CONTENTS.

APPENDICES TO THE MINES STATEMENT—*continued.* PAGE

1919.

NEW ZEALAND.

MINES STATEMENT

BY THE HON. SIR WILLIAM FRASER, MINISTER OF MINES.

MR. SPEAKER,—

During the currency of the war mining interests have suffered considerably, but now that victory has happily crowned our efforts on the battlefield, and our soldiers are returning to their former avocations, we may confidently look forward to an extensive revival.

For some years past the mining industry, owing to the war, has not received the attention and encouragement that it deserved, and the time has now come for a considerable forward movement.

The staff of the Mines Department, and particularly of the Geological Survey Branch, has become greatly depleted, so that the important functions devolving on the Mining Department of the State cannot be adequately and satisfactorily performed. This calls for an immediate remedy, and several new appointments have been or are to be made.

It was felt that a second Inspecting Engineer was badly needed, so that the important coal-mining industry might monopolize the services of one of these officers, and leave the metalliferous mining, oil-boring, &c., to be supervised by the other.

Applications for the position of Inspecting Engineer of Metalliferous Mines were duly invited, and eight replies were received; but I am pleased to be able to announce that the candidate considered to possess the best qualifications was found amongst the Department's own staff, and the officer selected for the position has now entered upon his duties.

The Geological Survey staff has been strengthened by the appointment of several additional officers, notably a Field Geologist and two Assistant Geologists, while a Palæontologist has been advertised for. With the enlarged staff we shall be able to put in hand a great deal of survey work that has been standing over for some time—in some cases for several years. Inquiries are also being made for a suitable man to act as Government Metallurgist, who it is hoped will be able to advise practically and acceptably regarding the reduction of our refractory ores, and also as to the smelting of our iron-ores and titaniferous ironsands.

A General Manager of the State Coal-mines has also been appointed, such an appointment having been found to be necessary in view of the opening of new coal-mines at Waikokowai (North Island) and Nine-mile (near Greymouth).

With a view to giving the Inspecting Engineer of Metalliferous Mines a good start with his work, and to ensure our methods and procedure being quite abreast of the times, he was instructed to visit Australia to make himself acquainted with

the best mining practice in the Commonwealth. The officer has recently returned to the Dominion, and I am sure that the valuable information he has gained will be of the greatest use to the mining community in New Zealand.

At a later date I hope to send him on a similar tour of the United States, as I am confident that the information he will gather will amply repay the time and expense involved in obtaining it.

To further assist the mining industry I have undertaken a partial revision of the mining law, and have already introduced Bills to amend the Mining Act, the Coal-mines Act, the Stone-quarries Act, and the Miner's Phthisis Act. I am fully aware that the whole mining law is much in need of consolidation and improvement, but there will not be time for so extensive a task as that this session, but I trust to be able to take it in hand during the recess and to be able to bring down consolidation and amending Bills next session.

I am also arranging for the issue of a series of mining leaflets, each one dealing with some branch of the mining law or mining methods or practices or procedure, as the need of authoritative information in a handy form is much felt by miners, who are quite justified in looking to the Mines Department to supply them with what is needed in this respect.

I will now proceed to furnish the usual official and statistical information customarily contained in the Mines Statement.

Owing to the abnormal conditions prevailing during 1918 there has again been a decrease in the production from metal-mines and collieries. In addition to shortage of labour and the increased cost of all material used in the mining industry the output has been considerably reduced owing to complete or partial cessation of work for two or three weeks during the influenza epidemic which occurred in the latter part of the year.

MINERAL-PRODUCTION.

The following table shows the quantity and value of a portion of our mineral export during the years 1917 and 1918, also the quantity of native coal consumed in the Dominion during the same periods. I regret that I cannot go into the matter more in detail, but the Imperial authorities are of opinion that it is still inadvisable to give exact information regarding the production and export of gold, and hence the reason for the curtailment of the information usually supplied.

Product.	Year ended 31st December, 1917.		Year ended 31st December, 1918.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Silver	787,152 oz.	105,299	879,383 oz.	171,456
Quicksilver	...	...	4½ tons	2,122
Tungsten-ore	161 tons	28,972	170 "	37,922
Miscellaneous minerals	2,357 "	6,844	2,300 "	5,882
New Zealand coal exported	221,125 "	236,063	182,603 "	227,228
New Zealand coal used in New Zealand	1,847,294 "	923,647*	1,851,647 "	2,303,449
Kauri-gum	4,594 "	291,917	2,419 "	157,313
Coke	119 "	240	70 "	146

* This is the figure given in last year's Statement, but it is much below the true value.

There has been a decreased production of most minerals during the past year. There has, however, been an increase in value of the output for 1918, which is due to the value of the coal-output being now for the first time estimated at the value placed upon it by the Customs Department for coal exported. During previous years it has been estimated at the very inadequate value of 10s. per ton.

COAL-MINING.

The output of coal during 1918 amounted to 2,034,250 tons, as compared with 2,068,419 tons during 1917, being a decrease of 34,169 tons.

The following is a comparative statement of the coal and lignite raised during the years 1916, 1917, and 1918:—

Inspection District.	Output for 1917.	Output for 1918.	Increase or Decrease, 1918.	Output for 1916.	Decrease between Years 1917 and 1916.
	Tons.	Tons.	Tons.	Tons.	Tons.
Northern	470,638	549,778	79,140*	486,114	15,476
West Coast	1,146,778	997,089	149,689†	1,295,635	148,857
Southern (Canterbury, Otago, and Southland)	451,003	487,383	36,380*	475,386	24,383
Totals	2,068,419	2,034,250	34,169†	2,257,135	188,716

* Increase. † Decrease.

The decline in the annual output for 1918 amounts to nearly 2 per cent. There was also a decrease in the output per person employed underground, from 715 tons during 1917 to 703 tons during 1918, which is likewise at the rate of nearly 2 per cent. This alone would account for the decrease of total output; but had it not been for the influenza epidemic, to which sixty-six coal-miners succumbed, and which caused most of the collieries to cease production for two or three weeks, an increased output would have resulted. The considerable decline in the production of bituminous coal was principally due to scarcity of miners on the West Coast.

The comparative tonnage of the various classes of coal for the years 1917 and 1918 is summarized as follows:—

Class.	Output for 1918.	Output for 1917.	Increase or Decrease for 1918.	
	Tons.	Tons.		Tons.
Bituminous and semi-bituminous ..	1,122,308	1,247,989	*Decrease*	125,681
Brown coal	705,773	629,174	*Increase*	76,599
Lignite	206,169	191,256	,,	14,913
Totals	2,034,250	2,068,419	*Decrease*	34,169

During the year prospecting-operations by Government drills have proved considerable areas of workable coal near Awaroa in the Parish of Whangape, on the Waikato coalfield. An area of nearly 1,300 acres of excellent coal-bearing land has accordingly been acquired, on which a State mine for the North Island will be established as soon as the necessary preliminary works can be undertaken. Also within the Government colliery reserve on the low coastal range adjacent to the Point Elizabeth State Colliery a good coal-seam has been proved, and here also coal-mining operations will be undertaken as soon as a short branch railway has been constructed to the site of the mine-mouth. The opening of this new colliery will afford an opportunity of utilizing nearly all the plant at the existing Point Elizabeth Colliery, which will shortly be closed on account of exhaustion.

The question of providing adequate and superior housing-accommodation for the State miners has also received careful consideration, with the result that at Waikokowai it has been decided to lay out a new township on "town-planning" lines, and provided with an efficient water-supply and drainage system, and furnished with electric light and power and all modern conveniences. Similar conveniences will be supplied as far as possible at Runanga.

It is also proposed to inaugurate a superannuation scheme for our men, and to also permit them to elect a representative on a Board of Management so that they may have a voice in matters of control. It is hoped by these means to gain the full interest of the miners in the success of the undertaking, and to ensure the permanence and continuity of their employment.

TUNGSTEN-ORE (SCHEELITE).

The quantity and value of tungsten-ore obtained during the year was 143 tons 6 cwt., valued at £31,279, as against 199 tons 8 cwt., valued at £37,863, during 1917. There was, however, an increase in the quantity and value *exported* during 1918, due to the liberation of ore which had been held back by some producers in anticipation of an increased price being offered by the Imperial Government. During the war period the price per unit of tungstic acid per ton of ore has been increased from £2 15s. to £3 8s.; prior to 1914 the market price was about half the latter amount. The decline in production can only be attributed to depletion of known deposits, and unless further deposits are discovered the decline will probably continue.

PETROLEUM.

Drilling in search of petroleum has, during the year, been carried out in Taranaki, Hawke's Bay, and Canterbury, but no development of real commercial value has yet occurred. Throughout the Dominion twenty-five deep boreholes in search of petroleum have been drilled or are in progress, the deepest being that known as the "Blenheim" well of the Blenheim Oil Company at Moturoa, which has attained a depth of 5,488 ft., drilling being still in progress.

Near Waikaia, Southland, a small area of oil-shale has been proved by drilling; and attention has again been drawn to the oil-shale deposit near Orepuki, which it is hoped will be worked in the near future. In connection with this deposit extensive oil-shale works were installed about seventeen years ago, but operations were suspended shortly after production began.

The importance of a petroleum industry in this Dominion can hardly be overestimated, and it is in consequence of this that the Government is assisting in some of the boring operations.

QUICKSILVER.

During the year our first exportation of quicksilver was made—the product of the New Zealand Quicksilver-mines (Limited), whose mine and works are situated at Puhipuhi, North Auckland. This company produced during the year 11,296 lb. of marketable quicksilver, valued at 5s. per pound.

KAURI-GUM.

The kauri-gum industry being under the administration of a separate Department, my reference thereto is confined to the quantity and value of this mineral exported, which during 1918 amounted to 2,419 tons, valued at £157,313, as against 4,594 tons, valued at £291,917, during 1917. The total quantity and value of kauri-gum exported to the end of 1918 is respectively 356,292 tons and £18,325,252.

During the past five years attempts have been made to dredge kauri-gum from swamps, but up to the present time the profits therefrom have been small.

Since 1917 progress has been made in the development of kauri peat-oil extraction. Plants have been installed by two companies at Kaimaumau and at Redhill. From the crude oil it is proposed to refine motor-spirit, also paint and varnish oils. Should these operations prove successful an important industry will become established, as the area of land available for such operations is large.

A new process has been discovered for cleaning low-grade gum, known as the "salt vacuum process," the patentee being Dr. J. S. Maclaurin, Dominion Analyst. Practical demonstrations have proved the process to be most satisfactory.

STONE-QUARRIES.

The operations of the Stone-quarries Act are confined to those places (excluding mines) where stone is quarried or tunnelled by the use of explosives, and where the rock-face is more than 20 ft. deep. A large number of important quarrying operations, regarding which safety provisions are as necessary as at those places to which the Act applies, are excluded by this definition. It is therefore proposed to enlarge the scope of the Act to make it apply more generally.

The quarrying industry of the Dominion is rapidly increasing in importance, more especially with regard to the output of limestone for agriculture, cement-manufacture, and building-stone. At those quarries which come under the operations of the Act about fifteen hundred persons were employed during the year, the output being nearly 1,000,000 tons.

PERSONS ENGAGED IN MINING.

The following table shows the number of miners in each inspection district, and the branch of mining in which they were engaged :—

Classification.	Inspection District.			Totals.		
	Northern.	West Coast.	Southern.	1918.	1917.	Increase or Decrease.
Gold, silver, and tungsten ore	1,264	760	542	2,566	2,996	*Decrease* 430
Coal	904	2,041	1,049	3,994	3,983	*Increase* 11
Cinnabar and asbestos ..	13	3	..	16	16	..
Totals	2,181	2,804	1,591	6,576	6,995	*Decrease* 419

During the period of the war there has been a decline of 740 in the number of persons working at or about coal-mines, amounting to 16 per cent. of the total number employed during 1914. The greater number of these men were voluntarily on active service abroad, but a considerable number have left the mines for other employment.

Regarding the occupation of coal-mining there exists a general but erroneous impression that it is dismal, unhealthy, and extremely arduous. In this Dominion this assumption is incorrect. The thickness of the coal-seams generally obviates the necessity of working in cramped positions, and likewise permits of adequate ventilation, superior generally to that in factories. The proportion of deaths from fatal accidents during the past three years has been less than 1½ per annum per 1,000 persons employed, comparing favourably with that in any other country. The facility by which coal may be mined in New Zealand is proved by the official statistics regarding output. During 1917 the output per person employed underground was 715 tons, as against 306 tons for the United Kingdom during the same period. The average earnings of coal-miners are probably as high as those prevailing in any other country, and during the period of the war such wages have increased to a greater extent than have food-prices. At the principal collieries the average net daily earnings per fortnightly pay, taken over a period of several months, were approximately—for coal-hewers, 17s. to £1 4s. ; truckers, 18s. ; boys, 13s. ; and deputies, £4 to £4 10s. per week.

Under the Coal-mines Act a day's work is limited to eight hours from the time of entering the mine to the time of departure therefrom ; thus the travelling-time, also that taken for a meal, is included in the daily shift. In addition to the above-mentioned favourable conditions obtained by the coal-miner, he may obtain a home at low rental, or if he so desires he may build for himself by the aid of a loan from the Government ; by such means many pleasant miners' homes have been established, those at Runanga, Huntly, Granity, and Kaitangata being especially so. Gardening is specialized in by coal-miners generally throughout the Empire, and some of the miners' gardens at these places are very attractive. For two successive years a Kaitangata colliery trucker has from his quarter-acre section produced roses which gained the champion prize in open competition at the Dunedin Flower Show, one of the principal shows in the Dominion.

At all colliery townships coal is supplied to the miners at a purely nominal charge, at the State collieries such charge being 3s. 4d. per ton. It will thus be seen that the coal-miners' life has many attractions, and admits of a person of

provident disposition saving enough money to enable him to eventually buy land, or take up a lighter occupation for advancing years. I have dwelt upon this subject at some length, hoping to remove the prevailing erroneous impression regarding the life of a coal-miner, and thus to encourage young men to give this lucrative occupation a fair trial; one of the most serious questions facing the Dominion at present being how to overcome the shortage of coal-miners.

While much has already been done to provide satisfactory dwelling-accommodation for coal-miners, there is no doubt that more still remains to be done. At the new State mine in the Waikato a township will be laid out on town-planning lines, with an efficient water service and good drainage system; and good comfortable residences for the miners will be built, and either let or sold to them as they may prefer; or they may lease or purchase sections and build houses themselves, provided that the designs of such houses are approved by the Department's Architect. Similar improvements, as far as now reasonably practicable, will also be made at Runanga (Greymouth).

A clause has also been inserted in this year's Coal-mines Amendment Bill requiring all colliery-owners to provide reasonable residence accommodation for their workmen, and to let same at reasonable rates. In cases where colliery-owners are unable to provide the requisite capital the Government may advance the same on mortgage at a reasonable rate of interest.

GEOLOGICAL SURVEY.

During the past field season a detailed geological survey of the Mokau coalfield has been completed, and a full report is now in preparation. An area in the Waikokowai district, west of Huntly, was also carefully examined with a view to ascertaining its suitability for a State coal-mine. Various localities in the South Island were visited by officers of the Geological Survey in order to obtain information concerning coal, gold, limestone, phosphate rock, &c.

During the war the Geological Survey has been severely hampered in carrying out its work. Several officers have been lost by death or resignation, and one is still with the Expeditionary Forces. It is, however, proposed to appoint several new officers at an early date, and so restore the staff to at least its pre-war strength.

INFLUENZA EPIDEMIC.

The number of miners who succumbed to the epidemic during 1918 was ninety-two (twenty-six metal-miners and sixty-six coal-miners), being 1·39 per cent. of the number employed at or about all mines; the mortality among coal-miners being at the rate of 1·65 per cent., and that of metal-miners 1·0 per cent. The estimated average death-rate from the epidemic throughout the Dominion of all persons, including coal and metal miners, was about 0·6 per cent.

The following table shows the number of miners' deaths by epidemic and the number of miners employed in the Dominion during 1918:—

Inspection District.	Number of Deaths.	Number of Persons employed in or about Mines.	Percentage of Deaths.
Northern District (North Island)—			
Coal-mines	24	904	2·65
Metal-mines	14	1,277	1·09
West Coast District (of South Island)—			
Coal-mines	16	2,041	0·78
Metal-mines	10	2,582	0·38
Southern District (Canterbury, Otago, and Southland)—			
Coal-mines	26	1,049	2·47
Metal-mines	2	542	0·37
Totals (coal-mines)	66	3,944	1·65
,, (metal-mines)	26	2,582	1·00

At the State collieries near Greymouth 432 persons were employed, none of whom succumbed to the epidemic. The West Coast suffered least of all districts. I am unable to offer any explanation for the higher percentage of deaths of coal-miners than of metal-miners, except that the epidemic happened to be more virulent in certain colliery townships such as Huntly, Kaitangata, and Nightcaps. The ventilation of coal-mines is probably superior to that of metal-mines; both are provided with bath and change-house accommodation at the principal mines. There is no marked difference in the character of their homes. Coal-miners usually receive on the average higher wages, and they do not work in deleterious siliceous dust from rock-drills, as do some metal-miners.

MINING AND QUARRY ACCIDENTS.

No fatal accident occurred at any colliery, metal-mine, or stone-quarry in the North Island during 1918, in which operations 4,158 persons were employed. No fatal accident occurred in or about any metal-mine in the Dominion during the year; but two fatalities, one of which occurred at an oil-bore and the other at a gold-dredge, have been counted as mining accidents, such operations coming under the provisions of the Mining Act. At stone-quarries two fatal accidents occurred in the South Island. In or about the collieries of the South Island six fatalities occurred, all being from falls of coal, stone, or timber. In no case was any person held blameworthy by the Coroner's jury which inquired into the circumstances of these accidents. In such cases it is usually found that the sufferer or his companion failed to properly protect themselves by timber supports as required by the regulations.

The proportion of fatalities during 1918 per 1,000 persons employed is as follows: Metal-mines, 0·77; collieries, 1·50; stone-quarries, 1·40: total (8,002 persons), 1·24, being the lowest for any year since mining was commenced in New Zealand.

SCHOOLS OF MINES.

The expenditure by the Department on the schools of mines at Coromandel, Thames, Waihi, Karangahake, and Huntly in the Auckland Provincial District, and at Westport, Reefton, and Otago in the South Island, for the year ended 31st March, 1919, amounted to £4,300.

The present regulations relating to Schools of Mines scholarships are much in need of revision, and are now receiving attention at the hands of the departmental experts, acting in conjunction with the Directors of the schools.

A proposal by the Otago University authorities for the granting of mining bursaries is also receiving careful consideration, with a view to its adoption in a more or less modified form.

SUBSIDIZED PROSPECTING.

During the year ended 31st March, 1919, nine approved prospecting-parties were granted subsidies amounting to over £1,400, of which over £1,200 was expended during the year. In addition to this, £9,942 granted during previous years was also expended. In two cases payable quartz was proved by subsidized work. During the year no loans for the development of mining under Part X of the Mining Act were granted, and it would appear that the part of the Act referred to stands in need of amendment to enable mining companies to take advantage of it to a larger extent than at present. I may say that the present provision has now been in force for fourteen years, and only six loans have so far been granted under it. In the Mining Amendment Bill which I hope to see placed on the statute-book this session provision is made for enlarging and improving this provision.

GOVERNMENT PROSPECTING-DRILLS.

Extensive use has been made during the year of the Government prospecting-drills, which are lent to hirers free of charge. This class of State aid to mining has proved to be most beneficial to the industry. The results of boring during the

year in most cases were highly satisfactory. An aggregate depth of 12,366 ft. was drilled by diamond, keystone, and percussion drills in search for coal, oil-shale, and alluvial gold. Two valuable extensions of known coalfields were proved in the neighbourhood of Huntly and Point Elizabeth respectively; two workable alluvial gold-mining claims were proved in Westland; also an oil-shale deposit at Waikaia, which may after further exploration be found to be of value.

ROADS AND TRACKS.

The expenditure by subsidies and direct grants out of the Public Works Fund vote, "Roads on Goldfields," during the year amounted to £4,185. This expenditure would have been greater had more labour been available.

GOVERNMENT WATER-RACES.

The Waimea–Kumara and Mount Ida Water-races, which greatly aid alluvial gold-mining in the Kumara and Naseby districts, have during the year supplied claims employing thirty-five miners with water for sluicing, by which gold to the value of £8,481 was obtained. The cash received for water sold was £1,583, and the expenditure on the upkeep of the races was £3,350.

TABLES AND REPORTS.

The usual statistical tables and departmental reports are appended.

TABLES TO ACCOMPANY THE MINES STATEMENT.

No. 1.

TABLE SHOWING THE QUANTITY AND VALUE OF MINERALS (OTHER THAN GOLD) ENTERED FOR EXPORTATION FOR THE YEARS ENDED THE 31ST DECEMBER, 1917 AND 1918, 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, 1918.		For Year ended the 31st December, 1917.		Total from the 1st January, 1853, to the 31st December, 1918.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£	Oz.	£
Silver	879,383	171,456	787,152	105,299	21,793,912	2,458,248
Mineral produce, including kauri-gum—	Tons.	£	Tons.	£	Tons.	£
Copper-ore	..	6	6	163	1,504	19,378
Chrome-ore	..	..	..	..	5,869	38,002
Antimony-ore	13	104	..	..	3,781	55,045
Manganese-ore	..	..	..	..	19,364	61,905
Hæmatite ore	..	..	..	..	77	469
Tungsten-ore	169 1/16	37,922	161	28,972	2,163 1/16	268,444
Quicksilver	4 1/2	2,122	..	..	4 1/2	2,122
Sulphur (crude)	..	..	..	2	4,927	13,241
Mixed minerals*	2,286 3/4	5,772	2,351	6,679	55,959 3/4	237,328
Coal (New Zealand) exported	182,603	227,228	221,125	236,063	4,894,843	4,656,670
Coke exported	70	146	119	240	16,753	25,512
Coal, output of mines in Dominion (less exports)	1,851,647	2,303,449	1,847,294	923,647	43,297,997	22,934,813
Oil-shale	..	..	..	..	14,444	7,236
Kauri-gum	2,419	157,313	4,594	291,917	356,292	18,325,252
Total quantity and value of minerals other than gold and silver	2,039,212 18/20	2,734,062	2,075,650	1,487,683	48,673,978 18/20	46,645,417

* Including—Pyrites, 1 ton; lime, 22¾ tons; pumice sand, 2,210 tons; pumice stone, 52 tons; stone (hewn), 1 ton: also dressed marble and stone of weight unspecified by the Customs Department.

No. 2.

TABLE SHOWING THE OUTPUT OF COAL FROM THE VARIOUS COALFIELDS, AND THE COMPARATIVE INCREASE AND DECREASE, FOR THE YEARS 1917 AND 1918, 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, 1918.
	1918.	1917.			
	Tons.	Tons.	Tons.	Tons.	Tons.
North Auckland	125,349	101,320	24,029	..	3,739,303
Waikato (including Mokau)	424,429	369,318	55,111	..	5,354,412
Nelson	13,954	19,616	..	5,662	342,241
Buller	580,796	652,183	..	71,387	15,634,050
Inangahua	16,237	14,766	1,471	..	295,612
Grey	386,102	460,213	..	74,111	9,566,773
Canterbury	20,475	18,063	2,412	..	757,135
Otago	316,449	274,306	42,143	..	9,443,892
Southland	150,459	158,634	..	8,175	3,069,522
Totals	2,034,250	2,068,419	..	34,169*	48,192,840

* Net decrease, 34,169 tons.

No. 3.

TABLE SHOWING THE OUTPUT OF DIFFERENT CLASSES OF COAL.

Class of Coal.	Output.		Increase.	Decrease.	Approximate Total Output to the 31st December, 1918.
	1918.	1917.			
	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous	1,122,308	1,247,989	..	125,681	31,171,005
Brown	705,773	629,174	76,599	..	14,480,157
Lignite	206,169	191,256	14,913	..	2,541,678
Totals	2,034,250	2,068,419	..	34,169	48,192,840

No. 4.

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	..	33,778
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	25,371	..
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

No. 5.

TABLE SHOWING THE TOTAL QUANTITY AND VALUE OF COAL IMPORTED INTO AND EXPORTED FROM NEW ZEALAND FROM AND TO EACH COUNTRY DURING THE YEAR ENDED 31ST DECEMBER, 1918.

Country.	Imports.*		Exports.†	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
United Kingdom	..	..	90,890	122,854
India	..	..	400	400
Canada, via west coast	..	..	4,959	8,266
Australia	255,332	202,102	27,112	31,886
Fiji	..	..	4,871	7,064
Egypt	..	..	2,506	3,569
Chile	..	..	1,100	1,664
United States of America, via west coast	..	..	18,177	18,177
Samoa in British occupation	..	..	1,293	1,770
Guam	..	..	29,372	28,853
Hawaii	..	..	11	30
Society Islands	..	..	2,457	3,390
Tonga	..	..	1,989	2,745
Tuamotu Archipelago	..	..	370	370
Totals	255,332	202,102	185,507	231,038

* Countries whence imported. † All coal included, bunkers and cargo, and coal mined in other countries as well as in New Zealand.

No. 6.

NUMBER OF PERSONS ORDINARILY EMPLOYED AT OR ABOUT MINES OTHER THAN COAL-MINES DURING THE YEAR ENDED 31ST DECEMBER, 1918.

County or Borough.	Number of Persons ordinarily employed at				Total.	
	Gold-quartz Mines.	Gold Alluvial Mines.	Gold-dredges.	Mines other than Gold and Coal.	1918.	1917.
NORTHERN INSPECTION DISTRICT.						
County and Borough of Thames	74	..	..	..	74	117
County of Ohinemuri	254	..	..	..	254	291
,, Coromandel	17	..	..	..	17	19
,, Piako	4	..	..	..	4	5
Borough of Waihi	887	..	..	..	887	971
Tauranga district	25	..	..	..	25	10
Puhipuhi district	..	..	..	13	13	16
Great Barrier Island	3	..	..	..	3	3
WEST COAST INSPECTION DISTRICT.						
County of Marlborough	60	4	..	4	68	73
,, Waimea	5	14	..	3	22	..
,, Collingwood	..	..	..	..	..	12
,, Murchison	2	21	..	..	23	42
,, Buller	3	26	..	..	29	35
,, Inangahua	372	2	29	..	403	528
,, Grey	7	55	3	..	65	76
,, Westland	..	105	34	..	139	150
Borough of Ross	14	..	..	..	14	9
SOUTHERN INSPECTION DISTRICT.						
County of Taieri	4	..	..	10	14	17
,, Tuapeka	..	92	..	..	92	121
,, Vincent	1	40	84	..	125	151
,, Maniototo	..	43	7	..	50	58
,, Waihemo	19	..	..	35	54	42
,, Waitaki	..	15	..	..	15	16
,, Lake	..	21	..	59	80	96
,, Wallace	..	32	..	..	32	32
,, Bruce	..	..	..	..	..	3
,, Southland	..	50	30	..	80	119
Stewart Island	..	..	..	..	..	..
Totals	1,751	520	187	124	2,582	3,012

Summary of Persons ordinarily employed in or about New Zealand Mines during 1918 and 1917.

	1918.	1917.	Increase or Decrease.
Gold, silver, and gold-scheelite mines	2,458	2,908	*Dec.* 450
Other metalliferous mines, including those worked for scheelite alone	124	104	*Inc.* 20
Coal-mines	3,994	3,983	,, 11
Totals	6,576	6,995	*Dec.* 419

No. 7.

STATEMENT OF AFFAIRS OF MINING COMPANIES, AS PUBLISHED IN ACCORDANCE WITH THE COMPANIES ACT, 1908.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid 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.														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Alluvial Claims (Limited)	24/10/16	2,500	2,220	600	50	2 2 3	..	19	1	..	..	2,258	..	43
Gallant Gold-mining Company (Limited) ..	20/10/15	526	524	2,125	21,210	0 2 6	2	47	..	..	..	569	..	9
Golden Belt Gold-mining Company (Limited) ..	22/12/11	23,451	7,512	17,027	117,255	0 4 0	..	115	9	2,491	1,850	20,577	..	427
Great Northern Waihi Gold-mining Company (Limited)	13/8/14	18,233	6,112	6,000	88,000	..	..	223	1	..	..	5,830	..	..
Hauraki Reefs (Limited)	28/4/10	17,500	11,682	5,083	175,000	0 1 8	18	412	..	..	9,176	20,833	..	126
Komata Reefs Gold-mining Company (Limited) ..	16/10/00	40,000	..	..	800,000	0 1 0	..	375	..	77,797*	372,313	329,583	7,467	..
Kuranui Gold-mining Company (No Liability) ..	5/6/14	21,750	2,125	..	87,000	0 0 8	192	38	4	..	22	2,374	..	43
Maoriland Mines (Limited)	4/8/13	441	441	..	105,800	0 0 1	..	98	..	..	2,620	3,611	..	..
New Waitaia Gold-mining Company (Limited) ..	25/2/09	15,000	8,113	2,500	150,000	0 1 5	..	133	1	6,483	24,025	22,617	1,875	2
New Zealand Crown Mines (Limited)	13/3/14	39,413	11,356	..	..	0 4 0	298	160	4	3,635†	15,540	32,139	..	15
North Prince of Wales Consolidated Gold-mining Company (No Liability)	23/3/12	3,019	4,099	1,250	24,150	0 2 6	..	12	..	..	..	3,462	..	623
Ohinemuri Gold and Silver Mines (Limited) ..	1/6/14	75,584	8,060	55,000	151,168	0 5 0	116	172	13	1,892	387	8,187	..	80
Old Hauraki Gold-mines (Limited)	3/8/07	..	..	..	..	..	..	..	..	..	..	..	..	..
Rising Sun Gold-mining Company (Limited) ..	1/10/08	16,555	11,125	2,229	110,368	0 2 8	..	179	30	12,486	24,382	35,470	2,759	2,278
Tairua Broken Hills Gold-mining Company (Limited)	1/5/16	6,000	4,132	..	60,000	0 1 3	48	73	3	340	647	4,730	..	134
United Gold-mine (Limited)	17/7/15	18,664	8,664	10,000	22,000	1 0 0	..	47	7	7	..	9,633	..	1,179
Waihi Extended Gold-mining Company (Limited)	12/8/95	149,967	59,452	5,498	149,967	0 10 8½	267	101	1	1	4	62,143	..	52
Waihi-Paeroa Gold-extraction Company (Limited)	4/3/10	125,000	65,000	60,000	125,000	1 0 0	..	154	10	47,331‡	274,473	373,696	18,749	306
Waiotahi Gold-mining Company (Limited) ..	28/7/71	18,000	16,000	..	240,000	0 1 4	..	570	4	..	680,169	282,360	400,800	5
Waitangi Consolidated Gold-mining Company (No Liability)	23/10/08	147,833	28,930	1,000	170,800	0 4 9½	103	55	7	..	4,132	46,386	..	7,069
Zechan Consolidated (Limited)	23/10/10	11,300	3,060	3,700	150,000	0 0 6½	107	15	..	..	..	5,060	..	..
New Zealand Quicksilver Mines (Limited) ..	16/7/18	12,219	1,230	6,070	48,876	0 5 0	..	79	10	9,375 lb.§	2,344	2,220	..	355
Antonio's Limited	21/12/17	5,000	2,551	2,450	10,000	0 10 0	..	29	8	..	..	2,219	..	286
Waihi Gold-mining Company (Limited) ..	7/12/87	495,907	19,212	..	..	1 0 0	..	2,247	573	17,204,122	11,878,705	6,438,917	850,799	39,874

* 363,782 oz. of silver produced. † Silver, 13,191 oz. ‡ Silver, 560,661 oz. §Quicksilver.

No. 7—*continued.*

Statement of Affairs of Mining Companies, as published in accordance with the Companies Act, 1908—*continued.*

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid 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.			
NELSON DISTRICT (INCLUDING WEST COAST).														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Blackwater South Gold-mining Company (Limited)	2/11/14	6,602	6,101	..	58,203	0 10 0	39	43	..	..	..	5,813	..	195
Boatman's Consolidated Gold-mines (Limited) ..	10/8/15	29,592	21,516	22,000	51,952	..	435	341	19	..	..	32,564	..	2,560
Dominion Consolidated Developing Company (Limited)	18/1/11	15,000	7,000	8,000	15,000	1 0 0	..	47	50	13,198*	48,891	107,099	3,750	455
Five-mile Beach Gold-extraction Company (Limited)	16/6/13	16,305	7,727	1,000	16,305	1 0 0	1,578	75	..	..	..	6,287	..	2,541
Kapitea Goldfields (Limited)	–/7/16	3,750	3,750	6,250	10,000	1 0 0	..	44	13	2,418	9,416	13,209	1,500	498
Mount Greenland Gold-quartz Mining Company (Limited)	21/11/14	5,000	4,448	855	10,000	0 10 0	..	90	7	1,362	5,355	6,285	500	290
Murray Creek Gold-mining Company (Limited) ..	30/5/11	50,000	44,271	2,000	50,000	1 0 0	20	133	80	15,111	49,720	116,160	..	350
New Big River Gold-mining Company (Limited)	19/8/07	6,000	600	..	24,000	0 0 6	..	61	42	57,751	233,185	164,081	100,800	77
New Keep-it-Dark Mines (Limited)	26/2/17	50,000	10,467	32,983	50,000	0 17 0	131	201	40	2,760	10,537	21,944	..	15,749
North Blackwater Development Syndicate (Limited)	19/11/15	31,930	22,972	..	3,193	..	..	39	..	..	..	30,302	..	3,112
Victory Mines Syndicate (Limited)	20/2/18	3,500	3,231	3,750	290	25 0 0	..	100	8	..	..	6,437	..	6
OTAGO DISTRICT (INCLUDING SOUTHLAND).														
Deep Stream Gold-mining Company (Limited) ..	19/11/06	2,500	500	2,000	2,500	1 0 0	..	7	..	2,528	9,713	9,428	2,000	325
Dredges (Limited)	28/4/17	10,000	5,000	..	10,000	0 10 0	88	12	..	..	..	4,854	..	307
Earnscleugh Gold-dredging Company (Limited)..	15/7/01	8	8	10,992	11,000	1 0 0	..	17	21	56,150	215,595	191,267	30,250	692
Gabriel's Gully Sluicing Company (Limited) ..	2/5/07	600	180	..	600	0 6 0	..	9	18	11,654	45,037	37,389	12,455	201
Golden Crescent Sluicing Company (Limited) ..	26/11/98	3,500	3,500	..	3,500	1 0 0	..	22	7	10,018	39,046	29,983	11,900	80
Havelock Sluicing Company (Limited).. ..	3/3/08	4,000	3,400	600	4,000	1 0 0	..	13	5	7,939	30,460	24,149	10,800	1,563
Ladysmith Gold-dredging Company (Limited) ..	19/4/00	12,000	3,964	3,000	14,500	0 10 0	..	79	4	13,147	50,660	38,797	16,376	70
Lawrence Sluicing Company (Limited).. ..	18/3/16	5,000	5,000	..	5,000	1 0 0	..	22	7	958	3,728	4,639	250	55
Lower Nevis Dredging Company (Limited) ..	29/9/06	600	600	600	1,200	1 0 0	..	7	4	6,734	25,863	24,221	2,970	136
Mareburn Gold and Scheelite Mining Company (Limited)	18/4/14	6,000	5,947	..	6,000	1 0 0	53	8	6	451	1,612	7,464	..	48
Muddy Terrace Sluicing Company (Limited) ..	4/10/06	14,400	14,400	5,550	19,950	1 0 0	..	126	15	11,910	47,365	78,574	..	16,989
New Alexandra Gold-dredging Company (Limited)	16/2/16	1,325	1,325	..	1,325	1 0 0	..	13	10	1,216	4,676	6,859	..	1,184
New Crewe Gold-dredging Company (Limited) ..	2/11/16	1,000	500	..	1,000	0 10 0	..	19	..	3	12	294	..	12
North Blackwater Mines (Limited)	23/7/18	200,000	3,156	179	200,000	1 0 0	..	58	13	..	..	3,148	..	606
Ngapara Gold-dredging Company (Limited) ..	9/9/11	..	..	2,400	3,000	0 16 0	..	10	9	1,049	4,040	25,392	4,950	142
Nokomai Hydraulic Sluicing Company (Limited)	26/3/98	24,000	7,000	17,000	24,000	1 0 0	..	69	25	46,295	172,991	128,807	51,083	410
Ourawera Gold-mining Company (Limited) ..	23/5/95	3,000	3,000	..	3,000	1 0 0	..	17	8	14,513	57,863	47,286	14,815	..
Phœnix Water-race Company (Limited) (Regd.)	12/10/67	1,500	1,500	..	1,000	1 10 0	..	19	1	..	..	1,459	9,562	14

* Scheelite, 23 tons, £57,514.

No. 7—*continued.*

STATEMENT OF AFFAIRS OF MINING COMPANIES, AS PUBLISHED IN ACCORDANCE WITH THE COMPANIES ACT, 1908—*continued.*

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid 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.			
OTAGO DISTRICT (INCLUDING SOUTHLAND)—*continued.*														
		£	£	£		£ s. d.	£			Oz.	£	£	£	£
Pukepouri Gold-mining Company (Limited) ..	22/1/14	2,500	2,277	..	2,500	1 0 0	224	24	..	22	87	3,581	..	1,086
Pukerangi Gold and Scheelite (Limited) ..	15/8/17	15,000	2,500	5,000	30,000	10 0	..	28	2	..	698*	3,409	..	105
Rise-and-Shine Gold-dredging Company (Limited)	24/2/00	10,000	9,746	2,000	12,000	1 0 0	254	154	19	49,449	191,905	150,540	53,100	1,032
Rising Sun Gold-dredging Company (Limited) ..	16/2/01	8,000	5,500	2,500	8,000	1 0 0	..	79	10	25,385	98,270	76,062	24,000	170
Round Hill Mining Company (Limited) ..	30/7/02	28,245	6,753	21,492	5,649	5 0 0	..	180	16	45,340	181,458	177,872	12,287	1,100
Sailor's Gully (Waitahuna) Gold-mining Company (Limited)	3/6/96	8,400	200	8,200	8,400	1 0 0	..	24	6	6,604	25,326	21,148	5,000	324
Scandinavian Water-race Company (Limited) ..	10/12/07	7	..	9,750	9,757	1 0 0	..	20	5	7,319	27,869	30,458	..	7,044
Skipper's Sluicing Company (Limited) ..	20/11/11	3,450	345	3,105	3,450	1 0 0	..	30	2	1,344	5,178	5,733	..	401
Success Gold-dredging Company (Limited) ..	25/5/10	10,000	8,000	2,000	10,000	1 0 0	..	127	11	12,356	48,720	50,362	5,500	133
Tallaburn Hydraulic Sluicing Company (Limited)	3/12/04	1,200	1,200	..	12	100 0 0	..	9	2	1,808	6,984	8,236	1,380	290
Teviot-Molyneux Gold-mining Company (Limited)	24/12/09	35,000	25,000	10,000	35,000	1 0 0	..	23	12	836	3,156	50,453	..	..
Undaunted Tinkers Gold-mining Company (Limited)	6/9/17	20,007	2,748	15,000	20,007	0 18 0	214	53	9	542	2,087	5,910	..	1,097
United M. and E. Water-race Company (Regd.)	8/4/72 23/4/72	7,600	7,600	..	152	50 0 0	..	9	3	16,945	65,311	71,199	3,306	199
Vinegar Hill Hydraulic Sluicing Company (Limited)	23/9/00	6,000	6,000	..	6,000	1 0 0	..	13	3	3,974	15,267	14,146	..	274
Waikaka Deep Lead Gold-dredging Company (Limited)	16/6/13	6,000	6,000	..	6,000	1 0 0	..	13	1	3,130	12,520	21,114	300	3,367
FOREIGN MINING COMPANIES.														
Hohonu Diamond Terrace Gold-mining and Water-race Company	8/6/14	22,500	3,714	..	..	..	570	..	3	549	2,152	13,306	..	600
Talisman Consolidated (Limited)	14/9/16	345,000	4,500	..	..	1 0 0	..	1,331	120	100,014	264,635	121,995	86,250	9,683
Waihi Grand Junction Gold-mining Company (Limited)	28/12/97	385,000	40,495	..	..	1 0 0	..	1,187	353	..	1,679,680	1,514,532	123,836	3,659

* Scheelite.

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, 15th April, 1919.

I have the honour to present my thirteenth annual report on metalliferous mines and stone-quarries, together with annexures and statistical information, for the year ended 31st December, 1918.

At the request of the Imperial authorities the quantity and value of gold produced or exported during 1918, as during the period of the war, is not published in this report.

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, 1918, to the 31st March, 1919.

The reports, &c., are divided into the following sections:—

I. Minerals (other than Gold) entered for Exportation.

II. Persons employed.

III. Accidents.

IV. Gold-mining.
- (1.) Quartz-mining.
- (2.) Dredge Mining.
- (3.) Alluvial Mining.

V. Minerals other than Gold.

VI. Stone-quarries.
- (1.) Quarry Inspection and Statistics.
- (2.) Accidents.

VII. State Aid to Mining.
- (1.) Subsidized Prospecting.
- (2.) Government Prospecting-drills.
- (3.) Subsidized Roads on Goldfields.
- (4.) Government Water-races.

VIII. Schools of Mines.

Annexures,—
- (A.) Summary of Reports by Inspectors of Mines.
- (B.) Summary of Reports by Water-race Managers.
- (C.) Summary of Report by the Inspector of Stone-quarries for the North Island.

I. MINERALS ENTERED FOR EXPORTATION.

The following statement shows the value of minerals (other than gold) entered for exportation from metal-mines, quarries, and kauri-gum fields from the 1st January, 1853, to the 31st December, 1918:—

Classification.	1917.	1918.	Increase or Decrease.	Total from the 1st January, 1853, to the 31st December, 1918.
	£	£	£	£
Silver	105,299	171,456	Inc. 66,157	2,458,248
Quicksilver	...	2,122	" 2,122	2,122
Tungsten-ore	28,972	37,922	" 8,950	268,444
Other minerals	6,847	5,882	Dec. 965	425,368
Kauri-gum...	291,917	157,313	" 134,604	18,325,252

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, 1918.
	Northern.	West Coast.	Southern.	
Gold, silver, and tungsten	1,264	760	542	2,566
Cinnabar	13	...	...	13
Asbestos	...	3	...	3
Totals for 1918	1,277	763	542	2,582
Totals for 1917	1,432	925	655	3,012

During the period of the present war—viz., 1914 to 1918 inclusive—the number of metal-miners employed has declined 430; but as most of the principal quartz-mines have considerably reduced their ore reserves during the war period the shortage of metal-miners is by no means so acute as that of coal-miners.

III. ACCIDENTS.

The following is a summary of persons killed or seriously injured in metalliferous mines during 1918:—

Inspection District.	Explosives.		Falls of Ground.		In Shafts.		Miscellaneous Underground.		Surface.		About Dredges.		Total.	
	Killed.	Seriously Injured.	Killed.	Seriously Injured.	Killed.	Seriously Injured.	Killed.	Seriously Injured.	Killed.	Seriously Injured.	Killed.	Seriously Injured.	Killed.	Seriously Injured.
Northern	...	2	...	...	...	...	...	...	1	...	...	...	1	2
West Coast	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Southern	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Totals	...	3	...	...	...	...	...	...	1	...	1	...	2	3

The proportion of fatalities per 1,000 persons employed was 0·77, being, with one exception, the lowest hitherto recorded for the metal-mines of the Dominion, and less than one-quarter of the proportion of fatalities in the United States or South Africa.

Neither of the two fatalities occurred in or about mines, however, one being in connection with drilling for oil; the other happened upon a gold-dredge. Both operations being controlled by the Mining Act, the fatalities have been included among mining accidents.

The following is a description of fatal accidents during 1918 at operations which are under the Mining Act:—

Date.	Name and Situation of Mine or Operations.	Name, Age, and Occupation of Person killed.	Description of Accident, and Remarks.
1918. 29 Oct.	Taranaki Oil-wells (Limited), Moturoa	Frank Salmons Drury (33), derrick hand	He with four other men were at No. 5 bore, rotating fishing-rods, working with two pairs of tongs, one used for holding the strain, the other for rotating. The tongs used for rotating were pulled around by block and tackle; these at the time of the accident were being pulled by an engine. They had considerable strain on the fishing-stem, when, releasing the pulley hold, the strain was all on the holding-tongs. When about to hook the blocks on to take a fresh hold the pin that holds the chain in place on the bottom tongs sheared off, allowing the pulling-tongs to swing back with considerable force, striking in the first instance another man, but not doing him much harm, and then hitting deceased, inflicting injuries from which he died the same day. The Coroner found that the occurrence was entirely accidental, no blame being attachable to any one.
21 Nov.	Rise-and-Shine No. 2 Dredge, Cromwell	John Macauley Wright-son (41), winchman	His body was found jambed between two pinions of a winch on the opposite side to that on which the driver usually stands. The winch was in good order. The dredgemaster believed that deceased thought he had steam shut off, and either went to put the clutch in, or to look at the toothed wheels, and while doing so touched the reversing-lever and set the engine in motion, and was caught by his loose clothing and drawn into the wheels. He was an experienced, careful, and sober man. The Coroner's jury found that there was no conclusive evidence to show how the accident occurred, and that no person was blameworthy.

IV. GOLD-MINES.

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

	Dividends paid. (By Registered Companies only.)		Number of Persons ordinarily employed, 1918.	Number of Productive Quartz-mines, Alluvial Mines, and Dredges, 1918.
	1918.	1917.		
	£	£		
Quartz-mining	193,519	203,069	1,751	50
Dredge mining	4,925	4,800	187	28
Alluvial mining	4,953	5,710	520	153
Totals	203,397	213,579	2,458	231

(1.) Quartz-mining.

The following is a statement showing the tons of ore treated and the amount of dividends paid by quartz-mining companies in each of the inspection districts during the years 1917 and 1918:—

Inspection District.	Statute Tons of Ore treated.		Dividends paid. (By Registered Companies only.)	
	1918.	1917.	1918.	1917.
			£	£
Northern	259,103	298,396	178,619	195,619
West Coast	86,495	105,539	14,900	7,450
Southern	1,690	5,381	...	...
Totals	347,288	409,316	193,519	203,069

The following is a statement of the quantity of quartz treated, dividends declared, and the number of persons employed by the principal gold-quartz mining companies during 1917 and 1918 :—

Name of Company.	Quantity of Quartz treated, 1918.	Dividends paid.		Number of Persons ordinarily employed during 1918.	Quantity of Quartz treated, 1917.
		1918.	Total to End of December, 1918.		
	Statute Tons.	£	£		Statute Tons.
Northern District—					
Waihi Gold-mining Company (Limited)*	168,748	99,181	5,238,876	553	171,198
Waihi Grand Junction Gold-mining Company (Limited)	71,616	38,438	267,064	325	103,687
Talisman Consolidated (Limited)	13,865	34,500	1,133,722	131	16,007
Waihi-Paeroa Gold-extraction Company	..	6,250	25,000	60	..
West Coast District—					
Wealth of Nations	3,720	..	..	24	17,133
Blackwater Mines (Limited)	31,728	12,500	174,994	108	34,417
New Big River Gold-mining Company (Limited)	4,163	2,400	100,800	36	5,201
Progress Mines of New Zealand (Limited)	16,320	..	326,562	75	19,840
Murray Creek Gold-mining Company	9,749	..	21,727	51	9,728
Other quartz-mines throughout New Zealand	27,379	250	..	..	32,105
Totals	347,288	193,519	7,288,745	1,751	409,316

The following is a brief summary of the operations at the principal mines during the year ; more detailed references are contained in the Reports of the Inspectors of Mines appearing in Annexure A accompanying this report :—

Northern Inspection District.

Waihi Gold-mining Company.—At the lowest or No. 12 (1,448 ft.) level no development was carried out, this level being under water. At No. 11 (1,301 ft.) level quartz of low value was proved in the Empire and Royal lodes. At No. 10 (1,151 ft.) level the Empire lode was proved to contain payable values. A small decrease occurred during the year in the production of ore and bullion, but the average value per ton was maintained.

Waihi Grand Junction Gold-mining Company.—Development was confined to No. 8 (1,320 ft.) level owing to suspension of pumping from the lowest level of the adjoining Waihi Mine. At No. 8 level the Empire and Royal lodes where exposed contained low values. There was a decline in the production of ore and of bullion, also in the value per ton treated.

Talisman Consolidated.—Operations at the lowest or No. 16 level ceased during the year and pumps were withdrawn. The ore treated was obtained principally from stopes in the Bonanza section immediately below No. 13 level ; little of this rich ore now remains to be stoped. Prospecting by means of a Government diamond drill is now being carried out to prove the Woodstock lode under the crosscut driven 70 ft. below No. 13 level ; also the Bonanza lode from holes to be drilled at the bottom of winzes Nos. 6 and 12 respectively, being approximately from the horizon of No. 15 level. The annual production has slightly declined, but the value per ton increased from £8 12s. 5d. to £9 0s. 5d.

Waihi-Paeroa Gold-extraction Company.—This company, which since March, 1912, has recovered and re-treated tailings from various mines deposited in the Ohinemuri River, a proclaimed sludge-channel, during the year went into liquidation and offered its extensive treatment plant for sale. Since the commencement of operations 907,138 statute tons of tailings were treated for a return of £276,211, being an average value of 6s. 1d. per ton. The total expenditure by the company was about £320,000. Dividends amounting to £25,000 were declared. The reason for the failure of this undertaking is obvious, values obtained being too low to cover costs.

Muir's Gold Reefs.—This recently formed company, the mine of which is situated on freehold land near Te Puke, having developed from adits a moderate reserve of ore, has installed a ten-stamp mill and small cyanide plant, which will be in operation at an early date. This company received a Government subsidy during the year for driving a level on its proved lode.

West Coast Inspection District.

Boatman's Consolidated Mine.—The old Fiery Cross shaft having been retimbered and continued to a depth of 1,025 ft., a crosscut was projected eastward to intersect the supposed course of the Fiery Cross lode, profitably worked in the upper levels many years ago before the shoot of ore disappeared. The results so far attained have been negative, only a series of parallel fissures or faults having been encountered in the vicinity of the supposed lode course. The operations of this company were subsidized by the Government to the extent of £10,000.

Blackwater Mines.—Development at No. 7 (1,065 ft.) level at a distance of about 750 ft. southward from the shaft proved the lode to be faulted and horizontally displaced about 95 ft. The lode

being subsequently located was found to be about 6 ft. in thickness, containing average values. This development is of importance. The maintenance of the Blackwater lode in course, average thickness, and values is probably unique as regards New Zealand lodes, frequent faulting or pinching out of the lode being the rule at most of the quartz-mines of the Dominion. The prospectors who discovered the Blackwater lode were assisted by a Government subsidy.

Murray Creek Gold-mining Company.—The only development was carried out at No. 4 level, where a small quantity of ore was proved. The value of the bullion obtained per ton of ore treated declined 6s. 6d.

New Big River Gold-mining Company.—Development was confined to No. 11 (1,775 ft.) level. During the year there was a decline in the quantity of ore produced, and of 5s. 10d. per ton in its value.

North Blackwater Development Syndicate.—Little development was carried out owing to the installation of winding plant. Chambers have been excavated for proposed levels. Crosscuts were driven at the 1,000 ft. and 1,200 ft. levels. This syndicate was assisted by a Government subsidy of £10,000.

Wealth of Nations and Progress Mines of New Zealand.—The production was small owing to the destruction by fire in April, 1918, of the shaft head-gear and nearly all the surface buildings, together with much machinery.

Southern Inspection District.

In Otago and Southland gold-quartz mining operations were unimportant. The Otago Central Gold-mining Company, operating near Bannockburn, received a Government subsidy for driving, but no discovery of value resulted.

(2.) Dredge Mining.

On the West Coast seven dredges produced gold.

In Otago and Southland twenty-one dredges produced gold.

The number of persons employed upon gold-dredges in the Dominion was 187.

During the year a considerable amount of prospecting was carried out by Government Keystone drills under the superintendence of Mr. G. E. D. Seale on claims in the Arahura Valley and at Rimu Flat, Westland. The results are reported to be satisfactory. A dredge formerly known as "Worksop No. 2" has been removed to the Arahura Valley and has during the current year been put into commission. The results so far attained have been moderate.

The following is a statement showing the capacity and profits of bucket gold-dredges during 1918. (Note.—The profits made 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.	S = Steam. H = Hydraulic. E = Electrical. SG = Suction Gas.	Average Depth of Ground dredged.	Dividends declared.	
							During 1918.	Total.
Otago and Southland.						Ft.	£	£
Rise-and-Shine No. 1	Cromwell	5½	10	20	S	40	..	53,100
Rise-and-Shine No. 2	,,	5½	10	20	S	40		
Rising Sun	,,	7	10	25	S	45	..	24,000
Ferry (private)	,,	4½	11½	16	S	40	..	..
Earnscleugh No. 3	Alexandra	7	12	150	E	50	..	30,250
Earnscleugh No. 5	,,	6	13	150	E	35		
Ngapara	,,	5	10½	16	S	30	525	4,950
New Alexandra (private)	,,	6	10	25	S	35	..	..
Gorge (late Manuherikia)	,,	5	11	16	S	40	..	..
Olrig	,,	5	10	16	H	15	..	300
Lower Nevis	Nevis	4	11	12	S	10	..	2,970
Nevis Crossing (private)	,,	3½	10	12	S	10	..	..
Crewe No. 2	,,	3½	12	12	S	30	..	..
Otakau	Kyeburn	4½	12	70*	SG	16	300	2,925
Rosedale (private)	Waikaka	4½	10	16	S	16	..	..
Star (private)	Waikaka Valley	4	11	12	S	9	..	..
McGeorge's Freehold No. 2 (private)	,,	6½	9	16	S	14	..	..
McGeorge's Freehold No. 3 (private)	,,	6½	9	20	S	35	..	..
Charlton Valley (private)	Charlton Creek	3¾	11	16	S	18	..	..
Koputai (private)	Waikaia	6	11	16	S	20	..	..
Kura (private)	,,	3½	9	16	S	30	2,600	4,527
West Coast.								
Success	Near Hokitika	6	12	25	S	30	500	5,500
Kapitea	Near Kumara	5	10	16	S	..	1,000	1,500
Ahaura	Ahaura River	7	11	20	S	35	..	..
Rimu No. 1	Rimu	7	10	16	S	20	..	..
Worksop No. 2	Antonio's Creek	8	14	16	S	21	..	43,350
Slab Hut Creek	Tawhai (near Reefton)	5	11	12	S	16	..	..
Hessey, Cameron, and Tacon	Capleston	6	11	20	S	30	..	6,480

* Brake horse-power.

(3.) Alluvial Mining.

On the West Coast two new sluicing companies, having almost completed their water-races and surface works, propose to commence sluicing during the current year—viz., the Hochstetter Goldfields (Limited), which has expended about £100,000 upon a water-race from Lake Hochstetter to its claims on the terraces at Riverview, on the Arahura River, and the Westland Prospecting Syndicate, the recipient of a Government subsidy for prospecting-shafts, whose claims are situated near Lake Kanieri. It will be seen, therefore, that alluvial mining either by sluicing or dredging on the West Coast still attracts a considerable amount of capital where the ground has been properly tested by drilling and sinking preparatory to the installation of plant and construction of water-races.

V. MINERALS OTHER THAN GOLD.

Tungsten-ore.

The quantity of tungsten-ore exported during the year amounted to 169½ tons, valued at £37,922, as compared with 161 tons, valued at £28,972, in 1917. The following statement shows the quantity and value of ore exported:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£
1899	32	2,788	1910	143	15,070
1900	54	2,635	1911	138	11,853
1901	2	83	1912	135	13,347
1902	39	1,200	1913	221	22,933
1903	42	1,439	1914	204	21,498
1904	17	791	1915	194	27,784
1905	28	1,848	1916	266	49,070
1906	55	3,407	1917	161	28,972
1907	137	15,486	1918	169½	37,922
1908	68	6,055			
1909	58	4,263	Totals ..	2,163½	268,444

The quantity of tungsten concentrate obtained during the year was 143$\frac{6}{20}$ tons, as compared with 199½ tons for the previous year, and 258 tons during 1916. The increased quantity exported during 1918, as shown in the above table, is due to the liberation of concentrate which had been held back in anticipation of an increased price being offered by the Imperial Government.

During the war period the price was raised from £2 15s. per unit (per ton of tungstic acid) to £3 8s. Prior to 1914 the market price was about half the latter amount. The decline in production may be attributed to depletion of known deposits and neglect of development underground. The number of persons employed at scheelite-mines has been maintained. During 1919 the Imperial Government has discontinued buying the whole of the output of tungsten-ore produced in the Empire, which will probably affect the current price as previously fixed by war requirements.

The following is a table showing the quantity of quartz crushed and scheelite concentrates obtained for the year ended the 31st December, 1918:—

Name of Mine or Company.	Locality.	Quartz crushed.	Scheelite Concentrates obtained.	Value.
Marlborough—		Tons.	Tons. cwt. qr. lbs.	£
Dominion Consolidated Company	Wakamarina	11,973	23 1 2 4	4,761
Deep Creek Gold-mining Syndicate	,, ...	77	0 1 0 0	23
J. M. Cadigan	,, ...	Concentrates.	4 0 0 0	800
J. Whiting	Tophouse	..	0 1 3 4	26
Otago and Southland—				
Glenorchy Scheelite Company, and five parties of miners	Glenorchy, Lake County ..	1,059	65 0 1 5	14,365
John R. Tripp	,, ,, ..	..	0 6 0 0	66
Sutherland and Hood	,, ,, ..	5	1 0 1 19	226
Hall and Ross	,, ,, ..	10	2 11 0 1	564
W. H. Long	,, ,, ..	..	0 4 2 3	50
Black and McPherson	,, ,, ..	5	2 1 0 19	455
Grant and Sinclair	,, ,, ..	..	2 3 3 23	486
Hood and Beasley	,, ,, ..	18	2 16 2 3	625
Thomas Scurr	,, ,, ..	..	0 16 1 9	180
Paulin and Tripp	,, ,, ..	16	6 13 3 21	1,480
Huntly Groves	,, ,, ..	50	1 3 2 19	262
Golden Point Gold-mining Company	Macrae's, Waihemo County	34	2 6 2 4	513
Deep Dell	,, ,,	8	1 5 2 11	283
G. A. Carson	,, ,,	1½	0 6 2 8	73
A. Phelan	,, ,,	2	0 10 2 1	116
F. A. Smith	,, ,,	8	1 0 2 9	227
Fraser and Gaytan	,, ,,	20	5 3 2 1	1,144
Gaytan and Innes	,, ,,	14	2 18 1 22	646
Hugh Fraser	,, ,,	9	0 15 0 2	166
Phelan and McConnell	,, ,,	4	0 12 3 27	143
Philip Donoghue	,, ,,	6	1 6 3 11	297
A. A. Cockerell	,, ,,	3½	0 7 0 0	77
Cockerell and Randall	,, ,,	32	4 10 1 26	999
C. Brown	,, ,,	2	0 7 3 3	86
J. H. Evans	,, ,,	..	0 13 0 14	145
Donaldson Bros. and Ellis ..	,, ,,	3½	0 15 3 18	176
D. Allan	,, ,,	15	2 7 1 16	524
Stoneburn Mining Company ..	Stoneburn, ,,	386	0 5 0 15	57
Mareburn Mining Company ..	Hyde, ,,	819	2 6 0 23	510
R. A. Mathewson	,, ,,	..	0 1 3 14	21
Pukerangi Mining Company ..	The Reefs, Taieri County ..	118	2 2 0 22	466
H. S. Molineaux	,, ,, ..	40	0 8 1 8	92
C. G. White	,, ,, ..	10	0 7 3 24	88
Reefs Syndicate	,, ,, ..	339	0 5 0 0	55
Totals, 1918	..	15,098	143 6 0 17	31,279
Totals, 1917	..	19,655	199 8 2 11	37,863
Decrease	..	4,557	56 2 1 12	6,584

Certain of the above mines also produced a quantity of gold.

Petroleum.

No development of commercial value occurred during the year as the result of oil-prospecting operations, and none of the existing bores yielded oil in payable quantity.

The Taranaki Oil-wells (Limited) was engaged during the year recasing No. 5 bore with 8 in. pipe. No drilling was done. During 1918 7,550 gallons of crude oil was obtained from No. 3 bore. The Blenheim Oil Company continued drilling its Blenheim borehole to a depth of 5,329 ft., the greatest depth attained in the Dominion. The Canterbury Petroleum Company, operating near Chertsey, continued drilling through gravel and conglomerate to a total depth of 1,820 ft. The Kotuku Oilfields Syndicate attained a depth of 3,466 ft. in the Waipatiki bore and obtained strong gas emissions.

The following are particulars regarding the deep boreholes in the Dominion :—

Name of Company.	Name or Number of Well.	Locality.	Total Depth in Feet.	Result of Drilling and Present Operations, if any.
Taranaki Oil-wells	1	Moturoa	3,030	Suspended.
,, ...	2	,, ...	3,045	Feebly productive; 8 in. casing.
,, ...	3	,, ...	4,040	Feebly productive, intermittently; 4 in. casing.
,, ...	4	,, ...	850	Unproductive; casing withdrawn.
,, ...	5	,, ...	2,950	Productive; relining with 8 in. casing.
,, ...	6 (rotary)	,, ...	2,885	Casing withdrawn.
,, ...	1	Bell Block, Waitara ..	3,821	Unproductive; abandoned.
,, ...	2	,, ,, ..	2,970	,, ,,
Blenheim Oil Company ..	Blenheim	Moturoa	5,329	Feebly productive at 2,200 ft.; very small flow; 5 in. casing to 5274 ft., thence 3½ in. casing.
Phœnix Oil	..	,, ...	2,300	Abandoned or suspended.
Consolidated Oilfields of Taranaki	..	Huiroa	4,921	Drilling stopped; hole blocked.
Bonithorn Freehold Oil ..	..	Near New Plymouth ..	2,505	Drilling stopped.
United Oil	..	Tikorangi, Waitara River	695	Abandoned or suspended.
Kotuku Oilfields Syndicate ..	..	Near Lake Brunner ..	952	Abandoned (in primary rock).
,, ..	Kaimata bore	,, ..	1,335	Stopped; strata unfavourable.
,, ..	1	Near Waipatiki, Hawke's Bay	3,466	Drilling; strong gas emissions.
,, ..	2	Ditto	2,000	Drilling stopped.
New Zealand Oilfields.. ..	1	Totangi, Gisborne ..	511	Abandoned or suspended.
,, ...	2	Waihirere	1,375	,,
Mangaone Oilfields	1	Mangaone Valley, near Ekctahuna	3,000	,,
,, ...	2	Near Ekotahuna ..	114	,,
Canterbury Petroleum Prospecting Company	1	Near Chertsey ..	1,896	Still drilling; 1,500 ft. of gravel and conglomerate; 5 in. casing; traces of oil-gas.

Cinnabar.

The Whangarei Cinnabar-mining Company, whose operations are carried on at Puhipuhi, North Auckland, has been renamed the "New Zealand Quicksilver-mines (Limited)." During 1918 the company mined and retorted about 582 tons of ore for a return of 11,296 lb. of quicksilver, valued at £2,824. The Customs returns show that during the same period there was entered for exportation 4½ tons (10,080 lb.) of quicksilver, valued at £2,122.

The Inspector of Mines reports that during the year mining development has not been carried out, the reserve of ore being drawn upon to supply the retorts.

Kauri-gum.

The kauri-gum industry being under the administration of a separate Department controlled by a Superintendent, and reported on in an official annual report by that officer, reference to such industry in this report is confined to the publication of the quantity and value of this mineral which has been exported, and to new processes which have and are being adopted for the recovery or treatment of kauri-gum prior to shipment, and to the extraction of oil therefrom.

During 1918 2,419 tons of kauri-gum, valued at £157,313, was exported, the total quantity and value of gum exported to the end of 1918 being respectively 356,292 tons, valued at £18,325,252.

During the past five years attempts have been made to raise kauri-gum from swamp land by means of gold-dredges, but up to the present time the profits therefrom, if any, have been small.

Since 1917 progress has been made in the development of the kauri-peat oil-extraction. Plants are being installed by two companies—viz., the New Zealand Peat-oils Company (Limited), who propose to operate on 3,000 acres at Kaimaumau, north of Mangonui, and by the Parenga Gum-fields (Limited), who will shortly commence operations at Redhill, Northern Wairoa, upon 6,000 acres. It is proposed to refine from the crude oil motor-spirit (benzine), paint-oil, and varnish-oils, with the residuum pitch.

The following is the result of analyses by the Dominion Analyst of samples of peat from Kaimaumau taken from a depth of 12 ft. :—

	Sample No. 1.	Sample No. 2.	Sample No. 3.	Sample No. 4.	Sample No. 5.
Total crude oil, in gallons per ton ..	29·8	17·3	20·2	40·9	29·0
Gas (cubic feet per ton)	..	..	..	..	4,300
Ammonia sulphate, in pounds per ton	11·9	13·2	11·2	10·5	14·1
Charcoal (hundredweight per ton) ..	..	..	..	..	7·2
Acetic acid (pounds per ton) ..	..	..	..	..	8·0

A new process for cleaning low-grade gums has been discovered and patented by Dr. J. S. Maclaurin, Government Analyst. By this process, known as the "salt vacuum process," the gum-containing dirt is agitated in a conical tank containing a strong solution of common salt, the air being removed by a pump. Upon stopping the agitation the gum and dirt separate by gravity, the gum rising to the top of the tank, while the dirt sinks to the bottom, where it is drawn off.

VI. STONE-QUARRIES.

(1.) Quarry Inspection and Statistics.

The operations of the Stone-quarries Act are confined to those places (excluding mines) where stone is quarried or tunnelled by means of explosives, and to those places where the rock-face is more than 20 ft. deep. It will thus be seen that an important section of the quarrying industry, including the Oamaru limestone-quarries and those at which high faces are worked without explosives, likewise all Government quarries, do not come under the operations of the Act, which is unfortunate from the viewpoint of safety or the collection of statistics. In the Stone-quarries Act or Regulations no provision has been made for annual returns of quarrying statistics, such as is provided in the Coal-mines and Mining Acts, for the annual returns of output and other particulars necessary for the compilation of statistics. Under these circumstances the Quarry Inspectors are dependent upon the generosity of quarry owners or managers for any statistical information which is required for official use.

The table accompanying this report, containing the number of quarries, the number of persons employed, also the output, must therefore be regarded as approximate only. From the information available, however, it will be seen that the quarrying industry is rapidly growing to considerable importance. The production of 247 stone-quarries which are under the operation of the Act amounted to 840,426 tons. At these quarries 1,453 persons were employed.

The production of limestone for agriculture and cement-manufacture amounted to 123,314 tons. A decline occurred in the quantity of stone used upon harbour-works.

Table showing the Number of Quarries under the Stone-quarries Act, 1910, also the Number of Persons ordinarily employed thereat, and the Annual Output of Crude Stone during 1918.

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 Crude Stone.							
				Stone or Gravel for Macadamizing or Ballast.	Stone for Harbour-works.	Building-stone.	Limestone for Agriculture.	Limestone for Cement or Mortar.	Phosphate for Agriculture.	Fireclay for Bricks or Tiles.	Sand for Building or Asphalting.
				Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Auckland ..	James Newton, Mines Dept., Auckland	100	651	322,921	8,505	2,578	250	115,420	..	..	..
	M. Paul, Mines Dept., Waihi (Hauraki Mining District only)	11	71	39,904	..	735	..	..	..	..	..
Hawke's Bay	James Newton, Mines Dept., Auckland	11	65	18,215	..	..	16,000	..	..	..	..
Taranaki ..	Ditto	15	60	38,237	..	..	..	..	..	..	..
Wellington ..	,, ...	60	147	59,773	12,605	..	4,001	..	..	..	..
Greymouth and Westport	G. Duggan, Mines Dept., Greymouth	2	15	..	15,369	..	..	..	..	..	..
Nelson	J. F. Downey, Mines Dept., Reefton	4	112	400	..	653	..	23,494	..	..	..
Westland		1	15	..	..	..	400	..	..	..	..
Canterbury	E. R. Green and A. Whitley, Mines Dept., Dunedin	16	98	65,993	33,602	..	4,428	1,642	..	..	437
Otago		20	161	56,430	7,980	231	56,748	11,371	5,000	2,500	5,749
Southland		7	48	9,296	12,000	..	4,980	..	..	..	..
Totals 1918	..	247	1,453	611,169	90,061	4,197	86,807	36,507	5,000	2,500	6,186
Totals 1917	..	151	1,000	620,261	180,161	6,409	69,861	154,717	5,050	..	3,124

Further particulars regarding the inspection of stone-quarries in the North Island are contained in the annual report by Inspector James Newton, appearing in Annexure B accompanying this report.

(2.) Quarry Accidents.

The following is a summary of persons killed or seriously injured during 1918 at stone-quarries and places within the operation of the Stone-quarries Act:—

Cause of Accident.	Number of Accidents.		Number of Sufferers.	
	Fatal.	Serious.	Killed.	Seriously Injured.
Explosives	..	1	..	2
Falls of ground	2	..	2	..
Falling from face, or during ascent or descent	..	..	..	..
Miscellaneous	..	2	..	2
Totals	2	3	2	4

The fatal accidents were in the proportion of 1·40 per 1,000 persons employed.

The total number of quarry accidents is the lowest since the Act came into operation during 1910. Both the fatal accidents were caused by falls of rock. That by which James Ward Cotton, a carter, lost his life at Shiel's quarry, Dunedin, was due to neglect by the management in not making the face safe. A fine of £20 and costs was inflicted for this breach of the law. In the case of John King, quarry foreman, killed at Cobden quarry, the evidence at the inquest showed that deceased took a risk by working under loose rock, and that no other person was blameworthy.

The non-fatal accidents were only four in number.

The regular and efficient inspection of stone-quarries by experienced Inspectors of Mines, who are also Inspectors of Stone-quarries, has greatly improved the conditions of the stone-quarries as regards safety.

The following is a description of fatal accidents during 1918 at quarries which are under the Stone-quarries Act:—

Date.	Name and Situation of Quarry.	Name, Age, and Occupation of Person killed.	Description of Accident, and Remarks.
3 July	Shiel's quarry, St. Clair, Dunedin	James Ward Cotton (42), carter	He was sent by his employer, C. J. Mead, a carting contractor to the Dunedin City Council, to Shiel's quarry to load stone into his dray. On arrival there he was directed by Henry J. Harrison, quarry foreman, to back his dray and load broken stone from a fall at the face near an overhanging basalt column, the base of which had been removed by blasting some time previously. While he was loading at the place directed a small fall of stone occurred from the overhanging face, striking him on the head and inflicting injuries from which he died five days later. Shiel's quarry has been worked for about twenty-five years, and has a front of about 200 yards, and a maximum height of about 102 ft. The quarry, owing to the almost perpendicular fissured and jointed basalt columns, was worked from the bottom by blasting the base of each column separately, and removing workmen from the vicinity until the column fell; by this method there had been no serious accident for many years. In the case of this accident, however, the above precaution had not been taken, and deceased was put to load stone under an unfallen column, with the result stated. The quarry foreman, Mr. Harrison, was subsequently prosecuted by the Inspector of Stone-quarries, Mr. E. R. Green, for breaches of section 9 (*d*) of the Stone-quarries Act, and of Regulation 1 under that Act, in that the quarry at the time of the accident was not securely protected and made safe for persons employed therein, and that the working of the quarry was not carried out so as to prevent dangerous falls. A conviction with a fine of £20 and costs was imposed.
26 Aug.	Cobden quarry, Greymouth	John J. H. A. King, quarry foreman	When holding dog-hooks in position upon a large stone about 60 ft. up the quarry-face, preparatory to the stone being lowered by a crane, a fall of loose stones occurred from above that being moved, two of which stones, of considerable size, knocked him down and pinned him to the ground, inflicting injuries from which he died the following day. He was an experienced and careful quarryman, but committed an error of judgment by not first removing the stones which fell. The face of the quarry where the fall occurred has a slope of about 45°.

VII. STATE AID TO MINING.

(1.) Subsidized Prospecting.

During the year ended 31st March, 1919, nine approved prospecting parties were granted subsidies amounting to £1,404 11s. 8d., of which £1,206 1s. 8d. was expended duing that period. In addition to this, £9,942 11s. 1d. granted during previous years was expended by ten parties during the past financial year.

The following statement shows the total expenditure during the year ended 31st March, 1919:—

	£	s.	d.
Tauranga County	479	6	8
Coromandel County	24	0	0
Thames County	106	13	4
Ohinemuri County	38	0	0
Pelorus Road District	17	10	0
Grey County	50	0	0
Buller County	77	13	4
Westland County	315	19	6
Prospecting associations, &c.	*10,039	9	11
Total	£11,148	12	9

* Includes subsidy to Boatman's Consolidated Gold-mining Company (Limited), £9,201 0s. 3d.; and to Teviot-Molyneux Gold-mining Company (Limited), £500.

The following is a statement showing the number of subsidized prospectors, the amount of subsidy granted and paid, also the character and result of such prospecting operations from the 1st April, 1918, to the 31st March, 1919:—

Name of Prospecting Party	Number of Prospectors.	Locality of Operations.	Amount of Subsidy granted.	Amount of Subsidy expended.	Distance driven.	Nature of Claim.	Character of Operations.	Remarks.
Northern Inspection District.				£ s. d.	Ft.			
Waitangi Gold-mining Company	6	Thames ..	£166 13s. 4d., at 6s. 8d. per foot	166 13 4	500	Quartz ..	Driving ..	Driving on lode; average width, 4 ft. Assay shows average value £1 per ton.
Muir's Gold Reefs	25	Te Puke	£100, at 6s. 8d. per foot	100 0 0	300	,, ..	,, ..	Driving upon 5 ft lode. Value, about £3 per ton.
,, ...	25	,, ..	£380, at 6s. 8d. per foot	380 0 0	1,140	,, ..	,, ..	Driving upon 5 ft. lode. Value, about £2 per ton.
W. S. C. Nichol	2	Waitekauri ..	£50, at 5s. per foot ..	38 0 0	152	,, ..	,, ..	After driving 152 ft. work suspended. Nothing payable discovered.
C. Wells and G. Blythe ..	2	Cabbage Bay ..	£36, at £1 10s. each for three months	36 0 0	..	..	Surface prospecting	Work in progress. Nothing payable so far discovered.
West Coast Inspection District.			£ s. d.					
Alpine Consols	2	Lyall	..	77 13 4	233	Quartz ..	Driving ..	Driving on reef 250 ft. below old Tyr Connel tunnel. Small bodies of quartz encountered.
Batson and party	2	Hokitika ..	..	11 0 6	147	Alluvial ..	,, ..	Nothing of value located.
Dominion Consolidated Development Company	2	Wakamarina ..	..	74 0 0	296	Quartz ..	,, ..	Driving on reef, Empire City claim. Good values opened up.
Fiddes and Jordan	2	Ahaura	..	26 0 0	..	..	..	General prospecting. Nothing of value found.
M. D. O'Keeffe	1	Deep Creek ..	..	17 10 0	..	..	..	,, ,,
Webster and party	1	Back Creek ..	..	40 4 0	26	Alluvial ..	Driving ..	Small values found for considerable distance, but nothing rich enough for blocking out.
Westland Gold-prospecting Syndicate	6	Arahura and Lake Kanieri	..	264 15 0	800	..	Sinking ..	Shaft-sinking on alluvial prospect. Values of payable nature said to have been got.
T. Waugh	..	Body Town ..	75 0 0	..	..	..	..	For prospecting (500 ft. of driving).
Southern Inspection District.								
Otago Central Gold-mines ..	4	Bannockburn ..	243 6 8	202 13 4	608	Quartz ..	Driving ..	Royal Standard reef intersected and proved gold-bearing, but no discovery of importance made.
Deep Dell Consolidated Company	2	Macrae's ..	120 0 0	24 13 4	74	,, ..	,, ..	Driving to cut scheelite vein; work in progress.
R. Symes and party	2	Bald Hill Flat ..	£110 and £60	162 10 0	..	,, ..	Surface prospecting and trenching	No discovery of importance made.
Pukerangi Gold and Scheelite Mining Company	2	The Reefs ..	173 6 8	..	..	..	Driving ..	Driving on scheelite lode; work in progress.

(2.) Government Prospecting-drills.

The following is a table giving the result of operations by Government drills during 1918:—

Type of Drill.	Name of Drill Superintendent.	Number of Holes drilled.	To whom lent.	Mineral sought for.	Total depth in Feet.	Character of Country pierced.	Average Cost per Foot drilled, including Transport.	Diameter of Hole.	Results.
							s. d.	Inches.	
					(1) 57		9 6	2½	8 ft. 3 in. oil-shale.
					(2) 70		4 9	2½	No oil-shale; fair gold in gravels, 4 gr. per yard.
					(3) 106		3 11	2½	No oil-shale; fair gold in gravels, 3 gr. per yard.
					(4) 58		4 6	3	1 ft. oil-shale.
					(5) 66		4 11	3	9 ft. oil-shale; good gold in gravels, 40 gr. per yard.
					(6) 60		4 5	3	14 ft. 6 in. oil-shale.
					(7) 75		3 4	3	17 ft. 9 in. oil-shale.
Schramm-Harker diamond drill (oil-driven)	W. H. Warburton	17	Waikaia Oil-shale Development Company (Limited)	Oil-shale	(8) 50	Fine gravels, carbonaceous sand and clay beds	4 11	3	No shale.
					(9) 86		5 6	3	16 ft. oil-shale.
					(10) 47		6 1	2⅓	15 ft. oil-shale.
					(11) 50		6 9	2½	No shale.
					(12) 70		4 1	2½	,,
					(13) 86		3 9	2½	,,
					(14) 45		7 3	2½	,,
					(15) 120		4 1	2½	1 ft. 6 in. lignite; no oil-shale.
					(16) 114		3 8	2⅓	6 in. lignite; no oil-shale.
					(17) 78		6 10	2½	No shale.
Schramm-Harker diamond drill	W. H. Warburton	1	Lyttelton Borough Council	Water ..	630	Hard basalt and scoria	13 4	1⅝	Drilled from bottom of shaft, 280 ft.; no water found.
Schramm-Harker diamond drill			Mines Department: Awaroa Land Company's area		(1) 150		4 6½	2½	16 ft. coal, 11 ft. broken and dirty, at 118 ft. deep.
Ditto			Ditto		(2) 145		4 4	2½	14 ft. coal, hard and clean, at 118 ft. deep.
,, ...			,, ...		(3) 113		4 2½	2½	12 ft. coal, hard and clean, at 94 ft. deep.
,, ...			,, ...		(4) 131		4 3	2½	15 ft. coal, hard and clean, at 114 ft. deep.
,, ...			,, ...		(5) 157		4 4	2½	21 ft. coal, hard and clean, at 132 ft. deep.
,, ...			,, ...		(6) 162		4 1½	2½	14 ft. 6 in. coal, hard and clean, at 141 ft. 6 in. deep.
,, ...			,, ...		(7) 313		4 7½	2½	17 ft. coal, hard and clean, at 293 ft. deep.
,, ...	W. H. Warburton	14	,, ...	Coal	(8) 300	Calcareous sandstone, clays, clay-shales to greywacke	4 7	2½	18 ft. coal, hard and clean, at 277 ft. 6 in. deep.
,, ...			,, ...		(9) 138		10 2	2½	19 ft. 6 in. coal, hard and clean, at 109 ft. 6 in. deep.
,, ...			Whangape Coal Company's area ..		(10) 129		4 11	2½	21 ft. coal, hard and clean, at 109 ft. deep.
,, ...			,, ..		(11) 129		3 0	2½	15 ft. 6 in. coal, hard and clean, at 112 ft. 6 in. deep.
Percussion drill ..			Awaroa Coal Company's area ..		(12) 85		5 11	2	No coal found.
,, ..			,, ..		(2A) 175		5 11	2	2 ft. coal at 29 ft. deep.
,, ..			,, ..		(3A) 234		5 11	2	1 ft. coal at 61 ft. deep.
Keystone placer drill ..	G. E. D. Seale ..	90	Westland Gold-prospecting Syndicate (Limited) (D. Ziman)	Alluvial gold	Aggregate 1,812	River gravel	5 6	6	Payable gold was proved.
,, ..	,, ..	81	Metals Exploration Company (New York)	,, ..	Aggregate 3,381	,, ...	5 6	6	Results unsatisfactory.
Keystone	H. Butland ..	22	Dunedin City Corporation reservoir area, Post-office Creek, Waipori	,,	Aggregate 616 deepest 42	Gravel	..	6	Payable gold proved in holes numbered 11 to 14 inclusive.
,, ...	,, ..	13	Reservoir area, Waipori Flat ..	..	Aggregate 487 deepest 74	,, ...	..	6	Unpayable results.
Percussion	..	8	State Collieries, Point Elizabeth Extended area	Coal ..	Aggregate 883	Sandstone and mudstone ..	..	2½	An 8 ft. coal-seam was proved over about 300 acres, which will be developed as a State colliery.

Extensive use has been made during the year of the Government prospecting-drills which are lent to hirers free of charge other than wages and maintenance. The result of boring in most cases was highly satisfactory, and has well warranted this class of State aid to mining. An aggregate of 12,366 ft. was drilled in 246 holes, a summary of which is as follows:—

Number of Holes drilled.	Mineral searched for.	Type of Drill used.	Cost per Foot, including Transport.	Aggregate Depth attained.	Results.
11	Coal ..	Diamond ..	s. d. 4 3 to 5 11	3,105	Very good; workable area, Waikato coal-field.
11	,, ..	Percussive..	..	1,377	Very good; workable area, State Colliery Reserve, Point Elizabeth.
1	Water ..	Diamond ..	13 4	350	Negative.
17	Oil-shale ..	Keystone ..	3 11 to 7 3	1,238	Partially successful at Wakaia.
206	Alluvial gold	Keystone ..	5 6	6,296	One of the three localities bored proved profitable ground.
246	..	..	..	12,366	..

(3.) Subsidized Roads on Goldfields.

The following schedule shows the amounts expended by subsidies and direct grants out of the Public Works Fund, vote "Roads on Goldfields," in the different counties, &c., during the year ended 31st March, 1919:—

	Direct Grants. £ s. d.	Subsidies. £ s. d.
Coromandel County	200 0 0	..
Thames County	445 15 6	500 0 0
Ohinemuri County	305 10 6	..
Pelorus Road District	60 0 0	..
Collingwood County	144 0 0	45 0 0
Buller County	636 1 0	..
Inangahua County	437 12 0	..
Westland County	32 8 8	253 1 4
Grey County	447 14 0	..
Maniototo County	75 18 0	..
Lake County	402 7 2	..
Wallace County	150 0 0	..
Taieri County	50 0 0	..
Totals	£3,387 6 10	£798 1 4

(4.) Government Water-races.

The Waimea-Kumara and Mount Ida water-races, which render possible mining in the Kumara district, Westland, and the Naseby district, Central Otago, have during the year ended 31st March, 1919, supplied claims employing thirty-five miners with water for sluicing, by which gold to the approximate value of £8,481 was obtained. The cash received for water sold amounted to £1,583, the expenditure on the upkeep of the races being £3,350. From the foregoing it will be seen that the expenditure on upkeep exceeded the cash received for sales of water by £1,767; no depreciation on the capital expenditure of about a quarter of a million sterling being provided for. The loss on the races during the year represents £50 per miner employed, and 20 per cent. of the total value of gold won.

VIII. SCHOOLS OF MINES.

The following table shows the expenditure by the Government on schools of mines during 1918-19:—

	£ s. d.
Subsidies towards erection and maintenance	1,792 13 0
Salaries of teachers, travelling-expenses, &c.	2,506 13 2
Total	£4,299 6 2

Owing to the epidemic during the latter part of 1918 the annual Government examination of students attending the schools of mines was not held until the early part of 1919. Very few students presented themselves for examination on mining subjects.

I have, &c.,

Frank Reed,

Inspecting Engineer of Mines.

ANNEXURE A.

SUMMARY OF REPORTS BY INSPECTORS OF MINES.

Northern Inspection District (Mr. M. Paul, Inspector of Mines).

Quartz-mining.

Waihi Gold-mining Company (Limited).—The following are the particulars of the principal development-work carried out in this mine during the year:—

No. 12 level (1,447½ ft. below the collar of No. 4 shaft): No work has been done in this level during the year.

No. 11 level (1,301 ft. below the collar of No. 5 shaft): The drive on the north section of the Empire lode west of Pistol Crosscut was advanced 34½ ft., making a total of 84½ ft. The width varied from 2 ft. to 5 ft., and the values were low. The Royal lode was intersected in the South-east Crosscut, 165 ft. from the Edward lode, being vertical and its course 56° (true). The first 12 ft. was quartz of an average value of 16s. per ton; the next 4 ft. was country rock, followed by a mixture of quartz and country rock.

No. 10 level: At 250 ft. in Cow South-east Crosscut from the south wall of the Martha lode the north section of the Empire lode was intersected, course 30° (true), dip 1 in 3 north. Five feet of mixed quartz was succeeded by 5 ft. of country rock, and then the north section of the Empire lode, 54 ft. wide, consisting alternately of sulphide-ore, quartz, calcite, and finally sulphide-ore. Driving east and west was started. The east drive was driven 70 ft., values varying from 2s. 9d. to £2 4s. 1d. per ton. The west drive was driven 163 ft., the values varying from 3s. 3d. to £6 1s. 3d. per ton. At 50 ft. in the east and west drives crosscuts were driven through the lode; in the former it showed a width of 21 ft., whilst in the latter it was proved to be 25 ft. with 2 ft. of sulphide-ore on the north wall. The next 5 ft. was country rock, and the remaining 18 ft. was mixed quartz and country rock. This lode was again cut at 100 ft. west, showing a width of 28 ft.

No. 7 level (Martha lode): The north section east of No. 6 shaft crosscut was driven on a further 226 ft., making a total of 447 ft. There is payable ore from 4 ft. to 9 ft. wide on the north wall from 301 ft. to 447 ft.

Shafts: No shaft-sinking was done during the year. A large number of men are employed in the upper levels driving and stoping on the different lodes, and from which a considerable tonnage is being won. High-grade ore is also still being won from arches left in under the levels. The system adopted—described in last year's report—enables the ore to be extracted with safety, and no serious accidents have occurred during the year.

Waihi Grand Junction Gold-mining Company.—No. 8 level (1,320 ft.) (Empire lode): Drive west advanced 179 ft., making a total of 464 ft. The face is close to the western boundary. From 285 ft. to 462 ft. over an average width of 56 in. the average value was £1 14s. 2d. per ton. Crosscuts were driven at 350 ft. west of the south-east crosscut. The south crosscut was driven for 50 ft. and passed through 17 ft. of quartz mixed with country rock (value, 3s. 5d.), and the north crosscut for 122 ft. The first 3½ ft. was quartz (value, 19s. 3d.), the balance country rock and quartz stringers of low value. Drive east Empire lode advanced 280 ft., making a total of 867 ft. The following values were obtained: 585 ft. to 600 ft., width 56 in., values 14s. 6d. (south wall exposed); 600 ft. to 615 ft., width 43 in., values 1s. (north wall exposed); 615 ft. to 630 ft., country rock; 630 ft. to 645 ft., broken quartz, values 3s. 4d., width 61 in.; 645 ft. to 688 ft., disturbed country; 688 ft. to 746 ft., quartz, dipping south; values 11s. 8d., width 57 in. Lode cut off or faulted at 777 ft. Drive continued in firm country rock to 867 ft. In breaking out this reef preparatory to stoping, from 275 ft. to 470 ft., the average width was 99 in. and the assay value £1 8s. 1d. per ton.

Drive east on Royal lode advanced 110 ft., making a total of 396 ft. From 280 ft. to 345 ft. over width of 56 in., value 11s. 5d. per ton. At 375 ft. lode cut off by fault.

Drive west on Royal lode advanced 400 ft., making a total of 600 ft. From 200 ft. to 590 ft. the average width was 60 in. and assay value 16s. 8d. per ton.

The drive on lode intersected in north-west crosscut, 17 ft. from shaft-chamber, was advanced east for a distance of 178 ft. At 75 ft. east this lode is 42 ft. in width. The first 6 ft. on footwall assayed 7s. 10d., the next 36 ft. 1s. 6d.

The following is a summary of development-work done: Main and intermediate drives on lodes, 1,434½ ft.; crosscutting lodes from drives, winzes, and rises, 283½ ft.; rises on lodes and through country rock, 363½ ft.; winzes, 320 ft.; driving and crosscutting through country rock, 743½ ft.: total, 3,145 ft.

The upper levels of this mine are almost depleted, and it is absolutely essential that arrangements be made whereby sinking can be resumed, otherwise it will be impossible to keep the mill going.

Waihi Extended Gold-mining Company.—Owing to the difficulty in getting in calls work in this mine was suspended; protection applied for and granted for twelve months from the 1st July, 1918.

Waihi Reefs Consolidated (Limited).—The lode, 20 ft. in width, intersected at 300 ft. level. Favona shaft was driven upon for 30 ft., when funds became exhausted, and the mine is now held under protection.

Rising Sun Gold-mining Company, Owharoa.—The only development-work in progress in this mine is driving a crosscut at a point 2,100 ft. from the entrance of low level. A small lode 2½ ft. in width has been intersected; values low. Stoping is proceeding above low level, but there is a falling-off in values. Rock-drilling plant installed which greatly facilitates operations.

Master Key and Orient Gold-mining Syndicate, Waikino.—A small prospecting-shaft, 6 ft. by 4 ft., has been sunk to a depth of 160 ft., and a crosscut driven west for 110 ft. with the object of endeavouring to locate the lode which shed loose gold-bearing stone found in this locality.

Talisman Consolidated (Limited).—No. 16 level: Work at this level has been suspended and pumps withdrawn. No. 15 level: This level has also proved disappointing as far as values are concerned, but quartz has been found to exist in a section which in the level above showed a vein fissure filled with clay. Driving south at this level in the Dubbo section has disclosed two short shoots of fair-grade ore. With a view of ascertaining whether the reefs continue at depth, and also to prove the country, it was decided to put down three boreholes—the first at the end of the crosscut at the bottom of the Woodstock shaft, the second from No. 6 winze, and the third from No. 12 winze. This work is now in progress, arrangements having been made with the Mines Department for the use of a diamond drilling plant.

New Zealand Crown Mines (Limited).—At No. 4 level a crosscut is being driven to test a block of ground situated between the Talisman and Adeline reefs. The old Talisman No. 1 level is also being cleaned out for the purpose of exploring the Talisman reef in this section of the mine. Ten wages men and nine tributers are employed.

Waihi Paeroa Gold-extraction Company.—Owing to the high cost of cyanide, and flints for the tube mills, together with low grade of river sand, this company decided to go into liquidation, and the plant is now being sold.

Komata Reefs Gold-mine (Mr. H. H. Adams, owner).—Two men have been employed prospecting, but nothing of importance has been discovered.

United Gold-mines, Maratoto.—Very little work has been done in the mine during the year, the men being engaged completing mill and cutting a branch water-race. This work is now finished, and everything is ready to commence crushing.

Ohinemuri Gold and Silver Mines, Maratoto.—A stoping block 130 ft. in length has been opened up on the Queen lode, which varies from 5 ft. to 12 ft. in width. The ore contains silver telluride, 5 tons of ore sent to Australia yielding silver to the value of £385 5s. 8d. Samples treated by the oil-flotation process gave a very high extraction.

Bendigo Mine, Waiorongomai.—60 tons of ore treated produced bullion valued at £67. Four men employed.

Waiotahi Mine, Thames.—Work confined to stoping various small rich leaders above sea-level. These have now been worked out, and this company, in order to continue mining operations, has taken up the old Eclipse Claim at the head of Tararu Creek, now known as the Waiotahi No. 2.

Sylvia Reefs (Limited).—The quartz won from the stoping block opened up on Norfolk lode proved to be of much lower grade than anticipated, consequently the directors decided to go into liquidation and sell the mine and mill, which was purchased by Mr. H. H. Adams.

Waitangi Consolidated.—A distance of 300 ft. was driven at No. 2 level on the lode, varying from 2 ft. to 10 ft. in width. 530 tons of quartz treated produced fairly good gold.

Mount Zechan Consolidated (Limited).—Owing to legal and financial difficulties this company was granted protection for six months. Reconstruction of the company is now in progress to provide £33,000 working capital. Four men are now employed in the mine.

Golden Belt Gold-mining Company, Neavesville.—The drive south of main lode at No. 1 level has been extended 470 ft.; values low.

Nonpareil Claim.—Owner, Mr. F. Sawyer. A portion is let on tribute. Gold to a fair value was obtained during the year.

There are a number of other small claims at work in the Thames County, but nothing worthy of note has been discovered.

Oil-flotation Process.—On the Thames foreshore Mr. H. H. Adams has recently erected an oil-flotation plant, and for nearly a year has been experimenting with small parcels of ore obtained from different parts of the Hauraki Peninsula. It is claimed that in every case the extraction proved satisfactory. Mr. Adams now proposes to treat by this method several hundred tons of tailings lying on the Thames foreshore, also a large tonnage of ore from the Sylvia Mine.

Coromandel.—Mining in this district is still confined to prospecting, but it is anticipated that the Old Hauraki Gold-mining Company, having succeeded in raising further capital, will shortly resume operations.

Barrier Reefs Gold-mining Company, Great Barrier Island.—Driving east and west on the lode intersected at the low level was continued, values being low. A winze has been connected with surface which provides ample ventilation.

Muir's Gold Reefs (Limited), Te Puke.—Low level: The lode has been driven upon south for 580 ft., having an average width of 5 ft., stated to be worth £2 per ton. A rise has also been continued to the surface, and the upper level has been timbered ready for stoping. Owing to the difficulties in transit, shortage of labour, and wet weather, the erection of the mill took longer than anticipated. I am informed that everything is now ready to commence crushing.

Oil-wells.

Taranaki (New Zealand) Oil-wells (Limited).—During the year the drilling staff has been engaged recasing and cleaning out No. 5 bore, which is now recased with 8 in. pipe to a depth of 2,140 ft.

with water cemented off, and it is anticipated that the old oil horizon will be penetrated shortly. No. 3 bore: Depth, 4,019 ft., with 4 in. casing. No work has been done to this well during the year. This well flows intermittently. Rotary bore: 4 in. and 5 in. casing being withdrawn. No. 2 bore: Depth, 3,045 ft., in 8 in. casing. New derrick erected but no drilling done. Oil obtained during the year, 7,550 gallons.

Blenheim Oil Company.—Blenheim well: During the year 253 ft. have been drilled, making the total depth 5,274 ft. About the end of July the casing parted, bent, and telescoped. The fishing operations which followed were not completed until the end of December. Drilling has since been resumed, and although a very strong outburst of gas occurred in January no oil was obtained. Production from 2,200 ft. during the year, 7,940 gallons.

Waipatiki Oil-wells (Limited).—The main bore has been sunk to a depth of 3,468 ft.—1,132 ft. having been drilled for the year. At several points a good flow of natural gas was met with, and indications of oil strongly in evidence. A very strong flow of natural gas is obtainable from three bores put down to a depth of 80 ft., 120 ft., and 140 ft. respectively, and also from the surface a short distance from these bores, and it is estimated that the present supply of gas per diem is about 30,000 cubic feet. Certain experiments with a gas-engine proved that natural gas was far more efficient than ordinary coal-gas. A gas-engine has been obtained, which is now being installed, and it is hoped will develop sufficient power to drive the machinery and plant by electricity.

Accidents.

I am pleased to state that no fatal accidents occurred in the metal-mines under my supervision during the year, but unfortunately a man named Frank Salmon Drury, aged thirty-two years, was killed on the 29th October at the Taranaki Oil-wells (Limited) No. 5 bore by being struck on the head by chain-tongs. This accident was caused by the pin holding the chain in place shearing.

Non-fatal Accidents.

26th March: F. Houghton lost the sight of one eye by a blasting accident in the Golden Belt Mine, Neavesville.

14th November: L. F. Collins had the drum of both ears injured by concussion from a shot in the Waihi Mine.

Full details of accidents are contained in tabulated remarks of the Inspecting Engineer of Mines.

North Auckland Inspection District (Mr. Boyd Bennie, Inspector of Mines).

New Zealand Quicksilver Mines (Limited).—The former company, known as the "Whangarei Cinnabar-mining Company," was absorbed by the new company, under the above title, in July last, the new company taking over all assets and liabilities as from the 19th July, 1918. During the year there were mined and treated at the company's works 582 tons (estimated) of ore, for a return of 11,296 lb. of mercury, valued at £2,824, being at the rate of 5s. per pound at Auckland. During that period an average of fourteen men were employed by the company at their mine and works.

It is reported that the company's mines are under option for sale to a British company, who have had the mines examined by a well-known mining engineer in the Auckland District. The result of that inspection is not known yet, or only by the option-holding company. Mining development at the mine during the year has been much neglected, the reserve ore in the mine being worked. Work in the form of sinking, driving, and crosscutting was entirely neglected, due, I suppose, in a measure, to the shortage of miners and also to the isolated nature of the mining claim. During the year the company has built several huts for the workmen, and is erecting mine offices and improving the manager's residence, all of which were much needed.

By a rearrangement of the boundaries of the Whangarei and Bay of Islands Counties the mines are now in the Whangarei County, and already some improvements have been made to the roads leading to the mines. Mining-timber is difficult to obtain. It appears that a settler adjacent to the mine has got a license to remove kauri, rimu, and totara timber standing or lying on his pastoral lease over the mining company's claim; in consequence of this there has been friction between the company's officials and the settler over access to the mine and using timber found on the mining claim.

Collins's Alluvial Cinnabar Claim.—The Collins brothers have been busy during the year in preparing to work the mine, their time being occupied in forming a water-dam, with tail-race and ground tram, but no real mining has been done.

Joffre Mine (D. X. McLeod, owner).—An adit level had been driven on a cinnabar-lode formation. I visited the mine twice during the year and found that little or no work had been done in extending the tunnel referred to. At a distant portion of the claim a prospecting-drive has been driven, but nothing of real value was discovered. Two bores were put down. The claim is not manned as required by the Mining Act.

There are a number of mining claims granted on the field, but they are apparently held for speculative purposes. The New Zealand Quicksilver-mining Company, Collins brothers, and D. X. McLeod are the only ones working on their claims.

WEST COAST INSPECTION DISTRICT (Mr. J. F. DOWNEY, Inspector of Mines).

Quartz-mining.

MARLBOROUGH.

Dominion Consolidated Mining and Development Company (Limited).—The influenza epidemic in November and December affected this mine considerably. Nearly all the employees were attacked by the disease, and four of them are reported to have died. Otherwise work proceeded smoothly throughout the year, an average of fifty men being employed. The bulk of the work was carried out on a big reef in the Golden Bar section of the property. A small amount of driving was done here, but the hands were mostly employed at stoping. The reef continued to open up fairly well. On the Empire City side a good deal of development was carried out, No. 2 intermediate drive being extended nearly to the Bar workings, with which connection should be made within the next few months, which will greatly improve working-conditions in the latter section. This development revealed good scheelite-values.

Deep Creek Gold-mining Syndicate.—No fresh development-work was done. The battery and tram-lines were completed, however, and a small parcel of 77 tons put through for a return of 9 oz. 16 dwt. gold and 1 cwt. scheelite, valued at £60 0s. 9d. altogether.

Alford and Party (Mountain Camp).—Practically no development has been done for the year, but the party is making arrangements, I understand, to erect a small crushing plant.

Cadigan's Treatment Works.—Some 4 tons of scheelite, valued at £800, were recovered by this plant, but work was adversely affected to a great extent by litigation.

NELSON.

Colossus Gold-mining Development Company.—This company has, with an average of five men, carried on its prospecting operations at Wangapeka. There are a number of reefs and lodes on the property, and a good deal of work has been done on some of them, particularly on one known as the Surprise reef, which carries very good values in silver, lead, and copper. No plant has yet been erected. Another reef, known as O'Malley's, has been driven on for a considerable distance, revealing at least one pay-shoot. This is the only quartz-mining in the Nelson District.

LYELL.

New Alpine Consols Company.—Owing to difficulty in securing labour this company had to obtain protection for some months during the year. The low-level drive on the reef line was carried on several hundred feet farther, and is now being pushed ahead to pick up the stone met with on the old Tyr Connel tunnel, 250 ft. higher up.

CAPLESTON.

Boatman's Consolidated Gold-mines (Limited).—The Fiery Cross shaft was continued to 1,025 ft., and a crosscut was put out easterly for a distance of 810 ft., with a view to striking the line of reef worked in the old days. Quite a number of small stringers of quartz was encountered, but nothing that could be definitely considered as the main reef. At 455 ft. from the shaft driving was started north on a small formation that seemed to show some promise. A little quartz was in evidence, but after driving a few feet this cut out, and no more was picked up although the drive was continued for 104 ft. A start was then made to drive south on the same formation in the hope of picking up the downward continuation of the Walhalla shoot, and this drive has now been carried on about 300 ft. Boulders of quartz were picked up, but no defined reef. Progress-payments were made from the Government subsidy of £10,000, which was practically exhausted.

REEFTON.

Blackwater Mine.—A good deal of development-work was done, particularly in the north end of Nos. 7 and 8 levels and in the south ends of Nos. 6, 7, and 8. In the north end the reef was considerably broken by faulting, but the southern developments were all good. Preparations are being made to sink the shaft another 150 ft., and this work will be under way early in the New Year. During the year the company paid a dividend.

Blackwater South Mine.—This has been idle pending the formation of a new company with further capital.

Cumberland Mine.—Litigation, which was continued during the year, prevented anything being done on this claim.

Keep-it-Dark Mine.—Some development-work was done on Nos. 8 and 9 levels, several blocks of stone being opened up. All the stone encountered was, however, of low grade. For the year 8,138 tons were crushed. Owing to the shortage of labour brought about by the influenza epidemic the mine closed down the first week in December.

Murray Creek Mine.—Work was carried out steadily throughout the year, and in spite of the fact that only fifty-one men were employed, as against an average of seventy-five in 1917, the quantity of stone crushed was slightly greater than during 1917, the figures being 9,749 tons as compared with 9,728 tons. The company is now giving consideration to a scheme for utilizing water-power for driving their mill in place of the steam-power now employed. If this is done it may result in a considerable cheapening of the treatment-costs and put the company in a better position to carry on its development-work. Very little development-work has been done throughout the year, and this was confined to No. 4 level, when a small shoot of good stone was picked up.

New Big River Mine.—Shortage of men has affected this mine in common with all others in the district. The tonnage crushed was 4,163 tons. A dividend absorbing £2,400 was paid, bringing the total dividends paid by the company to £100,800. Very little development-work has been done for the year, and has been confined to No. 11 level. Under the present conditions of labour-supply and the greatly increased cost of mining requisites it is difficult for a company to undertake any large development schemes.

North Blackwater Development Syndicate.—During the year this syndicate was compelled, pending the erection of air-compressing plant, to discontinue the eastern crosscut at the 1,000 ft. level of the Prohibition shaft at 315 ft. Chambers were then cut for the Nos. 1 to 6 levels, and a start was made to crosscut at No. 6 (1,200 ft.). The first of the gold-bearing reefs cut in No. 7 was met, but work then ceased underground until such time as the new winding and steam plant is erected. Good progress is being made with this, and it should be in commission within a few months.

Progress Mine.—A little development-work was done on Nos. 10 and 11 levels without any very satisfactory results. Only one shift of men has been employed during the year in underground operations, and there was an average of twenty less employees than during last year. During 1917 19,840 tons were treated.

Wealth of Nations and Energetic Mines.—Owing to a fire which took place in April destroying the poppet-heads, winding-ropes, practically all the surface buildings, and doing considerable damage to the boiler and winding plant, mining operations had perforce to cease, and as it was not possible under the war conditions existing to secure new winding-ropes no further work was done for the year. Prior to the fire, however, 3,720 tons of quartz was crushed. As far as the work went it would appear that there was an improvement in the values per ton treated.

HOKITIKA AND ROSS.

Mount Greenland Company.—Work was carried on steadily in a small way throughout the year. Only seven men were employed altogether, and 567 tons of quartz were mined and crushed. Practically no development-work was done. Owing to the out-of-the-way locality of the mine great difficulty is experienced in securing suitable labour for it.

WESTPORT.

Bagley's Reward Mine.—Three men were employed here during the year repairing and restoring the old Columbia Reef plant, and putting in a drive to intersect the discovery made there last year at a spot where the work will not be affected by slip country. The reef has not yet been cut.

STILLWATER.

Victory Mine.—A little development-work was carried on, but work was mainly concentrated on the erection of the battery and aerial tramline. These are now approaching completion, and crushing should be started within a few months.

General Remarks on Quartz-mining.

Apart from the work referred to in connection with the mines little or no prospecting has been done for quartz reefs in any part of the district. Men have been so scarce that few could be spared for this class of work, and the high prices to which all mining requisites, such as drill-steel, explosives, candles, wire ropes, &c., soared have had a great tendency to further discourage any efforts in this line.

The mines have all been inspected at frequent intervals and every endeavour made to see that the regulations were strictly observed. No fatal accidents occurred, and the only accident of any kind that happened was one in which a miner at the Big River Mine lost an eye as the result of an explosion. As far as could be learned the mate of the injured man was firing four charges in a face. Some difficulty occurred in getting one of the fuses to light, and in trying to set it off the men apparently remained too long in the neighbourhood, with the result that the other blasts went off and they were struck by the flying debris. One man was only slightly injured; the other was struck in the face and, as mentioned before, suffered the loss of an eye.

One mine-manager was prosecuted for failing to provide adequate ventilation, but the case was dismissed.

A few applications were received from men for assistance in the nature of a subsidy to enable them to prospect in certain localities. In one case assistance was given at the rate of £1 10s. per week per man for two men for some months, but nothing of any value was found.

Dredging.

The dredging industry in the district has fallen back badly during the year.

The Ahaura dredge, after being closed down for a considerable part of 1917, made another effort, but the results were so unsatisfactory that it only worked a couple of months, ceasing altogether about the end of April.

The Worksop No. 2 dredge started operations at the beginning of the year, but only worked a week or so, when it was decided to cease for good, as the payable ground was evidently worked out.

The Slab Hut dredge worked about half the year, and closed down for the same reason,

Rimu No. 1 dredge only worked during the first two months of the year. As it could not be made to pay it was then laid up. The high cost of working and inability to secure supplies owing to war conditions were given as the main reasons for this action, but it would appear that the trouble lay in the fact that the dredge was neither large nor powerful enough to cope with the heavy ground encountered.

The Success dredge did fairly well through the year, handling about 400,000 yards of material.

The Kapitea dredge also did well.

The Hessey, Cameron, and Tacon dredge resumed work at Capleston towards the end of the year.

The Westland Prospecting Syndicate has been energetically getting ready to work its ground in the Arahura Valley. The Worksop No. 2 dredge was purchased and removed to the Arahura, where it has now been re-erected and will shortly be in commission. The pontoon has been lengthened and more powerful boiler plant installed. This, it is expected, will enable the dredge to work, if necessary, at a greater depth than formerly. The spot at which this dredge has now been launched is not far from the old Humphrey's Gully sluicing claim, on a prospecting claim held by the syndicate. It is intended, however, to work with it certain portions of the Arahura Native Reserve, which the syndicate has received permission to do on the condition that the soil is replaced on top of the tailings in some such way as practised at various places in Otago. To enable this to be done the dredge has now been provided with an extra shoot apart from the ordinary tailings-shoot, which projects out 20 ft. farther than the latter. The two shoots are side by side, and at the tumbler end a door is so arranged that the material being handled can be immediately diverted into one shoot or the other according as gravel or soil is being dredged. There is no reason why this arrangement should not fully carry out the intentions for which it was designed, and if it does the result should be that these upper sections of the reserve should be left in a more valuable condition for pastoral purposes than they are at present. A large quantity of valuable white-pine (probably 1,500,000 sup. ft.) is growing on the area to be dredged. In order that this may not be destroyed the syndicate has installed a sawmill to cut it, and this is now in full working-order, employing ten men, and putting out 4,000 to 5,000 sup. ft. per day. The syndicate, it may also be mentioned, has also purchased the Ahaura dredge, said to be the largest in the Dominion, and this also is to be removed to the Arahura, where it will be placed in the river near Hungerford's bridge. At the present time it is dredging its way out of the stream at the Ahaura River to a spot where it will be dismantled, three shifts of men being employed to push the work on. The Westland Prospecting Syndicate is to be commended for its enterprise and the energy with which it has carried on its operations under difficult conditions, and it is to be hoped that its undertakings will bring it the reward it well deserves.

Alluvial Mining.

MARLBOROUGH.

Very little work has been done in this part of the district, the only returns being 3 oz. 10 dwt.

COLLINGWOOD.

There has been only one return furnished, and this for a very small quantity of gold.

HOWARD DIGGINGS.

The number of miners here has still further shrunk to twenty-five. Most of the old claims have been worked out, and no fresh finds have taken place.

MURCHISON.

Hunter's at Matakitaki and Beilby, Richardson, and Lewis's claims at Horse Terrace are still the only producing ones.

ADDISON'S FLAT.

Addison's Limited.—This property resumed operations and recovered some gold, as did also W. Williamson and party in the same locality, and Mouat and party, working a beach claim at Fairdown.

CHARLESTON.

Powell Bros.' beach claim has worked steadily, also Butterworth and Norris.

One other small claim returned 8 oz. Only eleven men in all were employed.

GREY VALLEY.

Hochstetter Goldfields (Limited).—The construction of the tunnels on the water-race has been pushed on energetically, an average of thirty-three men being employed. It is expected that the whole work will be completed early in 1919, and sluicing operations should therefore be begun within a few months at most. The company has had a great struggle to carry this work on to the present stage, the expenditure to date having been about £100,000.

The Grey Valley Sluicing Company at Goat Terrace and the Maori Gully sluicing claim (T. Costigan) both produced gold, and at No Town Robertson's claim also made a return. Several other small claims worked, but the results were poor.

BARRYTOWN.

The Barrytown Hydraulic Elevating Company, although working with five men less, showed an increase in production as against the previous year.

At North Beach Chapman's and Williamson and party's claims produced gold.

KUMARA.

At Kumara, Goldsborough, Stafford, and Callaghan's things have been quiet. About thirty-three men have been employed altogether, and the total gold won amounted to 1,233 oz. 13 dwt.

HOKITIKA.

Brighton Terrace Sluicing Company.—Owing to returns from this claim not coming up to expectations work was stopped about the end of May. The plant has since been shifted to Seddon's Terrace locality, where the Woolston Tanneries Company has taken an option over a claim previously worked by the Rimu Sluicing Company.

The *Westland Prospecting Syndicate* has limited its operations during the year in this locality to a claim at Lake Kanieri, where a large number of shafts were put down to test an area of virgin ground apparently of considerable extent. The results were sufficiently satisfactory to warrant the syndicate in exercising its option over the old Humphrey's Gully Water-race, and putting a plant on. About twenty men on an average have been employed, and already 100 chains of ditching has been cut. It only remains now for the pressure-pipes to be laid to make a start at sluicing operations. About 40 chains of pipes altogether have to be laid. These are all on the ground, and many of them in place. Sluicing should be in full swing about May. The ground is heavily timbered, and, as at Arahura, the syndicate is erecting a mill to cut it.

Reference has already been made, under the head of "Dredging," to this syndicate's further operations at the Arahura Valley, where two dredges will probably be at work before the end of 1919 on areas that have been well prospected by means of Keystone drills.

Rimu Options (Limited).—On the large area (500 acres) held by this company extensive prospecting operations have been carried out during the year on behalf of an American company which has taken an option over the areas. The work has consisted mainly in putting down bores with the Government Keystone drills, but a large number of shafts have also been sunk. About ninety drill-holes have, I understand, been already put down. No information has been made available as to the values obtained. Fourteen men were employed.

REEFTON.

Very little has been done throughout the year. The largest producer was Sewell's claim at Merrijigs.

At Antonio's the Auckland company known as Alluvial Claims (Limited) has spent a considerable sum in constructing a race to bring water to a claim it prospected there. This work is in progress now, and it is hoped that sluicing operations will begin early in the new year.

Southern Inspection District (Mr. A. Whitley, Inspector of Mines).

Quartz-mining.

GLENORCHY.

Glenorchy Scheelite-mining Company (Limited).—Glenorchy Mine: Operations have been directed chiefly to stoping blocks of ore at Nos. 1A and 5 levels, and driving No. 6 level to locate the upward continuation of a run of high-grade ore which was worked from No. 5 level. The lode in No. 1A level is descending strongly, carrying payable values in scheelite, while coarse gold is occasionally seen in the ore from the stopes. The company proposes to drive another level to open up the lode 100 ft. below No. 1A.

Junction Mine: In the Bonnie Jean section sluicing has been carried on continuously during the year. Owing to the broken nature of the country on the hanging-wall of the lode this system of working was found to be the most economical. Water for the purpose was brought from Junction Creek.

Mount Alfred Mine: There has been no mine-development to report. Ore treated during the year has been won from stoping the east lode at No. 2 level and the west lode at No. 3 level. At the battery ten heads of stamps and Wilfley table were installed for dealing with low-grade ore and tailings from screens and jigs.

Fifteen small parties of miners were profitably employed during the summer and autumn seasons working the outcrops of scheelite lodes and veins on the mountains in the vicinity of Glenorchy at altitudes of 3,000 ft. to 6,000 ft.

MACETOWN.

United Goldfields (Limited).—The low level in the Garibaldi section was extended about 200 ft. on the lode without meeting with any payable ore. In Anderson's section a level was driven 260 ft. on the Caledonian reef, and a small lens of quartz showing a little gold opened up. A jack-hammer drilling plant was installed for driving the low level in the All Nations section, but owing to scarcity of labour very little work was done in this part of the mine.

MACRAE'S.

Golden Point Gold and Scheelite Company.—Development-work at this company's mine comprised driving 500 ft. at the intermediate level above Donaldson's low level and rising 30 ft. on the main lode. The lode in the rise averaged 7 ft. in width, and is carrying good scheelite-ore.

Deep Dell Consolidated Company.—The extension of Evans drive on a scheelite vein in the north-east section of the mine was the only development-work undertaken by this company.

Stoneburn and Mareburn Mining Companies ceased operations during the year. Mining plant and batteries were dismantled and sold.

THE REEFS.

Pukerangi Mining Company.—This company crushed 118 tons of ore from the drive and stopes at the battery level.

The Reefs Syndicate.—Operations were confined to stoping a small block of ore on the Barewood reef. As the returns were not payable the syndicate ceased working.

Other parties working scheelite lodes in this locality are Betty and party and H. S. Molineaux. Betty and party are opening up the mine which was worked by Buckland and Ewart in 1914–15.

BANNOCKBURN.

Otago Central Gold-mines.—The extension of the Carrick low level has been in progress during the year. The Royal Standard reef was cut at 825 ft. from the surface and driven upon 200 ft. The reef over the distance driven consisted of crushed schist and small lenses of quartz, the formation being about 3 ft. in width. Some of the quartz showed free gold, but the quantity opened up was small.

BENDIGO.

Come in Time.—H. Birley and party crushed 100 tons of ore from the mineralized shear-zone in this mine.

Alluvial Mining.

TUAPEKA COUNTY.

Gabriel's Gully Sluicing Company (Lawrence).—Good returns are being obtained from the tailings-deposit from Blue Spur. Two elevators are kept steadily at work.

Tuapeka Sluicing Company (Lawrence).—This company's water-races were repaired and work in the claim was resumed in the latter part of the year.

Lawrence Sluicing Company (Munro's Gully).—Sluicing and elevating the tailings-deposit from Blue Spur with payable results.

Golden Crescent Sluicing Company (Weatherstone's).—Operations have been carried on steadily throughout the year, and continue to show a small profit.

Havelock Sluicing Company (Waitahuna).—This company is working an alluvial deposit near Waitahuna Township. Operations for the year resulted in the recovery of gold.

Waipori Claims.—Seven sluicing claims were operating in branches of the Waipori River. Payable returns were obtained by Munro and George, Post Office Creek; R. J. Cotton, Nardoo Creek; and A. Rogers, North West Creek.

Waipori Flat.—Prospecting operations by means of a Mines Department Keystone drill have been undertaken by the Dunedin City Corporation. The area to be tested comprises about 900 acres of river-flat, extending from 30 chains below the confluence of Post Office Creek with the Waipori River to within two miles and a half of Waipori Township, and 40 chains up Post Office Creek. The work is being done to prove if payable auriferous ground exists within the area. If no payable ground is found the Corporation will apply for a license for a dam over the area for storing water for power purposes.

Teviot Molyneux Gold-mining Company (Roxburgh).—This company is carrying on the work of sluicing and elevating within an area of 10 acres in the claim at White's Flat. In the southern part of the area a bar of hard schist rock was met which had been subjected to a great amount of scour. Numerous large schist boulders were resting upon it, but very little payable wash was found. As work proceeded towards the north a rich seam of wash came in. Several stoppages of sluicing operations occurred during the year. A period of three months was occupied in repairing a break in the water-race and shifting one of the elevators to command the deepest part of the ground, which is 60 ft. below the level of the river.

Ladysmith Gold-mining Company (Roxburgh).—Working on the eastern boundary of the claim, near the road-line. The wash is very stony, and not so rich as formerly.

MANIOTOTO COUNTY.

Scandinavian Water-race Company (St. Bathan's).—This company is working part of the United M. and E. Company's ground, on the boundary-line between the two claims, under an agreement which provides that the latter company shall receive one-third of the gold won. Payable returns are being obtained.

United M. and E. Company (St. Bathan's).—Sluicing and elevating auriferous quartz drift from a depth of 50 ft., which is the greatest depth that can be worked with the available hydraulic head.

Morgan Bros. (Cambrian).—The seam of auriferous quartz drift opened up by this party is yielding payable returns.

Naseby Claims.—Sixteen small parties of miners were engaged in sluicing operations in the several gullies in this locality. The rainfall was more regular and the water-supply better than for some years past. Most of the claims are supplied from the Government water-races.

WAITAKI COUNTY.

Maerewhenua and Livingstone.—Mining in these localities has remained almost stationary for the past three years. During 1918 fifteen men were employed.

VINCENT COUNTY.

Undaunted Tinkers Gold-mining Company (Matakanui).—This company has been concentrating the whole of its water-supply upon one face in shallow blocks of recent gravels, with better results than when two faces were worked.

Nevis Claims.—Six claims were in operation in this part of the district. Of these Graham and party were the most successful. An average of four men was employed in each claim.

LAKE COUNTY.

Alluvial mining in the Arrow River and its branches has practically ceased. Eight claims were working within the watershed of the Shotover. Campbell and Murray, operating in the gorge of the Shotover below Moke Creek, obtained gold.

SOUTHLAND COUNTY.

Nokomai Hydraulic Sluicing Company.—This company has kept two elevators working in Victoria Gully with two shifts of men throughout the year, but scarcity of labour has hampered operations considerably.

A. Mutch (Athol).—Four heads of water have been brought on from Dome Creek to work the alluvial deposit on the high terrace between the Mataura and Nokomai Rivers.

Muddy Terrace Sluicing Company (Waikaia).—Sluicing operations were carried on in Maori and Long Gullies and at Amanda Hill. Three faces were worked, varying in height from 5 ft. to 50 ft.

WALLACE COUNTY.

Ourawera Gold-mining Company (Round Hill).—A new paddock has been opened up in Italian Gully, and a new set of gold-saving tables installed. Eight men were employed.

Round Hill Gold-mining Company.—Floods in March considerably damaged the company's water-races. Owing to this cause, and the scarcity of labour, only one claim has been kept in operation throughout the year.

Dredge Mining.

This branch of the mining industry continues to steadily decline. Six dredges were dismantled during the year—viz., Electric No. 2, at Cromwell; Olrig, at Alexandra; New Golden Run, at Island Block; Rosedale and Star, at Waikaka Valley; Charlton Valley, at Charlton Creek.

The Electric Gold-dredging Company, which was wound up during the year after having been in active operation for a period of nineteen years, was the most successful dredging company in the Dominion. This company's two dredges, working on the Clutha and Kawarau Rivers in the vicinity of Cromwell, obtained a good return of gold.

Minerals other than Gold.

Scheelite.—A decline in the production of this mineral is recorded from all scheelite-producing localities throughout the district. The output for the year amounted to 116 tons, valued at £25,663. No discovery of importance has been made during the year.

Accidents.

21st November: John Wrightson, winchman on the Rise and Shine Company's No. 2 dredge, was killed through being caught in the cog-wheels of the winch.

In the Southern Inspection District no serious non-fatal accident occurred during 1918.

ANNEXURE B.

SUMMARY OF REPORTS OF GOVERNMENT WATER-RACE MANAGERS.

Waimea-Kumara Water-races, Westland (Mr. James Rochford, Manager).

Waimea Water-race.

The cash received from sales of water from this race for the year ended the 31st March, 1919, was £480 10s. 9d., and the expenditure on management, maintenance, and repairs amounted to £809 18s. 9d., showing a debit balance of £329 8s. on the year's transactions.

The average number of miners supplied with water during the year was 11·83, a decrease of 7·17 on the previous year.

The sales of water, which only amounted to £450 4s. 10d., were the smallest for over twenty years, and showed a decrease of £250 2s. 3d. on the previous year, and £577 8s. 4d. as compared with the year ended 31st March, 1915. The chief cause for the falling-off in the sales from this race was the scarcity and consequently high price of labour, and the increased cost of mining equipment, caused by the war. The high price of labour and the increased cost of living pressed more heavily on the mining industry than any other, because the miner could not pass on the increased cost of production to the purchaser of the produce of his labour, with the result that claims that were paying £4 to £5 per week prior to the war were closed down or abandoned, as they would not give the miner and his wife and family a living-wage. The Waimea Race is the only race that commands the large areas of auriferous ground from Fox's to Kelly's Terrace and Scandinavian Hill, and, now that miners are returning from the front, the probabilities are that some of those areas will be developed in the near future, more particularly if an active and progressive policy of prospecting is to be adopted by the State.

The cash received was £232 10s. 7d. less than in the previous year, and owing to breaks the expenditure showed an increase of £72 12s. 3d.

The year was unusually wet even for the West Coast, and the Waimea Siphon was running full all the time.

Branch Race to Callaghan's and Middle Branch Flat.

The cash received for sales of water from this race for the year ended 31st March, 1919, was £103 12s. 10d., and the expenditure on management, gauging, maintenance, and repairs amounted to £298 18s. 8d., showing a debit balance of £195 5s. 10d. on the year's transactions.

The average number of miners supplied with water from this race was 1·5, a decrease of 1·83 on the previous year.

The sales of water amounted to £82 10s. 10d., a decrease of £14 14s. 2d. as compared with the previous year, and the smallest ever recorded since the completion of the race in 1897. These decreased sales can in a great measure be attributed to the same causes as set forth in my remarks on the Waimea Race—viz., scarcity of suitable labour and the increased cost of living and mining equipment. The Callaghan's Race, which is, of course, totally dependent on the Waimea Race for its supply of water, commands some of the richest unworked ground in the district at Middle Branch and Callaghan's Flats. A considerable area of known payable ground at Middle Branch has been locked up since the end of 1915, when the Inspector of Mines stopped the sluicing through the Waimea Main Tail-race owing to its being unsafe for men to work in. Since that time the condition of the main tail-race has become much worse, and at the present time it would probably take £600 to put it in safe working-order. There is a very extensive area of ground at Callaghan's Flat that would return payable results if it were properly developed and worked on up-to-date principles.

The cash received was £10 12s. 2d. less than last year, and the expenditure decreased by £54 1s. 10d. In addition to the cash received, £10 was written off W. Hanrahan's account by authority of the Under-Secretary.

Kumara Water-race.

The cash received from this race for the year ended 31st March, 1919, was £12, and the expenditure on management, gauging, maintenance, and repairs amounted to £201 14s. 10d., showing a debit balance of £189 14s. 10d. on the year's transactions.

No miners were supplied with water from this race during the year, and at the present time there does not appear to be any likelihood of a revival of mining taking place on the south side of the Taramakau River, the only reasonable possibility being that the lead that originally distributed the gold on the Kumara field may yet be found in McGrath's area at Upper Larrikins; but unfortunately, owing to the shortage of competent mining labour, no work has been done on this property during the past three years.

The sales of water amounted to £14 16s. 8d., a decrease of £24 8s. 4d. as compared with the previous year. This water was supplied to the Kumara Flax-milling Company for scutching purposes; and, although the revenue derivable from this source at any time will not be large, it must be admitted that the company's operations were unduly hampered by the break in the trans-Taramakau pipe-line, which stopped stripping operations and incidentally the whole plant for seven months of the year.

The cash received was £27 5s. less than last year, and the expenditure decreased by £146 4s. 7d.; but this expenditure does not include the sum of £66 13s. 4d., the gauger's salary for four months whilst engaged working on the restoration of the trans-Taramakau pipe-line across Third Gully. Nearly the whole of the expenditure debited to the Kumara Race was spent on the maintenance of the section between its intake at the No. 1 Kapitea Reservoir and the intake of the trans-Taramakau pipe-line. This section includes the Kumara Head-race tunnel, which is the key of the whole of the Kumara-trans-Taramakau water-system. The section of the Kumara Race from the intake of the trans-Taramakau pipe-line to its terminus at the Kumara Borough only supplies water for scutching and fire-brigade purposes, but its cost of maintenance is practically nil.

Kumara-trans-Taramakau Water-race.

The cash received for sales of water from this race for the year ended 31st March, 1919, was £59 18s. 10d., and the expenditure on management, gauging, maintenance, and repairs amounted to £327 16s. 7d., showing a debit balance of £267 17s. 9d. on the year's transactions.

The average number of miners supplied with water during the year was 4·16, a decrease of 6·92 on the previous year.

The sales of water amounted to £65 16s. 4d., a decrease of £73 18s. 3d. on the previous year.

The cash received was £80 4s. 1d. less than last year, and the expenditure showed an increase of £2 2s. 1d.

The falling-off in the sales was caused by a break which occurred in the section of old 36 in. cast-iron pipes in the trans-Taramakau pipe-line across Third Gully, which cut off the supply of water to the Kumara Flax-milling Company for power-development purposes, and also stopped Lawrence and party from sluicing at Quinn's Terrace for about seven months of the year.

During the year an Otago syndicate under the management of Mr. James Jackson acquired the mining rights to a large area of ground at Payne's Gully, on the north bank of the Taramakau River. This company has already expended a considerable sum of money in constructing 50 chains of a water-race (with a carrying-capacity of 40 heads) from the Taramakau Water-race to their claim, and carrying out other preparatory work, and they should be in a position to purchase Government water in about two months.

Erin-go-Bragh Water-race.

The cash received from this race for the year ended the 31st March, 1919, was £219 13s. 3d., and the expenditure on management, gauging, maintenance, and repairs amounted to £308 4s. 11d., showing a debit balance of £88 11s. 8d. on the year's transactions.

The average number of miners supplied with water was 5·58, a decrease of 4·17 on the previous year.

The sales of water amounted to £208 11s., a decrease of £12 9s. 8d. as compared with the previous year.

The cash received was £3 15s. 3d. less than in the previous year, and the expenditure showed an increase of £17 16s.

The slight falling-off in the sales can be more than accounted for by the stoppage of one of the claims at Argus Terrace for the last five months of the year owing to the death of the owner.

Wainihinihi Water-race.

A small break occurred in one of the tunnels near the intake of this race on the 9th February, but repairs were immediately started and the water was again turned on by the 12th. The open ditching in this race is in excellent condition, but some of the timber sets in different parts of the tunnels are badly decayed, and a few of them will have to be replaced with new timber during the ensuing year.

Waimea-Kumara Water-races.

The following is a summary of the revenue and expenditure of the above races for the year ended 31st March, 1919: Sales of water, £821 19s. 8d.; cash received, £875 15s. 8d.; expenditure, £1,946 13s. 9d.; average number of miners, 23·07.

The sales of water showed a decrease of £375 12s. 8d., and the cash a decrease of £354 7s. 1d. In addition to the above sales free water to the value of £23 0s. 11d. was supplied to parties to open up new ground.

The total expenditure on the combined races was £1,946 13s. 9d., as against £2,054 9s. 10d. for the previous year, a decrease of £107 16s. 1d. Comparing the sales of water with the expenditure, the combined races show a loss of £1,124 14s. 1d.

The cash received was £53 16s. greater than the sales, and this, together with the £10 written off by departmental authority, reduced the outstandings by £63 16s.

MOUNT IDA WATER-RACE, CENTRAL OTAGO (Mr. J. C. BUCHANAN, Manager).

The total sales of water from the Mount Ida Water-race during the year amounted to £706 14s. 9d., a decrease on that of last year of £493 9s. 9d. The expenditure on maintenance and repairs for the same period amounted to £1,403 11s. 9d., an increase on that of last year of £236 11s. 8d. The total cash received was £706 14s. 9d. Free water for washing up was supplied to the value of £55 1s. 7d., and free water for opening out was supplied to the value of £8 0s. 4d. The total value of water supplied from this race amounted to £769 16s. 8d., a decrease on that of last year of £526 16s. 4d. The average number of men employed was 12·16.

From the 1st April to the 23rd June the weather continued very dry, with a shortage of water-supply. Rain on the 23rd June gave an abundant supply of water till the 30th, when 6 in. of snow fell and was followed by very severe frost, which compelled the claims to close down. The winter continued severe until the 17th August, when a thaw set in, which enabled the claims to make a start after being idle for six weeks. From the 17th August to the 26th January there was a fairly good supply of water. On the 26th January heavy rain set in and continued for six days, causing one of the largest floods ever known in this locality. This large quantity of rain did considerable damage to the race, and from this date to the end of March all available men were employed cleaning the race and repairing the damage caused by the flood.

Owing to the shortage of labour some of the elevating claims were unable to work throughout the year: this, with a dry autumn, followed by a severe winter, and then the flood in January, were the chief causes of the small returns from this race. The war being over, labour should become more plentiful and enable the claims which have been closed down for the last two seasons to recommence operations.

ANNEXURE C.

SUMMARY OF THE REPORT OF THE INSPECTOR OF STONE-QUARRIES FOR THE NORTH ISLAND (Mr. JAMES NEWTON).

Most of the year has been spent in actual inspection of the quarries that come within the scope of the Act, a great many of which are operated intermittently, and I have endeavoured to inspect all such places in the several districts whether they have actually been under operation at the time of my visit or not.

In many cases I have found that operations were not being carried out in strict compliance with the regulations, having regard to the storage and use of explosives and the working of the quarry-face. Persons responsible for these conditions have on every occasion been warned and instructed to effect immediate remedial measures in accordance with the requirements of the law.

There has, however, been found in a great majority of the quarries substantial improvement in these matters, and it is noticeable that those responsible are showing much genuine inclination to do the right thing, and I have no doubt further good results will follow as the direct result of frequent inspection.

I am pleased to be able to report that no fatal or serious quarry accident has happened in the North Island during the year.

With regard to quarries not sufficiently high at the face to bring them within the scope of the Act but where explosives are used, together with those quarries where the faces reach a greater height than that mentioned in the Act but where no explosives are used, I have found a varying amount of real carelessness in the storage and use of explosives, and an astonishing amount of undue risk taken in the actual winning of the metal at the face of the quarry. I am of the opinion that it would be wise to bring such places within the scope of the Stone-quarries Act.

APPENDIX B.

REPORTS RELATING TO THE INSPECTION OF COAL-MINES.

The Inspecting Engineer of Mines to the Under-Secretary of Mines.

Sir,— Wellington, 31st March, 1919.

I have the honour to present my thirteenth annual report, together with statistical information, in regard to coal-mines of the Dominion, for the year ended 31st December, 1918.

The report is divided into the following sections :—

I. Output of Mineral.

II. Persons employed.

III. Accidents.

IV. General Remarks—

(*a.*) Exploration and Development of Coal Areas.

(*b.*) Safety Provisions.

(*c.*) Oil-shale Resources.

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 1918.				Total Output to the End of 1918.
	Northern District.	West Coast District.	Southern District.	Total.	
	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous*	125,349	996,959	....	1,122,308	31,171,005
Brown	420,430	130	285,213	705,773	14,480,157
Lignite	3,999	...	202,170	206,169	2,541,678
Totals for 1918 ...	549,778	997,089	487,383	2,034,250	48,192,840
Totals for 1917 ...	470,638	1,146,778	451,003	2,068,419	46,158,590

* Including coal formerly classified as "pitch" coal.

The decline in output for 1918 amounts to 34,169 tons, being 2 per cent. of the total output. There was likewise a decline in the output per underground miner from 715 to 703 tons per annum, which also is in the proportion of 2 per cent. This alone accounts for the annual decrease of output; had it not been, however, for the epidemic, by which most of the mines were rendered idle for two or three weeks and to which sixty-six working coal-miners succumbed, there would have been an increased output for 1918. The considerable decline at bituminous collieries is partly attributable to shortage of miners on the West Coast.

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

Name of Colliery.	Locality.	Class of Coal.	Output for 1918.	Total Output to 31st December, 1918.	Total Number of Persons ordinarily employed.
Northern District.			Tons.	Tons.	
Hikurangi	Hikurangi...	Semi-bituminous	65,361	1,165,283	109
Taupiri Extended	Huntly ...	Brown ...	203,015	2,385,196	373
Taupiri Rotowaro...	Rotowaro...	" ...	31,618	33,274	69
Pukemiro	Pukemiro...	" ...	114,458	296,424	160
Waipa	Glen Massey	" ...	69,085	388,784	73
West Coast District.					
Coalbrookdale	Millerton ...	Bituminous	240,096	5,492,521	406
	Denniston	"	179,630	7,781,218	391
Westport-Stockton	Mangatini	"	154,120	1,357,612	276
State Coal-mines (Point Elizabeth...	Dunollie ...	Semi-bituminous	95,106	2,350,823	134
State Coal-mines (Liverpool ...	Rewanui ...	Bituminous	113,013	585,484	298
Blackball	Blackball ...	"	121,259	2,709,639	284
Paparoa...	Roa ...	"	34,145	297,694	85
Southern District.					
Kaitangata and Castle Hill ...	Kaitangata	Brown ...	124,985	3,632,480	293
Nightcaps	Nightcaps...	" ...	53,805	1,307,949	109
Other New Zealand collieries ...	All coalfields	Various ...	434,554	18,408,459	934
Totals	...	...	2,034,250	48,192,840	3,994

SECTION II.—PERSONS EMPLOYED.

Inspection District.	Average Number of Persons employed during 1918.		
	Above Ground.	Below Ground.	Total.
Northern	242	662	904
West Coast	520	1,521	2,041
Southern	340	709	1,049
Totals, 1918	1,102	2,892	3,994
Totals, 1917	1,090	2,893	3,983

During the period of the war there has been a decline of 740 in the number of persons employed at or about collieries, which amounts to 16 per cent. of the total number employed during 1914. The greater portion of these men were voluntarily on active service abroad, but a considerable number have given up coal-mining during the war. On the other hand, to avoid military service some men temporarily left other occupations to work at collieries, being thus exempt from conscription. It appears probable that the shortage of colliers will continue.

SECTION III.—ACCIDENTS.

The following is a summary of coal-mining accidents during 1918, 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	6	6	8	10
Explosives...	...	...	...	...
Haulage	...	...	2	2
Miscellaneous—Underground...	...	...	12	12
On surface ...	...	...	...	...
Totals	6	6	23	25

The death-rate from accidents was 1·50 per 1,000 persons employed, or 2·95 deaths per 1,000,000 tons of coal produced.

All of the six fatalities were due to falls; with proper care most of these would have been avoided. The explanation for nearly all of the fatal accidents was the usual concealed joint known to miners as "greasy," "slippery," or "sooty" "backs." The most reliable preventive of such dangers is provided for in the regulations—viz., by systematic timbering right up to the face, and by the frequent use of sounding-rods and ladders for high places. During my inspections I seldom visit a colliery without finding one or more cases of needless risk being taken by miners by failure to support the roof and face of their working-places.

In the case of William Downs, killed by a fall at Blackball Colliery, the evidence at the inquest showed that there was no sounding-rod or ladder in the working-place, although the overhanging coal which fell was 15 ft. above the floor. In the case of Frank Mitchell, killed by a fall in the Wareatea Section of the Coalbrookdale Colliery, it is probable that if the use of props and bars had been insisted upon by the management, as instructed by Inspector Newton and myself, this accident would not have occurred.

The following is a description of fatal accidents in connection with coal-mining operations during 1918 :—

Date.	Name and Situation of Colliery.	Name, Age, and Occupation of Person killed.	Description of Accident, and Remarks.
1918. 17 Jan.	Blackball Colliery, Blackball	William Downs (32), miner	In H level, Section 17, of the panel workings, he was with his mate employed bringing back in a retreating manner overhead coal from above a split through a pillar. The split was about 6½ ft. high and 5½ ft. wide when first driven. The coal-seam 18 ft. above its floor contains a clay band about 1 ft. in thickness, above which the top coal is left unworked for a roof. He was preparing a shot in the overhanging coal and band at a height of about 15 ft. above the floor, when a fall occurred without warning, covering him and inflicting injuries from which he died the following day. No sounding-rod or ladder was provided in the place to enable an examination of the overhead coal and roof, which is in this mine extremely treacherous, and has caused several fatal accidents. The Coroner, when giving his verdict at the inquest, stated that "sounding-rods, prickers, and ladders should be provided in any place where the height exceeds 9 ft. or 10 ft. But I do not find that in this case deceased's death was in any way caused by the want of any of these appliances." There is no provision in the Coal-mines Act or Regulations that they shall be supplied.
4 April	Westport-Stockton Colliery, Mangatina	Edward John Paterson (32), miner	He was working with his mate in a lift off a pillar in D section of the mine when about 10 cwt. of coal fell without warning from a slippery joint, striking and killing him almost immediately. The height from the floor to the strong sandstone roof was about 10 ft. A clay parting occurred in the coal-seam 2½ ft. below the roof; from this parting the joint extended 3 ft. to the roof. At the inquest the mate of deceased stated that the face of the lift where the fall occurred was practically square and did not overhang; no sprag or face prop was set. The Coroner's jury found that no blame was attachable to any one. The circumstances raise a doubt as to the adequacy of the roof-support prior to the fall. The "slippery joint" was then invisible, but such must everywhere be anticipated by systematic timbering.

Date.	Name and Situation of Colliery.	Name, Age, and Occupation of Person killed.	Description of Accident, and Remarks.
3 July	Kaitangata No. 2 Colliery, Kaitangata	Edgar Salzburger (34), miner	He was employed on contract driving through conglomerate a place 6 ft. wide. The drive was timbered by props and bars only, the last set being about 5 ft. from the face. While preparing a new set a large piece of claystone fell from the top side, striking him and severely injuring his back and leg. A month later he was discharged from the hospital, where he had made good progress towards recovery, and such progress continued until the 23rd October, when he contracted the so-called influenza, which was followed by pneumonia, from which he died on the 27th October. The doctor attending him considered that the accident four months and a half previously was a contributary cause to his death, and for that reason this case has been included among fatal colliery accidents.
12 Aug.	Coalbrookdale Colliery, Denniston	Frank Mitchell (46), miner	In the Waretea section of the mine, with his mate, he was working. They were standing together near the face of their bord, when, without warning, a fall of coal from a slippery joint in the roof occurred, bringing a prop with it, and inflicting injuries from which he died the following day. At this colliery the system of timbering generally employed is by props with cap-pieces, the roof being friable coal. The manager has on several occasions been notified by the Inspector of Mines under Regulation 56 (*c*) that two props and a bar shall be used systematically instead of a prop and a cap in bords where slippery joints occurred. If this notification had been observed this accident might possibly have not occurred.
17 Oct.	Nightcaps Colliery, Nightcaps	Michael Prendeville (42), miner	With two mates he had driven a split through a pillar, and 9 ft. props had been set. At the time of the accident they were bringing back in a retreating manner the overhead coal, about 4 ft. thick. A shot had been fired and the coal removed; another shot had been prepared by him in the overhead coal. In the split about 2 ft. back from the lip a 9 ft. by 6 in. prop was set to the roof; this prop the men decided to leave in when the proposed shot was fired. Deceased had finished charging the hole, and was passing near the prop when, owing to roof-pressure, it sprung out, striking him with force on the head and killing him instantly. It was stated in evidence at the inquest that the prop was correctly set and that it was not broken. About 7 cwt. of coal fell with the prop, but it did not strike him. The Coroner's jury added to its verdict of accidental death a rider that in its opinion not more than two men should be employed in one place while working pillar or head coal. As in all the foregoing fatal accidents from falls, in this case also a doubt must be raised as to the adequacy of the roof-support by timber prior to the fall.
19 Dec.	Moss Bank Colliery, near Nightcaps	David McKenzie (42), permit-holder as manager	He was working with his brother and another miner at the opencast workings stripping the cover from the coal-seam in advance of and above the working coal-face, such face being about 12 ft. high. At ten minutes to 12 a.m. a fall of coal occurred, and deceased and his brother descended and picked some dirt from the fallen coal, which occupied a minute or two, and they were just about to leave for dinner when a piece of coal weighing about a ton fell without warning from between two diagonal joints, a distance of about 9 ft., striking deceased but not rendering him unconscious. He was removed to the Riverton Hospital, where he died that evening. In the morning he had been working near the coal which fell, and might have then loosened it. He was an experienced miner. The Coroner's jury returned a verdict of accidental death. Upon inspection of the scene of this accident a month later I observed the coal-seam to contain a series of almost vertical parallel joints, also defined horizontal cleavage, rendering the place dangerous.

The following statement shows the tons of coal and shale raised, persons employed, lives lost by accidents in or about coal-mines, &c., from 1878 to 1918:—

Year.	Output.	Persons employed.			Tons raised per each Person employed Underground.	Lives Lost.		
		Above.	Below.	Total.		Per Million Tons raised.	Per Thousand Persons employed.	Number by Accident.
Prior	709,931	...	...	...	...	...	...	...
1878	162,218	147	366	513	443	*	*	0
1879	231,218	...	...	802	...	194·64	44·00	35†
1880	299,923	...	...	1,038	...	6·66	1·92	2
1881	337,262	...	...	963	...	2·96	1·04	1
1882	378,272	...	...	1,043	...	5·28	1·91	2
1883	421,764	361	888	1,249	475	4·74	1·60	2
1884	480,831	393	890	1,283	540	6·23	2·34	3
1885	511,063	338	1,145	1,483	456	5·87	2·01	3
1886	534,353	392	1,213	1,605	440	*	*	0
1887	558,620	388	1,111	1,499	503	7·16	2·66	4
1888	613,895	414	1,275	1,689	481	6·51	2·36	4
1889	586,445	466	1,251	1,717	468	6·82	2·37	4
1890	637,397	512	1,334	1,846	477	12·55	4·33	8
1891	668,794	416	1,277	1,693	523	5·98	2·36	4
1892	673,315	485	1,196	1,681	563	1·48	0·66	1
1893	691,548	590	1,298	1,888	533	7·23	2·64	5
1894	719,546	506	1,393	1,899	516	8·33	3·16	6
1895	726,654	525	1,274	1,799	618	6·88	3·33	5
1896	792,851	590	1,347	1,937	588	83·24	34·07	66‡
1897	840,713	531	1,381	1,912	609	4·75	2·09	4
1898	907,033	556	1,447	2,003	627	1·10	0·49	1
1899	975,234	554	1,599	2,153	609	3·07	1·39	3
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	633	3·65	1·79	7
1910	2,197,362	1,136	3,463	4,599	634	7·28	3·55	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	1·38	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	750	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
Totals ...	48,207,283	...	...	...	...	...	...	335

* No life lost. † Year of Kaitangata explosion. ‡ Year of Brunner explosion. § Year of Ralph's (Huntly) explosion.

SECTION IV.—GENERAL REMARKS.

(*a.*) Exploration and Development of Coal Areas.

Boring operations by Government drills were carried out in the Parish of Whangape on the Waikato Coalfield upon Sections 116, 202, 204, 207, and 209, the property of the Awaroa Land Company; also upon Section 125, owned by the Whangape Coal Company. Upon the first-named property twelve holes were drilled, in nine of which brown coal of workable thickness was proved. The maximum thickness of the coal-seam is 21 ft., and the average thickness 16 ft. 4 in. To estimate the thickness of workable coal in this locality a deduction of 3 ft. or more is necessary, which being required to support the tender fireclay roof would not be removed when mining. Adjoining this property to the north-east upon Section 125, owned by the Whangape Coal Company, three holes were drilled during the year, in two of which the coal-seam, averaging 18 ft. in thickness, was proved to exist over a portion of the section. The exploration here recorded proves a valuable addition to the known areas of brown coal on the Waikato Coalfield.

At Huntly the extension northward of the two workable coal-seams has been proved by underground development and boring at the Taupiri Extended Colliery.

On the west coast of the South Island, on the low coastal range in close proximity to and northward of the Point Elizabeth State Colliery, between Seven-mile and Nine-mile Creeks, at a distance of about two miles and a half from Runanga, a workable area of semi-bituminous coal of about 300 acres has been proved by recent boring and surface prospecting carried out by the Mines Department. The coal-seam, averaging 8 ft. in thickness, occurs at altitudes between 200 ft. and 350 ft. above the sea. The construction of a branch railway thereto from Runanga presents no engineering difficulty; a short incline tramway would connect a mine with such railway. This coal area is situated on the State Colliery Reserve.

For the purpose of obtaining an average sample for analysis of the coal contained in this area short drives were put in at six different places, and from these twelve samples were obtained. The following is the average analysis of such samples, and for comparison there are given from the Fortieth Annual Report of the Dominion Laboratory the analyses of some of the principal household coals mined in the Dominion, all analyses being made by the Dominion Analyst:—

	Point Elizabeth Extended Area. Per Cent.	Point Elizabeth Colliery. Per Cent.	Taupiri Extended Colliery. Per Cent.	Kaitangata Colliery. Per Cent.	Nightcaps Colliery. Per Cent.
Fixed carbon	40·45	48·70	43·73	38·00	31·04
Hydrocarbon	51·12	41·52	42·12	39·96	39·24
Water	6·00	8·36	11·72	18·22	24·80
Ash	2·43	1·43	2·43	3·82	4·92
	100·00	100·00	100·00	100·00	100·00
Sulphur, per cent.	3·40	0·82	0·32	0·40	0·23
Calories, per gram	7,254	7,143	6,129	5,553	4,767
British thermal units, per pound ..	13,057	12,857	11,032	9,995	8,581
Evaporative power in pounds of water at 212° F.	13·53	13·33	11·44	10·36	8·89

It will be seen from the above that in hydrocarbon and evaporative power the coal from the new area is the highest of all, in water-contents it is the lowest, and in ash the lowest but one; it is somewhat high in sulphur, however, but not prohibitively so. The coal may be classed as a superior household coal useful also for steam-production. Any areas of coal high in sulphur could be left unworked, as is customary.

In Canterbury, near Avoca, the Mount Torlesse Collieries (Limited) commenced operations on the 23rd May on their lease from Canterbury College situated on the north side of Broken River, but in October work was discontinued thereon owing to faulting after an output of only 2,020 tons was obtained. Mining operations were then transferred to the Crown lease on the south side of Broken River, where several coal-seams, including one of considerable thickness, outcrop. These seams occur at very high angles, varying up to 75°. The area of workable coal is thus restricted, and mining is rendered somewhat difficult. From the mine-mouth to the screens at Avoca Station, distant three miles, five changes in the haulage system occur. The coal may be classed as a superior brown coal, and is in considerable demand in Canterbury for household requirements. The company's employees mostly live in tents near the mine, but it is proposed to erect cottages and a boardinghouse upon a town-site about midway between the mine and Avoca Station.

At Liverpool State Colliery, Rewanui, important development of the Morgan seam is being carried out by the construction of a low-level tramway and stone drive about three-quarters of a mile in length, from the middle hydraulic brake on the main haulage incline to intersect the Morgan seam near the forks of Seven-mile Creek, thus enabling the 17 ft. seam to be worked haulage and drainage free, in addition to reducing the distance of haulage by the avoidance of the upper section of the main haulage incline. The area of coal thus rendered available will be adequate to supply requirements for a number of years.

In the Wairio district, near Nightcaps, Southland, several small collieries have been established to work a thick seam of brown coal, an extension of the Nightcaps Coalfield. The coal areas thus being developed have hitherto proved of small extent, being isolated fragments of erosion, insufficient in area to warrant the installation of large mining plants.

(*b.*) Safety Provisions.

Ventilation.—In most of the mines, especially those at which thick seams are worked, the ventilation has been good. At practically all the collieries of any importance modern fans have been installed, and the officials understand the methods of distribution of the air; it therefore is their duty to see that the air is properly distributed. In some mines, however, a dullness in the ventilation at the working-faces has been observed. At Hikurangi Colliery, owing to the length of the intake and the smallness of its sectional area, the fan of small capacity has at times been found inadequate to provide adequate ventilation. At Kaitangata collieries the ventilation was in some places found dull owing to defective distribution, short-circuiting, and failure to properly erect and maintain the brattice. At Nightcaps, owing possibly to a parsimonious policy, no brattice at all was used in the mine to carry air to the faces on the occasion of my inspection this year. The management informed me that none could be procured, but as every other colliery of importance obtained it I am unable to understand why such a prosperous company as the Nightcaps Coal Company should tender such an explanation for neglect to comply with the law.

At the following mines firedamp mixtures have been reported most frequently by deputies during the year:—

	Number of Occasions.	Maximum Estimated Accumulation.
Taupiri Extended	63	18,000 cub. ft.
Kaitangata No. 1	65	500 cub. ft.
Castle Hill	20	Unspecified.
Liverpool No. 1	24	300 cub. ft.
Liverpool No. 3	20	1,000 cub. ft.

Only two ignitions of gas came to my knowledge during the year. On the 21st March Michael Hallinan received burns from an ignition of gas in a fireclay drive at the Brunner Mine, and on the 20th September R. Francy received slight burns at Westport-Stockton Colliery from an ignition of coal-gas distilled by an underground fire. Neither of these occurrences was notified by the manager to the Minister of Mines as required by section 10 of the Coal-mines Act of 1914.

Explosives.—An adequate supply of Imperial "permitted" explosives was available during the year, but there has been from some unexplained cause a great number of missfires owing to defective detonators, also incomplete detonation of "permitted" explosives and gelignite, which must chiefly be attributed to defects in manufacture. At the Liverpool No. 1 Colliery, which is a comparatively small mine, between the 2nd October, 1918, and the 13th March, 1919, the number of missfires was 179, five of which were due to defects in the wires from the exploder, eighty-nine to defective detonators, and sixty-six to defective "permitted" explosive. At Taupiri Extended Colliery during 1918 165 cases of missfire and incomplete detonation occurred, due to six defects in wires, ninety defective detonators, and fifty-nine charges of defective explosive. At other collieries where "permitted" explosives and gelignite were used the results were also unsatisfactory.

Support of Roof and Sides.—Notwithstanding that all the six fatal accidents which occurred during the year were caused by falls of coal, stone, or timber, and that such are the most prolific cause of colliery accidents in all countries, yet some miners take little notice of the regulations regarding systematic timbering, and the workmen's inspectors in their reports, to my knowledge, have never referred to neglect by the miner to protect himself by observance of Regulation 56, pertaining to the distance apart of props and the distance from the face of the nearest prop. I regard this defect as the most serious in connection with the inspection and management of mines; it is most common on the West Coast, but also occurs in some of the Waikato mines, and to a much smaller extent at Kaitangata. There is also a tendency to make the bords too wide on the West Coast and Waikato coalfields.

Supply of Materials.—Although the supply of materials from abroad has been practically cut off, yet during the period of the war collieries have carried on their operations making the best of what they could procure locally and of old material from unworked mines and other sources. The shortage of steel rope and brattice was the most severely felt requirement, but no serious accident resulted from such shortage.

Electricity at Collieries.—During 1918 there has been no increase in the number or capacity of electrical installations.

The following is a summary of the annual returns, in accordance with Regulation 160 (*c*), regarding electrical apparatus at collieries:—

Number of collieries at which electrical apparatus is installed	11
,, continuous-current installations	9
,, alternating-current installations	2
,, collieries electrically lighted	11
,, collieries using electrical ventilating-machines	6
,, ,, pumping plants	2
,, ,, haulage plants	5
,, ,, screening plants	2
,, ,, miscellaneous plants	2
,, ,, locomotives	1
Total horse-power employed from motors on surface	1,741½
,, ,, underground	609½

(*c.*) Oil-shale Resources.

During the year boring operations by Government diamond drill were carried out near Waikaia, Southland, by the Waikaia Oil-shale Development Company (Limited), a company having a nominal capital of £5,000. Seventeen boreholes were drilled, in six of which an oil-shale seam varying in thickness from 1 ft. to 17 ft. 9 in. was proved, also in some of the boreholes payable alluvial gold was found in the surface-gravels. The company is now obtaining a lease to cover these developments.

The following is a recent analysis of Waikaia oil-shale by the Dominion Analyst:—

	Per Cent.
Fixed carbon	13·51
Volatile hydrocarbon	35·04
Water	9·60
Ash	41·85
	100·00
Total sulphur	3·41

Near Orepuki, Southland, where the oil-shale property of the New Zealand Oil and Coal Company (Limited) is situated, mining and retorting operations have been suspended since 1903, but in view of the attention which has recently been directed towards a petroleum industry in the Dominion I have recently, by instruction from you, inspected the property, the following being a brief report thereon:—

The oil-shale-bearing area and oil-works are situated in the County of Wallace, adjoining the Township of Orepuki. A Government lease for mining coal and shale over 1,260 acres is held by the company over sections 37, 106, and 6, Blocks I, II, and III, Longwood Survey District. The lease is held for a fixed annual rental of £63, merging into a royalty of 3d. per ton, the duration of the lease being for sixty-six years from the 27th June, 1899. After securing its lease the company systematically laid out oil-works of modern type to treat 60 tons of shale per day, the cost with subsequent expenditure being stated by the managing director to be £124,000. The mining and treatment of the shale commenced during 1901. About two years later—viz., on the 17th July, 1903—operations were suspended, and have not been resumed; but during the past six years it is stated that £6,000 has been expended, chiefly in boring. The total output of oil-shale was 14,422 tons. The company earned during 1903 the Government bonus of £5,000 for the production of the first 100,000 gallons of crude petroleum.

Since March, 1913, the company has annually been granted suspensions of the output clauses of its lease. The last suspension terminates on the 11th September, 1919. The output conditions of the lease require a production of 12,000 tons of coal or shale per annum. Failure to comply with the output conditions entails liability to forfeiture of the lease by the Crown. During 1910 three successful boreholes were drilled by Government diamond drill. These proved the oil-shale over a distance of about 16 chains to be from 4 ft. to 4 ft. 10 in. in thickness.

The following are, I believe, the causes of failure of the initial operations at Orepuki: (1.) Retorting at too high a temperature, the result being a low extraction of crude oil and an excess in sulphur contents. (2.) Difficulties at the mine, which was opened in an isolated and much-faulted fragment of shale of small extent, the roof being difficult to support. The shale and underlying coal-floor was liable to spontaneous combustion and fires.

Future Prospects.—Although the operations of the company have hitherto been unsuccessful, the shale-deposit should not be condemned. By further boring to prove its extent, and by the installation of improved retorts of more up-to-date type, a superior oil will probably be produced. During 1906 a shipment of 57 tons of this shale was tested at the Pumpherston Oil-works in Scotland under the direction of Sir Boverton Redwood, an acknowledged authority. The results showed the average yield of the shale to be 38·41 gallons of crude oil and 19·12 lb. of sulphate of ammonia per ton. Samples of the crude oil obtained during the tests were refined, and the report states that the various oils and solid paraffin were found to resemble the corresponding products from Scotch shale-oil; further, that no special process of desulphurization in the treatment of the oil was necessary.

The following is an abstract of the fractionation as taken from the analyses in Sir Boverton Redwood's report:—

	Per Cent.
Burning-oil or kerosene	25·92
Gas-oil	3·07
Medium oil	4·05
Lubricating-oil	17·55
Hard paraffin containing 4 per cent. of oil M.P. 119·5°	19·03
Soft paraffin M.P. 86·5°	1·08
Total per cent. of commercial products	70·70
Loss in refining	29·30
	100·00

The Pumpherston Oil-works are of similar type to those at Orepuki.

With an output of 100 tons of shale per day, upon these results, during one year, there may be produced—kerosene or burning-oil, 299,500 gallons; lubricating-oil, 201,600 gallons; in addition to other oils and hard paraffin. This output would provide only for a very small proportion of the Dominion's requirements, the total quantity and value of imported oils during 1917 being—

		Value. £
Burning-oil (viz., kerosene)	4,534,862 gallons	134,367
Lubricating-oil	934,973 ,,	96,798
Gas-oil	8,528,635 ,,	594,788
Paraffin wax	3,174,530 lb.	66,130
		£892,083

The above value is estimated at a fair market price at the place of production plus 10 per cent.

During the current year the company has commenced to work the coal-seam of about 12 ft. to 14 ft. in thickness from an outcrop on its lease on the bank of the Waimeamea Stream, situated about one mile north-west of the shale-works, and about a quarter of a mile from Waimeamea Railway-siding on the Invercargill–Tuatapere Railway.

In view of the fact that the company's operations in connection with the Orepuki oil-shale deposits constitute up to the present time the most advanced step in this Dominion towards a much-desired oil industry, further boring is warranted and necessary to prove the extent of the oil-shale seam.

I have, &c.,

FRANK REED,

Inspecting Engineer and Chief Inspector of Coal-mines.

ANNEXURE A.

SUMMARY OF REPORTS BY INSPECTORS OF MINES.

Northern Inspection District (Mr. Boyd Bennie, Inspector).

Taupiri Collieries Extended Mine.—The mine-workings are located in the north-west and south-west dip sections respectively. In my report of 1917 reference was made to a mine-creep in the No. 6 level, north-west section. The pillar coal crushed to such a degree that there was danger of fire; the section was therefore closed off and flooded with water, and remains so.

In the extension of the main dip heading, northern section, a considerable upthrow fault has been met with. At a point a few chains back from the heading-face a drive has been carried into the upper coal-seam, when it was found that only a few feet of fireclay separates the main and the upper coal-seam. The upper coal-seam is about 18 ft. thick, of good hard coal. It is intended to work the upper seam first.

The work throughout the north-west section is being vigorously prosecuted. At No. 1 level a stone drive is now being driven into Aitken's Freehold (Section 2), and when completed a branch of the main dip haulage will be extended into the coal area lying along the eastern bank of the Waikato River. It is believed that this section contains a large quantity of good coal lying adjacent to the old Kimihia Mine.

Western dip section: The upper coal-seam has been cut into at No. 4 level on the south side, and the workings have been driven close up to the Ralph's barrier pillar. The main and the upper coal-seams are separated by about 40 ft. of fireclay; the main seam has been worked under this new section, but the pillar coal has not been extracted. In the upper coal-seam methane has been given off almost continuously, causing some inconvenience and anxiety at times. Every precaution has been taken for the safety of the workmen, safety-lamps being used throughout the mine; in the western dip section generally this gas has been found more frequently than in the northern dip. The mine-workings are regularly examined, and the company's officials and the workmen's inspectors have made many inspections of the old and disused portions of the mine. No serious falls of roof have been reported during the year. The mine-workings are fully a mile from the winding-shaft, and the time occupied by the workmen travelling to and from their work in the mine is seriously hindering the daily output of coal. The western and northern sections at the heading-faces are each one mile in length from the junction at the fan shaft, and between the two headings there is a distance of one mile.

There appears to be an extensive area of coal yet to be worked in this mine. The present winding-shaft being too small to allow of more up-to-date means of raising coal preparations are being made to wind coal up the fan shaft also.

Work at the mine has been continuous through the year, and there have been no fatal accidents, nor any of a really serious nature.

Taupiri Collieries, Rotowaro Mine.—The main-adit dip has been extended to a length of 20 chains in hard coal. Nos. 1 and 2 levels have been driven 13 and 7 chains respectively, also in good hard coal. There are many segregations of stone in the coal. The mine is comparatively dry. The mining plant and installation of machinery is completed for the present. A sirocco fan has been installed, and the ventilation is good. A ground tram is about to be constructed to connect with the No. 2 Mine tunnel. The company has erected houses for the manager and the principal officials of the mine, also a number of comfortable cottages with modern conveniences for the miners, at the new township near the Rotowaro Railway-station. A comfortable change-room or shelter-shed has been erected at the mine. The miners have requested the company to build change and bath rooms as required by the Coal-mines Act.

Pukemiro Collieries.—The mine has worked continuously through the year, and, despite the loss of time by miners through the influenza epidemic, the output for the year was 114,458 tons, an increase of 25,083 tons above the previous year's output. No. 1 Mine continues to produce coal of the best quality, and no further faults have been met with. The section over the upthrow fault is opening up satisfactorily. The ventilation and conditions generally throughout the mine are good.

No. 2 Mine, beyond the downthrow fault: This mine is entered by an adit dip level of about 2 chains in length; the coal is of good quality, hard and clean, and free from bands of stone; but there are segregations of stone met with, as in No. 1 Mine. This is characteristic of the high-level areas of the Waikato coalfield. This section is not connected underground with No. 1 Mine. Electrical-haulage endless rope and an electrically driven fan have been installed. I have examined the colliery a number of times during the year and found it safely worked. The workmen's inspectors have made several inspections of the mine and old workings, and report them all safe. Methane has not been found in the mines, and open lights are used through the workings, with electric light and telephones at the haulage stations.

Waipa Collieries.—In the No. 2 section of this colliery the pillar coal is being worked by six miners, so that the quantity of coal produced is not great, and I anticipate that from six to twelve months will finish the mine. No. 3 section has not been reopened, and it is the intention of the management to work the coal beyond the upthrow fault from No. 4 Mine level section. A new

haulage-tunnel has been driven, through which the mine will be worked and the endless haulage-rope of the ground tram will be extended into the mine. This will give greater facilities in the delivery of the coal over the previous methods. The coal in No. 4 section is of a good quality, and the coal-seam is from 6 ft. to 8 ft. thick. I made eight visits of inspection to the mine during the year and found the mine safe, but the ventilation, though adequate in the main intake and return airways, was defective in workmen's bords, due to the want of brattice-cloth and stoppings in the worked-out places. On my recommendation that condition was amended, and the ventilation was eventually much better. The ground tram has been much improved by the completion of a tunnel and the installation of a haulage main and tail rope, replacing horse haulage. The mine machinery and buildings are in good order. The output of coal from the mine is 12,633 tons short of the output for the previous year, due to the closing of Nos. 1 and 3 Mines, and in some degree to the loss of working-time by miners who were victims of the influenza.

Waikato Extended.—During the year a tunnel was driven through rock from the 7 ft. coal-seam into the big coal-seam at a higher level, and there the workmen have been employed and have mined 2,254 tons of coal, an increase of 1,364 tons over last year's output. There are only a few men employed, and the company ship their coal in barges to settlers adjacent to the Waikato and Waipa Rivers. More vigorous methods might be employed in disposing of the coal, and it is doubtful if the present methods will pay working-expenses. I found the mine safely worked.

Huntly Coal and Fireclay Mining Company.—The opencast mine being worked out, after some prospecting a small coal-seam was located a few chains north of the opencast. An adit level has been driven about half a chain into the coal. The fireclay in the company's quarry is intersected by inferior clay bands, but as work proceeds it is believed the quality of the clay will improve. The coal mined and used at the works was 3,782 tons, being 607 tons increase over the previous year. I inspected the mine and quarry a number of times during the year and found them safely worked.

Crown Lease, Aria.—In June I visited the mine and found that the coal-seam was much broken, and it appeared that there was an upthrow fault ahead of the main drive. Later I was informed that this fault had been cut into, but I have not yet heard what is the amount of the displacement. It is my intention to visit the mine soon, when I will make a careful examination with the view of advising the owner for future development-work. The coal being of an inferior quality due to crush, there has not been a demand for it as a household fuel. During the year there was sold 217 tons of coal, mostly to the Aria Dairy and Butter Factory.

Hikurangi Collieries.—The company's mines are at Waro, the coal underlying the lime rocks there. As previously stated, there was some trouble in draining the mines, but that difficulty has been overcome and the pillar coal is being worked. No. 6 adit is at the southern end of the lime rocks, while No. 2 is just beyond the rocks at their northern end. Both mines are working the pillar coal, commencing at a fault-line about midway between the two tunnels and working back so as to leave the waste in the centre. Good progress is being made. Early in the year excessive quantities of timber were used in building chocks and pillars to protect the main haulage and airway roads. Since then the consumption of timber has been normal as in such cases. The work is being carried on with great care.

The Phœnix Mine: The workings have been driven up to the boundary of the Great North Road, where there is an upthrow fault close to the company's boundary. The seam is from 8 ft. to 12 ft. thick, and the coal is of a superior quality; there appears to be several years' supply in the area. I am informed that on the north-west side of the fault-line referred to a number of boreholes have been drilled into the coal, and that there is a prospect of extending the mining to that area. At present a new stone drive is being driven as an adit dip in a line with the screening plant to connect the Phœnix Mine workings, and it may be extended into the new area. This new tunnel will greatly facilitate the mine-coal haulage, being direct and worked by endless haulage-rope. I found the mines safe and the ventilation generally good.

The miners suffered to some degree by the epidemic, which resulted in much lost time at the mines; nevertheless the year's production of coal was 65,361 tons, being an increase of 33,480 tons over the previous year. The output for 1917 was much below the previous years' record.

Northern Coal-mining Company, Hikurangi Sections.—Tauronga section: The old Northern Mine is worked out, but there are six men working in a small mine on the Tauronga section, where the coal-seam is from 4 ft. to 7 ft. thick. The area is very small. The men are working on the co-operative or tribute system, mining and delivering the coal to the Northern Company at a fixed tonnage rate. During the year there was mined 1,380 tons from the Tauronga section and 10,701 tons from the company's Crown lease, being part of Section 2, Block 16, Hikurangi Survey District (Little and party, tributers). This latter area is now worked out and the mine closed. The total output from the Tauronga and Crown lease is therefore only 12,081 tons, as compared with 27,782 tons for the previous year, being a decrease of 15,701 tons. I have found the mines safely worked.

The Northern Company's Waro Rocks section: The company are preparing to reopen this mine, and are now calling for tenders for the sinking of an air and drainage shaft, which is to be sunk to the north-west of the mine-workings. However, it will be some time before the Waro Mine section is again working, as some new and improved machinery will have to be installed for haulage, drainage, and ventilation. The old mining plant is inadequate and obsolete.

Northern Company's Kiripaka Mine.—Crown lease, Section 17, Block VII, Whangarei Survey District, Te Kiripaka section: The mine has been worked continuously throughout the year. The north-east level has been continued along the line of fault or fold, and the coal mined up the folded

portion of the seam to a height of from 50 ft. to 60 ft., when the coal thins out to an unworkable thickness. The south-west section of the mine has been worked out, the pillar coal having been extracted. On the north-east portion of the lease an adit level is being driven where the coal is showing in an old drive driven many years ago, known as Shephard's drive. It is said that the coal-seam is 7 ft. thick there. A ground tram is being constructed to connect with the mine main-haulage tram-line.

No. 1 Mine, freehold: Four men are working there taking out pillar coal. The area is small, and six months hence the mine will be closed.

No. 2 Mine, freehold: Four men are at work, pillar coal being worked, and the mine will be worked out in a few months.

I found all three mines being safely worked, and the ventilation good. The coal mined for the year was 28,633 tons, of which 15,946 tons was from the Crown lease and 12,687 tons from the company's freehold, being an increase of 7,379 tons as compared with the previous year.

Foot and Doel's Crown Lease (Part of Section 2, Block 16, Hikurangi Survey District).—A portion of the mine has been worked and the pillars removed. Another mine having been opened, and the main drive extended to the boundary, it was found that the levels right and left soon entered soft unsaleable coal, with no prospect of improving, therefore the area is very small, and at present it appears that the mine will be closed in a few months' time. Some of the pillar coal has already been worked. I found the mine carefully worked. During the year 7,733 tons of coal were mined, and during the previous year 1,855 tons, being an increase of 5,878 tons for the present period.

Kerr and Wyatt's Crown Lease (Section N.E. 39, Block 16, Hikurangi Survey District).—The company has been very successful in locating coal left in by a former mining company, and during the year it has mined 6,924 tons of coal, as compared with 7,585 tons the previous year, being a decrease of 661 tons. The mine is being carefully worked, and very little coal is lost. It would appear that the mine will be worked out during 1919. The Hikurangi Coal Company purchase the coal.

Cunningham's Crown Lease (Section N.E. 48, Block 16, Hikurangi Survey District).—The owner has suffered from the influenza and has not been at work since. The prospects at the mine are very poor. During the year 469 tons of coal were mined.

North New Zealand Coal-mining Company.—This mining company is in the unfortunate position of being unable to sell its coal. It is alleged that the coal is of an inferior quality, yet the analysis from samples taken by me from every mine in that district proved that it was equal to any of the other coal. Unfortunately the company has been mining in a highly faulted area, and to some extent the coal would be adversely affected. A more vigorous development of the mine and the extension of the main dip headings would, I believe, have proved coal of better quality, where the faulting would have been less frequent, and the difficulties now facing the company might have been avoided. The coal in the deepest workings of the mine was much thicker and less subject to faulting than the area previously worked, and it is stated that the old Kamo Mine was working the coal some distance ahead of this mine, and that the coal in that mine was very good and the seam from 8 ft. to 10 ft. thick. I examined the mine in May last just prior to it being closed. Twenty-five men were employed in and about the mine.

Serious Non-fatal Accidents during 1918.

Taupiri Collieries.—George Williams, miner, slipped and fell while using a spanner on a coal-cutting machine, and sprained his knee. The accident, which was not considered serious at first, happened on 6th August, but later the miner had to enter the Hamilton Hospital and have the semi-luna cartilage removed. The man is still off work, and to all appearances the knee will be permanently weak.

William Ingram, with some other youths, was tending to a rope in the Extended Mine. The rope had been at a standstill, and the youths were sitting down; the rope started, and Ingram put his right hand on the rope to raise himself up, with the result that his hand was drawn into a pulley and two fingers severed, and the third so severely injured that it had to be amputated at the Hamilton Hospital. The accident happened on the 24th September.

Ben Housley had two fingers amputated while working at the screening-belt at the Extended Mine on the 21st May.

Pukemiro Collieries.—Bene Poutu, miner, permanently disabled through conjunctivitis in a severe form, 22nd February.

Richard Shilton, miner, permanently disabled through conjunctivitis (severe) caused by injury to the eye by flying coal, 20th June.

Hikurangi Collieries.—James Russell, miner, had his left ankle injured on the 26th March by a prop falling upon it; off work 214 days.

Northern Collieries, Kiripaka.—John Craig, miner, sustained a comminuted fracture of the right leg, while getting down coal, by a lump of coal falling away from a fault and crushing his leg against a prop. I was at the mine when the accident happened, and found the place well timbered right up to the face; a sprag had been in position under the coal, and had just been removed when the accident happened. Date of accident, 5th October.

During the year there occurred sixty-four accidents, which necessitated the injured persons being off work twenty-five days or more, six of these being from eye accidents due to flying coal. There also occurred forty-one other eye accidents, causing the sufferers to be off work for a shorter period.

WEST COAST INSPECTION DISTRICT (MR. GEORGE DUGGAN, Inspector).

New Zealand State Coal-mines.

Liverpool Colliery.—No. 1 section: The workings of this section have been developed mainly to the north, and the main headings to the rise are now approximately 31 chains from the main level. One of the higher levels, going east, has holed out on the bank of Puru Creek, and this has considerably increased the quantity of air circulating in the rise workings. Pillar-extraction is proceeding on the lower east side, as well as on the west side of the Seven-mile Creek. The coal from this section is still of a friable nature.

Morgan seam: Work in the Morgan seam has been confined to the development of the east and west levels, and very little wide work has yet been done. The east levels are now 15 chains in from the haulage road, and the west levels 10 chains. Owing to the shortage of truckers, work in the west levels has been temporarily suspended. The Morgan seam continues to be of good quality, but is friable. The endless-rope haulage has been carried in to the end of the main stone drive. As a considerable area of coal lies to the dip of the main levels in the Morgan seam, and to reduce the length of haulage, another stone tunnel will soon be commenced from the Seven-mile Creek near the middle brake to intersect the coal-seam.

No. 3A section: All of the output is now obtained from pillar-extraction. A small area of about 6 acres, containing low coal, to the east of the old dip, remains to be worked.

No. 3 section: The development during the past year has been in a northern and eastern direction. Only a limited area now remains unworked between this section and No. 3A section. The fourth level, going eastward, is within 2 or 3 chains of the cliff overlooking the Seven-mile Creek, and when through will materially assist the ventilation. The pillar workings on the west side of the first level are almost exhausted, and the output from the section is gradually diminishing. The up-to-date safety-lamp house, where 200 electric safety-lamps were charged and stored, was destroyed by the landslip. Only forty lamps were recovered, and are now reserved for the use of the truckers. The coal-hewers have had to revert to the use of ordinary safety-lamps. The bins being erected to replace those demolished are almost completed. A number of reports of small quantities of inflammable gas were recorded at the No. 3 section and at the Morgan seam. The output from the Liverpool mines, 113,013 tons, is nearly 33,000 tons less than that for 1917. This was mainly due to the stoppage caused by the landslip.

Point Elizabeth Colliery.—The dip portion of the No. 1 section ceased output in October, and in a few weeks the rise portion will be exhausted. It is anticipated that the No. 2 section will also be exhausted during the coming year. A few reports of inflammable gas were recorded at the No. 2 section. The output from the Point Elizabeth Colliery for 1918 was 95,106 tons.

New Coalfield near the Sea-coast, eight and a half miles from Greymouth.—Prospecting and boring is now being done on this field, and has already proved a considerable extent of workable coal. The coal is very hard and is non-caking, and should take the place of the nearly exhausted Point Elizabeth coal for household purposes.

Paparoa Colliery.—The output from this mine, 34,145 tons, has been considerably curtailed through numerous strikes occurring. One of these, commencing on the 18th October, was still unsettled at the end of the year. Very little development has been done during the past year. One level going south-east from the head of the first jig is approximately 7 chains in, and will open up a small area below some of the standing pillars. Most of the output was obtained from pillar workings in the slant heading section. Inflammable gas has again been reported in small quantities during the year. Very little progress having been made towards the erection of bath-houses, the management were notified that proceedings would be taken if the work was not facilitated. Owing to the protracted strike labour has since been unobtainable for this purpose.

Blackball Colliery.—The output from the Blackball Mine was 121,259 tons, being nearly 11,000 tons less than that of the previous year. This reduction was mainly due to an inrush of water carrying down a huge quantity of debris on to the haulage-road. This occurred in July, and no output has since been obtained from the inner workings. The miners employed in these workings were found places by working two shifts in all places in the No. 9 dip and the No. 1 rise sections. The bottom of No. 9 dip is 13 chains below the main level. The dip itself is not at present being driven owing to very acid water destroying the pumps. Levels are driven from the bottom of the dip and are now approximately 24 chains in. They have another 16 chains to go before striking the fault. Black-damp is given off from the floor of the main and water levels, needing ample ventilation to dilute it. The area stoped off, through spontaneous combustion in the rise workings, has been under constant surveillance, and, although at times troublesome, has been kept well in hand. A fatality, caused by a fall of coal in pillar workings, occurred at this mine in January.

North Brunner Colliery.—This mine will be completely exhausted during the coming year. Only a few miners are at present employed on pillar-extraction in the top section. The lower section is now finished. Output for 1918 was 11,489 tons.

Brunner Mine.—Most of the output is obtained from pillar-work in the St. Kilda section. A few solid places are being driven south-east of the dip. A pair of miners are engaged in the Coal-pit Heath area driving through old workings to obtain pillars left in during the previous working. The inclined stone drive, to cut a deposit of fireclay, has been full of water the greater part of the year. A low level is being driven to cut the stone drive about half-way down from surface. The year's output was 11,090 tons.

Boustridge's Prospecting-area.—Prospecting is being done on the south side of the Grey River at the eastern end of the Brunner-Stillwater Railway tunnel. A level, in coal varying from 3 ft. to 7 ft. thick, has been driven about 150 ft. This drive has had to be diverted to the east owing to a large "roll" coming in on the right side.

Reefton Coal Company's Mine.—This mine has worked continuously during the year, and has produced 6,636 tons of coal, being 2,332 tons more than the output for 1917. Towards the end of the year an outcrop was discovered about 11 chains up the creek from the mine-mouth. Further prospecting will prove whether this is a lower seam than the one being worked at present. The coal shown at the outcrop is from 10 ft. to 12 ft. thick and of excellent quality. A survey has been made from the Reefton Railway-station with the object of taking the railway-hoppers up to the four mines in the Burke's Creek district—*i.e.*, the Reefton Coal Company's, Lockington's, Morris and Learmont's, and the Waitahu mines. At present the coal is conveyed from the Reefton Coal Company's mine to the railway-station along a narrow-gauge tramway and drawn by a horse. From the other three mines the coal has to be conveyed the greater part of the way by drays. A serious accident occurred on the Reefton Coal Company's tramway, which is mentioned further in the report.

Other Reefton Mines.—Very little development has been done on this field during the year, although numerous coal leases and prospecting licenses have been applied for. Lockington's and Morris and Learmont's mines changed ownership, and the Waitahu Mine resumed mining operations in April. A fault was struck in this mine in the level, and driving was continued into the fault for 105 ft. This drive is still in coal-measures which are almost perpendicular at the face. The management now contemplate putting down a borehole from surface 800 ft. ahead of the face of the drive.

The Lankey's Creek mine, which only supplied coal for the Energetic Gold-mine, has been idle since May, owing to a fire destroying the Energetic shaft.

Other small mines in the Reefton field still produce a little coal, mostly for household purposes.

Westport District.

Coal Creek Mine, Mokihinui.—This mine has produced 4,007 tons for the year, as compared with 2,554 tons for 1917. Seven miners are now employed. Pillar-extraction continued in the lower workings until October, when this section was abandoned. In the upper workings a drive is going through a "roll" to get to an unworked area to the rise. A coal-prospecting license has been obtained by this party over 105 acres further up Coal Creek, who state that outcrops of coal 18 ft. thick are exposed on the area.

Co-operative Mine, Seddonville.—From the old No. 4 section workings the year's output was 2,813 tons. The coal varies in quality, much "brassy" coal being left unmined. An area of 200 acres, comprising part of the old Cardiff workings and some of the former State mine area, has been applied for by this party

Westport-Stockton Colliery.—Considerable development has been made at the new mine. A new haulage-road has recently been completed to an area of about 20 acres to the east of the C tunnel, old mine. The seam is about 6 ft. thick and of good quality. Work at the old mine consists mainly of pillar-extraction. Near the electric-haulage road to the new mine a small area, called Sandcap, of about 4 acres, has been connected up, and mining operations commenced therein. The seam here is about 7 ft. thick and very hard, and has an excellent sandstone roof. Six pairs of miners are employed on single shift. At the new mine a stone drive, going south-west, is being constructed to shorten the motor-haulage road, and when completed this will allow the extraction of a large section of pillars near the present mine-mouth. A dip in coal going westward is being driven towards a borehole which has proved 18 ft. of hard coal. This dip will command an area of 15 to 20 acres. Early in July a fire, caused by the explosion of a small distributing-magazine, broke out near the mine-mouth. The fire was with difficulty confined to a small area of goaf to the east of the mine-mouth. The output from the Westport-Stockton Mine for 1918 was 154,120 tons. A fatality occurred in the pillar workings of this mine on the 4th April.

Millerton Colliery.—Mangatina and old dip sections: At the Mangatina section coal is still being won along the eastern boundary of the lease near the boardinghouse. The south Mangatina heading has not been extended during the year, but boreholes have been put down ahead, and to the west of the face of the heading. One of these boreholes proved 11 ft. of coal, and another 13 ft. It is proposed to extend the heading in a south-western direction, and it is anticipated that the coal will be struck within a few chains, the borehole being only 7 chains from the face of the heading.

Old dip section: In this section all the miners are employed on solid work. The coal in the headings going south is very steeply inclined, and the headings were recently stopped. The face of the main heading is only 5 chains from the Mine Creek workings, but the country between is much folded, and all driving to make the connection must now be done from the Mine Creek side. A stone drive to facilitate haulage is proceeding in the old dip section. This drive is parallel to and about 5 chains to the west of the old main jig. Another haulage-road is proposed, going south-west through the workings, towards an outcrop of coal in the left branch of Granity Creek, and will open up the area near the curved stone drive.

Mine Creek Mine.—Most of the output from this extensive area is still obtained from solid workings. Development is to the west and the north, but the northern workings (dip sections) will soon connect to the old dip section. Pillars are being extracted in the top south near the fire area. Heating was apparent in the fire area during November, but prompt measures were taken and water was pumped in through one of the brick stoppings for a few days and the temperature reduced to normal. Last year's output was 240,096 tons, being nearly 40,000 tons less than that of the previous year.

Denniston Collieries.—The output from the Denniston mines for 1918 was 179,630 tons. These mines suffered severely through the shortage of labour, and the influenza epidemic was very virulent at Burnett's Face and Denniston.

Ironbridge Mine.—Mining operations in the Shaft, Inner Shaft, and Right-hand Kruger's sections are confined to pillar-extraction. No coal was won from the Inner Shaft section during the last six weeks of the year.

Upper Kruger's section: A dip has been driven into an area of coal 10 ft. to 12 ft. thick, lying between this section and the Inner Shaft. The extent of this area has not so far been proved, but present indications are encouraging.

No. 8 section: Development in the bottom seam has been continuous, but the area remaining to be won is very limited. A fireclay roof necessitates constant renewal of the timber supports.

Deep Creek section: In addition to the extraction of pillars in the old Deep Creek section, a new endless-rope-haulage road is being formed to the Extension field. Thirty chains of heavy formation has been completed and has reached a small area of coal. It is intended to extend this road for another 25 chains to reach the main field. This portion will not be so difficult to construct as that already completed.

Kiwi section: All coal won from this section has been from pillar-extraction, and used principally for power purposes.

An accident of a serious nature occurred in the Kruger's section on the 10th October, the details of which are appended.

Coalbrookdale Colliery.—Wareatea jig section: The two winning headings, going due west, have been driven a total distance of 40 chains. The coal won in the headings has been of good quality. Little wide work has yet been done, and if a good haulage-road existed it would be possible to place all the men in the mine in this one section. The output is delivered by horse haulage along a circuitous level. In order to deal with the large output that this section is capable of producing attempts were made to form a new rope-road through heavily fallen ground. A further heavy fall occurred recently, and work on the road has temporarily been stopped.

Wareatea Extended section: The large "reverse fault" recently met in the main heading has hampered development in this section. During the latter part of the year a number of boreholes have been put down. Coal has been proven at depths varying from 30 ft. to 60 ft. A drive through the fault was made, but the coal met is gradually thinning and is now only 15 in. thick. It is anticipated that 5 chains ahead of the face of the drive thick coal will again be struck. A large area of coal is known to exist south-west of the present workings.

No. 8 Cascade section: All of the output from this section is obtained from pillar-extraction. The coal is generally low and the ground very heavy, necessitating the use of a large quantity of timber for supports. Signs of heating were noticed in a place in No. 8 section. The heated coals were immediately filled away and the temperature soon reduced to normal.

Callaghan's dip section: A few pairs of miners are still engaged on pillar-extraction. The little dip was stopped owing to the haulage-road becoming dangerous, and only a few stumps of pillars remained.

The commodious bathhouse near the entrance to the Wareatea section has been kept in good order and much used by the miners.

A fatality occurred in the Wareatea Extended section on the 12th August, particulars of which are appended.

Nelson District.

Puponga Mine.—No work has been done at the main mine during the year, but a party of six miners started pillar-extraction, in September, at the top section.

North Cape Mine.—No solid work remains to be done at this mine, and the whole output, 13,225 tons, was obtained from pillar workings. The main dip was stopped early in the year, having struck a "downthrow fault," and, although a good deal of stone-work was done, no coal was proved to exist. A cross-measures drift was driven 219 ft., and two small seams, about 12 in. thick, were pierced. At the inner end of the drive a borehole was put down 20 ft. and struck the conglomerate, so the drive was stopped. The coal-seam being thin the pillars will be exhausted in two years.

Fatalities.

Three persons lost their lives underground during the past year. On the 17th January a miner named W. Downes, whilst working back "tops" in the Blackball Mine, was struck by a fall of coal and stone with fatal results.

On the 4th April E. J. Paterson, a miner, had his neck broken by a fall of coal from the face of the lift in pillar workings at the Stockton Mine.

On the 12th August F. Mitchell, a miner, while in the act of removing his coat from a prop, was struck by a lump of coal falling from the roof. The prop, which had been supporting this coal, had become loosened and fell. When assistance was first rendered a broken leg was suspected, but the deceased's spine was broken, and he died thirteen hours after the accident.

Serious but Non-fatal Accidents.

Millerton Mine.—20th April: J. Bazeena, a horse-driver, received a broken leg through falling over a trolly whilst trying to get clear of his horse.

Reefton Coal Company's Mine.—24th May: T. Lamberton, a horse-driver, sustained a fractured leg by a branch of a tree being blown by the high winds across the tramway as he was driving from the mine to the railway-station.

Ironbridge Mine.—10th October: Robert Meadows, a miner, was struck by a fall of coal from the roof in his working-place, and received severe injuries to his spine, and a fractured thigh.

Dangerous Occurences requiring Notification according to Regulation 31.

Blackball Colliery.—On the 5th June a fire occurred at the outcrop on No. 17D section, but was immediately attended to and subdued. It again broke out on the 17th June, and again subdued after the breaks in the overlying measures were filled in.

Coalbrookdale Colliery.—On the 9th May a small area in No. 8 section became heated, and a pair of miners were employed filling away the heated coal. After this was completed the temperature became normal.

Stockton Colliery.—On the 4th July a small underground magazine exploded and set fire to the surrounding coal. Water was brought on to the burning area, and a cut subsequently made in the overlying strata over an old bord, thus confining the fire to a small area of old workings.

Brunner Mine.—On the 21st March a miner named M. Hallinan was slightly burned about the face and arm by an ignition of a small quantity of firedamp in the stone drive to the fireclay-deposit.

Coaldust.—Permitted explosives, as a preventive of coal-dust explosions, are now used at most of the collieries in the district. Many miss-shots have been reported at Blackball and the State mines. Some of these have been caused through the explosive having absorbed moisture and deteriorated. Others were caused through the shot-firers or deputies not taking sufficient care in the charging of the shot. If the detonator be not central in the shot-hole, then the detonating wave will strike towards the side of the charge and, losing its effect, portions of the charge will remain unexploded. If more care is taken in the charging of the shot the number of miss-shots will be reduced.

SOUTHERN INSPECTION DISTRICT (Mr. E. R. GREEN, Inspector).

Canterbury.

Mount Torlesse Collieries (Limited), Avoca.—The mining operations on the Canterbury College lease from outcrops on the north side of Broken River, which were commenced on the 23rd May, 1918, were suspended in October of the same year owing to faulting and pinching of the coal-seam, which had never exceeded 5 ft. in thickness in that section. The manager had introduced the longwall system prior to the suspension of work. Mining operations were then transferred to the company's Crown lease of 1,000 acres on the south side of Broken River, where several coal-seams, one of considerable thickness, outcrop. These seams occur at very steep angles, varying up to 75°. It was proposed to construct jigs in the coal-seam (having the roof and floor on the sides of the jig) connecting levels, the pillar-extraction to commence from the apex of the top level—bridges of coal being left under each level to prevent the goaf from falling into the section below.

Sheffield Coal-mine, Sheffield.—The shaft had been sunk to the bottom of the coal-seam, 5 ft., but no further working had been done during the year.

Bush Gully Coal-mine, Coalgate.—Underground mining suspended. Some prospecting-work had been done at surface outcrop to south of former workings.

Homebush Coal-mine, Glentunnel.—Engine seam, dip section: Coal-seam to dip having become thin and inferior, the pillars were extracted and the section stopped off owing to heating in the waste. Workmen were scattered and coal was being won from six separate places on the outcrops of the several seams which had been worked. A 3 ft. 6 in. seam at a depth of 70 ft. below the main seam was expected to continue and provide future output. A boring plant was being obtained to test the ground to the dip of the field.

St. Helens Coal-mine, Whitecliffs.—Another drive had been made on the hillside and the small steam plant moved to recover a small known area of seam left at former working.

Staveley Coal-mine, Springburn.—Prospecting on a Crown lease area recently approved.

Tripp's Coal-mine, Mount Somers.—Pillar and head coal extraction continued. An air-shaft had been sunk for ventilating the far-in places.

Woolmers Coal-mine, Mount Somers.—The 5 ft. coal-seam had been worked until the winter, when snowfalls caused temporary stoppage.

Albury Coal-mine, Albury.—A heavy fall underground blocked the lower level, rendering it necessary to drive around in the solid to the dip to recover the working-faces. Meanwhile an old drive to the rise was reopened to get the pillars supposed to have been left.

Allanholme Coal-mine, Waihao Forks.—Dip drive, 200 ft. to the working-face in a good seam of lignite, probably the best seen in the district.

St. Andrew's Coal-mine, Papakaio.—The old mine had become worked out and work was suspended in September.

Prince Alfred Coal-mine, Papakaio.—Some heating had occurred in the dip pillared section, which was blocked off in time. Ventilation fair.

Ngapara Coal-mine, Ngapara.—A small mine worked for local requirements. Ventilation good.

Shag Point (Old) Mine, Shag Point.—Pillaring and robbing continued. Rise workings almost finished. A contracted known area to dip was being driven on. Some heating from the waste had been stopped off.

Shag Point Coal Company's Coal-mine, Shag Point.—Developing to dip; advancing levels suspended meantime, consequently ventilation improved by the shortening of airways.

Coal Creek Coal-mine, Coal Creek Flat.—Opencast working in good order.

McPherson's Coal-mine, Coal Creek Flat.—Low-level drain being put in with dredging-screens for pipes, side pressure being very heavy.

Alexandra Coal-mine, Alexandra.—The seam to dip was continuing beyond the boundary, and an extension of the coal area was being applied for. Workings in good order. Ventilation good.

Cromwell Coal-mine, Cromwell.—Dip driven 6 chains in the seam at an angle of 30°; coal-seam split. Return airway made.

Shepherd's Creek Coal-mine, Bannockburn.—Installing new steam boiler on the surface. Pillar working to dip continued. Running sand overlying the seam much dryer than at first working; water has apparently been drained off, thus permitting pillar and head coal extraction.

Gibson's Coal-mine, Bannockburn.—Drive to dip and level broken away.

Cardrona Coal-mine, Cardrona.—Opencast. Stripping surface by sluicing with water brought in for the purpose. The almost vertical seam appeared to be making going southward.

Gibbston Coal-mine, Gibbston.—Pillar-extraction continued. Mine in good order and ventilation good.

Nevis (E. J. Williams) Coal-mine, Nevis.—A small drive had been put in, but stripping being shallow the lessee proposes removing it by sluicing.

Nevis Crossing Coal-mine, Nevis.—This opencast pit had not been reopened since the severe winter, but is expected to start soon.

Fernhill Coal-mine, Abbotsford.—Ventilation good. Additional second outlet provided, with ladderway at near working-places.

Freeman's Coal-mine, Abbotsford.—Places in good working order and ventilation good.

Green Island Coal-mine, Green Island.—A new entrance had been made owing to the former one having fallen in. Substantial fire-stoppings in against the waste. Ventilation is to be improved by extra brattice, and ladderway in shaft to be completed.

Jubilee Coal-mine, Saddle Hill.—Withdrawing pillar coal; stentons kept up for ventilation. A drive was being projected towards Walton Park old workings, some considerable distance away.

Saddle Hill Nos. 1 and 2 Mines, Saddle Hill.—Pillar and head coal extraction. Fan ventilation good.

East Taieri Coal-mine, East Taieri.—Pillar and head coal extraction continued. The "creep" necessitated close attention to timbering for safety.

Brighton Coal-mine, Brighton.—Preparing for increased output from the new inlet. Shaft sunk for ventilation.

Salisbury Coal-mine, North Taieri.—Prospecting by boring on the flat and driving into the hillside at several points, at one of which a 6 ft. seam of lignite had been struck.

Waronui Coal-mine, Milton.—Floor heaving badly in remaining pillaring area to rise where output being obtained. Fan ventilation good.

McGilp's Coal-mine, Milton.—Natural ventilation not entirely satisfactory on occasions when weather unfavourable; workmen were then withdrawn.

Taratu Coal-mine, Lovell's Flat.—The old mine is exhausted and outlet closed. Barclay's seam near surface is over 20 ft. in thickness, with strong roof; bords are driven to the outcrop. Pillar and head coal has been withdrawn from the fault. In the shaft seam a new drive from the water-level to the dip had been commenced.

Mahara Coal-mine, Kaitangata.—Worked chiefly for local summer sales. A company was being formed to increase the scale of operations.

Port Arthur Coal-mine, Kaitangata.—Work suspended meantime as the seam between outcrop and the fault had apparently been worked out. Smoke was coming from the mine-mouth, which had fallen in.

Longridge Coal-mine, Kaitangata.—Output continued on a small scale.

Kaitangata No. 1 Mine, Kaitangata.—No. 21 dip section had become worked out to No. 19 dip, at which the air-shaft pillars had been left intact. The output had been chiefly derived from Mundy's dip and No. 6 dip sections. At No. 6 dip section the usual methods of extraction had been followed—viz., development in solid and robbing pillar and head coal backward, leaving ample coal barriers for isolation of worked panels by permanent ash and sand fire-stoppings inserted at all openings. Mundy's dip section of work had provided substantial output from pillar and head coal in retreat toward the dip haulage-way. Firedamp had occasionally been reported as occurring at the edges of the goaves and gate-end lips, when workmen were not permitted to enter the section until these places had been made safe by ventilation or stopped off as occasion required. The largest quantity of firedamp reported as accumulated at one time during the year amounted to 500 cubic feet, on the 24th August, 1918.

Kaitangata No. 2 Mine, Kaitangata.—Workings in Nos. 1 and 2 dips were drawing in gradually; the "creep" was still in evidence, consequently much contraction of haulage-roads and airways necessitating constant renewals of timber and air-spaces for ventilation. The cross-measures stone

drive had met the coal-seam somewhat troubled and disturbed, but a pair of levels were being driven northerly in the seam for prospecting purposes. The 6 ft. seam had been further developed, and was found to be continuous over an area as yet undetermined. The fan drift outlet was being lined with concrete to prevent leakage. This mine continued to be reported free from firedamp, but safety-lamps only are permitted to be used.

Castle Hill Mine, Kaitangata.—The blower of gas met in Carson's seam has ceased. Owing to shortage of miners at Kaitangata collieries this mine had not been worked full-handed during the year.

The Inspector of the Society for Prevention of Cruelty to Animals has again reported that the ponies and pit-horses at Kaitangata mines were well cared for. Materials for construction of bath and change house are on the ground ready for erection when workmen are available.

Benhar Coal-mine, Stirling.—Dip driven through the fault and levels opened on both sides; seam thick and strong, making good roof and sides.

Stevenson Collieries, Stirling.—Large timbers used for support of roof in this thick seam of strong lignite.

Pukerau Coal-mine, Pukerau.—Lignite produced for local requirements until the winter period, when the pit was closed down.

Whiterigg Coal-mine, East Gore.—Output steadily maintained. Seam strong and safely worked.

Green's Coal-mine, Gore.—The new air-shaft provided for adequate clearance of powder-smoke from working-faces. The old pillar "fire" is kept down by water laid on for the purpose.

Bushy Park Coal-mine, Gore.—Opencast pit. Lignite used locally.

Burnwell Coal-mine, North Chatton.—A new inlet and haulage-way for output being made.

Ramsay's Coal-mine, North Chatton.—Working continued steadily. Seam strong and worked safely.

Pyramid Coal-mine, Riversdale.—Only 166 tons of coal was obtained as the result of prospecting and boring. Mining is again discontinued.

Glenlee Coal-mine, Waikaka.—An opencast pit worked for local requirements.

Greenvale Coal-mine, Waikaka.—Unwatered and preparing for resumption of work.

Rossvale Coal-mine, Waikaia.—Safely robbing head and pillar coal.

Waikaia Coal-mine, Waikaia.—A small output; only one man employed.

Argyle Coal-mine, Waikaia.—An opencast pit supplying local trade.

Waikaia Oil-shale Development Company, Muddy Terrace.—The area having been proved by the Government boring-drill, application has been made for a lease, and development may be expected at an early date.

Princhester Creek Coal-mine, The Key.—Opencast pit. Coal-deposit irregular; stripping heavy.

Mataura Collieries, Mataura.—The mine, which had been flooded by the backwaters of the Mataura River during winter storms, was restored, and coal-production was proceeding steadily. The powder-magazine is well kept.

Mataura Lignite-mine, Mataura.—Natural ventilation at present adequate, but this may be expected to become insufficient as underground working extends

Nightcaps No. 1 Mine, Nightcaps.—No. 1 Section: Pillaring outward to head of No. 3 winch dip. A dip drive in the resin seam has been commenced. No. 3 or Lloyd's dip section: The lower working-faces were about 10 chains from the public-road line. Rise workings pillared safely.

Nightcaps No. 2 Mine, Mount Hilda.—Seam 20 ft. to 25 ft. in thickness. The opencast face had slipped in, but was being reopened. The coal-seam in prospecting-drive underground is steeply inclined at an inclination of 1 in 2.

Black Diamond Coal-mine, Nightcaps.—Being developed on the bord-and-pillar system. A new tram-line had been laid for conveyance of coal from the mine to Nightcaps public road.

Burndale Coal-mine, Nightcaps.—Driving to the dip from the outcrop. Water-inflow rather heavy. Previously driving from the outcrop in the 9 ft. coal-seam.

Coaldale Coal-mine, Nightcaps.—Working was recently suspended pending Ohai Railway extension.

New Brighton Coal-mine, Wairio.—Driving to dip, the seam having been enlarged from 5 ft. to 7 ft. in thickness. Fan ventilation fair.

Wairio Coal-mine, Wairio.—Extraction of pillar coal continues, but the end of the old mine-workings is in sight. A prospecting-drive to the rise has developed a small area of workable coal. An application had been made for a lease over an adjoining area into which it was hoped that the coal-seam existed.

McKenzie and Sheddan's Coal-mine, Nightcaps.—A new mine. 199 tons had been won when the coal-seam became faulted and disappeared. Work now suspended.

Wairaki Coal-mine, Nightcaps.—Only a small output had been obtained when operations were suspended pending the extension of the Wairio Branch Railway to Ohai.

Mossbank Coal-mine, Nightcaps.—Is now opencasting the seam, which had previously been won by underground mining. A connection by tram-line made with Wairio Branch Railway extension provides at present for limited output.

Linton Coal-mine, Nightcaps.—There are two seams averaging 10 ft. to 12 ft. each of coal separated by a 4 ft. band of stone. Four men were employed winning coal by opencast for land sale. It was anticipated that the Wairio Railway extension would be completed before winter, as the mine was ready to produce coal.

Diamond Lignite-pit, Seaward Bush.—Some driving had previously been done, but opencast working has been reverted to. Stripping is not well kept back from the face, also one part of face is undermined. I strongly pointed out to the workman the danger of this.

Orepuki Coal-mine, Orepuki.—Opencast pit on the banks of Waimeamea Stream. The Orepuki Shale Company has recently resumed work, and a mine was being driven in the seam.

Southport Coal-mine, Preservation Inlet.—A coal lease had been granted over 1,000 acres of Crown land at Gulches Head, Preservation Inlet. Three drives had been put in to the face of coal, but no development has been done since the lease was issued. The two seams proved to be 4 ft. and 6 ft. in thickness respectively.

Fatal Accidents.

Kaitangata No. 2 Mine, Kaitangata.—3rd July: Edgar Salzberger, 34, miner—fracture of spine and extensive bruising of left lung by fall of stone from low roof and side while preparing for a set of timber. Death ensued on the 21st November from hæmorrhage of left lung, caused, according to the medical certificate, by Salzberger having contracted a severe cold, and violent coughing had brought on tearing of old pleuritic adhesions due to the accident.

Nightcaps Coal-mine, Nightcaps.—17th October: Michael Prendeville, 42, miner—fracture of skull behind ear, struck by a falling prop at the working-place.

Mossbank Coal-mine, Nightcaps.—19th December: David McKenzie, 42, mine-manager under permit—fractured thigh and internal injuries by a fall of coal from side of opencast pit while passing by.

Serious Non-fatal Accidents.

Castle Hill Coal-mine, Kaitangata.—4th April: Benjamin Beardsmore, 40, repairer—hand jambed against prop by a rolling stone, necessitating amputation of little finger of left hand; 107 days off work. 8th October: Josh. Gilmour, 37, miner—scalp wound and general bruising; struck by piece of coal falling from face; 59 days off work.

Kaitangata No. 2 Mine, Kaitangata.—24th April: Alexander Morrison, 44, miner—fracture of skull and left thigh by fall of stone from roof while working at the face; still off work.

New Brighton Coal-mine, Wairio.—11th May: A. C. Dixon, 33, miner—dislocation of left thigh by fall of stone from roof while setting timber; 55 days off work.

Taratu Coal-mine, Lovell's Flat.—27th May: James Thompson, sen., 54, miner—fracture of right clavicle; crushed against working-face by coal-box while filling; 108 days off work.

Nightcaps No. 1 Mine, Nightcaps.—13th June: Patrick Hayden, 34, miner—fracture of left foot, caught between rail and wheel of box of coal being lifted on to the road; 95 days off work.

Nightcaps Coal-mine, Nightcaps.—27th June: J. Sheehan, 35, miner—crushed left foot by a rolling lump while picking coal; 105 days off work. 29th November: Herbert Dahren, 27, miner—dislocated left shoulder and bruises; while barring a lump of coal it gave away unexpectedly; still off work.

Kaitangata No. 1 Mine, Kaitangata.—2nd July: Gordon Beadle, 18, horse-driver—fracture of left thigh; caught between empty boxes and timber on roadside; 167 days off work. 8th July: Alfred E. Hawkins, 37, miner—compound fracture of right tibia and bruised chest by fall of coal and timber while repairing; still off work. 8th July: L. L. Grimshaw, 29, miner—bruised back and right knee by fall of coal and timber while repairing; 120 days off work. 8th July: William W. Miller, 40, miner—crushed chest and hip-joint by fall of coal and timber while repairing; 60 days off work. 13th August: William Miller, 35, miner—bruised lumbar muscles and laceration of ear; struck by proud coal flying from face; still unable to work.

Taratu Coal-mine, Lovell's Flat.—20th July: A. Cunningham, 50, miner—fracture of rib, left side, and bruised chest; prop fell while setting it; 61 days off work.

Stevenson Collieries, Stirling.—30th July: A. C. McLelland, 43, mine-manager—severe burns of face and arms by ignition of blasting-powder while serving it out; still off work.

Freeman's Coal-mine, Abbotsford.—8th October: J. McGilvary, 42, miner—bruised chest and right forearm; struck by runaway coal-box; 77 days off work.

Coal-miners' Relief Fund.

A total of 129 accidents was reported to me during the year, mainly in connection with the Coal-miners' Relief Fund. Of these, four claims were not prosecuted or disallowed as ineligible, applicants being less than one week off work, leaving 125 cases of workmen disabled for a period of one week or more on account of accidents. The following is an abstract of accidents:—

	Above Ground.	Below Ground.
Fatal accidents	1	2
Non-fatal accidents (serious and severe)	..	16
,, (ordinary)	11	96
Totals	12	114

Eye accidents from flying coal comprised seven of the accidents reported. Fortunately all were able to resume work in from twelve to sixteen days from the date of accident. Four eye cases occurred at Kaitangata, one at Mahara (near Kaitangata), one at Nightcaps, and one at Shag Point.

At the end of the year five claimants severely injured remained on the fund,

ANNEXURE B.

COLLIERY STATISTICS, 1918.

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	Number of Seams worked.	Thickness of Seams.	Thickness worked.	System of Underground working.	Number of Shafts.	Total Output for 1918.	Approximate Total Output to 31st December, 1917.	Approximate Total Output to 31st December, 1918.	Number of Men ordinarily employed.			Means of Ventilation.
												Above.	Below.	Total.	
NORTHERN INSPECTION DISTRICT.															
North Auckland Coalfields.									Tons.	Tons.	Tons.				
Whangarei, North Auckland Coal Company	E. J. Scoble ..	8	Semi-bituminous	1	6′ to 10′	6′ to 10′	Bord and pillar	2	3,750	26,908	30,658	4	20	24	Fan.
Northern Tauronga, Hikurangi ..	H. Tipton ..	21	Ditto ..	1	6′	5′	Ditto ..	1	1,778	610,964	612,742	1	4	5	Natural.
Northern Crown Lease, Hikurangi	G. Doel	1½	„ ..	1	6′ to 7′	6′ to 7′	„ ..	1	10,701	22,512	33,213	1	7	8	„
Northern Kiripaka, Kiripaka ..	E. Nelson ..	3½	„ ..	1	5′ to 11′	Full	„ ..	4	28,633	325,959	354,592	18	30	48	Fan one section, others natural.
Northern Co-operative, Hikurangi	E. A. Cunningham..	4½	„ ..	1	5′ to 8′	5′ to 8′	„ ..	1	469	21,197	21,666	1	2	3	Natural.
Kerr and Wyatt, Hikurangi ..	F. H. Kells ..	3	„ ..	2	3′ to 10′	Full	„ ..	..	6,924	9,569	16,493	2	8	10	„
Foot and Doel, Hikurangi ..	G. Doel	1½	„ ..	1	5′	5′	„ ..	1	7,733	1,855	9,588	1	9	10	„
Hikurangi	A. H. Taylor ..	27	„ ..	1	6′ to 10′	6′ to 10′	„ ..	3	65,361	1,099,922	1,165,283	34	75	109	Fan.
Waikato Coalfields.															
Waipa, Glen Massey	T. Thomson ..	5	Brown ..	1	10′	8′	Bord and pillar	..	69,085	319,699	388,784	25	48	73	„
Taupiri Extended, Huntly ..	W. Wood ..	30	„ ..	1	10′ to 34′	20′	Ditto ..	2	203,015	2,182,181	2,385,196	71	302	373	„
Taupiri Rotowaro, Rotowaro ..	A. Penman ..	1	„ ..	1	6′ to 15′	7′	„ ..	..	31,618	1,656	33,274	28	41	69	„
Pukemiro, Pukemiro	A. Burt	3½	„ ..	1	16′ to 18′	6′ to 12′	„ ..	..	114,458	181,966	296,424	50	110	160	„
Huntly Coal and Brick, Huntly..	R. Greenwell ..	6½	Lignite ..	1	15′	15′ and 6′	Opencast and bord and pillar	..	3,782	17,085	20,867	3	1	4	Natural.
Waikato Extended, Huntly West	W. C. Davies ..	2½	Brown ..	1	16½′	12′	Bord and pillar	..	2,254	920	3,174	2	4	6	„
Greencastle, Aria	A. Morgan ..	2	Lignite ..	1	12′	9′	Level ..	..	217	75	292	1	1	2	„
Output of mines included in previous statements at which operations are abandoned or suspended							..	..	..	3,721,489	3,721,489	..	..	..	..
WEST COAST INSPECTION DISTRICT.															
Nelson Coalfield.															
Puponga Colliery	A. J. McHardy ..	15	Bituminous	1	5′ 6″	Full height	Bord and pillar	..	729	215,453	216,182	3	4	7	Natural.
North Cape Colliery	William Morgan ..	8	„	1	2½ to 4½′	„	Ditto ..	..	13,225	54,697	67,922	15	20	35	Mechanical.

Buller Coalfield.																	
Co-operative Mine	H. Chester (P.) ..	4	Bituminous	1	10′	8′	Bord and pillar	..	2,813	4,661	7,474	1	5	6	Natural.
Coal Creek Mine	W. McGuire ..	3	,,	1	5′	5′	Ditto ..	1	4,007	5,031	9,038	3	6	9	,,
Westport-Stockton Colliery ..	P. Hunter ..	10	,,	1	4′ to 20′	Full height	,, ..	2	154,120	1,203,492	1,357,612	87	189	276	Mechanical.
Millerton Colliery	R. Fox and W. Pearson	27	,,	1	5′ to 14′	,,	,, ..	..	240,096	5,252,425	5,492,521	56	350	406	,,
Ironbridge Colliery	G. Smith ..	27	,,	2	3′ to 30′	,,	,, ..	..	179,630	7,601,588	7,781,218	60	141	201	,,
Coalbrookdale Colliery ..	N. Milligan ..	38	,,	1	4′ to 20′	,,	,, ..	..				60	130	190	,,
Rocklands Mine	J. P. Burley (P.) ..	16	Brown ..	1	27′	8′	,, ..	..	130	7,065	7,195	..	2	2	Natural.
Inangahua Coalfield.															
Coghlan's Freehold Mine ..	J. Coghlan (P.) ..	22	Semi-bituminous	1	12′	8′	Bord and pillar	..	1,100	6,826	7,926	..	2	2	Natural.
Archer's Freehold Mine ..	F. W. Archer (P.) ..	23	Ditto ..	2	9′ to 12′	8′ to 10′	Ditto ..	..	940	20,216	21,156	1	2	3	,,
Reefton Coal Company's Mine ..	A. Thompson ..	17	,, ..	1	12′	8′	,, ..	..	6,636	32,570	39,206	6	9	15	,,
Deep Creek Mine	E. F. Lockington (P.)	17	,, ..	2	28′	7′	,, ..	..	877	3,696	4,573	3	2	5	,,
Phœnix and Venus Mine ..	W. Julyan (P.) ..	37	,, ..	2	25′ to 30′	8′	,, ..	..	3,516	37,920	41,436	2	4	6	,,
Lankey's Creek Mine	F. Knight (P.) ..	16	,, ..	1	8′	7′	,, ..	..	295	24,789	25,084	..	2	2	,,
Loughnan's Mine	H. Griggs (P.) ..	32	,, ..	1	4′	Full height	,, ..	..	1,552	15,047	16,599	1	2	3	,,
Big River Mine	W. Kirwan (P.) ..	5	,, ..	1	2′ to 12′	,,	,, ..	..	766	3,431	4,197	..	2	2	,,
Waitahu Mine	I. Rhodes (P.) ..	16	,, ..	1	14′	8′	,, ..	..	160	4,719	4,879	3	4	7	,,
Morris and Learmont's Mine ..	J. Eager (P.) ..	5	,, ..	1	20′	8′	,, ..	..	395	125	520	..	3	3	,,
Grey Valley Coalfield.															
Paparoa Colliery	H. Talbot ..	10	Bituminous	1	5′ to 25′	Full height	Bord and pillar	..	34,145	263,549	297,694	20	65	85	Mechanical.
Blackball Colliery	G. Davidson ..	28	,,	2	17′	15′	Ditto ..	..	121,259	2,588,380	2,709,639	57	227	284	,,
North Brunner Colliery ..	J. Armstrong ..	9	,,	1	3′ to 10′	Full height	,, ..	..	11,489	104,384	115,873	16	24	40	Natural.
Brunner Colliery	R. Alison ..	54	,,	1	4′ to 12′	,,	,, ..	..	11,090	2,408,252	2,419,342	8	12	20	Mechanical.
N.Z. State Coal-mines.															
Point Elizabeth Colliery ..	O. J. Davis ..	14½	Bituminous	2	4′ to 16′	4′ to 10′	Bord and pillar	..	95,106	2,255,717	2,350,823	42	92	134	,,
Liverpool Colliery	W. Parsonage ..	6	,,	3	4′ to 16′	Full height	Ditto ..	..	113,013	472,471	585,484	76	222	298	,,
Output of mines included in previous statements at which operations are abandoned or suspended									..	2,135,249	2,135,249	..	..	..	..
Canterbury.	SOUTHERN INSPECTION DISTRICT.														
Mount Torlesse, Avoca ..	W. Leitch ..	1	Brown ..	1	5′	5′	Bord and pillar	1	2,946	..	2,946	21	35	56	Fan.
Bush Gully, Coalgate	James Gillick ..	5	,, ..	1	5′	5′	Ditto ..	1	396	37,183	37,579	1	2	3	,,
Homebush, Glentunnel ..	James Gillick ..	45	,, ..	1	6′	6′	,, ..	1	10,172	299,578	309,750	9	29	38	Natural.
St. Helens, Whitecliffs ..	J. Sutherland ..	37	,, ..	1	6′	5′	,, ..	1	688	26,874	27,562	1	3	4	,,
Tripp's, Mount Somers ..	J. McClimont (P.) ..	52	,, ..	1	40′	15′	,, ..	1	2,278	68,138	70,416	1	3	4	,,
Woolmer's, Mount Somers ..	J. Watt (P.) ..	2	,, ..	1	5′	4′ 6′	,, ..	1	644	294	938	1	2	3	,,
Stavely, Stavely	D. Kane	1	,, ..	1	Variable	8′	Semi-vertical	..	80	..	80	..	2	2	,,
Te Moana, Geraldine	G. D. Macfarlane ..	4	,, ..	1	5′	5′	Bord and pillar	..	2	145	147	..	..	..	,,
Albury, Albury	T. F. Slowey (P.) ..	27	,, ..	1	16′	10′	Ditto ..	1	932	16,785	18,717	1	4	5	,,

COLLIERY STATISTICS, 1918—*continued.*

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	Number of Seams worked.	Thickness of Seams.	Thickness worked.	System of Underground working.	Number of Shafts.	Total Output for 1918.	Approximate Total Output to 31st December, 1917.	Approximate Total Output to 31st December, 1918.	Number of Men ordinarily employed.			Means of Ventilation.
												Above.	Below.	Total.	
SOUTHERN INSPECTION DISTRICT—*continued.*															
Canterbury—continued.									Tons.	Tons.	Tons.				
Allanholm, Waihao Forks ..	A. Todd (P.) ..	3	Brown ..	1	15′	9′	Bord and pillar ..		1,264	753	2,017	2	4	6	Natural.
A. E. Kirk, Waihao Forks ..	J. Corry	1	„ ..	1	5′	5′	Open		73	..	73	2	..	2	„
Dalgety's, Hakataramea ..	E. W. Ensor ..	37	„ ..	1	30′	15′	Bord and pillar ..		..	3,590	3,590	..	..	..	..
North Otago.															
St. Andrew's, Papakaio ..	T. Nimmo (P.) ..	40	Brown ..	1	7′	6′	Bord and pillar	1	397	56,708	57,105	1	3	4	Natural.
Prince Alfred, Papakaio ..	A. Beardsmore (P.)	49	„ ..	1	9′	7′	Ditto ..	1	1,516	62,445	63,961	1	2	3	„
Ngapara, Ngapara	W. Nimmo (P.) ..	40	„ ..	1	25′	8′	„ ..	1	725	31,491	32,216	1	2	3	„
Shag Point (old mine), Shag Point	W. H. Hunt (P.) ..	4	„ ..	1	4′	4′	„ ..	1	1,460	409,928	411,388	1	6	7	„
Shag Point Coal-mining Company	Job Hughes ..	10	„ ..	1	5′	5′	„ ..	1	10,676	34,142	44,818	10	21	31	„
Central Otago.															
Larsen and Brown's, Kyeburn ..	Larsen and Brown..	1	Lignite ..	1	2′	2′	Open ..	..	2	..	2	..	..	..	..
Coal Creek, Roxburgh ..	J. Barber ..	48	„ ..	1	20′	7′	„ ..	..	395	60,677	61,072	2	..	2	Natural.
McPherson's, Coal Creek Flat ..	J. Weatherall (P.) ..	48	„ ..	1	10′	20′	„ ..	1	1,786	70,634	72,420	3	..	3	„
Perseverance..	J. Craig	31	„ ..	1	75′	25′	Bord and pillar	1	8	60,491	60,499	..	..	..	„
Alexandra, Alexandra.. ..	A. W. Whittlestone	37	„ ..	1	11′	7′	Ditto ..	1	3,680	93,450	97,130	1	7	8	Exhaust steam.
Cambrian, Cambrian	David Jones ..	57	„ ..	1	30′	All	Open ..	..	422	49,071	49,493	2	..	2	..
Laudervale, Cambrian ..	J. Rutherford ..	14	„ ..	1	12′	„	„ ..	..	..	1,309	1,309	1	..	1	..
St. Bathan's, St. Bathan's ..	J. Enwright ..	21	„ ..	1	20′	20′	„ ..	..	130	6,151	6,281	1	..	1	..
Roughridge, Oturehua ..	J. Beck (P.) ..	32	„ ..	1	20′	20′	„ ..	..	1,342	31,038	32,380	2	..	2	..
Idaburn, Oturehua	J. White (P.) ..	48	„ ..	1	20′	20′	„ ..	..	962	46,284	47,246	2	..	2	..
Gimmerburn, Gimmerburn ..	C. Dougherty ..	62	„ ..	1	12′	12′	„ ..	..	..	3,253	3,253	..	..	..	..
Cromwell, Cromwell	A. Scott	4	„ ..	1	7′	6′	Bord and pillar ..	..	1,029	3,019	4,048	1	2	3	Exhaust steam.
Shepherd's Creek, Bannockburn	W. R. Parcell ..	41	„ ..	1	12′	6′	Ditto ..	..	5,699	86,558	92,257	2	10	12	„
Gibson's, Bannockburn ..	J. Gibson (P.) ..	1	„ ..	1	18′	8′	Dip and levels ..	1	316	..	316	1	2	3	Natural.
Cardrona, Cardrona	R. McDougall (P.)..	34	„ ..	1	10′	10′	Open ..	..	130	25,928	26,058	3	..	3	..
Gibbston, Gibbston	R. Cowan (P.). ..	32	„ ..	1	15′	10′	Bord and pillar	..	1,096	23,559	24,655	2	3	5	Natural.
Nevis, Nevis..	E. J. Williams (P.)	18	„ ..	1	20′	20′	Levels ..	..	358	6,575	6,933	1	..	1	„
Nevis Crossing, Nevis	R. Ritchie ..	15	„ ..	1	16′	16′	Open ..	..	360	13,365	13,725	2	..	2	..
Dillon's, Blackstone Hill ..	J. Dillon	21	„ ..	1	12′	12′	„ ..	..	10	282	292	..	..	..	..

South Otago.														
Fernhill, Abbotsford	Thomas Gray (P.) ..	41	Lignite ..	1	11′	8′	Bord and pillar	1	3,098	159,219	162,317	3	4	7	Natural.
Freeman's, Abbotsford ..	G. F. Whittlestone	38	,, ..	1	10 to 12	All	Ditto ..	3	11,350	557,594	568,944	9	11	20	Fan.
Green Island, Green Island ..	T. Barclay, jun. ..	31	,, ..	1	10′	8′	,, ..	1	3,565	131,444	135,009	3	4	7	Furnace.
Jubilee, Saddle Hill	T. Barclay ..	21	,, ..	1	6 to 10	All	,, ..	2	20,497	339,971	360,468	10	22	32	,,
Saddle Hill (No. 1), Saddle Hill	Robert Hill ..	46	,, ..	1	20′	20′	,, ..	1	8,088	241,997	250,085	4	8	12	Fan.
Saddle Hill (No. 2), Saddle Hill	Robert Hill ..	17	,, ..	1	20′	20′	,, ..	1	16,136	250,264	266,400	7	18	25	,,
East Taieri, Riccarton ..	W. Coulter (P.) ..	7	,, ..	1	10′	7′	,, ..	1	2,751	15,108	17,859	1	6	7	Natural.
Salisbury, North Taieri ..	L. C. Hazlett ..	3	,, ..	1	6′	6′	Level ..	1	15	4,433	4,448	2	..	2	,,
Brighton, Brighton	H. C. Russell (P.) ..	3	,, ..	1	6′	6′	Bord and pillar	1	468	3,513	3,981	1	4	5	,,
Waronui, Milton	James Carruthers ..	14	Brown ..	1	18′	8′	Ditto ..	1	12,048	190,936	202,984	13	14	27	Fan.
McGilp's, Milton	James Carruthers ..	14	,, ..	1	12′	10′	,, ..	1	18,036	40,127	58,163	2	16	18	Natural.
Taratu, Lovell's Flat	A. Morris ..	17	Lignite ..	3	6′ to 30′	7′ to 15′	,, ..	2	47,391	307,076	354,467	16	52	68	Fan & natural.
Mahara, Kaitangata	J. Neilson (P.) ..	10	Brown ..	1	9′	7′	,, ..	..	1,538	2,249	3,787	2	3	5	Natural.
Port Arthur, Kaitangata ..	J. M. Morrison ..	9	,, ..	1	10′	8′	,, ..	..	1,614	1,312	2,926	3	4	7	,,
Longridge, Kaitangata ..	N. Mackie (P.) ..	10	,, ..	1	4′	4′	,, ..	..	184	3,814	3,998	..	1	1	,,
N.Z. Coal and Oil Company (Limited)—															
Kaitangata No. 1, Kaitangata	A. S. Gillanders ..	42	,, ..	1	25′ to 32′	All	,, ..	1	124,985	3,507,495	3,632,480	34	111	145	Fan.
Kaitangata No. 2, Kaitangata	W. Carson ..	6	,, ..	3	26′ and 7′	All	,, ..	1				39	109	148	,,
Castle Hill, Kaitangata ..	W. Carson ..	25	,, ..	1	18′	18′	,, ..	1							
Benhar, Stirling	J. Walls (P.) ..	55	Lignite ..	1	25′	12′ to 16′	,, ..	1	8,924	169,834	178,758	1	6	7	Exhaust steam.
Stevenson Collieries, Stirling ..	J. Throp (P.) ..	2	,, ..	1	15′	10′	,, ..	..	3,262	196	3,458	3	6	9	Natural.
Southland.															
Pukerau, Pukerau	F. A. Junker (P.) ..	38	Lignite ..	1	14′	14′	Open ..	..	301	42,103	42,404	1	..	1	..
Whiterigg, East Gore	W. C. Johnston (P.)	40	,, ..	1	20′	12′	Bord and pillar	1	3,366	68,144	71,510	1	2	3	Exhaust steam.
Green's, Gore	J. Mason	30	,, ..	1	20′	14′	Ditto ..	1	16,121	190,275	206,396	3	8	11	Fan.
Bushy Park, Croydon ..	G. M. Wilson ..	13	,, ..	1	20′	18′	Open ..	..	415	22,514	22,929	1	..	1	..
Burnwell, North Chatton ..	W. McIvor (P.) ..	19	,, ..	1	20′	12′	Bord and pillar	1	845	40,505	41,350	1	2	3	Natural.
Ramsay's, North Chatton ..	J. Ramsay (P.) ..	15	,, ..	1	20′	15′	Ditto ..	..	1,892	84,951	86,843	1	2	3	,,
Glenlee, Waikaka	D. T. McGill (P.) ..	25	,, ..	1	14′	10′	Open ..	..	971	15,890	16,861	..	2	2	,,
Greenvale, Waikaka	A. A. Edge (P.) ..	2	,, ..	1	14′	10′	Bord and pillar	1	..	770	770	..	..	..	,,
Kelly, W., Greenvale	A. A. Edge (P.) ..	1	,, ..	..	14′	10′	Open ..	..	111	..	111	1	..	1	..
Pyramid, Pyramid	E. Jones	2	,, ..	1	9′	8′	Bord and pillar	..	166	2,775	2,941	1	2	3	Natural.
Rossvale, Waikaia	R. Craig (P.) ..	15	,, ..	1	10′	8′	Ditto ..	1	1,889	40,237	42,126	1	3	4	,,
Waikaia, Waikaia	J. Johnston (P.) ..	10	,, ..	1	8′	6′	,, ..	1	209	14,753	14,962	1	..	1	,,
Argyle, Waikaia	M. C. Hutton ..	27	,, ..	1	12′	12′	Open ..	..	331	5,711	6,042	2	..	2	..
Princhester Creek, The Key ..	J. A. Denton ..	16	,, ..	1	6′	6′	,, ..	..	88	1,731	1,819	1	..	1	..
Mataura Collieries, Mataura ..	R. Brown ..	22	,, ..	1	17′	12′	Bord and pillar	1	10,264	187,016	197,280	2	8	10	Exhaust steam.
Mataura Lignite, Mataura ..	E. Charles ..	42	,, ..	1	18′	14′	Ditto ..	..	17,095	173,050	190,145	8	7	15	,,
Heatherlee, Waimumu ..	F. Barber ..	7	,, ..	1	10′	8′	Open ..	..	64	564	628	1	..	1	..
Torrie, Andrew, Waimumu ..	A. Torrie	1	,, ..	1	8′	All	,, ..	..	101	..	101	..	..	..	..
Ota Creek, Wyndham	E. Genge (P.) ..	38	,, ..	1	9′	9′	,, ..	..	1,550	21,308	22,858	2	..	2	..
Clarke's, Wyndham	Hunter and Rice ..	11	,, ..	1	12′	12′	,, ..	..	403	14,894	15,297	2	..	2	..
Glenham, Wyndham	N. McEwan ..	3	,, ..	1	6′	6′	,, ..	..	..	385	385	..	..	..	..

COLLIERY STATISTICS, 1918—*continued.*

SOUTHERN INSPECTION DISTRICT—*continued.*

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	Number of Seams worked.	Thickness of Seams.	Thickness worked.	System of Underground working.	Number of Shafts.	Total Output for 1918.	Approximate Total Output to 31st December, 1917.	Approximate Total Output to 31st December, 1918.	Number of Men ordinarily employed. Above.	Below.	Total.	Means of Ventilation.
Southland—continued.									Tons.	Tons.	Tons				
Nightcaps No. 1, Nightcaps	W. Barclay	37	Brown	3	6′, 12′, and 16′	All	Bord and pillar	2	43,024	1,254,144	1,307,949	25	70	95	Two fans and natural.
Nightcaps No. 2, Nightcaps	W. Barclay	2	„	1	28′	20′	Bord and pillar and open	..	10,781			9	5	14	Natural.
Black Diamond, Nightcaps	G. Tinker (P.)	3	„	1	25′	10′	Bord and pillar	..	4,352	2,752	7,104	3	5	8	„
Burndale (Beattie's), Nightcaps	G. Beattie (P.)	4	„	1	9′	7′	Ditto	..	923	34	957	1	3	4	„
Coaldale, Nightcaps	J. Robertson	1	„	1	10′	6′	„	..	665	..	665	2	5	7	„
New Brighton, Nightcaps	W. Dixon	12	„	1	7′	All	„	1	7,092	48,529	55,621	4	13	17	Fan.
Wairio, Nightcaps	C. R. Heycock	13	„	1	14′	All	„	..	18,879	66,224	85,103	14	22	36	Natural.
McKenzie and Sheddan, Nightcaps	J. Robertson	1	„	1	14′	7′	„	..	199	..	199	1	2	3	„
The Willow, Nightcaps	J. O. Clapp	5	„	1	12′	..	Open	..	62	2,501	2,563	1	..	1	..
Wairaki, Nightcaps	W. Excell	5	„	1	9′	7′	Bord and pillar	..	241	350	591	2	3	5	Natural.
Beaumont, Nightcaps	A. Hunter	10	„	1	20′	All	Open	..	..	12,234	12,234	..	..	..	..
Mossbank, Nightcaps	A. Hunter	4	„	1	14′	14′	„	..	3,609	2,637	6,246	4	3	7	..
Linton, Nightcaps	C. R. Heycock	3	„	1	20′	20′	„	..	203	3,779	3,982	5	..	5	..
Wellwood Park, Pukerau	A. M. Mason	17	Lignite	1	7′	7′	„	..	12	364	376	..	..	..	..
Otikerama, Pukerau	W. J. Voight	21	„	1	7′	7′	„	..	10	332	342	..	..	..	..
Riverview, Gore	J. Nicol	31	„	1	10′	10′	„	..	30	1,968	1,998	..	..	..	..
Diamond Lignite, Seaward Bush	W. Robertson (P.)	16	„	1	25′	18′	„	..	2,652	15,303	17,955	3	1	4	..
Orepuki, Orepuki	W. Herrick	22	Brown	1	10′	10′	„	..	1,529	24,925	26,454	3	..	3	..
Lynwood, Te Anau	N.Z. Govt. Tourist Department	8	Lignite	1	7′	7′	„	..	14	2,365	2,379	1	..	1	..
Output of mines included in previous statements at which operations are suspended or abandoned									..	2,673,226	2,673,226	..	..	..	..
Totals, Southern District, South Island									487,383	12,595,523	13,082,906	340	709	1,049	
Totals, West Coast District, South Island									997,089	34,721,753	25,718,842	520	1,521	2,041	
Totals, North Island									549,778	8,543,957	9,093,735	242	662	904	
Grand totals									2,034,250	45,861,233	47,895,483	1,102	2,892	3,994	
Output of some mines prior to 1890 not included in the above statement									..	..	311,779	..	..	..	
Shale exported									..	..	21	..	..	..	
											48,207,283*				

* This total includes 14,443 tons of oil-shale mined prior to 1914.

APPENDIX C.

REPORT OF THE BOARDS OF EXAMINERS.

Mines Department, Wellington, 10th June, 1919.

The Under-Secretary for Mines, Wellington.

I HAVE the honour to submit the following report on behalf of the Boards of Examiners under the Mining Act and Coal-mines Act for the year 1918–19—or, rather, for the period from the 11th November, 1918, to the 31st May of this year. Examinations for mine-managers' and battery superintendents' certificates were held in December, 1918. Interim examinations were held on the 20th May last, to which all candidates who were unsuccessful at the previous examination or were debarred from sitting through the influenza epidemic were admitted.

A meeting of the Board of Examiners under the Coal-mines Act was held on the 29th January, 1919, in order to consider the results of the examinations held on the 10th December and following days.

A first-class mine-manager's certificate under the Coal-mines Act was granted to James Neilson, and W. C. Davies was granted a partial pass. Alexander Cain and John Brennan obtained partial passes for second-class mine-managers' certificates.

It was resolved that all candidates who had been prevented by the influenza epidemic from sitting for the December examination should be permitted to sit at the interim examination in May. This has been carried into effect, and the same privilege was extended to candidates who had intended to sit for examination under the Mining Act.

A motion was carried recommending that all candidates for mine-managers' certificates, &c., who succeeded in passing the written examinations for mine-managers' and battery superintendents' certificates should undergo an oral examination before the Board. It is probable that provision for the oral examination of such candidates will be made during this year; and, if so, candidates who pass the written examinations to be held next December will be expected to present themselves in Wellington at the next meeting of the Boards, which is to be held at the end of January, 1920.

No meeting of the Board of Examiners under the Mining Act has been held during the period for which this report is made.

The following oil-well managers' permits have been issued since the 14th October, 1918, under Regulations Nos. 199-201: Neil Christensen, New Plymouth; Jan Federowicz, New Plymouth; Lafayette Keith, New Plymouth; B. C. O'Dowd, New Plymouth. These are the first permits issued under the above-mentioned regulations.

Thomas Myers, Kiripaka, has been granted a second-class coal-mine manager's certificate in exchange for an equivalent British certificate.

Examinations for underviewers and firemen-deputies under the Coal-mines Act were held at Dunedin on the 11th March, with the result that the following gained certificates: Underviewer—James Phillips, Taratu. Firemen-deputies—Fred Barclay, Kaitangata; John Hannah, Glentunnel; William Hollows, Fairfield; John Mackie, Kaitangata; William Snowdon, Kaitangata.

I greatly regret having to report the death on the 20th April of Mr. H. P. Hornibrooke, of Auckland, who had been a member of the Board of Examiners under the Mining Act for many years.

P. G. MORGAN,
Chairman of Boards.

LIST OF MINE-MANAGERS, BATTERY SUPERINTENDENTS, AND DREDGE-MASTERS WHO HOLD CERTIFICATES UNDER THE MINING ACTS.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES.

Certificates of Service issued under the Mining Act, 1886, without Examination.

Adams, H. H., Waiorongomai.
Andrews, T., Thames.
Barclay, T. H., Thames.
Bennett, J., Alexandra.
Black, T., Waiomio.
Burch, W. H., Thames.
Cameron, A., Macetown.
Chapman, J. A., Dunedin.
Davis, J. E., Queenstown.
Edwards, J., Skipper's.
Elliott, J., Macetown.
Evans, J. H., Skipper's.
Frewen, J. B., Queenstown.
Gilmour, T., Thames.
Glass, W. M., Naseby.
Harrison, R. H., Coromandel.
Hunter, R., Thames.
Jamieson, A., Coromandel.
Jenkins, M., Wakatipu.
Johnstone, H., Bluespur.
Kerr, J., Thames.
McGruer, G. N., Karangahake.
McIntosh, D., Bluespur.
Moore, H. W., Thames.
Morrisby, A. A., Glenorchy.
Newman, W., Naseby.
Polton, A., Karangahake.
Porter, J., Waipori.
Quinn, E., Te Aroha.
Ralph, J. G., Thames.
Reid, P., Coromandel.
Rooney, F., Reefton.
Scott, T., Waiorongomai.
Smith, J. E., Thames.
Stone, F., Karangahake.
Sturm, A., Waipori.
Todd, C., Heriot.
Treloer, J. S., Reefton.
Watson, T., Reefton.
Wearne, T., Endeavour Inlet.
Williams, J., Skipper's.
Wylie, W., Ross.
Young, G., Skipper's.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES—*continued.*

Issued after Examination under the Mining Act, 1886, and Amendment Acts.

Baker, W., Thames.
Cochrane, D. L., Reefton.
Colebrook, J. D., Coromandel.
Crawford, J. J., Thames.
Donaldson, W., Otago.
Fleming, M., Thames.
Harris, W., Thames.
Horn, G. W., Thames.
Horne, W., Coromandel.
Hornick, M., Thames.
Hosking, G. F., Auckland.
Kruizenza, W., Reefton.
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, and 1913.

Argall, W. H., Coromandel.
Beckwith, L. H., Wellington.
Brook, R. H. T., Reefton.
*Cock, J., jun., Ross.
Cock, W. Waiomio.
Datson, J., Manaia.
Dodd, William, Milton.
Griffiths, A. P., Auckland.
Griffiths, H. P., Auckland.
Hailey, R. C., Dunedin.
Hall, E. K., Reefton.
McKenna, Thomas, Dunedin.
Molineaux, H. S., Gore.
Rich, F. A., Auckland.
Williams, W. H., Auckland.

Issued after Examination under the Mining Act, 1891.

Agnew, J. A., Thames.
Annear, William, Reefton.
Bennett, E. P., Thames.
Boydell, H. C., Coromandel.
Bradley, R. J. H., Te Puke.
Carroll, J., Lyell.
Cartwright, E., Thames.
Crabb, J., Reefton.
Evans, H. A., Wellington.
Gilmour, J. L., Thames.
Hodge, J. H., Thames.
Keam, P. E., Thames.
Lawn, C. H., Capleston.
Linck, F. W., Thames.
Morrison, R., Thames.
McDermott, G., Thames.
McDermott, J., Thames.
McDermott, W., Thames.
McGregor, W. T., Thames.
McKenzie, H. J., Coromandel.
McPeake, J., Thames.
O'Keeffe, M. D., Thames.
Paltridge, Henry, Thames.
Paul, Matthew, Thames.
Robertson, D. B., Stafford.
Ross, Richard, Thames.
Russell, Murray, Dunedin.
Shepherd, H. F., Thames.
Stanford, W. J., Macetown.
Tierney, R., Thames.
Vialoux, F., Coromandel.
Warne, George, Thames.
Waters, D. B., Skipper's.
White, G. H., Thames.
Whitley, A., Thames.

Issued after Examination under the Mining Acts, 1898, 1905, and 1908.

Allen, Henry, Waihi.
Autridge, L. E., Thames.
Baker, S. G., Thames.
Barker, B., Thames.
Barrance, K. M., Karangahake.
Bell, O., Waihi.
Bennie, Boyd, Waihi.
Birch, J. J., 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.
Carroll, A. M., Reefton.
Carroll, John, Kuaotunu.
Carter, R. P., Waihi.
Clouston, R. E., Kaitangata.
Collier, E., Reefton,
Cooper, J. H., Thames.
Cooper, Thornhill, Waihi.
Cordes, F. M., Karangahake.
Cornes, J. G., Waihi.
Docherty, W. H., Coromandel.
Downey, J. F., Reefton.
Dutton, W. F., Waihi.
Ellery, John, Reefton.
Evered, N. J., Waihi.
Fry, S., Waimangaroa.
George, M. T., Waihi.
Goldsworthy, C., Karangahake.
Goldsworthy, W., Coromandel.
Gordon, J. A., Thames.
Grayden, P., Thames.
Greening, W., Karangahake.
Gudgeon, C. W., Macrae's.
Hitchcock, W. E., Barewood.
Hooker, John, Coromandel.
Irwin, Samuel, Waihi.
Jackson, G. T., Waihi.
Johnson, J. H., Coromandel.
Kingsford, C., Waihi.
Langdon, H., Waihi.
Langford, G. S., Waihi.
Lautour, H. A. de, Waihi.
Lawn, Nicholas, Reefton.
Lewis, Ralph Reginald, Waihi.
Lowes, G. W., Reefton.
Mackie, Portland George A., Waihi.
McConachie, W., jun., Waihi.
McDonald, R. M., Table Hill.
McGruer, A., Karangahake.
MacLaren, J. A. J., Coromandel.
McMahon, J. H., Reefton.
McMahon, T., Reefton.
McMillan, T., Waihi.
Mitchell, William J., Barewood.
Moore, L. O., Waihi.
Morgan, William, Waihi.
Morrison, William, Waihi.
Moye, Michael, Reefton.
Oats, John, Black's Point, Reefton.
O'Shea, J., Reefton.
O'Sullivan, J. W., Thames.
Rimmer, J. C., Helensville.
Rodden, John, Reefton.
Ruffin, R. C., Reefton.
Saunders, W. H., Reefton.
Scoble, E. J., Waihi.
Sheehan, D., Karangahake.
Smith, Walter, Karangahake.
Spearing, J. R., Waihi.
Stewart, F., Waihi.
Stewart, R. A., Reefton.
Sullivan, T., Reefton.
Thomson, J. R., Waihi.
Thomson, Thomas, Waihi.
Thorne, G. M., Waihi.
Tucker, E. S., Coromandel.
Turnbull, E. V., Coromandel.
Turner, C. E., Murchison.
Turner, G. W. E., Reefton.
Ulrich, G. A. C., Waihi.
Walker, A. J., Waihi.
Watson, J. L., Thames.
Wood, P. H., Reefton.
Wotherspoon, James, Waihi.

Issued under Section 313 of the Mining Act, 1891.

Hornibrooke, H. P., Coromandel.
Martin, James, Reefton.
Rickard, John, Thames.
Snow, Thomas, Huntly.
Thomas, James, Thames.
Trelease, J. H., Thames.
White, John S., Karangahake.
Williams, John, Kuaotunu.

Certificates of Competency granted to Holders of Provisional Warrants under Section 32 of the Mining Act Amendment Act, 1896.

Alexander, Thomas, Deep Creek.
Argall, A. E., Coromandel.
Battens, H., Coromandel.
Bunney, Joseph, Waihi.
Campbell, Alexander, Cullensville.
Carlyon, Samuel, Coromandel.
Cornes, C. A., jun., Karangahake.
Daldy, Edward Arthur, Coromandel.
Draffin, Samuel, Waitekauri.
Farmer, C. S., Waitekauri.
Goldsworthy, William, Karangahake.
Harvey, A. G., Coromandel.
James, Robert, Thames.
Jamieson, John, Reefton.
Johns, Thomas, Waihi.
Kennerley, W. H., Thames.
McCombie, John, Karangahake.
MacDonald, H., Coromandel.
McEnteer, James, Tararu.
McLean, Benjamin J., Waitekauri.
Meehan, James, Westport.
Moorecraft, Walter, Coromandel.
Morgan, William, Owharoa.
Moyle, Thomas, Thames.
Patton, William, Macetown.
Pearce, Francis, Reefton.
Potter, William H., Thames.
Rillstone, Charles, Waipori.
Somervell, John, Thames.
Thomas, Archelaus, Tapu, Thames.
Turnbull, Thomas A., Whangamata.

* Alluvial.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES—*continued.*

Issued to Inspectors of Mines by virtue of Office under the Mining Acts, 1886, 1891, and 1898.

Binns, G. J., Dunedin.
Cochrane, N. D., Westport.
Green, E. R., Dunedin.
Hayes, J., Dunedin.
McLaren, J. M., Thames.
Tennent, R., Westport.

SECOND-CLASS MINE-MANAGERS' CERTIFICATES.

Certificates of Service issued under the Mining Act, 1891.

Agnew, J. A., Coromandel.
Argall, A. E., Coromandel.
Blair, Thomas, Kuaotunu.
Bolitho, James, Reefton.
Bremner, John, Coromandel.
Brokenshire, James, Thames.
Brown, John, Macrae's.
Bunny, Joseph, Thames.
Byrne, John, Karangahake.
Comer, W. W., Thames.
Comer, George, Thames.
Corbett, T., Paeroa.
Crabb, Thomas, Reefton.
Daniel, P. F., Greymouth.
Dobson, John Allen, Kuaotunu.
Edwards, George, Westport.
Ellery, John, Reefton.
Foster, Thomas, Wellington.
Gemmings, Charles, Thames.
Gill, George, Thames.
Goldsworthy, William, Mauku, Auckland.
Gribble, James, Norsewood.
Grimmond, Joseph, Ross.
Guthrie, John, Wellington.
Hardman, James Edward, Thames.
Hetherington, William, Thames.
Hill, Alexander Grey, Waikakaho.
Hollis, Frederick J., Waihi.
Hore, John, Wellington.
Hornibrooke, H. P., Kuaotunu.
Jamieson, John, Reefton.
Jobe, James, Thames.
Johns, Thomas, Thames.
Johnstone, William, Collingwood.
Kerr, George, Kamo.
Kirker, Thomas, Thames.
Law, John, Thames.
Loughlin, S., Thames.
Mackay, William, Nenthorn.
Martin, David, Black's Point.
Martin, James, Reefton.
Mayn, John, Coromandel.
McCombie, John, Karangahake.
McEwen, James, Reefton.
McNeill, George, Upper Kuaotunu
Meagher, John, Karangahake.
Morgan, William, Upper Thames.
Moyle, Thomas, Thames.
Newdick, Alfred, Thames.
O'Keefe, M. W. D., Thames.
Page, John, Lyell.
Peebles, Alexander, Kuaotunu.
Pettigrew, Robert, Sydney.
Primrose, J., Kuaotunu.
Richards, A. H., Kuaotunu.
Rickard, John, Thames.
Rogers, William Henry, Kumara.
Shaw, James, Karangahake.
Sligo, Alexander, Nenthorn.
Thomas, A., Thames.
Thomas, James, Thames.
Thomson, John, Dunedin.
White, John S., Karangahake.
Williams, James, Thames.
Williams, John, Thames.
Worth, Robert, Waihi.

Issued after Examination under the Mining Acts, 1891, 1898, and 1908.

Benney, J., jun., Paeroa.
Bennie, Boyd, Coromandel.
Birch, J. J., ——
Cahill, T. M., Upper Kuaotunu.
Carroll, John, Upper Kuaotunu.
Christie, William, Waitekauri.
Draffin, S., Waitekauri.
Dunkin, T., Coromandel.
Evans, H. A., Skipper's.
Mathewson, A., Hyde.
McNeil, A. H., Coromandel.
Tilsley, G., Thames.
White, F. H., Kuaotunu.
White, G. H., Thames.

Issued under Section 313 of the Mining Act, 1891.

Connon, William, Thames.
Edwards, E., Coromandel.
McCormick, W. J., Waitekauri.

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.
Brownlee, Henry, Thames.
Collins, Charles, Waitekauri.
Curtis, Charles, Taylorville.
Davis, James, Coromandel.
Gardner, James, Waimangaroa.
Howe, Albion S., Waitekauri.
Johnson, Frank H., Collingwood.
Kirwan, William, Reefton.
Martin, William, Tararu, Thames.
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.
Barker, J. W., Coromandel.
Brabyn, John, Clarendon.
Butcher, F. J., Waitekauri.
Donaldson, George, Macrae's Flat.
Gillan, Thomas, Thames.
Grace, Pierce, Waitekauri.
Hansen, Charles Hans, Puketui.
Hayes, James, Thames.
Hill, Harrold Alexander, Thames.
Hyde, Henry John, Karangahake.
Iles, E. J., Bannockburn.
Inglis, Robert, Kuaotunu.
Kell, Arthur, Karangahake.
Lynch, James, Glenorchy.
McKenzie, D., Georgetown.
Reid, George, Glenorchy.
Reynolds, Edmond Francis, Coromandel.
Sheehan, James, Thames.
Tallentire, John, Waiorongomai.

BATTERY SUPERINTENDENTS' CERTIFICATES.

Issued under the Mining Act 1891 Amendment Act, 1894, without undergoing Examination.

Adams, H. H., Waihi.
Aitken, R. M., Reefton.
Banks, Edwin Gripper, Waihi.
Barry, Hubert Percy, Waihi.
Goldsworthy, Henry, Kuaotunu.
Goldsworthy, John, Kuaotunu.
Greenway, H. Howard, Auckland.
Hope, John S., Waitekauri.
Hutchison, William, Karangahake.
Margetts, Frederick Ernest, Kuaotunu.
McKenna, T. N., Tararu.
McLellan, William, Waitekauri.
Noble, James R., Karangahake.
Park, James, Thames.
Shepherd, Henry Franklin, Waihi.
Sims, C. F., Tararu.
Walker, James A., Kuaotunu.
Wilson, Arthur E., Waihi.

Issued after Examination under the Mining Act 1891 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.
Clarke, J. L., Thames.
Clarke, R., Waitekauri.
Clarke, W. J., Waihi.
Day, A. T., Thames.
Dixon, Clement, Waihi.
Fuller, J. P., Kuaotunu.
Gray, J. W., Waihi.
Hayward, F. W., Komata.
Horn, G. W., Kuaotunu.
Jackson, J. H., Paeroa.
Jones, Achison, Waihi.
Kidd, F. D., Thames.
Laurie, D. B., Karangahake.
Lee, J. W., Reefton.
Macdonald, W., Waihi.
McKenzie, H. J., Thames.
McMicken, S. D., Thames.
Morgan, P. G., Thames.
Morrin, W. S., Thames.
Noakes, H. L., Waihi.
Raithby, R. W., Reefton.
Robinson, J. R., Waitekauri.
Stafford, B. H., Waihi.
Taylor, C. H., Tararu.
Thorpe, A. H., Thames.
Vercoe, R. B., Thames.
Williams, A. G. R., Thames
Wingate, H. M., Maratoto.
Winslow, G., Thames.

BATTERY SUPERINTENDENTS' CERTIFICATES—*continued.*

Issued after Examination under the Mining Acts, 1898, 1905, and 1908.

Adams, J. H., Coromandel.
Adams, J. H., Thames.
Adams, Richard W., Tararu, Thames.
Airey, Hubert, Karangahake.
Aitken, Alexander Hugh, Waihi.
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.
Barrance, K. McK., Karangahake.
Barrett, J. J., Karangahake.
Barron, William E., Waikino.
Baskett, E. G., Karangahake.
Bell, L. M., 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.
Brown, J. E., Komata.
Brown, W. E., Reefton.
Browne, E., Waitekauri.
Burns, William, Waiomio.
Bush, E. F., Parawai.
Bush, George Arthur, Karangahake.
Bush, H. R., Thames.
Campbell, Colin, Thames.
Carless, Noel, Waihi.
Carpenter, W. E., Karangahake.
Carroll, John, Kuaotunu.
Carter, S., Waihi.
Chappell, G. A., Karangahake.
Clark, John L., Waihi.
Clarke, Thomas, Waihi.
Coote, J. M., Thames.
Couper, J., Thames.
Cowles, R. K., Crushington.
Crawford, H., Macrae's.
Crompton, H., Maratoto.
Croucher, Herbert, Waihi.
Dawson, B., Ellerslie.
Donnelly, Thomas, Waihi.
Donovan, Willie, Waikino.
Draffin, Eugene, Kuaotunu.
Eaton-Turner, Geoffrey William, Waihi.
Ellis, L. L., Waitekauri.
Empson, J. B., Karangahake.
Evans, G. C., Waihi.
Evans, J., Waihi.
Evans, W. B., Reefton.
Ewen, H. F., Auckland.
Fletcher, H. T., Katikati.
Fry, Sidney, Westport.
Fuller, John P., Kuaotunu.
Fyfe, A., Dunedin.
Gardner, E. A., Reefton.
Gibson, William, Waihi.
Gilpin, J., Waihi.
Gow, E. A., Crushington.
Grayden, J., Waitekauri.
Grayden, Peter, Thames.
Grumitt, P. H., Thames.
Gwilliam, Benjamin, Karangahake.
Halliwell, L. V., Karangahake.
Hargraves, E. P., Waihi.
Harsant, C., Puketui.
Hay, Adam, Karangahake.
Hazard, T. R. C., Waitekauri.
Hitchcock, W. E., Barewood.
Hogg, B., Karangahake.
Hogg, T. R., Karangahake.
Horn, G. W., Kuaotunu.
Gillooly, T., Roxburgh.
Gillstrom, Carl A., Berlin's.
Hutchison, R. M., Karangahake.
Johnson, Edward, Waihi.
Jones, R. D., Karangahake.
Kidd, R. B., Waitekauri.
Kingsford, A., Karangahake.
Kingsford, C., Waihi.
Kitching, L. J., Thames.
Langford, G. S., Waikino.
Launder, G. H., Waitekauri.
Lawless, L. J., Paeroa.
Lawn, H., Reefton.
Littlejohn, W. D., Karangahake.
Lovelock, J. E., Crushington.
Mackay, John, Crushington.
Maltman, A., Reefton.
Mann, C., Westport.
Matheson, A. M., Barewood.
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.
Metcalf, G. H., Karangahake.
Montgomery, A. E., Opitonui.
Morgan, Robert James, Waihi.
Motherwell, William, Waihi.
Moyle, W. T., Upper Tairua.
Orbell, G. S., Waikouaiti.
Orr, F. S., Waiuta.
Paltridge, F., Thames.
Pond, H. C., Auckland.
Quick, J. N., Thames.
Reid, J. E., Great Barrier.
Reynolds, E. A., Auckland.
Roberts, H. C., Waihi.
Rodden, William, Lyell.
Rosewarne, R. H., Thames.
Royse, W. G., Reefton.
Sanford, A. G., Waihi.
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, David Mitchell, Barewood.
Tomlinson, W. F., Dunedin.
Turnbull, E. V., Waihi.
Ulrich, G. A. C., Komata.
Ulrich, Herstall, Whangapoua.
Walker, Alfred James Dickson, Waihi.
Waters, D. B., 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.

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.
Blue, G. P., Alexandra.
Brand, Peter, Waikaka.
Brennan, Philip, Palmerston South.
Bremner, A. P., Lower Shotover.
Brice, William H., Cromwell.
Bringans, D., Alexandra.
Brown, T. G., Ahaura.
Bunting, James, Murchison.
Busbridge, P., Gore.
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.
Cowan, James, Nelson Creek.
Crookston, W. L., Three-channel Flat.
Cumming, J. C., Beaumont.
Curtis, Charles, Stillwater.
Cutten, W. H., Dunedin.
Deniston, R. A., Cromwell.
Dewar, John, Alexandra.
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.
Hay, James, Dunedin.
Hedley, A., Cromwell.
Herbert, J., Beaumont.
Hewitt, James, Clyde.
Hogg, Thomas, Cromwell.
Hoskins, Thomas, Maori Point.
Hoy, Samuel, Alexandra.
Inwood, W. J., Rocklands Beach.
Johnston, E. A., Alexandra.
Johnstone, Alexander, Cromwell.
Kennedy, Angus, Alexandra.
Kitto, Edward T., Miller's Flat.
Kitto, Francis, Lowburn.
Kitto, J., Lowburn Ferry.
Kitto, John F., Miller's Flat.
Kitto, W. H., Cromwell.
Kloogh, N. P., Lowburn Ferry.
Lawson, Edward, Dunedin.
Ledingham, J., Bannockburn.
Lee, George, Collingwood.
Lidicoat, R. H., Fern Flat.
Luke, S. J., Alexandra.
Magnus, A., Roxburgh.
Magnus, Olaf, Box 130A, Christchurch.
Mailer, John, Stillwater.
Maitland, A. E., Miller's Flat.
McClure, F. C., Rongahere.
McConnell, J., Cromwell.
McCormack, D., Kanieri.
McDonald, E. A., Waitiri.
McDonald, J., Sofala.
McDonald, John, Cromwell.
McGeorge, Alexander, Dunedin.
McGeorge, J., 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. S., Cromwell.
Murray, D., Clyde.
Murray, Madget, Cromwell.
Neilson, S., Miller's Flat.
Nicholson, W. E., Alexandra.
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.

DREDGEMASTERS' CERTIFICATES—*continued.*

Issued without Examination under the Mining Act, 1898, and Amendments Act, 1901 and 1902—continued.

Ritchie, J. S., Waitiri.
Sanders, H. P., Clyde.
Sanders, John, Cromwell.
Sanders, Thomas, Alexandra.
Schaumann, H., Alexandra.
Scott, M. G., Alexandra.
Scott, Robert, Capleston.
Shore, T. M., Queenstown.
Shore, William, Gore.
Simonsen, Charles, Alexandra.
Skilton, A. G., Old Diggings.
Sligo, N. K., Ahaura.
Smith, Alfred, Inangahua Junction.
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.
Wilson, S. W., Waikaka Valley.
Wood, R. M., Cromwell.
Woodhouse, W. S., Roxburgh.
Young, Andrew, jun., Roxburgh.

Issued after Examination under the Mining Acts, 1898, 1901, 1902, 1905, and 1908.

Anderson, Andrew, Alexandra South.
Anderson, Bertram, Maori Point.
Anderson, G. B., Roxburgh.
Archer, D. J., Ngakawau.
Baird, William G., Clyde.
Bardsley, John James, Cromwell.
Bate, H. T. G., Greymouth.
Bishop, Hugh Arthur, Collingwood.
Blair, G., Abbotsford.
Borthwick, Robert, Alexandra.
Bourke, John, Clyde.
Brent, C. D., Cromwell.
Briggans, Thomas, Alexandra.
Briggans, William, Alexandra.
Broderick, T., Lyell.
Bruce, J. A., Kawarau Gorge.
Burley, J. P., Westport.
Burnside, 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.
Chapman, Robert, Maori Point.
Clark, D., Callaghan's Creek.
Clarke, R. S. B., Alexandra South.
Coup, George, Albertown.
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.
Faithful, Alfred, Bannockburn.
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.
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.
Harliwick, Matthew, Roxburgh.
Hepburn, D. O., Alexandra.
Hewetson, Sydney, Nelson Creek.
Hogg, J., Nevis.
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.
Kane, William, Clyde.
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 Halbert, 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.
McLean, John, Roxburgh.
Melvin, J. R., Roxburgh.
Merchant, Isaiah, Clyde.
Milne, John A., Roxburgh.
Moffitt, 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.
Poppelwell, William, Alexandra.
Rait, Hume, Albertown.
Ray, J. F., Bannockburn.
Ray, Robert Marshall, Bannockburn.
Reiderer, Edward, Cromwell.
Reynolds, T., Greymouth.
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.
Turner, T. F., Moonlight.
Vickerman, E. M., Cromwell.
Walker, J. J., Alexandra South.
Wasserbrenner, M., Alexandra.
Wathen, James, Miller's Flat.
Watson, E. H., Collingwood.
Weaver, P., Alexandra.
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.
Wood, W. W., Cromwell.
Woodhouse, F., Bannockburn.
Woodhouse, G. G., Waitiri.
Wylde, G. R., Inangahua Junction.

OIL-WELLS MANAGERS' SERVICE PERMITS.

Issued under Regulations 199–201.

Christensen, C., New Plymouth.
Fedorowicz, J., New Plymouth.
Keith, L., New Plymouth.
O'Dowd, B. C., New Plymouth.

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.
Alexander, T., Brunnerton.
Binns, G. J., Dunedin.
Bishop, J., Brunnerton.
Cameron, J., Denniston.
Cochrane, N. D., Dunedin.
Collins, W., Taupiri.
Dando, M., Brunnerton.
Kerr, G., Kamo.
Lloyd, J., Invercargill.
Love, A., Whangarei.
Mason, J., Nightcaps.
May, J., Greymouth.
Moore, W. J., Springfield.
Ord, J., Huntly.
Reed, F., Westport.
Smith, A. E., Nelson.
Smith, T. F., Nelson.
Sneddon, J., Mosgiel.
Swinbanks, J., Kawakawa.
Taylor, E. B., Huntly.
Thompson, A., White Cliffs.
Walker, J., Collingwood.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES—*continued.*

Issued under the Coal-mines Acts, 1886, 1891, 1905, and 1908, after Examination.

Armitage, F. W., Auckland.
Armstrong, J., Brunnerton.
Barclay, T., Kaitangata.
Barclay, W., Kaitangata.
Bennie, Boyd, Waihi.
Bishop, T. O., Reefton.
Brown, J. C., Denniston.
Burt, A., Waihi.
Campbell, Peter, Fairfield.
Carruthers, J., Shag Point.
Carson, W., Kaitangata.
Crockett, S., Millerton.
Crowe, W., Ngakawau.
Davis, O. J., Runanga.
Dixon, C. W., Granity.
Dixon, W., Kaitangata.
Duggan, George, Burnett's Face.
Dunn, Andrew, Denniston.
Dunn, W., Brunnerton.
Fleming, J., Kaitangata.
Fletcher, James, Granity.
Fox, R. A., Denniston.
Fry, Sydney, Waimangaroa.
Gibson, John, Westport.
Gillanders, A., Shag Point.
Green, E. R., Abbotsford.
Green, J., Brunnerton.
Hamilton, J. S., Burnett's Face.
Herd, J., Brunnerton.
Heycock, C. R., Nightcaps.
Hill, Robert, Abbotsford.
Hosking, G. F., Auckland.
Hughes, Job, Puponga.
Jebson, D., Canterbury.
Jones, T., Kimihia.
King, T., Granity.
Langford, G. S., Huntly.
Leitch, J., Blackball.
Leitch, W., Blackball.
Marshall, A. G., Denniston.
McCaffrey, Patrick, Ferntown.
McCormack, W., Denniston.
McEwan, Robert, Coromandel.
McGeachie, J., Mokau.
McLean, M., Ngakawau.
Milligan, N., Westport.
Morgan, William, Waihi.
Mosley, J. T., Kaitangata.
Murray, T., Westport.
Newton, James, Brunnerton.
Parsonage, W., Runanga.
Pearson, W., Waihi.
Penman, A., Huntly.
Scoble, E. J., Waihi.
Smith, George, Fairfield.
Sowerby, H., Denniston.
Strongman, C., Ngakawau.
Talbot, H., Brunnerton.
Tattley, E. W., Huntly.
Tattley, F. J., Mercer.
Taylor, A. H., Waikato.
Thomson, Thomas, Denniston.
Turner, G. F., Shag Point.
Westfield, C. H., Fairfield.
Whittlestone, A. W., Shag Point.
Young, James H., Waimangaroa.

Issued under the Coal-mines Act, 1886, on Production of English Certificate.

Binns, G. J., Dunedin.
Black, T. H., Waipori.
Broome, G. H., Ngakawau.
Cochrane, N. D., Dunedin.
Hayes, J., Kaitangata.
Hodgson, J. W., Ross.
Reed, F., Wellington.
Tattley, W., Auckland.

Issued to Inspectors of Mines by virtue of Office, under the Coal-mines Acts of 1886 and 1891.

McLaren, J. M., Thames.

Issued under the Coal-mines Acts of 1891, 1905, and 1908, on Production of Certificate from a recognized Authority outside the Dominion.

Alison, J., Mangatini.
Alison, R., Greymouth.
Bayne, J. A. C., Roa.
Broadhead, A. K., Ngakawau.
Clark, W., Blackball.
Davidson, Gavin, Blackball.
Davies, D. J., Ngakawau.
Fletcher, George, Westport.
Frame, Joseph, Kaitangata.
Gillick, J., Kaitangata.
Goold, A. L., Auckland.
Hunter, Peter, Ngakawau.
Irvine, James, Dunedin.
James, Isaac Angelo, Westport.
Kane, D., Denniston.
Kirkwood, D., Coromandel.
Lamont, J., Devonport.
Lewis, W., Blackball.
Mark, W. S., Kaitangata.
McAvoy, H., Christchurch.
Morris, A., Huntly.
Nelson, E., Hikurangi.
Tennent, R., Brunnerton.
Twining, C. E., Dunedin.
Watson, James, Greymouth.
Watson, John, Blackball.
Wight, E. S., Auckland.
Woods, William, Mokihinui.

SECOND-CLASS MINE-MANAGERS' CERTIFICATES.

Issued under the Coal-mines Act, 1891.

Collier, Levi, Kamo.
Clarke, Edward, Shag Point.
Elliot, Joseph, Coal Creek.
Harris, John, Denniston.
Herd, Joseph, Brunnerton.
Howie, James, Kaitangata.
Lobb, Joseph, Mokau
McIntosh, Allan, Shag Point.
McLaren, J. M., Thames.
Murray, Thomas, Denniston.
Radcliffe, William, Reefton.
Sara, James, Reefton.
Thomas, James, Springfield.
Wallace, William, Huntly.
Willetts, John Morris, Papakaio.
Young, William, Waimangaroa.

Issued under the Coal-mines Acts, 1886, 1891, 1905, and 1908, after Examination.

Allan, J., Brunner.
Austin, W. B., Sheffield.
Ball, A., Kimihia.
Barber, John, Shag Point.
Barclay, T., Kaitangata.
Barclay, T., jun., Kaitangata.
Barclay, William, Kaitangata.
Barnes, A. E., Shag Point.
Broome, J., jun., Gore.
Brown, Robert, Kaitangata.
Cadman, J., Hikurangi.
Campbell, Peter, Fairfield.
Carruthers, J., jun., Nightcaps.
Charles, E., Glentunnel.
Cherrie, R. C., Mokau.
Christie, James, Saddle Hill.
Clemo, G., Whangarei.
Craig, John, Coal Creek Flat.
Crockett, S., Millerton.
Dale, E. G., Kaitangata.
Davies, W. C., Huntly.
Dixon, W., jun., Kaitangata.
Doel, G., Lovell's Flat.
Duffy, Frank, Burnett's Face.
Duncan, James, Kaitangata.
Duncan, J. E., Kaitangata.
Duncan, John, Lovell's Flat.
Ferguson, A., Kaitangata.
Ferguson, G., Roa.
Fox, R. A., Blackball.
Harris, A., Saddle Hill.
Hewitson, W. E. G., Burnett's Face.
Heyes, T., Kaitangata.
Heycock, C. R., Nightcaps.
Hill, R., Abbotsford.
Hodson, John, Kaitangata.
Hughes, Job, Roa.
Hunter, A., Southland.
Kells, F. H., Denniston.
Lewis, David, Puponga.
Lewis, J., Nightcaps.
Lindsay, J. B., Orepuki.
Lowden, W., Millerton.
McAllister, Neil, Kaitangata.
McLelland, J., Kaitangata.
McLelland, A. C., Kaitangata.
McNeill, D., Fairfield.
Mills, Walter, Huntly.
Morganty, Louis, Ngakawau.
Mosley, J. T., Stirling.
Neilson, J., Runanga.
Neilson, Moffat, Abbotsford.
Newburn, S., Kaitangata.
Orr, Hugh, Fairfield.
Parcell, W., jun., Bannockburn.
Penman, C. P., Kaitangata.
Price, F. J., Burnett's Face.
Robertson, J., Nightcaps.
Scoble, E. J., Blackball.
Snow, T., Mercer.
Tattley, F. J., Mercer.
Taylor, Joseph, Collingwood.
Thompson, Joseph, Blackball.
Thomson, James, Nightcaps.
Todd, T., Nightcaps.
Waldie, A. B., Mokau.
Watson, A., Soldier's Creek.
Westfield, C., Fairfield, Otago.
Whittlestone, A. W., Shag Point.
Whittlestone, G. F., Abbotsford.

SECOND-CLASS MINE-MANAGERS' CERTIFICATES—*continued.*

Issued under the Coal-mines Acts of 1891, 1905, and 1908, on Production of Certificate from a recognized Authority outside the Dominion.

Arundel, W., Hikurangi.
Barlow, H., Greymouth.
Baxendale, J., Mine Creek.
Black, J., Granity.
Boyd, J., Hikurangi.
Brownlie, T., Huntly.
Burley, T., Hikurangi.
Burt, A., Huntly.
Clarkson, S., Kaitangata.
Cross, G., Hikurangi.
Dickinson, W., Gore.
Dodd, W., Granity.
Eyeington, G., Huntly.
Graham, D., Huntly.
Greenwell, R., Huntly.
Grenall, S., Granity.
Inglis, A., Huntly.
Jones, T., Kimihia.
Kerr, D., Collingwood.
Lennox, W., Springfield.
Little, W., Wellington.
Littlewood, G. G., Denniston.
Longstaff, H. C., Kaitangata.
McCall, John, Wellington.
McGeachie, J., jun., Mokau.
McGuire, P., Mount Somers.
McGuire, William, Seddonville.
McHardy, A. J., Ferntown.
Molony, C. V. P., Auckland.
Myers, T., Kiripaka.
Newburn, F., Roa.
Parsonage, W., Dunollie.
Penman, A., Huntly.
Provan, P., Runanga.
Robertson, R., Roa.
Sneddon, J., Blackball.
Strachan, J., Dunedin.
Tennant, D., Paparoa.
Talbot, H., Huntly.
Tipton, Harry, Hikurangi.
Webb, T. E., Huntly.

UNDERVIEWERS' CERTIFICATES.

Issued under the Coal-mines Amendment Act, 1909.

Allan, James, Puponga.
Attrill, Charles Waterford, Mercer.
Berry, A. H., Huntly.
Bond, John, Waikaia.
Boustrage, T. Hubert, Brunnerton.
Broome, James, Gore.
Clough, Henry, Millerton.
Davidson, William, Mine Creek.
Davis, William, Runanga.
Donaldson, James, Kaitangata.
Flynn, John, Bannockburn.
Green, Richard, Abbotsford.
Hawthorn, James, Puponga.
Hunter, Peter, Ngakawau.
Johnston, William Crowan, Gore.
Johnstone, Thomas, Denniston.
Levick, Harry, White Cliffs.
Marsh, Charles George, Glentunnel.
Muncaster, William, Runanga.
McAlister, Robert, Kaitangata.
McNeill, William, Fairfield.
Newlands, George, Brunnerton.
Nimmo, Thomas, Papakaio.
Nimmo, William, Ngapara.
Penman, John, Denniston.
Proctor, William, Kaitangata.
Robertson, William, Mosgiel.
Todd, Thomas, Nightcaps.
Walker, John, Blackball.
Williams, William, Kaitangata.
Wilson, Daniel, Kaitangata.
Winter, John, Denniston.

Issued under the Coal-mines Amendment Act, 1909, after Examination.

Ainscough, William, Huntly.
Armstrong, V., Runanga.
Atkinson, John, Puponga.
Bashall, J., Puponga.
Berry, A. H., Huntly.
Boddy, A. J., Rewanui.
Brennan, John, Kaitangata.
Brown, Charles Henry, Denniston.
Cain, A., Kaitangata.
Carson, F. Kaitangata.
Chippendale, John, Westport.
Clark, W. S., State Collieries.
Dowgray, John, Granity.
Duffy, F., Burnett's Face.
Dymond, John, Mine Creek.
Griffen, J., Kaitangata.
Hadcroft, John, Dunollie.
Hall, Thomas, Kaitangata.
Hewitson, W. E. G., Burnett's Face.
Honey, A. J., Burnett's Face.
Hughes, T. G., Huntly.
Hunter, Peter, Stockton.
Jack, W., Millerton.
Johnston, C. M., Seddonville.
King, T. H., Granity.
Lowden, William, Millerton.
Maher, William, Denniston.
Makinson, J., Huntly.
McDonald, Thomas, Ngakawau.
McIvor, D., Runanga.
McKernan, John, Millerton.
McLean, Malcolm, Granity.
McLeod, J. G., Millerton.
Morganty, L., Stockton.
Mosley, J. T., Denniston.
Nicholson, D., Huntly.
O'Brien, D. Q., Mangatini.
Peacock, Thomas, Denniston.
Pearson, William, Burnett's Face.
Pendleton, Samuel, Blackball.
Phillips, J., Taratu.
Powell, Isaac, Rewanui.
Rogers, James, Ngakawau.
Strongman, C. J., Cobden.
Sweeney, J. L., State Collieries.
Thomson, James, Huntly.
Tucker, J., Kaitangata.
Turnbull, E. V., Thames.
Turner, Alfred, Kiripaka.
Turton, J., Huntly.
White, Edward, Ngaruawahia.
Whittlestone, G. F., Abbotsford.
Williamson, W. R., Rewanui.
Young, Joseph, Huntly.

Issued under the Coal-mines Amendment Act, 1910.

Beardsmore, E., Denniston.
Cuthbertson, Robert, Fairfield.
Evans, William, Abbotsford.
Fisher, T., Westport.
Gibson, M., Abbotsford.
Greene, M., Kaitangata.
Hadcroft, J., Runanga.
Hunt, W., Shag Point.
Jones, David, Nightcaps.
Jones, Morris, Nightcaps.
Jones, W., Waikaka Valley.
Kitto, Richard, Kaitangata.
Manderson, P., Runanga.
Mann, D., Granity.
Marshall, J. W., Westport.
Mason, Edward, Kingston Crossing.
Mitchell, Alexander, Runanga.
McCaughern, John, Kaitangata.
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.

Martin, Elias, Ngakawau.
Middleton, Robert, Runanga.

FIREMEN AND DEPUTIES' CERTIFICATES.

Issued under the Coal-mines Amendment Act, 1909.

Aitken, George, Glentunnel.
Allan, A. George, Abbotsford.
Allan, Charles, Brunnerton.
Beardsmore, Edward, Denniston.
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.
Chamley, William, Millerton.
Clausen, Emil P., c/o J. Worthington, 33 Hiropi Street, Newtown, Wellington.
Connelly, Michael, Denniston.
Connew, John, Puponga.
Coppersmith, John, Denniston.
Coulthard, Thomas, Brunnerton.
Cowan, Robert Black, Gibbston.
Cuthbertson, Robert, Fairfield.
Davis, Evan, Denniston.
Deeming, William, Hikurangi.
Dellaway, Archibald, Denniston.
Dickson, Richard, Hikurangi.
Dillon, Lawrence M., Nightcaps.
Duncan, Frank, Huntly.
Duncan, Hugh, Kaitangata.
Evans, John, Granity.
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.
Headcroft, James, Runanga.
Hamilton, John, Hikurangi.
Hargreaves, Charles, Millerton.
Harris, John, Reefton.
Hartley, John, Denniston.
Hay, James, Denniston.
Heron, Ralph, Kimihia.
Higgins, Thomas James, Denniston.
Hislop, William, Denniston.
Holden, Samuel, Granity.
Housley, Benjamin, Huntly.
Howe, George Charles, Shag Point.
Jarvie, William Marshall, Kaitangata.
Jaspers, George F., Denniston.
Jenkins, James, Ngakawau.
Johnston, C. Mountier, Seddonville.
Jones, David, Nightcaps.
Kaye, Charles, Runanga.
Kitto, Richard, Kaitangata.
Leeming, J. T., South Malvern.
Lutton, William, Millerton.
Mann, Duncan, Millerton.
Mason, William, Denniston.
Mears, Andrew David, Runanga.
Monerieff, Thomas, Nightcaps.
Moore, Thomas, Mangatini.
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.
McKenzie, James, Nightcaps.
Newburn, Robert, Kaitangata.
Newburn, Samuel, Kaitangata.
Nicholas, William, Kaitangata.
Oliver, William, Kaitangata.
Parcell, Henry Clyde, Bannockburn.
Park, Francis, Stirling.
Penman, Robert, Kaitangata.
Richards, James, Brunnerton.
Rodgers, Edwin, Kaitangata.
Sanderson, John, Kurow.
Scott, Charles, Nevis.
Scott, John, Runanga.
Smith, William, Seddonville.
Sneddon, James, Blackball.
Statham, Robert, Kaitangata.
Taylor, David, Roa.
Taylor, James, Springfield.
Thin, William, White Cliffs.
Tripp, Albert, Kaitangata.
Wallace, John, Mataura.
Wardrope, Francis, Hikurangi.
Watson, Andrew, Roa.
West, George Thomas, Waronui.
Wilson, Walter William, Springfield.
Young, Thomas Gardner, Waikaia.

FIREMEN AND DEPUTIES' CERTIFICATES—*continued.*

Issued under the Coal-mines Amendment Act, 1909, after Examination.

Allan, George, Huntly.
Allan, James, Brunnerton.
Anderson, Walter, Blackball.
Armstrong, V., Runanga.
Atkinson, J., Puponga.
Baddeley, Jesse, Dunollie.
Ball, A., Kimihia.
Barclay, F., Kaitangata.
Birchall, J., Burnett's Face.
Blair, Peter, Huntly.
Boddy, Archibald John, Runanga.
Bond, W. T., Huntly.
Brennen, J., Kaitangata.
Broadbent, Samuel, Huntly.
Brown, J., jun., Denniston.
Buchanan, William, Millerton.
Burdon, George, Denniston.
Burt, T., Huntly.
Calder, Thomas, Ngakawau.
Caldwell, Thomas, Blackball.
Callaghan, M., Blackball.
Campbell, J. C., Glentunnel.
Carson, Frederick.
Chadwick, A., Millerton.
Chapman, A. E., Kaitangata.
Chippendale, J., Millerton.
Clark, W. S., Dunollie.
Clarke, S., Roa.
Cleveland, F. L., Kaitangata.
Colledge, A., Huntly.
Connolly, John, Runanga.
Connolly, John Joseph, Runanga.
Cooper, J. J., Milton.
Cowan, J., Millerton.
Cruikshank, P. G., Runanga.
Curragh, A., Burnett's Face.
Curran, James, Ngakawau.
Cuthbertson, John, Glentunnel.
Danks, Peter, Millerton.
Darby, W., Huntly.
Davidson, Thomas, Mine Creek.
Davies, F., Puponga.
Davis, Oliver James, Runanga.
Delaney, J. E., Puponga.
Dowgray, John, Millerton.
Downes, William Norbury, Cobden.
Duggan, Francis, Runanga.
Dunsdale, George, Rewanui.
Dutton, John, Granity.
Dymond, J., Millerton.
Eckersley, W., Paparoa.
Fairhurst, R. W., Huntly.
Fannigan, P., Ngakawau.
Ferguson, A., Kaitangata.
Forrest, John, Runanga.
Frew, W., Huntly.
Gox, Henry John, Blackball.
Gilligan, H., Runanga.
Green, T., Kaitangata.
Griffen, James, Kaitangata.
Hale, J., Kaitangata.
Hall, R. H., Huntly.
Hall, Thomas, Kaitangata.
Hannah, J., Glentunnel.
Hardie, J., Millerton.
Harvey, D., Huntly.
Hawkins, Joseph, Burnett's Face.
Hendry, John, Millerton.
Hicks, J. R., Kiripaka.
Hill, A., Lovell's Flat.
Hill, E. E., Brunnerton.
Hilton, Thomas, Denniston.
Hogg, C., Blackball.
Hollows, W., Fairfield.
Honey, Archibald John, Denniston.
Hopkinson, Joseph, Seddonville.
Hughes, T. E., Huntly.
Innes, Andrew, Runanga.
Isherwood, T., Runanga.
Johnson, J. H., Hikurangi.
Johnson, Thomas, Huntly.
Jones, B., Millerton.
Jones, J., Hikurangi.
Jones, J., Kimihia.
Kerry, E., Huntly.
King, Thomas Henry, Granity.
Lancaster, Herbert, Puponga.
Lauder, Matt Currie, Runanga.
Lewis, I., Puponga.
Lowden, W., Millerton.
McAuley, P., Ngakawau.
McAvoy, William, Ngakawau.
McDonald, J., Ngakawau.
McDonald, Thomas, Burnett's Face.
McGovern, R., Wairio.
McGuinness, E., Runanga.
McIvor, David, Runanga.
McKenty, H., Denniston.
McKernan, John, Millerton.
McLaughlin, J. W., Huntly.
McMillan, John, Huntly.
McMillan, John, Kaitangata.
McMillan, R., Kaitangata.
Mackie, J., Kaitangata.
Mackinson, Job, Hikurangi.
Maddison, W., Huntly.
Maher, W., Denniston.
Makepeace, Henry, Runanga.
Martin, T. N., Huntly.
Miles, B. C., Millerton.
Mitchell, A., Seddonville.
Morganti, Louis, Millerton.
Moreland, S., Hikurangi.
Mosley, J. T., Denniston.
Moye, John Patrick, Denniston.
Myers, Richard, Millerton.
Nicholson, David, Huntly.
Nicholson, J., State Collieries.
Niven, Peter, Ngakawau.
Nolan, John, Granity.
Nuttall, John, Blackball.
O'Brien, Denis Quinsin, Millerton.
O'Brien, Martin, Millerton.
O'Fee, J., Kaitangata.
Oliver, R., Kaitangata,
Parker, Andrew, Greymouth.
Parr, Joseph, Burnett's Face.
Parrott, W., Waiuta.
Paul, James, Seddonville.
Pearson, James Thomas, Mataura.
Pearson, Samuel G., Burnett's Face.
Pearson, William, Burnett's Face.
Pendleton, S., Blackball.
Phillips, J., Puponga.
Ponton, F., Millerton.
Powell, J., Dunollie.
Pratt, Alexander, Millerton.
Ralph, J., Huntly.
Ramsay, J. McK., Kaitangata.
Reed, W. H., Hikurangi.
Reid, Henry, Millerton.
Reid, Henry, Huntly.
Richardson, W., Dunollie.
Robson, W., State Collieries.
Rodgers, J., Huntly.
Rodgers, J., Ngakawau.
Rogers, A. G., Kaitangata.
Rowse, J., Runanga.
Ruston, Edwin Walter, Huntly.
Rutherford, W. R., Kaitangata.
Scott, James, Blackball.
Seddon, William, Huntly.
Sharp, J. R., Kaitangata.
Shore, W. M., Taratu.
Smith, C. B., Dunollie.
Smith, J. A., Seddonville.
Smith, Thomas W., Millerton.
Smith, W. A., Denniston.
Snell, J., Kaitangata.
Snowdon, W., Kaitangata.
Southward, William, Runanga.
Strongman, Charles James, Cobden.
Sutherland, J., Millerton.
Sweeney, John Lewis, Runanga.
Tate, Anthony, Seddonville.
Taylor, Christopher, Millerton.
Thawley, William, Denniston.
Thomson, J., Huntly.
Thomson, Thomas, Mine Creek.
Throp, J., Kaitangata.
Timms, H., Huntly.
Tunstall, A. G., Hikurangi.
Tunstall, W., Hikurangi.
Turner, F., Kiripaka.
Turton, John, Huntly.
Unwin, James, Runanga.
Veitch, D., Blackball.
Vurlow, Frederick Alexander, Denniston.
Walker, W. J., Granity.
Wallwork, Moses, Runanga.
Wear, Daniel, Huntly.
Webster, Oliver, Huntly.
White, Edward, Granity.
Williamson, W. R., Rewanui.
Wilson, J. T., Kamo.
Woods, A., Millerton.
Wood, W., Huntly.
Worthington, T., Millerton.
Wyse, A., Blackball.
Young, Joseph, Huntly.
Young, Thomas, Granity.

Issued under the Coal-mines Amendment Act, 1910.

Broadfoot, W., Millerton.
Burgess, R. S., Waikaka.
Cain, Alexander, Waikaia.
Cameron, D., North Chatton.
Churchill, S. G., Alexandra South.
Clasen, Charles, Shag Point.
Crabbe, George, Alexandra South.
Cumming, J. S., Denniston.
Cunningham, Thomas, Kaitangata.
Dixon, A., Nightcaps.
Garrey, W., Kaitangata.
Gray, Hugh, Dunedin.
Halsey, W. J., Saddle Hill.
Hartshorne, W. C., Brunnerton.
Hodgetts, I., Burnett's Face.
Hunt, William, Shag Point.
Junker, F. A., Waikaia.
Kidd, G. C., Albury.
King, J., Granity.
Lee, S., Nightcaps.
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.
Russell, H. C., Bannockburn.
Saunders, W., Denniston.
Stevenson, J., Shag Point.
Thomas, B., Denniston.
Tinker, G., Nightcaps.
Whittlestone, G. F., Abbotsford.

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Barr, T., Coalgate.
Coan, R., Huntly.
Davies, W. C., Huntly.
Malcolm, A., Nightcaps.
Quinlan, A. E., ——.
Tucker, J., Kaitangata.

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