Puponga.
Snow, T., Mercer.
Tansey, Michael Joseph, Hikurangi.
Taylor, Joseph, Collingwood.
Thompson, Joseph, Blackball.
Thomson, D. B., Huntly.
Thomson, James, Nightcaps.
Todd, T., Nightcaps.
Turner, G. T., Reefton.
Turton, John, Huntly.
Tweedie, J., Huntly.
Waldie, A. B., Mokau.
Walls, James, Benhar.
Watson, A., Soldier's Creek.
Westfield, C., Fairfield, Otago.
Whittlestone, A. W., Shag Point.
Whittlestone, G. F., Abbotsford.
Williams, J. M., Reefton.
Williamson, G., Glen Massey.
Wilson, R., Pukemiro.
Woods, A., Millerton.
Wright, Thomas, Huntly.
Wykes, Alfred, Huntly.

Issued under the Coal-mines Acts of 1891, 1905, 1908, and 1925, on Production of Certificate from a Recognized Authority outside the Dominion.

Baxendale, J., Mine Creek.
Black J., Granity.
Boyd, J., Hikurangi.
Brown, John W., Hikurangi.
Brownlie, John, Huntly.
Burley, T., Hikurangi.
Burt, A., Huntly.
Christopher, Richard William, Greymouth.
Cross, G., Hikurangi.
Dickinson, W., Gore.
Dodd, W., Granity.
Eyeington, G., Huntly.
Ford, John Robert, Nightcaps.
Glendenning, J. W., Dobson.
Graham, D., Huntly.
Graham, Robert, Huntly.
Gray, James, Runanga.
Grenall, S., Granity.
Hall, Richard, Dobson.
Jones, T., Kimihia.
Kerr, D., Collingwood.
Lennox, W., Springfield.
Little, W., Wellington.
Littlewood, G. G., Denniston.
McCall, John, Wellington.
McGeachie, J., jun., Mokau.
McGuire, P., Mount Somers.
McGuire, William, Seddonville.
McHardy, A. J., Ferntown.
Molony, C. V. P., Auckland.
Morgan, H. L., Ngakawau.
Myers, T., Kiripaka.
Newburn, F., Roa.
Paterson, W., Christchurch.
Parsonage, W., Dunollie.
Penman, A., Huntly.
Provan, P., Runanga.
Reid, William Taylor, Star Town, Huntly.
Robertson, R., Roa.
Ross, John Hikurangi.
Sneddon, J., Blackball.
Strachan, J., Dunedin.
Talbot, H., Huntly.
Tervit, Alexander, Frankton Junction.
Tipton, Harry, Hikurangi.
Watson, John, Roa.
Webster, Arnold, Huntly.
Westhead, Frederick, Papakura.
Wilson, R., Ohai.
Yates, Thomas, Huntly.

MINE-SURVEYORS' CERTIFICATES.

Issued without Examination under the Coal-mines Act, 1925.

Andrews, T. L., Rotowaro.
Bryce, R., Dunedin.
Dale, Roger Thomas Hilton, Kaitangata.
Davies, Harold, N., Mount Eden, Auckland.
Dromgool, A. A. W., Auckland.
Flyger, Stanley Arthur, Glen Afton.
Geddes, Thomas, Ohai, Southland.
Gibson, J. A., Rotowaro.
Green, Eric Wallace, Wellington.
Kennedy, Ernest William, Runanga.
McIntyre, A. C., Thornton.
Schoen, R. H., Ohai.
Shand, N. M., Denniston.
Turner, William Herbert, Petone.

* Left New Zealand.

MINE-SURVEYORS' CERTIFICATES—*continued.*

Issued after Examination.

Edginton, Bernot Ewart, Dunedin.
Glendenning, James William, Glen Afton.
Hill, William Edward, Kaitangata.
Inglis, William Carrick, Pukemiro.
Langford, James Newton, Ohai.
Lennox, Gordon Murray, Renown.
Littlejohn, Herbert Clifford, Ngaruawahia.
Outhwaite, P. M., Runanga.
Rennie, John, Millerton.
*Samuel, John Thomas, Dunedin.
Watson, John Reginald, Huntly.

First-class Mine-managers' Certificates endorsed under Regulation 8 (3), under the Coal-mines Act, 1925.

Armstrong, James, Runanga.
Armstrong, Valentine, Runanga.
Baxendale, James, Auckland.
Brown, John Connel, Westport.
Buist, Charles David, Roa.
Burt, Andrew, Pukemiro.
Carson, Frederick, Kaitangata.
Carson, William, Kaitangata.
Crowe, William, Nelson.
Davidson, Gavin, Hikurangi.
Davies, Wilfred Charles, Huntly.
Davis, Oliver James, Reefton.
Duggan, George, Dunedin.
Forsyth, Matthew, Seddonville.
Fry, Sidney, Brunnerton.
Gilbert, George, Millerton.
Gillanders, Alex. S., Shag Point.
Hadcroft, John, Lovell's Flat.
Hewitson, W. E. G., Denniston.
Hill, Robert, Green Island.
Howard, Thomas, Runanga.
Hughes, Job, Dobson.
Hunter, Charles, Rotowaro.
Hunter, Peter, Glen Afton.
James, Isaac Angelo, Greymouth.
King, Thomas H., Runanga.
Leitch, Walter, Dobson.
Lowes, George Wall, Mahakipawa.
McGhie, Thomas, Ngakawau.
McMillan, Thomas, Ohai.
Makinson, Job., Hikurangi.
Molony, C. V. P., Pukemiro Junction.
Morris, Arthur, Ohai.
Mosley, John Thomas, Ohai.
*Murray, Robert, Ohai.
Neilson, James, Blackball.
O'Donnell, Alphonsus, Roa.
Parsonage, William, Blackball.
Pendleton, Samuel, Rotowaro.
Penman, Alexander, Rotowaro, Huntly.
Ross, John, Ohai.
Smith, Albert, Millerton.
Smith, George, Brunnerton.
Strongman, Charles James, Granity.
Talbot, Henry, Avoca.
Tattley, E. W., Auckland.
Taylor, Alfred Henry, Hikurangi.
*Thompson, Cyril, Brunnerton.
Thomson, Thomas, Ngaruawahia.
Watson, John, Rotowaro.
Whittlestone, Arthur William, Denniston.
Wood, William, Reefton.

UNDERVIEWERS' CERTIFICATES.

Certificates of Service issued under the Coal-mines Amendment Act, 1909.

Allan, James, Puponga.
Barry, A. H., Huntly.
Bond, John, Waikaia.
Boustrage, T. Hubert, Brunnerton.
Broome, James, Gore.
*Clough, Henry, Millerton.
Davidson, William, Mine Creek.
Donaldson, James, Kaitangata.
Flynn, John, Bannockburn.
Green, Richard, Abbotsford.
Hunter, Peter, Ngakawau.
Johnston, William Crowan, Gore.
Marsh, Charles George, Glentunnel.
McAlister, Robert, Kaitangata.
McNeill, William, Fairfield.
Nimmo, William, Ngapara.
Penman, John, Denniston.
Proctor, William, Kaitangata.
Robertson, William, Mosgiel.
Todd, Thomas, Nightcaps.
Walker, John, Blackball.
Williams, William, Kaitangata.
Wilson, Daniel, Kaitangata.

Issued under the Coal-mines Amendment Act, 1909, and the Coal-mines Act, 1925, after Examination.

Ainscough, William Huntly.
Airns, Abraham, Dunollie.
Alborn, R. V., Reefton.
Allison, John, Pukemiro.
Anderson, James, Denniston.
Anderson, Robert, Rewanui.
Archer, F. W., Capleston.
Armstrong, V., Runanga.
Astbury, Harold, Huntly.
Baird, John, Cobden.
Balderstone, William, Blackball.
Banks, James Lewis, Reefton.
Barclay, J. G., jun., Fairfield.
Barker, Richard, Dunollie.
Barlow, Eli John, Hikurangi.
Bell, Thomas, Huntly.
Berry, A. H., Huntly.
Bird, Christopher, Rotowaro.
Bird, Robert William, Ohai.
Black, David Livingstone, Pukemiro.
Blair, Robert, Glen Massey.
Bland, David Edger, Pukemiro.
Blyth, William, Millerton.
Boddy, A. J., Rewanui.
Bond, Edwin, Huntly.
Bowman, Robert James, Taylorville.
Brady, George, Blackball.
Brennan, John, Kaitangata.
Brown, William, Glen Afton.
Buist, Charles David, Roa.
Burchfield, Walter, Granity.
Burleigh, James Barr, Orepuki.
Burnie, William, Glen Massey.
Bullough, Ernest, Rotowaro.
Byers, William, Glen Massey.
Cain, A., Kaitangata.
Cannings, George McFarlane, Millerton.
Carson, F., Kaitangata.
Chippendale, John, Westport.
Clark, W. S., State Collieries.
Coan, Ralph Charles, Huntly.
Cohen, Ernest, Capleston.
Cook, Leonard, Runanga.
Coppersmith, Edward, Denniston.
Corden, E., Burnett's Face.
Cowan, Thomas, Huntly.
Cowan, William, Millerton.
Crawford, William, Glen Massey.
Croad, A. N. S., Dobson.
Crump, Robert, Huntly.
Curran, Valentine, Pukemiro.
Curran, John William, Huntly.
Dayne, Robert Desmond, Runanga.
Doel, Alfred James, Hikurangi.
Dowgray, John, Granity.
Duffy, F., Burnett's Face.
Duggan, John, Runanga.
Dunn, Samuel, Pukemiro.
Dyet, William, jun., Kaitangata.
Dymond, John, Mine Creek.
Eckersley, William Hampson, Roa.
Etheredge, J. E., Reefton.
Ewen, R. J., Runanga.
Farnworth, William, Dunollie.
Fenton, John William, Kaitangata.
Fleming, Gavin, Pukemiro.
Fleming, Robert, Glen Afton.
Foot, Sydney George, Hikurangi.
Forsyth, Matthew, Denniston.
Fowler, Murray, Blackball.
Fox, Sidney Arthur, Denniston.
Gardner, Matthew, Pukemiro Junction.
Gaskill, Gilbert, Westport.
Gilbert, George, Millerton.
Glendenning, Thomas, Runanga.
Goldthorpe, George, Pipiroa.
Green, John Allen, Huntly.
Grierson, Joseph, Waikokowai.
Griffin, J., Kaitangata.
Griffiths, Norman George, Runanga.
Hadcroft, John, Dunollie.
Hadcroft, Harold, Runanga.
Hall, Alfred, Kaitangata.
Hall, David, Huntly.
Hall, Thomas, Huntly.
Hall, Thomas, Kaitangata.
Harrie, Leslie, Reefton.
Hector, William, Runanga.
Heward, Nathan, Runanga.
Hewison, Sydney, Dunollie.
Hewitson, W. E. G., Burnett's Face.
Hodge, William, Pukemiro.
Honey, A. J., Burnett's Face.
Honey, J. R., Huntly.
Hughes, T. G., Huntly.
Hunter, Peter, Stockton.
Hutchinson, Ivanson, Huntly.
Inglis, William Carrick, Pukemiro.
Jack, W., Millerton.
Jamieson, A. C., Blackball.
Jenkinson, Alfred, Runanga.
Johnson, Edward, Pukemiro.
Johnston, C. M., Seddonville.
Johnston, William, Pukemiro.
Joines, Frank Edward, Pukemiro.
Jones, Ernest George, Millerton.
Jones, Harold Wright, Mangatoi.
Jones, Harry, Kimihia.
*Kelly, John, Runanga.
Kelly, Henry Michael, Granity.
Kennedy, Ernest William, Runanga.
Kerr, David, Palmerston South.
Kerry, Edward, Huntly.
King, T. H., Granity.
Lees, Thomas William, Glen Massey.
Lennox, Andrew Lightbody, Renown.
Leonard, James William, Huntly.
Lockington, F. E., Denniston.
Longmuir, Richard John, Glen Massey.
Longstaff, Robert, Ngaruawahia.
Mackay, Donald, Ohai.
Maguigan, Thomas, Roa.
Makinson, J. Huntly.
Mann, John Henry, Dunollie.
Marshall, Robert, Dobson.

* Left New Zealand.

UNDERVIEWERS' CERTIFICATES—*continued.*

Issued under the Coal-mines Amendment Act, 1909, and the Coal-mines Act, 1925, after Examination—continued.

Marshall, William James, Dunollie.
Martin, C. R., Ngakawau.
McAuley, Robert Thomas, Kaitangata.
McCaig, William, Glen Afton.
McCormick, Thomas, Blackball.
McDonald, Thomas, Ngakawau.
McDonald, Robert, Milton.
McEwen, Harold Wallace, Stockton.
McIlwain, John, Denniston.
McIvor, D., Runanga.
McKernan, John, Millerton.
McLean, Archibald Kennedy, Kaitangata.
McLean, Malcolm, Granity.
McLean, Roderick, Reefton.
McLelland James Thompson, Ohai.
McLeod, J. G., Millerton.
McLiskey, Edward Kemp, Pukemiro.
McLuckie, John, Huntly.
McMillan, Albert Edward, Ohai.
McMillan, John, Huntly.
McNeish, J. A., Brunnerton.
Mercer, James, Burnett's Face.
Monaghan, Henry, Millerton.
Morganty, L., Stockton.
Morris, Harry, Burnett's Face.
Morrow, John, Denniston.
Moseby, Edward, Nightcaps.
Mosley, J. T., Denniston.
Mossop, Isaac, Runanga.
Nicholson, D., Huntly.
Nimmo, Allan, Ngapara.
Nimmo, Thomas, jun., Papakaio.
Niven, James Quinn, Ngakawau.
Olsen, Clarence Victor, Millerton.
Openshaw, Arnold, Blackball.
Orr, Charles Mann, Ohai.
O'Brien, D. Q., Mangatina.
O'Callaghan, W. J., Huntly.
O'Donnell, Alphonsus, Roa.
O'Loughlin, Leo Francis, Runanga.
O'Rourke, William, Granity.
Padfield, Charles, Rotowaro.
Parfitt, William, Millerton.
Patterson, Ernest, Reefton.
Patterson, James William, Reefton.
Peart, Frederick Smith, Millerton.
Peattie, P. T., Renown.
Pendleton, Samuel, Blackball.
Penman, John, Hikurangi.
Peterson, Nicholas, Blackball.
Philp, Thomas, Denniston.
Pollock, John Marshallvale, Denniston.
Rennie, John, Millerton.
Richardson, Ernest, Kaitangata.
Richardson, William, Taylorville.
Robb, Henry James, Whitecliffs.
Roberts, Eric Methven, Oamaru.
Rogers, James, Ngakawau.
Schoen, Reginald Hugo, Ohai.
Sharpe, John Russell, Taratu.
Shearer, William, Glen Afton.
Shedden, Robert M., Nightcaps.
Simpson, James Cochrane, Runanga.
Smith, Albert, Denniston.
Smith, Basil, Dunollie.
Smith, Frederick, Rotowaro.
Smith, George, Hikurangi.
Smith, Joseph, Denniston.
Smith, Joseph William, Denniston.
Snedden, William Hector, Kaitangata.
Stirling, Hugh Macfarlane, Huntly.
Stirling, James, Huntly.
Strang, James, Blackball.
Strongman, C. J., Cobden.
Sweeney, J. L., State Collieries.
Tennant, Alexander, Blackball.
Tansey, Michael Joseph, Tartown, Hikurangi.
Taylor, John Ralph, Roa.
Thomson, David B., Huntly.
Thomson, James, Huntly.
Tucker, J., Kaitangata.
Tunstall, Adam Gray, Hikurangi.
Tunstall, William, Hikurangi.
Turnbull, E. V., Thames.
Turner, Alfred, Kiripaka.
Turner, Joseph F., Huntly.
Turton, J., Huntly.
Tyson, Isaac, Runanga.
Waters, Thomas Edwin, Shag Point.
Watson, George, Huntly.
Weatherspoon, Peter, Huntly.
Welsh, Mervyn, E. A., Dunedin.
White, Edward, Ngaruawahia.
Whitelaw, James, Kaitangata.
Whittlestone, G. F., Abbotsford.
Wight, David, Millerton.
Wilcox, William, Pukemiro.
Wilkinson, Herbert, Pukemiro.
Williamson, George, Glen Massey.
Williamson, W. R., Rewanui.
Wilson, Robert, Huntly.
Woods, Albert, Granity.
Wright, Thomas, Huntly.
Wykes, Alfred, Huntly.

Certificates of Service issued under the Coal-mines Amendment Act, 1910.

Cuthbertson, Robert, Fairfield.
Evans, William, Abbotsford.
Fisher, T., Westport.
Gibson, M., Abbotsford,
Jones, W., Waikaka Valley.
Kitto, Richard, Kaitangata.
Manderson, P., Runanga.
Mann, D., Granity.
Mason, Edward, Kingston Crossing.
Mitchell, Alexander, Runanga.
Neill, S., Kawakawa.
Newburn, S., Kaitangata.
Statham, Robert, Kaitangata.
Walker, J. R., Brighton.

Issued under the Coal-mines Amendment Act, 1914, on Production of Certificate of Corresponding Class granted in any British Possession or Foreign Country.

Beal, George Frederick, Runanga.
Lees, Andrew, Huntly.
Martin, Elias, Ngakawau.
Middleton, Robert, Runanga.

FIREMEN AND DEPUTIES' CERTIFICATES.

Certificates of Service issued under the Coal-mines Amendment Act, 1909.

Aitken, George, Glentunnel
Allan, A. George, Abbotsford.
Allan, Charles, Brunnerton.
Berry, Albert Henry, Huntly.
Blaney, James, sen., Kaitangata.
Boyd, Robert, Waronui.
Bradley, Robert, Denniston.
Buchols, Joseph, Waikaka.
Burgess, William Charles E., Gore.
Callaghan, Frederick, Kiripaka.
Campbell, Samuel, Millerton.
Clausen, Emil P., Wellington.
Connew, John, Puponga.
Coppersmith, John, Denniston.
Cowan, Robert Black, Gibbston.
Cuthbertson, Robert, Fairfield.
Davis, Evan, Denniston.
Dellaway, Archibald, Denniston.
Dillon, Lawrence M., Nightcaps.
Duncan, Frank, Huntly.
Duncan, Hugh, Kaitangata.
Evans, William, Abbotsford.
Findlay, Charles, Denniston.
Foot, Frederick Ernest, Denniston.
Gibson, Matthew, Abbotsford.
Gibson, Robert, Millerton.
Gilmour, William, Millerton.
Glover, Richard, Runanga.
Gray, Thomas, Abbotsford.
Gribben, John, Kaitangata.
Hamilton, John, Hikurangi.
Hargreaves, Charles, Millerton.
Hay, James, Denniston.
Heron, Ralph, Kimihia.
Howe, George Charles, Shag Point.
Jarvie, William Marshall, Kaitangata.
Jaspers, George F., Denniston.
Jenkins, James, Ngakawau.
Johnston, C. Mountier, Seddonville.
Kaye, Charles, Runanga.
Kitto, Richard, Kaitangata.
Lutton, William, Millerton.
Mann, Duncan, Millerton.
Moncrieff, Thomas, Nightcaps.
Moore, Thomas, Mangatina.
Morganty, Charles, Ngakawau.
Murdoch, Colin McColl, Stirling.
McCaffrey, James, Seddonville.
McCaughern, John, Kaitangata.
McDonald, John T., Millerton.
McGhee, William, Kaitangata.
McGill, Douglas Thomas, Waikaka.
McGill, John, Huntly.
Newburn, Robert, Kaitangata.
Newburn, Samuel, Kaitangata.
Nicholas, William, Kaitangata.
Oliver, William, Kaitangata.
Parcell, Henry Clyde, Bannockburn.
Park, Francis, Stirling.
Sanderson, John, Kurow.
Scott, John, Runanga.
Smith, William, Seddonville.
Sneddon, James, Blackball.
Statham, Robert, Kaitangata.
Taylor, James, Springfield.
Thin, William, Whitecliffs.
Tripp, Albert, Kaitangata.
Wallace, John, Mataura.
Wardrope, Francis, Hikurangi.
Watson, Andrew, Roa.
West, George Thomas, Waronui.
Young, Thomas Gardner, Waikaia.

FIREMEN AND DEPUTIES' CERTIFICATES—*continued.*

Issued under the Coal-mines Amendment Act, 1909, and the Coal-mines Act, 1925, after Examination.

Abbott, Edward Arthur, Millerton.
Abercrombie, William, Huntly.
Adcock, Robert Henry, Ohai.
Airns, Abraham, Dunollie.
Alborn, Bernard M., Reefton.
Alborn, Norman Richard, Reefton.
Alborn, Roderick V., Reefton.
Allan, Andrew Baxter, Rotowaro.
Allan, James, Brunnerton.
Allen, Richard Thomas, Reefton.
Allison, David, Huntly.
Allison, John, Pukemiro.
Anderson, David Alexander, Kaitangata.
Anderson, David Alexander, jun., Kaitangata.
Anderson, James, Denniston.
Anderson, Robert, Abbotsford.
Anderson, Robert, Ohai.
Armstrong, V., Runanga.
Astbury, Harold, Huntly.
Atkin, William, Waikokowai.
Baird, John, Green Island.
Baird, John, Greymouth.
Baker, Thomas, Huntly.
Balderstone, William, Blackball.
Ball, A., Kimihia.
Banks, James Lewis, Reefton.
Barber, Robert, Shag Point.
Barclay, F., Kaitangata.
Barclay, James, Kaitangata.
Barclay, James Greig, Fairfield.
Barclay, Ralph Carse, Fairfield.
Barclay, Ralph Ewen, Fairfield.
Barclay, William John, Kaitangata.
Barker, Richard, Runanga.
Barnfield, Henry, Wairio.
Baxendale, Sidney, Renown.
Beardsmore, Abel, jun., Papakaio.
Beattie, George V., Nightcaps.
Beckley, Ronald Richard, Mt. Somers.
Bell, Harry, Stillwater.
Bell, John, Dobson.
Bell, Thomas, Huntly.
Bennett, Thomas, Burnett's Face.
Bennett, Thomas Low, Seddonville.
Berry, Willis, Dunollie.
Birchall, J., Burnett's Face.
Bird, Robert William, Ohai.
Bird, Christopher, Huntly.
Blair, Robert, Glen Massey.
Blair, Peter, Huntly.
Bland, David Edger, Pukemiro.
Blyth, William, Millerton.
Boddy, Archibald John, Runanga.
Bolam, George Francis, Huntly.
Bolger, John, Mataura.
Bond, Edwin, Huntly.
Bond, W. T., Huntly.
Bougher, Lawrence Wilfred, Kamo.
Bowman, Robert James, Taylorville.
Bowron, Christopher, Huntly.
Boyd, James Langwell, Huntly.
Brady, George Joseph, Blackball.
Brady, William Richard, Roa.
Braithwaite, Percy, Nightcaps.
Brazier, Charles James, Ohai.
Brennen, J., Kaitangata.
Briggs, William Henry, Renown.
Brittan, Christopher, Pukemiro.
Broad, Ernest Wairau, Whitecliffs.
Broadbent, Thomas, Huntly.
Bromilow, John, Runanga.
Brown, Archibald, Oturehua.
Brown, Clifford, Oamaru.
Brown, J., jun., Denniston.
Brown, John Robert, Runanga.
Brown, William, Glen Afton.
Brownlie, William Aitken, Denniston.
Bryson, John, Millerton.
Buchanan, William, Millerton.
Buist, Charles David, Roa.
Bullough, Ernest, Rotowaro.
Burchfield, Walter, Granity.
Burnett, William, sen., Reefton.
Burnett, William, jun., Reefton.
Burnie, William, Glen Massey.
Burrell, Horace Joseph, Ohai.
Burt, John, Millerton.
Burt, T., Huntly.
Butler, Samuel Arthur, Runanga.
Butler, Vincent, Roa.
Byers, William, Glen Massey.
Byrne, Edward Francis, Granity.
Cairns, Adam, Kaitangata.
Cairns, Donald, Hikurangi.
Cairns, James, Glen Afton.
Calder, Thomas, Ngakawau.
*Caldwell, Thomas, Blackball.
Callaghan, M., Blackball.
Cameron, Daniel, Greymouth.
Campbell, Archibald, Cobden.
Campbell, J. C., Glentunnel.
Campbell, John, Allanholme Colliery, Waimate.
Carruthers, Alexander Denton, Waronui, Milton.
Carson, Frederick.
Chadwick, A., Millerton.
Chadwick, George, Blackball.
Chapman, A. E., Kaitangata.
Charles, Ernest, Coalgate.
Charteris, James Thomas, Kaitangata.
Chetwynd, William, Taylorville, Brunnerton.
Chippendale, J., Millerton.
Clare, William, Pukemiro.
Clark, Alfred James, Blackball.
Clark, W. S., Dunollie.
Clarke, John, Millerton.
Clarke, S., Roa.
Cleveland, F. L., Kaitangata.
Coates, Wilfred, Taylorville.
Cochrane, David Hamilton, Hikurangi.
Cockfield, John, Denniston.
Coghlan, John Joseph, Cronadun.
Cohen, Ernest, Capleston.
Cole, Walter G., Glen Afton.
Colquhoun, John C., Rotowaro.
Colledge, A., Huntly.
Colligan, Andrew, Nightcaps.
Connolly, John Joseph, Runanga.
Connolly, John, Runanga.
Coppersmith, Alexander, Denniston.
Coppersmith, Edward, Denniston.
Coppersmith, William John, Denniston.
Cooper, J. J., Milton.
Corden, Ernest, Burnett's Face.
Cosgriff, Edward, Nightcaps.
Cowan, Alexander, Dobson.
Cowan, J., Millerton.
Cowan, Thomas, Huntly.
Cowan, William, Millerton.
Craig, James, Waimate.
Crawford, William, Glen Massey.
Critchley, Frank, Dunollie.
Crook, Henry, Rotowaro.
Cruickshank, P. G., Runanga.
Crump, Robert, Huntly.
Cumming, George, Denniston.
Cunningham, Joseph, Hikurangi.
Cunningham, Richard William, Whangarei.
Curragh, A., Burnett's Face.
Curran, Valentine, Pukemiro Junction.
Curran, John William, Huntly.
Curran, James, Ngakawau.
Currie, Thomas H., Runanga.
Currie, William Nichol, Pukemiro.
Curtis, Cecil Donald, Reefton.
Cuthbertson, John, Glentunnel.
Dalzell, Joseph, Runanga.
Dando, Walter, Brunnerton.
Danks, Peter, Millerton.
Davidson, James, Blackball.
Davidson, Thomas, Mine Creek.
Davies, F., Puponga.
Davies, Henry Hubert, Huntly.
Davies, Llewellyn, Burnett's Face.
Davies, Sydney, Glen Massey.
Davis, Oliver James, Runanga.
Dayne, Robert Desmond, Runanga.
Delaney, J. E., Puponga.
Dellaway, Thomas, Denniston.
Dick, Alexander Clark, Kaitangata.
Dickson, John, Ngakawau.
Dillon, Joseph, Blackball.
Dinsdale, George, Rewanui.
Dixon, Alexander Shearer, Ohai.
Dixon, Andrew Cunningham, Wairio.
Dixon, George Robert, Taylorville, Brunnerton.
Dixon, Matthew, Nightcaps.
Docherty, Edward, Rewanui.
Docherty, John Edward, Nightcaps.
Docherty, Samuel Valentine, Glen Massey.
Dodds, John, Dunedin.
Doel, Alfred James, Hikurangi.
Donaldson, John Brown, Ohai.
Dove, John Thomas, Seddonville.
Dover, William Niven, Ohai.
Dowgray, John, Millerton.
Duffy, Owen, Burnett's Face.
Duggan, John, Upper Rewanui.
Duggan, William, Runanga.
Dumelow, Frank, Greymouth.
Dunlop, James, Green Island.
Dunn, Samuel, Pukemiro.
Durkin, Thomas, Millerton.
Dyet, William, Balclutha.
Dymond, J., Millerton.
Eaton, Robert, Kaitangata.
Eckersley, W., Paparoa.
Edge, Albert Henry, Waikaka.
Edmond, Adam, Green Island.
Edwards, Alfred, Dobson.
Edwards, Arthur, Waro.
Edwards, F. J., Ohai.
Ehlers, F., Burnett's Face.
English, George, Runanga.
Erskine, G., Dobson.
Etheredge, J. E., Roa.
Ewart, John, Millerton.
Ewen, Richard James, Runanga.
Excell, Walter, Nightcaps.
Fairhurst, R. W., Huntly.
Fannigan, P., Ngakawau.
Farnworth, William, Dunollie.
Fauth, Frederick, Blaketown.
Fazakerley, John, Stirling.
Featherstone, Joseph Lovell, Pukemiro Junction.
Ferguson, A., Kaitangata.
Ferguson, Hugh, Nightcaps.
Ferguson, John Leishman, Ohai.
Ferguson, William, Wairaki.
Finlay, James, Reefton.
Finlayson, Robert, Millerton.
Fleming, James, Denniston.
Fleming, Robert Barclay, Denniston.
Fleming, Robert, Glen Afton.
Fleming, Gavin, Pukemiro.
Fletcher, Daniel, Huntly.
Foot, Ernest Alfred, Hikurangi.
Foot, Sidney George, Hikurangi.
Ford, John, Dodson.
Forrest, John, Runanga.
Forsyth, Neil, Westport.
Fowler, Murray, Blackball.
Freeman, Samuel Lawrence, Nightcaps.
Frew, W., Huntly.
Gage, Thomas, Kaitangata.
Gair, Robert, Glen Massey.
Gallagher, Percival J., Cronadun.
Gaskell, Gilbert, Denniston.
Gaudion, David Robertson, Waikaia.
Gaudion, Thomas Shade, Mataura.
Gavin, Hugh, Huntly.
Gibb, Alfred Boyd, Taylorville.
Gilligan, H., Runanga.
Gilmour, George, Millerton.
Gilmour, Peter, Millerton.
Glendenning, Thomas, Glen Afton.
Good, Andrew F., Kaitangata.
Gordon, George William, Huntly.
Gould, Edward, Denniston.
Gourlay, James Wallace, Blackball.
Gox, Henry John, Blackball.
Graham, John, Puponga.
Graham, Thomas Thomson, Mount Somers.
Graham, William, Hikurangi.

*Left New Zealand.

FIREMEN AND DEPUTIES' CERTIFICATES—*continued.*

Issued under the Coal-mines Amendment Act, 1909, and the Coal-mines Act, 1925, after Examination—continued.

Gray, John, Hikurangi.
Green, Albert, Pukemiro.
Green, George Edward, Huntly.
Green, John Allan, Huntly.
Green, T., Kaitangata.
Greenhorn, Alexander, Glen Afton.
Grierson, Joseph, Waikokowai.
Griffiths, George Henry, Pukemiro.
Griffiths, Horace, Brunnerton.
Griffiths, Norman George, Runanga.
Griffiths, William, Runanga.
Griffen, James, Kaitangata.
Griggs, Stanley Charles, Reefton.
Grimshaw, Thomas, Star Town, Huntly.
Groom, George, Huntly.
Hadcroft, Harold, Runanga.
Haig, James Scott, Kaitangata.
Hale, Edmund, Granity.
Hale, J., Kaitangata.
Hall, Alfred, Kaitangata.
Hall, Edward, Huntly.
Hall, R. H., Huntly.
Hall, Thomas, Huntly.
Hall, Thomas, Kaitangata.
Halliday, Thomas, Dunollie.
Hallinan, Ed., Taylorville, Brunnerton.
Hallinan, James Joseph, Brunnerton.
Hamilton, Douglas Donaldson, Hikurangi.
Hamilton, James, Nightcaps.
Hamill, David, Reefton.
Hamill, Marshall, Glen Massey.
Hanley, Francis, Huntly.
Hannah, J., Glentunnel.
Hanson, Walter Allan, Roa.
Hardie, J., Millerton.
Hargood, Horace J. S., Kaitangata.
Harris, Adam, Mount Somers.
Harris, George S., Mount Somers.
Harris, Thomas, Mount Somers.
Harris, William, Mount Somers.
Harrison, William, Glen Afton.
Hart, John, Brunnerton.
Harvey, D., Huntly.
Harvey, Joseph Shaw, Riccarton, East Taieri.
Hassan, Hugh, Brunnerton.
Hawker, Clarence, Kaitangata.
Hawkins, Joseph, Burnett's Face.
Hawthorn, Ludovic William, Owen River.
Hay, William, Dunedin.
Heineger, Thomas, Greymouth.
Hendry, John, Millerton.
Henwood, John Richard, Ohai.
Heward, Nathan, Runanga.
Hewison, John, Reefton.
Hewison, Sydney, Dunollie.
Hewitson, Matthew, Denniston.
Heyward, Wilfred, Roa.
Hicks, J. R., Kiripaka.
Hill, A., Lovell's Flat.
Hill, Alfred, Runanga.
Hill, E. E., Brunnerton.
Hill, Henry Adamson, Huntly.
Hill, Joseph, Milton.
Hillary, William, Reefton.
Hillman, Charles, Huntly.
Hodge, William C., Pukemiro.
Hogg, C., Blackball.
Holland, Isaac, Huntly.
Hollows, W., Fairfield.
Holt, Thomas, Huntly.
Honey, Archibald John, Denniston.
Honey, John Ralph, Huntly.
Hopkinson, Joseph, Seddonville.
Hornby, Joseph, Ohai.
Howie, Archibald, Nightcaps.
Hudspeth, Wilfred Lister, Brunnerton.
Hughes, T. E., Huntly.
Hughes, William, Runanga.
Hunter, Albert Newman, Kaitangata.
Hunter, Archibald Joseph, Denniston.
Hunter, Robert, Ohai.
Inglis, William Carrick, Pukemiro.
Ireland, Richard, Glen Afton.
Isherwood, T., Runanga.
Jack, John, Kaitangata.
James, Isaac, Kaitangata.
Jenkins, William, St. Helens.
Jenkinson, Alfred, Runanga.
Johnson, Frederick William, Kaitangata.
Johnson, J. H., Hikurangi.
Johnson, Edward, Pukemiro.
Johnson, Frederick Richard, Hikurangi.
Johnson, Thomas, Huntly.
Johnston, Alexander, Glen Afton.
Johnston, William, Pukemiro.
Johnstone, John Braidwood, Nightcaps.
Johnstone, Thomas U., Huntly.
Johnstone, William Steele, Nightcaps.
Joines, Frank Edward, Pukemiro.
Jones, Ernest George, Millerton.
Jones, Harold Wright, Mangatoi, Mokau River.
Jones, Harry, Kimihia, Huntly.
Jones, William Isaac, Blackball.
Jones, B., Millerton.
Jones, J., Hikurangi.
Jones, J., Kimihia.
Jordan, Harry Leslie, Kaitangata.
Kay, Fred, Huntly.
Keating, Edward, Dobson.
Kelly, Henry Michael, Granity.
*Kelly, John, Runanga.
Keown, George J. K., Rapahoe.
Kerr, David, Green Island.
Kerry, E., Huntly.
King, Michael Percival, Millerton.
King, Thomas Henry, Granity.
Kinson, Brinley, Huntly.
Kinzett, Leonard Phipps, Roa.
Kitto, Henry, Abbotsford.
Kyle, James, Kaitangata.
Kyle, William, Nightcaps.
Kyle, William, Kaitangata.
Lancaster, Herbert, Puponga.
*Lauder, Matt Currie, Runanga.
Lawrence, Luther, Pukemiro.
Lawrence, Luther, sen., Pukemiro.
Lawson, David, Pukemiro.
Lawson, Robert, Pukemiro.
Lawson, Thomas, Denniston.
Learmonth, Alexander, Glen Massey.
Lee, William, Taylorville.
Leeming, Percy Thomas, Glenroy.
Lees, Gavin Russell, Glen Massey.
Lees, Robert, Glen Massey.
Leech, Richard, Runanga.
Lewis, I., Puponga.
Lewis, Reece Edward, Renown.
Leitch, Robert, Blackball.
Leishman, Robert, Kaitangata.
Lennox, Andrew Lightbody, Renown.
Leonard, John Patrick, Granity.
Lidbury, Charles Henry, Millerton.
Lockington, Francis Edward, Reefton.
Longmuir, Richard J., Glen Massey.
Longstaff, Robert, Roa.
Long, Arthur Feltham, Hikurangi.
Lowrey, Alexander Smith, Ohai.
Lowrey, John Hadden, Ohai.
Mackenzie, Alexander, Ohai.
Mackenzie, Alexander Boyd, Waro.
Mackie, David Wardrop, Pukemiro.
Mackie, J., Kaitangata.
Mackinson, Job, Hikurangi.
Maddison, W., Huntly.
Magee, Peter Lawrence, Kaitangata.
Maguigan, Thomas, Roa.
Mair, James, Ohai.
*Makepeace, Henry, Runanga.
Manderson, Archibald, Mosgiel Junction.
Mann, John Henry, Dunollie.
Mann, John, Mangatina.
Mann, William, Birchfield.
Marsh, Thomas, Runanga.
Marshall, James, Nightcaps.
Marshall, John, Glen Afton.
Marshall, Robert, Dobson.
Marshall, William James, Dunollie.
Martin, Charles Richard, Stockton.
Martin, T. N., Huntly.
Mason, Samuel Campbell, Nightcaps.
Massey, James, Runanga.
McAuley, P., Ngakawau.
McAuley, Robert Thomas, Kaitangata.
McCaig, William, Glen Afton.
McCaig, William, Glen Massey.
McCaw, John, Kaitangata.
McCallum, Andrew, Huntly.
McCallum, John, Blackball.
McClure, Arthur, Ngahere.
McCormack, Patrick John, Cronadun.
McCormick, Thomas, Blackball.
McDonald, Alexander, Runanga.
McDonald, J., Ngakawau.
McDonald, Kenneth L., Runanga.
McDonald, Thomas, Burnett's Face.
McDowell, William, Dunedin.
McEwan, David, Millerton.
McEwen, Harold Wallace, Stockton.
McFarlane, William Laurie, Hector.
McGovern, R., Wairio.
McGuinness, E., Runanga.
McGuinness, Samuel, Seddonville.
McGhie, George, Huntly.
McGhee, David, Granity.
McIlwain, John, Denniston.
McIntyre, William H., Millerton.
McIvor, David, Runanga.
McKenty, H., Denniston.
McKenzie, William David, Nightcaps.
McKernan, John, Millerton.
McKinlay, William John, Whangarei.
McKiver, Patrick, Roa.
McKinney, John, Kaitangata.
McLaren, William, Shag Point.
McLaughlin, J. W., Huntly.
McLean, Archibald Kennedy, Kaitangata.
McLean, Roderick, Reefton.
McLean, William Jack, Shag Point.
McLellan, William, Fairfield.
McLiskey, Edward Kemp, Pukemiro.
McMaster, Cecil Stanley, Reefton.
McMillan, John, Huntly.
McMillan, John, Kaitangata.
McMillan, R., Kaitangata.
McNeilage, Thomas, Ohai.
McNeish, John Alexander, Brunner.
McQueen, David, Sheffield.
McVie, Robert, Kaitangata.
Medlin, James Augustine, Dunollie.
Mee, Albert, Kaitangata.
Meekums, George, Glen Afton.
Melbom, Eric Peter, Reefton.
Mercer, James, Burnett's Face.
Messer, William, Dobson.
Miles, B. C., Millerton.
Milne, Charles, Kaitangata.
Mitchell, A., Seddonville.
Mitchell, Albert Frederick, Glentunnel.
Mitchell, James, Glen Afton.
Mitchell, James Wilson, Glen Afton.
Mitchell, John, Seddonville.
Mitchell, John Baird, Glen Afton.
Mitchell, Thomas, Glen Massey.
Mollison, Richard Phipps, Reefton.
Monaghan, Henry, Millerton.
Moreland, S., Hikurangi.
Morganti, Louis, Millerton.
Morrison, Alexander, Kaitangata.
Morris, Harry, Burnett's Face.
Morris, Herbert Thomas, Milton.
Morrow, John, Kaitangata.
Moseby, Edward, Nightcaps.
Mosley, J. T., Denniston.
Mossop, Isaac, Dunollie, Greymouth.
Moye, John Patrick, Denniston.
Muir, Thomas, Dobson.
Mulholland, Robert McN., Seddonville.
Mulligan, Patrick, Waro, Hikurangi.
Murray, Thomas, Millerton.
Murphy, Francis William, Dunollie.
Myers, Richard, Millerton.

* Left New Zealand.

FIREMEN AND DEPUTIES' CERTIFICATES—*continued.*

Issued under the Coal-mines Amendment Act, 1909, and the Coal-mines Act, 1925, after Examination—continued.

Neill, William, Kaitangata.
Nelson, James, Pukemiro.
Newman, Robert Thompson, Denniston.
Nicholson, David, Huntly.
Nicholson, J., State Collieries.
Nimmo, Allan, Ngapara.
Nimmo, John Haddo, Peebles.
Niven, James Quinn, Ngakawau.
Nuttall, John, Blackball.
Oakley, Frank John, Runanga.
O'Brien, Denis Quinsin, Millerton.
O'Brien, Martin, Millerton.
O'Callaghan, William John, Huntly.
O'Connell, John, Runanga.
O'Donnell, Alphonsus, Roa.
O'Fee, J., Kaitangata.
O'Flaherty, Morgan, Blackball.
O'Loughlin, Leo F., Runanga.
Oldham, Joshua, Burnett's Face.
Oliver, Alfred, Rotowaro.
Oliver, R., Kaitangata.
Olsen, Clarence Victor, Millerton.
Openshaw, Arnold, Blackball.
Orman, James, Millerton.
Orr, Charles M., Ohai.
Orr, John B., Hikurangi.
Owen, Fletcher, Glen Massey.
Padfield, Charles, Huntly.
Page, John Skikelthorp, Runanga.
Page, William, Dunollie.
Parfitt, William, Millerton.
Parker, Andrew, Greymouth.
Parr, Joseph, Burnett's Face.
Parrott, W., Waiuta.
Pasfield, Kelvin Harold, Blackball.
Patterson, Edward, Blackball.
Patterson, Ernest, Reefton.
Patterson, James William, Reefton.
Paul, James, Seddonville.
Payne, Edwin, Kaitangata.
Peart, Frederick Smith, Millerton.
Pearson, James Thomas, Mataura.
Pearson, Samuel G., Burnett's Face.
Pendleton, S., Blackball.
Penman, John, Hikurangi.
Peterson, Nicholas, Blackball.
Phair, James, Nightcaps.
Phillips, James, Nightcaps.
Philip, Thomas, Denniston.
Pollock, Archibald, Whangarei.
Pollock, John, Denniston.
Ponton, F., Millerton.
Porteous, George James, Wallsend.
Potter, George, Millerton.
Powell, Richard Fynes, Runanga.
Prendeville, Antonio Valli, Nightcaps.
Pratt, Alexander, Millerton.
Pratt, Alfred, Ngaruawahia.
Prescott, Joseph, Kaitangata.
Prosser, Arthur, Millerton.
Prosser, Frederick Oliver, Millerton
Purdie, Thomas Henry, Rotowaro.
Purvis, Thomas, Kaitangata.
Queen, John Joseph, Burnett's Face.
Quinlan, Thomas, Huntly.
Quinn, Harry, Blackball.
Quinn, Thomas, Seddonville.
Rafferty, William, Runanga.
Ralph, J., Huntly.
Ramsay, J. McK., Kaitangata.
Rarity, Alexander C., Hikurangi.
Rarity, John, Blackball.
Ratcliffe, John Thomas, Kaitangata.
Rayner, Frank, Pukemiro.
Reed, W. H., Hikurangi.
Rees, David John, Stockton.
Reid, Henry, Millerton.
Reid, Henry, Huntly.
Reid, Samuel, Nightcaps.
Rhodes, Israel, Glentunnel.
Richardson, Alexander, Kaitangata.
Richardson, Ernest, Kaitangata.
Richardson, James, Kaitangata.
Richardson, W., Dunollie.
Richardson, William, Mangatina.
Richmond, William, Runanga.
Ridley, William, Pukemiro Junction.
Riggans, William M., Huntly.
Robb, Henry James, Whitecliffs.
Robson, Thomas, Huntly.
Robson, W., State Collieries.
Roberts, Eric M., Oamaru.
Robertson, John, Runanga.
Robertson, William, Runanga.
Rodgers, J., Huntly.
Rodgers, J., Ngakawau.
Rodgers, William, Granity.
Roe, James, Glen Afton.
Rogers, A. G., Kaitangata.
Rogers, Francis Edward, Kaitangata.
Rogers, Harry Walter, Glen Afton.
Rogers, Sidney, Kaitangata.
Rollerson, Edward Francis, Reefton.
Rose, George, Pukemiro.
Rose, Walter Albert, Rewanui.
Ross, Alexander, Fairfield.
Ross, Robert, Ohai.
Ross, Richard, Ohai.
Rotch, Robert William, Orepuki.
Rothera, James William, Taylorville.
Rothwell, Thomas Green, Hikurangi.
Rowse, J., Runanga.
Ruane, Francis Joseph, Dobson.
Russell, William, Ohai.
Ruston, Edwin Walter, Huntly.
Rutherford, John, Dobson.
Rutherford, John Yarrow, Dunollie.
Rutherford, W. R., Kaitangata.
Saul, Herbert, Pukemiro Junction.
Saunders, William Henry, Hikurangi.
Savage, Thomas, Nightcaps.
Scott, James, Blackball.
Scott, Robert, Taylorville.
Scott, Robert, Runanga.
Scurr, William, Rotowaro.
Seddon, William, Huntly.
Shanks, William, Tahora.
Sharp, J. R., Kaitangata.
Sharp, William Russell, Kaitangata.
Shaw, John, Roa.
Shearer, William, Stockton.
Sheehan, Patrick R., Onetea.
Short, Samuel, Nelson.
Simon, George, Greymouth.
Simpson, James Cochrane, Runanga.
Simpson, James Stark, Seddonville.
Simpson, James, Seddonville.
Slack, Joseph, Darlington, Stockton.
Smillie, John H., Albury.
Smith, Basil, Dunollie.
Smith, Donald, Huntly.
Smith, Edward Walker, Hikurangi.
Smith, Frederick Joseph, Runanga.
Smith, Fred, Rotowaro.
Smith, George, Hikurangi.
Smith, Harold, Millerton.
Smith, J. A., Seddonville.
Smith, Joseph, Denniston.
Smith, Joseph William, Denniston.
Smith, Norman, Fairfield.
Smith, Peter, Gore.
Smith, Robert, Taylorville.
Smith, Thomas W., Millerton.
Smith, Wilfred, Millerton.
Smith, William George, Glentunnel.
*Smitheram, Thomas Francis, Runanga.
Smylie, Thomas, Roa.
Snedden, Thomas, Blackball.
Snedden, William Hector, Kaitangata.
Snedden, William Patterson, Kaitangata.
Snell, J., Kaitangata.
Snowden, W., Kaitangata.
Southward, William, Runanga.
Spence, John Gibson Henderson, Huntly.
Spiers, James, Hikurangi.
Stanniford, Robert, Kaitangata.
Steele, Andrew, Hikurangi.
Steele, John, Preston Road, Greymouth.
Steele, Reginald, Huntly.
Stewart, Robert, Whangarei.
Stirling, James, Huntly.
Strang, James, Blackball.
Strongman, Charles James, Cobden.
Summers, William, Pukemiro.
Suther land, J., Millerton.
Sutton, George Walker Dudley, Millerton.
Sutton, John, Kaitangata.
Sweeney, John Lewis, Runanga.
Tallentire, James Whiteside, Runanga.
Tansey, Michael Joseph, Kaitangata.
Tate, Anthony, Seddonville.
Tatley, Ernest, Reefton.
Taylor, Arnold, Christchurch.
Taylor, Christopher, Millerton.
Taylor, Henry Burdon, Hikurangi.
Taylor, John Ralph, Roa.
Tennant, Alexander, Blackball.
Tennant, Henry Francis, Kaitangata.
Terry, William Edwin, Ohai.
Thawley, William, Denniston.
Thomas, Ernest, Glen Massey.
Thomas, William, Denniston.
Thompson, Alexander Ferguson, Runanga.
Thompson, Abel George, Kaitangata.
Thompson, James, jun., Kaitangata.
Thompson, Thomas Kerr, Kaitangata.
Thomson, Andrew, Benhar.
Thomson, J., Huntly.
Thomson, Thomas Gordon, Whangarei
Thomson, Thomas, Mine Creek.
Thomson, Thomas, Nightcaps.
Throp, J., Kaitangata.
Timlin, George William, Runanga.
Timms, H., Huntly.
Tinker, Harry, Mount Somers.
Tinning, J., Brunnerton.
Todd, John Thomas, Glentunnel.
Todd, Stephen, Granity.
Tomasi, John, Seddonville.
Tunstall, A. G., Hikurangi.
Tunstall, W., Hikurangi
Turnbull, Matthew Charles, Hikurangi.
Turner, F., Kiripaka.
Turner, George, Reefton.
Turner, Joseph Frederick, Huntly.
Turner, William James, Denniston.
Turton, John, Huntly.
Tweedie, John, Huntly.
Tweedie, Robert, Huntly.
Tyler, Ivor Llewellyn, Ngakawau.
Tyson, Isaac, Runanga.
Unwin, James, Runanga.
Vaux, John Robert, Westport.
Veitch, D., Blackball.
Vigna, Adamo, Runanga.
Vurlow, Frederick Alexander, Denniston.
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Walls, James, Benhar.
Wall, Thomas, Mangatina.
Wallwork, William Alfred, Greymouth.
Warne, John, Denniston.
Waters, Thomas Edwin, Shag Point.
Watson, William T., Burnett's Face.
Waugh, Alexander, Shag Point.
Waugh, Robert, Huntly.
Wear, Daniel, Huntly.
Weaver, Joseph, Huntly.
Webster, Oliver, Huntly.
Welsh, M. E. A., Shag Point.
White, Edward, Granity.
Whitelaw, James, Kaitangata.
Whittle, George Handford, Granity.
Wight, David, Millerton.
Wilcox, William, Pukemiro.
Wilkinson, Herbert, Pukemiro.
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Wilson, Sidney Robert, Kaitangata.
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Wilson, Vernon, Kaitangata.
Wolstenholme, Frederick, Blackball.
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Worthington, T., Millerton.
Wright, Richard C. D., Brighton.
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Crabbe, George, Alexandra South.
Cumming, J. S., Denniston.
Dixon, A., Nightcaps.
Gray, Hugh, Dunedin.
Halsey, W. J., Saddle Hill.
Hodgetts, I., Burnett's Face.
Junker, F. A., Waikaia.
Kidd, G. C., Albury.
King, J., Granity.
Mackie, N., Kaitangata.
McAuley, John, Kaitangata.
McClimont, John, Mount Somers.
McDowell, R., Nightcaps.
McIntosh, A. S., Shag Point.
McIvor, W., Waikaka.
Nelson, J. H., Pukerau.
Ramsey, George, Waikaka.
Robinson, R., Ngakawau.
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