MINES STATEMENT.

CONTENTS.

APPENDICES TO THE MINES STATEMENT—*continued.*

1924.

NEW ZEALAND.

MINES STATEMENT

BY THE HON. G. J. ANDERSON, MINISTER OF MINES.

MR. SPEAKER,—

I have the honour to present to Parliament my fourth annual statement on the mining industry of the Dominion for the year ended the 31st December, 1923.

The following statement shows the quantity and value of the production of metalliferous mines, stone-quarries under the Stone-quarries Act, and of coal-mines during 1923 and 1922:—

Mineral.	1923.		1922.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Gold and silver*	692,090 oz	737,170	520,287 oz.	574,988
Quicksilver	..	..	$\frac{14}{20}$ ton	231
Tungsten-ore	$5\frac{9}{20}$ tons	218	..	..
Iron	..	..	81 tons	627
Stone	..	370,995	..	318,093
Pumice	3,716 „	10,029	3,020 „	9,320
Coal	1,969,834 „	1,969,834	1,857,819 „	1,857,819
Totals	..	£3,088,246	..	£2,761,078

* The gold-silver bullion is generally exported unseparated.

The value of minerals, including kauri-gum, exported and of the coal used in the Dominion, which is shown in table No. 1 accompanying this statement, amounted to £3,423,927, as compared with £3,171,105 during 1922. The total value of such minerals exported to the end of 1923 amounted to £153,268,184.

GOLD AND SILVER MINING.

The following statement shows the quantity and value of bullion-production, the dividends paid by registered companies, and the number of productive claims and gold-dredges during 1923 and 1922:—

Class of Gold-mining.	Production of Bullion.				Dividends paid by Registered Companies.		Number of Productive Claims and Dredges.	
	1923.		1922.		1923.	1922.	1923.	1922.
	Oz.	£	Oz.	£	£	£		
Quartz	661,468	609,993	488,202	439,489	24,795	51,991	22	20
Alluvial ..	14,834	59,174	16,620	68,260	2,266	1,040	130	149
Dredging ..	15,788	68,003	15,465	67,239	3,283	..	8	11
Totals ..	692,090	737,170	520,287	574,988	30,344	53,031	160	180

The bullion produced during the year was greater in quantity by 171,803 oz. and in value by £162,182 than in 1922. The increase was almost wholly from quartz-mining in the Waihi Borough. The yield from alluvial mining continued to decline, and was less by 1,786 oz. in quantity and £9,086 in value than it was the previous year. Dredging produced 15,788 oz., compared with 15,465 oz. during 1922, but the continued success of the Rimu dredge has been an important factor in encouraging further prospecting for dredging areas, and has led to a considerable amount of drilling being done in other areas.

MINERALS OTHER THAN GOLD AND SILVER.

No smelting was done at the Onakaka ironworks during the year. Operations were confined to rebuilding and renewing plant destroyed by a fire, and to the constructing of a wharf which is necessary for the transport of coal to the works and of the iron produced to the different markets. A battery of Beehive coke-ovens was erected and some coke produced in anticipation of the resumption of smelting operations.

The low prices ruling during the year prevented the working of the scheelite deposits.

COAL-MINING.

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

Class of Coal.	Output of Coal during 1923.				Total Output to the End of 1923.
	Northern District (North Island).	West Coast District (South Island).	Southern District (South Island).	Total.	
	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous	126,118	809,579	...	935,697	35,853,667
Brown	507,747	38,710	313,903	860,360	18,151,010
Lignite	...	740	173,037	173,777	3,516,464
Totals for 1923 ...	633,865	849,029	486,940	1,969,834	57,521,141
Totals for 1922 ...	520,153	879,983	457,683	1,857,819	55,551,307

The output of coal from the coal-mines in the Dominion shows a satisfactory increase for the year. The increase was very marked in the Northern Inspection District, the output for the year being 113,712 tons in excess of the output for 1922, the total increase of brown coal for the Dominion being 150,027 tons. The production of bituminous coal for the year was 32,741 tons less than for the previous year, due to the industrial dispute which led to most of the mines in

the West Coast District being closed for the last quarter of the year. This mainly accounts for the reduced production per person employed below ground for the year 1923, as mentioned in Appendix B, and had such stoppage not occurred there would have been a very large increase over the previous year in the amount of bituminous coal produced. The output of lignite continued to decline. The amount of coal imported was 445,792 tons, which is 55,686 tons less than during 1922. The Blackball Mine, which had had to close down the greater part of its working area in December, 1922, on account of a serious underground fire, was successfully reopened in March, and by the end of the year practically all the workings had been recovered.

Investigations, New Zealand Coals.

With a view to the utilization of much of the slack from our collieries, for which at the present time there is no profitable market, a small experimental briquetting-press was purchased from Yeadon and Son, Leeds, and installed at the Dominion Laboratory. With this, pressures up to 30 tons per square inch may be obtained. Some preliminary work has shown the necessity of providing some means of heating the moulds. A suitable heater is being constructed, and when completed the following points will be investigated with regard to the coals selected: (1) The most suitable degree of fineness; (2) the nature and amount of binder required; (3) the effect of varying pressure; (4) the conditions generally under which satisfactory briquettes may be obtained.

PERSONS EMPLOYED IN OR ABOUT MINES AND STONE-QUARRIES.

The following table shows the number of persons employed in each inspection district during 1923 and 1922:—

Classification.	Inspection District.			Totals.		
	Northern (North Island).	West Coast (of South Island).	Southern (rest of South Island).	1923.	1922.	Increase or Decrease.
Gold, silver, and tungsten ore	1,249	453	325	2,027	2,031	Dec. 4
Ironstone, cinnabar, and asbestos	3	4	..	7	60	,, 53
Coal	1,497	2,395	1,108	5,000	4,556	Inc. 444
Stone-quarries under the Stone-quarries Act	1,084	138	422	1,644	1,383	,, 261
Totals	3,833	2,990	1,855	8,678	8,030	Inc. 648

MINING AND QUARRY ACCIDENTS.

At metalliferous mines, at which 2,034 persons were ordinarily employed, there was no fatal accident, but five persons were seriously injured.

At stone-quarries under the Stone-quarries Act, in which 1,644 persons were ordinarily employed, there were three fatalities, and three persons met with serious injury.

In or about the coal-mines in the Dominion 5,000 persons were ordinarily employed. Five fatal accidents occurred during the year, and thirty-two other persons were seriously injured. The fatal accidents were consequently at the rate of 1·00 per thousand persons employed. For purposes of comparison it may be stated that in the British Isles, where the fatality rate for coal-mines is about the lowest in the world, the average rate for the last decade was 1·15 per thousand. Of the serious non-fatal accidents in the coal-mines in the Dominion eye accidents form a very large percentage; it is a matter for serious concern that, roughly, one-half of the accidents to hewers are eye accidents.

At all the mines and quarries the proportion of lives lost was 0·92 per 1,000 persons employed. For the preceding year the percentage was 1·1 per 1,000 persons employed.

GEOLOGICAL SURVEY.

During the past year detailed geological surveys were begun in the Rodney, Motueka, and Kaitangata districts. The total area surveyed was approximately 1,471 square miles. The survey of the Kaitangata district as originally planned was completed, but further field-work in this area is required in order to enable a comprehensive report to be written. The surveys of the other two districts will be continued next field season. A final examination of the Waihi Goldfield was made, and the results were incorporated in the bulletin thereon (No. 26). Visits to many localities other than those being areally surveyed were made by members of the Survey, the most important being an examination of part of Chatham Island, made last January in conjunction with the scientific expedition organized by the Otago Institute. The Director of the Survey attended the Pan-Pacific Science Congress, held in Melbourne and Sydney last August and September, as one of the official representatives of the New Zealand Government. In connection with this Congress he visited the Maitland Coalfield and the Broken Hill district.

Good progress is being made in the important work of investigating the fossil collections of the Survey, and a valuable report by Mr. Thomas Withers, of the British Museum, on fossil Cirripedes (Palæontological Bulletin No. 10) was published a few months ago. In addition several papers by the Palæontologist (Dr. J. Marwick) have been printed in various scientific publications.

The only other publications issued during the year were the annual report of the Survey and various reports and papers by its officers, published in the *New Zealand Journal of Science and Technology*. Since the end of the period covered by the report of the Survey an important bulletin, No. 26, "The Geology and Mines of the Waihi District," has been published. During the present year it is hoped to publish several other bulletins, the manuscripts of which have been completed.

STATE AID TO MINING.

Considerable use continued to be made of the Government prospecting-drills. During the year eight parties employed these drills, an aggregate of 6,449 ft. being drilled.

During the year ended 31st March, 1924, sixteen approved parties were granted subsidies amounting to £6,080. There was expended during the year £11,743, which included subsidies granted but not expended during previous years.

The expenditure on roads and tracks by subsidies and direct grants out of the Public Works Fund amounted to £2,867, as against £4,850 during the previous year.

The expenditure by the Mines Department on schools of mines amounted to £3,817 as against £4,457 during the previous year.

The Waimea–Kumara and Mount Ida Government water-races, which in past years considerably aided alluvial-gold mining in the Kumara and Naseby districts, have during the year ended 31st March, 1924, supplied claims employing eighteen miners with water for sluicing, by which gold to the approximate value of £5,619 was obtained. The cash received for water sold amounted to £1,233, the expenditure on the upkeep of the races being £2,032.

MINER'S PHTHISIS ACT, 1915.

The amount of pensions payable, in force, and granted to the 31st March, 1924, under this Act are as follows:—

	£
Amounts paid since inception until 31st March, 1924—	
From 1st November, 1915, to 31st March, 1923 ..	144,409
For year ended 31st March, 1924	36,084
	£180,493
Number of new grants for year 1923–24	88
Annual value of new grants	£6,448
Number of pensions in force at 31st March, 1924 ..	580
Annual value of pensions in force at 31st March, 1924	£36,634
Average pension payable per annum	£63
Total number of pensions granted to 31st March, 1924	1,052

Total number of pensions granted to 31st March, 1924, includes the following: To unmarried miners, 197; to married miners, 390; to widows of miners, 465: total, 1,052.

STATE COLLIERIES.

James Mine.

Underground development work was carried on continuously throughout the year, and the results obtained were very satisfactory. The coal produced is of excellent quality for household purposes and has a ready sale. The mine is now in a position to meet all the requirements of the Department for household coal for the depots.

Output and Sales.

The operations of the State coal-mines and State coal-depots for the year ended 31st March, 1923, are briefly reviewed hereunder.

Liverpool Colliery.—The gross output for the year was 134,320 tons, as compared with 116,285 tons for last year, an increase of 18,035 tons.

James Colliery.—The gross output for the year was 25,797 tons, as compared with 2,889 tons for last year, an increase of 22,908 tons. The colliery did not commence to actively produce coal until August, 1923.

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

Mine.	Output in Tons, 1923–24.		Output in Tons, 1922–23.	
	Gross.	Net.	Gross.	Net.
Liverpool	134,320	129,663	116,285	112,358
James	25,797	24,036	..	2,889

Note.—The difference between the gross and the net output is the allowance for mine consumption and waste. In addition to the above 5,923 tons of coal were purchased for resale, of which 3,522 tons were purchased from co-operative parties on the West Coast.

The disposal, inclusive of stock on hand at the beginning of the year, was as follows : Supplied to—Depots, 45,124 tons ; railways, 3,666 tons ; other Government Departments, 6,117 tons ; shipping, 26,598 tons ; gasworks, 71,440 tons ; other consumers, 4,870 tons : total, 157,815 tons.

The total sales of State coal from the Liverpool Mine for the year amounted to 129,329 tons, value £204,176, as compared with 112,515 tons, value £180,534, for last year—an increase of 16,814 tons, with an increase in value of £23,642.

The average price realized by the mine on the total sales for the year was £1 11s. 6·89d., a decrease of 6·20d. on last year's average. This decrease is due to sales to Christchurch depot being changed from a c.i.f. Lyttelton basis to f.o.r. Rewanui consequent upon the opening of the Otira Tunnel.

The total sales of State coal from the James Mine for the year amounted to 22,693 tons, value £36,817, giving an average of £1 12s. 5·37d. per ton.

The sales of coal, &c., through the medium of the depots totalled 119,387 tons, value £246,976, as against 87,042 tons, value £187,057, for last year.

The profit at the mines was £15,114, and the depots, &c., £5,180, making a total of £20,294, out of which £4,552 was applied to the Sinking Fund Account, leaving £15,742 to be carried forward. There was keen competition in the sale of coal during the year, owing mainly to large importations of coal by private enterprise from Australia.

Losses on coal sold to miners, concessions in the form of special railway facilities, and of allowances for railway fares to miners and workmen amounted to £4,931, and this sum was allowed for in arriving at the net profit for the year.

Tree-Planting—State Coal Areas.

The question of obtaining supplies of suitable timber for use at the State collieries is a most important one ; and, in order that requirements may be assured in the future, an area of about 84 acres has been planted at Waikokowai. Arrangements have also been made to plant an area on the State Colliery Reserve near Dunollie, where it is proposed to plant annually for the next three years an area of 75 acres.

At Waikokowai the trees planted consisted mainly of *Pinus radiata* and Eucalyptus, and it is proposed to plant Douglas fir and Eucalyptus at Dunollie.

Items from Balance-sheet.

The following items taken from the balance-sheet, which has been audited, will prove of interest as indicating the more important items of expenditure, and for reference in respect to the position of Capital Account, reserve funds, and other accounts shown therein.

	£
The amount written off for depreciation for the year was	20,451
The payments for interest totalled	9,252
The payments for sea carriage of coal amounted to	75,995
The cost of railway haulage amounted to	25,324
The total wages paid for coal-winning were	79,833
The amount paid for management and office salaries (Head Office and mines) totalled	3,753
The gross capital expenditure on the whole undertaking to the 31st March last was	554,799
The total depreciation written off to date (equal to 53 per cent. on the gross capital expenditure) amounts to	297,434
The debenture and loan capital stands at	227,601
The net profits of the State Coal-mines Account from inception to the 31st March, 1924	125,039
The net profit for the year ended 31st March, 1924, was	20,294
The sinking fund is in credit	35,407
General reserve stands at	75,853
The amount at credit of Profit and Loss is	15,742
The cash in hand and in the Public Account at the 31st March last was (last year £19,580)	17,389
The present net book value of permanent or fixed assets is ..	257,365

TABLES AND REPORTS.

The usual statistical tables and departmental reports are appended.

TABLES TO ACCOMPANY MINES STATEMENT.

No. 1.

TABLE SHOWING THE QUANTITY AND VALUE OF GOLD AND OTHER MINERALS EXPORTED DURING THE YEARS ENDED THE 31ST DECEMBER, 1922 AND 1923, 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, 1923.		For Year ended the 31st December, 1922.		Total from the 1st January, 1853, to the 31st December, 1923.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Precious metals—	Oz.	£	Oz.	£	Oz.	£
Gold*	169,512	698,583	131,848	540,182	23,042,460	90,863,040
Silver	514,655	62,851	443,134	55,222	24,054,691	2,832,670
Total gold and silver ..	684,167	761,434	574,982	595,404	47,097,151	93,695,710
Mineral produce, including kauri-gum—	Tons.	£	Tons.	£	Tons.	£
Copper-ore	..	..	..	..	1,504	19,390
Chrome-ore	..	..	..	..	5,869	38,002
Antimony-ore	..	..	..	..	3,781	55,045
Manganese-ore	8	43	..	..	19,374	61,958
Hæmatite ore	..	..	..	..	77	469
Tungsten-ore	13	875	$7\frac{1}{20}$	528	$2,325\frac{4}{20}$	300,714
Quicksilver	..	..	$1\frac{16}{20}$	674	$16\frac{12}{20}$	8,336
Sulphur (crude)	..	..	..	..	4,927	13,241
Mixed minerals†	$4,018\frac{6}{20}$	16,622	$3,357\frac{1}{20}$	18,393	$70,334\frac{15}{20}$	294,115
Coal (New Zealand) exported	95,636	173,833	118,755	253,762	5,380,679	5,523,667
Coke exported	298	700	4	10	17,122	26,408
Coal, output of mines in Dominion (less exports)	1,874,198	1,874,198	1,739,064	1,739,064	52,140,462	32,559,384
Oil-shale	..	..	..	..	14,444	7,236
Kauri-gum	6,598	596,222	6,391	563,270	383,791	20,664,509
Total quantity and value of minerals	$1,980,769\frac{6}{20}$	2,662,493	$1,867,580\frac{8}{20}$	2,575,701	$58,044,706\frac{11}{20}$	59,572,474
Value of gold and silver, as above	..	761,434	..	595,404	..	93,695,710
Total value of minerals, including gold and silver	..	3,423,927	..	3,171,105	..	153,268,184

* In respect of gold, ounces of the fineness of 20 carats and upwards. † Including pumicestone, 56 tons; pumice-sand, 3,660 tons; also marble of weight unspecified by the Customs Department.

No 2.

TABLE SHOWING THE QUANTITY AND VALUE OF GOLD EXPORTED FROM NEW ZEALAND FOR THE YEARS ENDED THE 31ST DECEMBER, 1922 AND 1923, AND THE TOTAL QUANTITY AND VALUE FROM 1857 TO THE 31ST DECEMBER, 1923.

District and County or Borough.	Year ended 31st December, 1923.		Year ended 31st December, 1922.		Total Quantity and Value from January, 1857, to 31st December, 1923.	
	Quantity.	Value.	Quantity.	Value.		
AUCKLAND—	Oz.	£	Oz.	£	Oz.	£
County of Tauranga	16,219	67,953	6,866	28,937		
County of Coromandel	..	..	18	68		
County of Thames	..	..	209	904		
County of Ohinemuri	..	..	560	1,987		
County of Piako	..	..	9	39		
Borough of Thames	..	..	214	917		
Great Barrier Island	..	..	..	..		
Borough of Waihi	93,986	394,550	64,679	271,449		
	110,205	462,503	72,555	304,301	7,081,260	27,424,793
WELLINGTON	..	..	..	..	188	706
MARLBOROUGH—						
County of Marlborough	32	127	511	2,043	105,452	410,644
NELSON—						
County of Waimea	..	..	..	..		
County of Collingwood	225	846	38	154		
County of Takaka	9	29	..	..		
County of Murchison	366	1,514	203	804		
	600	2,389	241	958	1,740,953	6,902,787
WEST COAST—						
County of Buller	..	..	303	1,208		
County of Inangahua	27,427	107,171	27,152	105,126		
County of Grey	647	2,603	229	915		
County of Westland	15,019	60,827	11,898	48,490		
Hokitika Borough	1,764	7,124	..	..		
Westport Borough	36	130	..	..		
Kumara Borough	484	1,939	..	..		
	45,377	179,794	39,582	155,739	6,370,249	25,283,760
CANTERBURY—						
County of Selwyn	2	9	..	..	122	482
OTAGO—						
County of Taieri	..	..	..	..		
County of Tuapeka	3,926	15,766	4,548	18,282		
County of Vincent	2,791	11,341	4,321	17,471		
County of Maniototo	1,362	5,511	2,000	8,127		
County of Waihemo	386	1,535	38	150		
County of Waitaki	183	730	82	328		
County of Bruce	1	4	..	..		
County of Lake	458	1,836	983	3,983		
County of Wallace	1,133	4,678	1,414	5,663		
County of Fiord	..	..	..	..		
County of Southland	2,728	11,039	4,781	19,438		
County of Clutha	..	..	..	..		
	12,968	52,440	18,167	73,442	7,737,059	30,810,672
Unknown	328	1,321	792	3,699	7,177	29,196
Totals	169,512	698,583	131,848	540,182	23,042,460	90,863,040

No. 3.

TABLE SHOWING THE OUTPUT OF COAL FROM THE VARIOUS COALFIELDS, AND THE COMPARATIVE INCREASE AND DECREASE, FOR THE YEARS 1922 AND 1923, 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, 1923.
	1923.	1922.			
	Tons.	Tons.	Tons.	Tons.	Tons.
North Auckland	126,118	89,575	36,543	..	4,256,512
Waikato (including Mokau)	507,747	430,578	77,169	..	7,500,771
Nelson	8,997	8,056	941	..	397,028
Buller	508,959	570,801	..	61,842	18,193,954
Inangahua	38,107	12,056	26,051	..	463,001
Grey	292,966	289,070	3,896	..	10,981,813
Canterbury	20,716	21,767	..	1,051	894,338
Otago	252,187	244,663	7,524	..	10,809,524
Southland	214,037	191,253	22,784	..	4,024,200
Totals	1,969,834*	1,857,819	..	..	57,521,141

* Increase, 112,015 tons.

No. 4.

TABLE SHOWING THE OUTPUT OF DIFFERENT CLASSES OF COAL.

Class of Coal.	Output.		Increase.	Decrease.	Approximate Total Output to the 31st December, 1923.
	1923.	1922.			
	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous	935,697	968,438	..	32,741	35,853,667
Brown	860,360	710,333	150,027	..	18,151,010
Lignite	173,777	179,048	.	5,271	3,516,464
Totals	1,969,834*	1,857,819	..	..	57,521,141

* Increase, 112,015 tons.

No. 5.

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

Year.	Coal and Shale raised in the Dominion.		Coal imported.		
	Tons.	Yearly Increase or Decrease.	Tons.	Increase over Preceding Year.	Decrease below Preceding Year.
Prior to 1878	709,931	..	..	..	..
1878	162,218	..	174,148	..	..
1879	231,218	*Inc.* 69,000	158,076	..	16,072
1880	299,923	„ 68,705	123,298	..	34,778
1881	337,262	„ 37,339	129,962	6,664	..
1882	378,272	„ 41,010	129,582	..	380
1883	421,764	„ 43,492	123,540	..	6,042
1884	480,831	„ 59,069	148,444	24,904	..
1885	511,063	„ 30,232	130,202	..	18,242
1886	534,353	„ 23,290	119,873	..	10,329
1887	558,620	„ 24,267	107,230	..	12,643
1888	613,895	„ 55,275	101,341	..	5,889
1889	586,445	*Dec.* 27,450	128,063	26,722	..
1890	637,397	*Inc.* 50,952	110,939	..	17,124
1891	668,794	„ 31,397	125,318	14,379	..
1892	673,315	„ 4,521	125,453	135	..
1893	691,548	„ 18,233	117,444	..	8,009
1894	719,546	„ 27,998	112,961	..	4,483
1895	726,654	„ 7,108	108,198	..	4,763
1896	792,851	„ 66,197	101,756	..	6,442
1897	840,713	„ 47,862	110,907	9,151	..
1898	907,033	„ 66,320	115,427	4,520	..
1899	975,234	„ 68,201	99,655	..	15,772
1900	1,093,990	„ 118,756	124,033	24,378	..
1901	1,239,686	„ 145,696	149,764	25,731	..
1902	1,365,040	„ 125,354	127,853	..	21,911
1903	1,420,229	„ 55,189	163,923	36,070	..
1904	1,537,838	„ 117,609	147,196	..	16,727
1905	1,585,756	„ 47,918	169,046	21,850	..
1906	1,729,536	„ 143,780	207,567	38,521	..
1907	1,831,009	„ 101,473	220,749	13,182	..
1908	1,860,975	„ 29,966	287,808	67,059	..
1909	1,911,247	„ 50,272	258,185	..	29,623
1910	2,197,362	„ 286,115	232,378	..	25,807
1911	2,066,073	*Dec.* 131,289	188,068	..	44,310
1912	2,177,615	*Inc.* 111,542	364,359	176,291	..
1913	1,888,005	*Dec.* 289,610	468,940	104,581	..
1914	2,275,614	*Inc.* 387,609	518,070	49,130	..
1915	2,208,624	*Dec.* 66,990	353,471	..	164,599
1916	2,257,135	*Inc.* 48,511	293,956	..	59,515
1917	2,068,419	*Dec.* 188,716	291,597	..	2,359
1918	2,034,250	„ 34,169	255,332	..	36,265
1919	1,847,848	„ 186,402	391,434	136,102	..
1920	1,843,705	„ 4,143	476,343	84,909	..
1921	1,809,095	„ 34,610	822,459	346,116	..
1922	1,857,819	*Inc.* 48,724	501,478	..	320,981
1923	1,969,834	„ 112,015	445,792	..	55,686

No. 6.

TABLE SHOWING THE TOTAL QUANTITY AND VALUE OF COAL IMPORTED INTO AND EXPORTED FROM NEW ZEALAND FROM AND TO EACH COUNTRY DURING THE CALENDAR YEAR 1923.

Imports.

Country whence imported.	Tons.	Value.
		£
United Kingdom	119	124
Australia	444,791	519,021
United States of America, via east coast ..	882	1,158
Totals	445,792	520,303

The values shown are the current domestic values in country of export plus 10 per cent.

Exports: Bunkers.

Country to which exported.	Produce of New Zealand.		Produce of other Countries.	
	Tons.	Value.	Tons.	Value.
		£		£
United Kingdom	54,723	117,023	342	796
Straits Settlements	350	710	..	..
Australia	10,790	11,570	103	247
Fiji	488	609	..	..
United States of America, via west coast	750	750	..	..
United States of America, via east coast	4,945	9,942	..	..
France	1,239	2,354	..	..
Totals	73,285	142,958	445	1,043

Exports: Cargo.

Country to which exported.	Produce of New Zealand.		Produce of other Countries.	
	Tons.	Value.	Tons.	Value.
		£		£
United Kingdom	..	..	..	..
Australia	20,141	27,733	..	..
Fiji	2,189	3,069	..	..
Solomon Islands	..	..	5	29
Western Samoa	20	71	6	18
Society Islands	1	2	..	..
Totals	22,351	30,875	11	47

No. 7.

NUMBER OF PERSONS ORDINARILY EMPLOYED AT OR ABOUT MINES OTHER THAN COAL-MINES DURING THE YEAR ENDED 31ST DECEMBER, 1923.

County or Borough.	Number of Persons ordinarily employed at				Total.	
	Gold-quartz Mines.	Gold Alluvial Mines.	Gold-dredges.	Mines other than Gold and Coal.	1923.	1922.
NORTHERN INSPECTION DISTRICT.						
County and Borough of Thames	41	..	..	..	41	9
County of Ohinemuri	73	..	..	..	73	45
„ Coromandel	36	..	..	..	36	51
Borough of Waihi	963	..	..	..	963	842
County of Tauranga	136	..	..	..	136	116
„ Whangarei	..	..	..	3	3	18
WEST COAST INSPECTION DISTRICT.						
County of Marlborough	1	4	..	..	5	11
„ Takaka	..	1	..	..	1	1
„ Collingwood	..	3	..	4	7	39
„ Murchison	..	20	..	..	20	20
„ Buller	..	10	..	..	10	17
„ Inangahua	259	8	..	..	267	292
„ Grey	..	9	5	..	14	40
„ Westland	..	77	56	..	133	162
SOUTHERN INSPECTION DISTRICT.						
County of Taieri	..	1	..	..	1	..
„ Tuapeka	..	68	..	..	68	80
„ Vincent	5	36	30	..	71	103
„ Maniototo	..	50	..	..	50	50
„ Waihemo	6	..	..	1	7	3
„ Waitaki	..	8	..	..	8	7
„ Lake	..	26	..	..	26	29
„ Wallace	..	30	..	..	30	40
„ Southland	..	55	9	..	64	76
Totals	1,520	406	100	8	2,034	2,091

Summary of Persons ordinarily employed in or about New Zealand Mines during 1923 and 1922.

—	1923.	1922.	Increase or Decrease.
Gold, silver, and tungsten mines	2,027	2,031	Dec. 4
Other metalliferous mines	7	60	„ 53
Coal-mines	5,000	4,556	Inc. 44
Totals	7,034	6,647	Inc. 387

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, 24th July, 1924.

I have the honour to present my report on metalliferous mines and stone-quarries, together with statistical information, for the year ended 31st December, 1923.

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, 1923, to the 31st March, 1924.

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

I. Minerals produced and exported.
II. Persons employed.
III. Accidents.
IV. Gold-mining.
  (1.) Quartz-mining.
  (2.) Dredge Mining.
  (3.) Alluvial Mining.
V. Stone-quarry Inspection and Statistics.
VI. State Aid to Mining.
  (1.) Subsidized Prospecting.
  (2.) Government Prospecting-drills.
  (3.) Subsidized Roads on Goldfields.
  (4.) Government Water-races.
  (5.) 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 Inspector of Quarries.
  (D.) Mining Statistics.

I. MINERALS PRODUCED AND EXPORTED.

The following statement shows the quantity and value of the production of metal-mines and of stone-quarries under the Stone-quarries Act during 1923 and 1922 : —

Mineral.	1923.		1922.	
	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£
Gold and silver (estimated)	692,090	737,170	520,287	574,988
	Tons. cwt.		Tons. cwt.	
Quicksilver	..	..	0 14	231
Tungsten-ore	5 9	218	..	..
Iron	..	..	81 0	627
Stone	..	370,995	..	318,093
Pumice	3,716 0	10,029	3,020 0	9,320
Totals	..	1,118,412	..	903,259

The following statement shows the value of New Zealand minerals (other than coal) exported from the 1st January, 1853, to the 31st December, 1923:—

—	1923.	1922.	Increase or Decrease.	Total from the 1st January, 1853, to the 31st December, 1923.
	£	£	£	£
Gold	698,583	540,182	Inc. 158,401	90,863,040
Silver	62,851	55,222	„ 7,629	2,832,670
Quicksilver	..	674	Dec. 674	8,336
Tungsten-ore	875	528	Inc. 347	300,714
Kauri-gum	596,222	563,270	„ 32,952	20,664,509
Manganese-ore	43	..	„ 43	61,958
Sand, lime, and building stone	13,609	10,037	„ 3,572	420,262
Other minerals	3,013	8,356	Dec. 5,343	
Totals	1,375,196	1,178,269	Inc. 196,927	115,151,489

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, 1923.
	Northern.	West Coast.	Southern.	
Gold, silver, and tungsten	1,249	453	325	2,027
Cinnabar	3	..	..	3
Ironstone	..	4	..	4
Totals for 1923	1,252	457	325	2,034
Totals for 1922	1,121	582	388	2,091

III. ACCIDENTS.

During 1923 no fatal but five serious but non-fatal accidents occurred in or about metalliferous mines, at which 2,034 persons were ordinarily employed.

Cause.	Fatal Accidents.		Serious Non-fatal Accidents.	
	Number of Separate Accidents.	Number of Deaths.	Number of Separate Accidents.	Number of Persons injured.
Falls of ground	..	..	2	2
Explosives	..	..	2	2
Miscellaneous, on surface	..	..	..	..
Miscellaneous, underground	..	..	1	1
Totals	..	..	5	5

Reports of the serious non-fatal accidents are contained in the District Inspectors' annual reports.

IV. GOLD-MINING.

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

—	Production of Bullion, 1923.* (All Mines.)		Dividends paid, 1923. (By Registered Companies only.)†	Number of Persons ordinarily employed at Productive and Unproductive Mines.	Number of Productive Quartz-mines, Alluvial Mines, and Dredges, 1923.
	Quantity.	Value.			
	Oz.	£	£		
Quartz-mining	661,468	609,993	24,795	1,520	22
Dredge mining	15,788	68,003	3,283	100	8
Alluvial mining‡	14,834	59,174	2,266	406	130
Totals, 1923	692,090	737,170	30,344	2,026	160
Totals, 1922	520,287	574,988	53,031	2,028	180

* In addition to the gold produced from the gold-mines, silver was obtained from them, hence the word "bullion" is used in preference to "gold."

† The profits of privately owned dredges and mines are unobtainable, which renders this statement incomplete.

‡ The bullion-production is from 130 alluvial claims, but the dividends are only ascertainable from those few that are the property of registered companies.

The value of gold produced during 1923 was greater by £162,182 than during 1922. This amount is made up of an increase of £170,504 from quartz-mining, an increase of £764 from dredging, and a decrease of £9,086 from alluvial mining. The greater part of the increase in the value of gold got from quartz-mining was from the mines in the Waihi Borough, where the value of the bullion produced during 1923 amounted to £427,622, against £269,238 for 1922, an increase of £158,384.

(1.) QUARTZ-MINING.

Inspection District.	Statute Tons of Ore treated.		Value of Bullion.		Dividends paid (by Registered Companies only).	
	1923.	1922.	1923.	1922.	1923.	1922.
			£	£	£	£
Northern	288,036	220,263	508,545	338,465	24,795	49,591
West Coast	47,872	48,184	99,143	100,682	..	2,400
Southern	1,935	162	2,305	342	..	..
Totals	337,843	268,609	609,993	439,489	24,795	51,991

The average value per ton of ore treated during 1923 amounted to £1 16s. 1d., as compared with £1 12s. 9d. during 1922.

(2.) DREDGE MINING.

The following is a statement showing the capacity, production, and profits of bucket gold-dredges during 1923. (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. E = Electrical.	Average Depth of Ground dredged.	Value of Bullion obtained during 1923.	Dividends declared.	
								During 1923.	Total.
Otago and Southland.						Ft.	£	£	£
Rise and Shine No. 1 ..	Clutha River ..	5½	10	20	S	40	1,703	..	53,700
Lady Ranfurly	Kawarau River ..	..	..	..	..	..	211	..	..
Earnscleugh No. 3 ..	Clutha River ..	7	12	150	E	50	1,499	..	30,250*
Nevis Crossing	Nevis River ..	3½	10	12	S	10	2,156	..	..
McGeorge's Freehold No. 3	Waikaka Valley ..	6½	9	20	S	35	1,538	..	..
McGeorge's Freehold No. 2	,, ..	..	..	..	..	..	2,282	..	..
West Coast.									
Rimu	Rimu	10	19	525	E	58	56,190	3,283	..
Awatuna	Awatuna Beach ..	8	15	20	S	12	2,424	..	..
Totals, 1923 ..	..	..	..	..	..	..	68,003	3,283	Unknown
Totals, 1922 ..	..	..	..	..	..	..	67,239	..	Unknown

* Includes Earnscleugh No. 5 (see previous Statement).

(3.) ALLUVIAL MINING.

The following is a statement showing the value of production and dividends declared from alluvial gold-mines during 1923 :—

Name of Company.	Estimated Value of Gold produced.	Dividends declared.	
		During 1923.	Total to End of 1923.
	£	£	£
Vinegar Hill Sluicing Company	1,191	..	1,050
Gabriel's Gully Sluicing Company	2,639	..	15,615
Lawrence Sluicing Company	4,681	750	1,000
W. R. Smith	1,225	..	..
Golden Crescent Sluicing Company	904	..	12,862
Sailor's Gully Sluicing Company	2,393	..	5,840
Havelock Sluicing Company	1,246	..	11,400
Graham and Party	2,686	1,400	1,400
A. Mutch	1,354	..	..
Nokomai Hydraulic Sluicing Company	4,501	..	54,684
Ourawera Gold-mining Company	233	116	15,231
Round Hill Gold-mining Company	4,593	..	12,287
Havill Bros.	1,315	..	..
Hohonu Gold Sluicing Company	1,254	..	..
Stubbs and Steel	1,230	..	..
All other claims	27,729	..	..
Totals	59,174	2,266	Unknown.

V. STONE-QUARRY INSPECTION AND STATISTICS.

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

The following is a table showing the number of quarries under the Stone-quarries Acts, also the number of persons ordinarily employed thereat, and the annual output and value of crude stone during 1923 :—

Provincial District.	Name and Address of Government Inspector of Stone-quarries.	Number of Working Quarries under the Act.	Number of Persons ordinarily employed.	Output of Stone.							Value at Quarry.
				Stone or Gravel for Macadamizing or Ballast.	Stone for Harbour-works.	Building or Monumental-stone.	Limestone for Agriculture.	Limestone for Cement or Mortar.	Phosphate for Agriculture.	Miscellaneous.	
				Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons	£
Auckland ..	James Newton, Mines Dept., Auckland	96	656	485,205	180,000	10,700	15,951	92,443	..	..	148,740
	M. Paul, Mines Dept., Waihi (Hauraki Mining District only)	18	119	77,134	..	53	..	..	..	..	25,381
Hawke's Bay	James Newton, Mines Dept., Auckland	15	76	19,711	29,118	541	14,400	207	..	..	10,022
Taranaki ..	Ditto	12	48	8,207	42,481	..	..	..	..	..	8,277
Wellington ..	,, ...	32	185	83,886	15,990	1,620	8,330	..	..	..	37,582
Canterbury ..	J. F. Downey, Mines Dept., Reefton	18	124	93,763	5,949	2,186	7,216	..	..	80	35,523
Nelson, Westland, Marlborough	Ditto	17	138	7,616	2,825	940	2,544	11,740	..	..	6,835
Otago, Southland	A. Whitley, Mines Dept., Dunedin	34	298	88,890	39,819	18,418	55,125	38,858	2,383	..	98,635
Totals 1923	..	242	1,644	864,412	316,182	34,458	103,566	143,248	2,383	80	370,995
Totals 1922	..	212	1,383	580,707	265,091	60,692	88,087	210,184	3,128	220	318,093

Quarry Accidents.

The following is a summary of serious accidents during 1923 at quarries under the Stone-quarries Act :—

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

Of the fatal accidents the following is a short description :—

Percy Ayden, at the Mount Eden sewerage-works, on the 10th February. The deceased was using a hammer and gad in a tunnel where six shots had been fired the previous day. He must have struck some unexploded gelignite, as an explosion occurred, which resulted in his death.

John Fowler, at the Mangatuna Quarry, Tolaga Bay, on the 12th May. The deceased was the quarry foreman, and was engaged in firing a round of shots when the accident occurred. From the evidence it appears that he either miscalculated the time of burning of the fuse or had attempted to light too many shots and left himself insufficient time to take shelter before the shots went off.

Arthur Joseph Pobar, at Calder's Quarry, Dunedin, on the 7th June. The deceased with other workmen was engaged on the quarry-floor when a large fall of stone took place from a height of about 90 ft. up the face of the quarry. The other workmen were able to get clear of the falling material, but the deceased was struck and so seriously injured that he died the following day.

VI. STATE AID TO MINING.

(1.) Subsidized Prospecting.

Upon subsidized prospecting operations seventy-five persons were intermittently employed during the year.

The following is a statement showing the results of prospecting operations as reported by the Inspectors of Mines.

Name of Prospecting Party.	Number of Prospectors.	Locality of Operations.	Amount of Subsidy granted.	Amount of Subsidy expended.	Distance driven or sunk.	Nature of Claim.	Character of Operations.	Remarks.
Northern Inspection District.			£ s. d.	£ s. d.	Ft.			
New Sylvia Gold-mining Company ..	6	Thames ..	200 0 0	185 18 0	429	Quartz ..	Rising	Work temporarily suspended.
Rising Sun Gold-mining Company ..	6	Owharoa ..	1,000 0 0	1,000 0 0	..	,, ..	Driving	Results up to date proved most disappointing.
Ohinemuri Gold and Silver Mines ..	9	Maratoto ..	108 6 8	108 6 8	250	,, ..	,, ...	Driving on large lode, but so far nothing payable has been found.
Caledonia-Kuranui-Moanataiari Gold-mining Company	6	Thames.. ..	2,000 0 0	2,000 0 0	..	,, ..	,, ...	Testing the reef-system on the eastern side of the main fault, but so far nothing of a payable character has been discovered.
Four-in-Hand	8	Waiokoromiko ..	86 13 4	Nil	Nil	,, ..	,, ...	No work done.
F. McGuiness and M. Breen	2	Coromandel ..	50 14 0	50 14 0	..	..	Prospecting	Failed to locate any gold-bearing lodes.
Horne and McKenzie	2	,, ..	50 14 0	50 14 0	..	..	,, ...	Promising dish prospects, but failed to trace the source of the gold.
T. A. Black	2	Whangarei ..	113 2 0	113 2 0	..	Cinnabar ..	Trenching	Results met with not payable.
Muir's Gold-reefs Limited	..	Te Puke ..	5,000 0 0	5,000 0 0	..	Quartz ..	Shaft sinking and equipment	Work in progress.
Thomas Parker	2	Waitekauri ..	23 8 0	Nil	..	,, ..	Prospecting	No work done.
Hardy's Mines	..	Te Aroha ..	130 0 0	Nil	..	..	..	No work done.
West Coast Inspection District.								
Blackwater Miners' Association ..	6	Alexander River ..	199 15 4	177 4 8	409	Quartz ..	Prospecting	Gold-bearing reef of promising appearance located.
Avery and party	2	Waimangaroa ..	43 6 8	43 6 8	100	,, ..	,, ...	Gold-bearing reef opened up.
Fayne and Danks	2	,, ..	35 2 0	11 14 0	..	..	,, ...	Nothing of any value located.
Holmes and Barnett	2	Alfred River ..	31 4 0	15 12 0	..	..	,, ...	Work in progress.
Honey and Cook	2	,, ..	56 5 0	Nil	..	..	,, ...	No work reported yet.
Kearns and party	2	Stevenson's ..	35 2 0	10 8 0	..	..	,, ...	Work in progress.
Lewis and party	2	Collingwood ..	30 0 0	24 1 9	..	..	,, ...	Assistance towards erecting plant.
Osmers and party	2	Ross	33 7 4	20 16 0	48	Quartz ..	,, ...	Reef located, but too small to work.
Wealth of Nations Mines Limited ..	..	Reefton.. ..	2,625 0 0	2,625 0 0	554	,, ..	Sinking and driving ..	Main shaft sunk 150 ft.; No. 13 level extended 404 ft.
Wise and O'Donnell	2	Wangapeka ..	29 5 0	18 4 0	..	..	Prospecting	Nothing of value reported.
H. Watson and party	..	Waimangaroa ..	7 17 6	5 5 0	22	Alluvial ..	,, ...	Shaft sunk; payable alluvial reported.
H. F. Chaffey	..	Upper Takaka ..	35 2 0	Nil				
Southern Inspection District.								
P. and W. H. Thomas	2	Hamilton's ..	118 19 8	118 19 8	420	Alluvial ..	Driving	No payable ground opened up.
A. F. Wilson and party	2	Longwood Range	113 2 0	113 2 0	..	..	Prospecting	No discovery of importance reported.
F. and H. Soper	2	Nevis	50 14 0	50 14 0	..	Alluvial ..	,, ...	Run of payable wash found.
Hayward and party	2	Mount Pisa ..	50 14 0	Nil	..	..	,, ...	Work in progress.
Coal Creek Prospecting Association ..	2	Old Man Range ..	50 14 0	Nil	..	..	,, ...	,,
	75	..	12,308 8 6	11,743 2 5				

(2.) Government Prospecting Drills.

The following table gives details of the drilling done and the results obtained :—

Drill Superintendents: W. H. Warburton, G. E. D. Seale, S. W. Ford, T. Williams, F. Carter, and H. Butland.
Drills used: Schram-Harker diamond and Keystone drills.

Number of Holes drilled.	Total Depth, in Feet.	Diameter of Hole.	Mineral sought.	Character of Rocks drilled through.	To whom lent.	Cost per Foot of Drilling.	Cost per Foot of Transport.	Cost per Foot of Carbon's wear.	Results.
		Inches.				s. d.	s. d.	s. d.	
1	1,345	2½	Coal	Gravel, mudstone, sandstone, and grits	Dobson Coal Co., Ltd.	4 8	0 5½	1 1·35	21 ft. of coal at 1,323 ft.
2	1,908	2½	,,	Ditto	J. Taylor ..	4 10	0 6	1 0·3	12 ft. of coal at 902 ft.
8	1,218	5	Gold	Gravels ..	*Waikaia Gold Syndicate	7 6	2 0	..	Four holes carrying fair gold.
16	794	6	,,	,, ..	*Ngahere Dredging Syndicate	25 4	..	..	Several holes carrying fair gold.
7	311	4, 3	..	Gravels and greywacke	*Christchurch Municipal Electricity Dept.	..	..	15 1·145	Testing bed of Waimakariri River for power-project dam.
9	613	6	Gold	Gravels ..	*Rimu Gold Dredging Co.	..	..	..	Gold averaging 0·94d. per cubic yard.
1	150	6	,,	Moraine gravels	*Westland Prospecting Association	..	..	..	No gold; hole not completed.
1	110	6	Water	Clay and gravel	*Westland Dairy Co.	4 0	..	..	Satisfactory.

* Drill Superintendent supplied by hirer.

(3.) Subsidized Roads on Goldfields.

The expenditure in the form of subsidies and direct grants upon roads on goldfields amounted to £2,867, as compared with £4,850 during the previous year.

(4.) Government Water-races.

The Waimea-Kumara and Mount Ida water-races, which greatly assist alluvial gold-mining in the localities of Kumara (Westland) and Naseby (Central Otago), but which showed a loss of £798 13s. 9d. to the Government, have during the year ended 31st March, 1924, supplied with water for sluicing auriferous gravel claims employing an average number of 17·91 persons, by which gold to the approximate value of £5,618 13s. was obtained.

The following is a statement showing the cash received by the Government for water sold, and the expenditure on the upkeep of the races, together with the average number of miners supplied with water, and the approximate quantity and value of gold received for the year ended 31st March, 1924 :—

—	Receipts. (Sales of Water.)	Expenditure.	Debit Balance.	Average Number of Miners supplied with Water.	Approximate Quantity and Value of Gold obtained.	
	£ s. d.	£ s. d.	£ s. d.		Oz.	£ s. d.
Waimea-Kumara Water-races ..	758 13 0	1,314 19 11	556 6 11	10·91	944	3,705 4 0
Mount Ida	474 4 10	716 11 8	242 6 10	7·00	497	1,913 9 0
Totals	1,232 17 10	2,031 11 7	798 13 9	17·91	1,441	5,618 13 0

The amount outstanding on the Waimea-Kumara water-races on the 31st March, 1924, was £722 13s. 2d., an increase of £27 9s. 4d. on the previous year. No money for water supplied was owing on account of the Mount Ida water-race.

(5.) Schools of Mines.

The total expenditure on schools of mines during the year ended the 31st March, 1924, amounted to £3,816 13s. 3d., against £4,456 16s. 3d. during the previous year. The schools continue to do very useful work, but the students who take advantage of the facilities which the schools offer are increasingly from occupations other than mining. This is markedly the case in schools, like the Thames School of Mines, which are situated in districts where mining has seriously declined, and where other industries have taken its place. In that particular school the students engaged in mining or likely to follow mining comprise less than 12 per cent. of the total number of students attending the school, so that the institution is now a technical school rather than a school of mines.

I have, &c.,

J. A. C. Bayne,

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), (J. L. Gilmour, Manager).—No. 14 level (1,752 ft. below collar of No. 4 shaft): The north crosscut was driven to 120½ ft. from No. 4 shaft. The first 70 ft. was in disturbed country, but from this onward the country is firmer. The following low-grade veins were intersected: At 102 ft., 3½ ft. wide; course, 19° (true), vertical. At 117 ft., 2 ft. wide, dipping 2 in 1 north. Driving east on the vein at 102 ft. was done for 58 ft., and a crosscut north commenced from this point and driven to 292 ft. The following veins were intersected in this crosscut: At 55 ft., 11 ft. wide; assay value, 2s. 6d. per ton; course, 33° (true); dip, 1 in 3 south. A distance of 112 ft. east was driven on the course of this lode. At 107 ft., 3 ft. wide; assay value, 2s. 4d. per ton; course, 68° (true); dip, 1 in 8 north. At 163 ft., 21 ft. wide; the first 17½ ft. is of low value; the last 3½ ft. has an assay value of £1 16s. 9d. per ton: this vein has a dip of 1 in 6 south-east. At 199 ft., 9 ft. wide; assay value, 1s. per ton. At 274 ft. the north section of Martha lode was intersected, the full width being about 6 ft. and average assay value £1 14s. 9d. per ton. Driving east and west was commenced on this, and a total of 107 ft. was driven by the end of the year. The average assay value for this distance was about £1 10s. per ton, and average width about 8 ft.

No. 13 Level (1,578½ ft. below collar of No. 4 shaft).—Martha lode east of No. 4 shaft crosscut: Driving east on this was continued to 609½ ft. The lode was crosscut at different points, the widths being as follows: At 400 ft., 87 ft. wide, of which 50 ft. is payable; at 500 ft., 73 ft. wide, containing some payable quartz; at 600 ft., 53 ft. wide.

North section of Martha lode west: At a point 358 ft. west, and at 10 ft. in Foster's south-east crosscut, a section of the Martha lode, 28 ft. wide, was intersected. The assay value is low.

Dreadnought west crosscut, commencing at 218 ft. in No. 4 shaft, north crosscut, was driven 166 ft. The object of this crosscut is to intersect the Edward lode at Trout winze.

No. 12 Level (1,447½ ft. below collar of No. 4 shaft).—Martha lode, north section: At 460 ft. west a crosscut was driven 37 ft. south-east. The first 22 ft. is a mixture of low-grade quartz and country; the next 10 ft. is quartz, assaying £1 5s. per ton; and the last 5 ft. quartz and country, assaying 9s. 3d. per ton. A total of 82 ft. has been driven east and west in the payable section. At 52 ft. west a crosscut proved the full width to be 27 ft., of which 10 ft. is payable.

Royal lode: The drive east on this was advanced 71 ft., making a total of 239½ ft. No payable ore was met, and driving was suspended.

Edward lode south of Trout crosscut: The drive was extended to 188 ft. in low-grade quartz. A crosscut at 161 ft. proved 33 ft. of reef, the assay value being low. Trout winze, situated at 81 ft. in Trout crosscut, was sunk 107½ ft. A crosscut at 91 ft. deep showed the full width of reef to be 60 ft., of which about 30 ft. is payable.

No. 11 Level (1,301 ft. below collar of No. 5 shaft).—Edward lode: Salmon winze was sunk to 90½ ft. A crosscut at this depth proved the full width of reef to be 23 ft., the value being low.

Salmon west crosscut: On the 12 in. vein at 249 ft. 16½ ft. was driven north and south: the value was low, and further work was stopped.

No. 10 Level (1,152 ft. below collar of No. 5 shaft).—Edward lode: The south drive was advanced to 1,700 ft. from No. 2 shaft. At 1,447 ft. a fault displaced the lode a few feet to the east. At 1,573 ft. a cross-lode 14 ft. wide again displaces the lode to the east. This cross-lode was followed to 90 ft. south-west, where work was suspended. A crosscut to the east was then commenced from the cross-lode with the object of locating the main Edward, and after driving 57 ft. the lode was intersected, the width being 10 ft., 5 ft. of which assayed £1 11s. per ton. Driving south has been continued on this. The full width at the face is about 3 ft.; the value is low.

No. 9 Level (1,004 ft. from collar of No. 5 shaft).—Edward lode: Work in the south face was resumed. A distance of 467 ft. was driven, making the total 1,149 ft. Payable ore came in at about 860 ft. and continued to the face. Several crosscuts were driven across the lode, the widths ranging from 13½ ft. to 22½ ft., all of good-grade ore.

No. 8 Level (852 ft. below collar of No. 5 shaft).—Edward lode: After driving 181 ft. from Scorpion crosscut on the south branch of Royal lode the junction of the Edward lode was found. Driving was then continued on this to 182 ft. The width of the reef varied from 18 in. to 5 ft., and the value is low.

No. 7 Level.—Harman north-west crosscut, situated 45 ft. east of Jove crosscut: This was driven 113½ ft. to prospect for the north lode. A carbonaceous seam 1 ft. wide was intersected at 26 ft., and from this point to the face the country is not favourable. The crosscut was driven considerably beyond the point where the north lode should be, but it is possible the reef may be found farther eastward beyond the disturbed country.

No. 6 Level.—North lode: This branches off the north branch of Martha lode at 154 ft. east of No. 6 shaft, and has been followed north-east for 172½ ft. The average width of quartz is about 5 ft., and the grade is good.

Shafts: No sinking was done. Repairs to the upper part of No. 6 shaft were effected during the latter part of the year. From the collar of shaft to 140 ft. down the shaft was straightened and the timbers renewed. Sinking in the main shaft below No. 14 level has been resumed, and good progress is being made.

The total tonnage crushed amounted to 201,430 tons (dry weight) of 2,000 lb. per ton, which yielded bullion to the value of £322,830 0s. 6d., being increases of 20,338 tons and £64,611 1s. 11d. respectively compared with the previous year.

The ore was obtained in the following proportions from the reefs worked during the year: Martha, 60,158 tons; Royal, 30,541 tons; Edward, 28,468 tons; Empire, 22,521 tons; Alexandra, 9,736 tons; Dreadnought, 9,356 tons; Jellicoe, 8,335 tons; North branch Martha, 7,878 tons; No 2 Reef, 6,891 tons; North section Empire, 6,832 tons; Albert, 2,499 tons; Bell, 2,331 tons; South branch Welcome, 1,597 tons; Regina, 1,475 tons; Welcome, 1,410 tons; North, 813 tons; South branch Martha, 424 tons; Mary, 164 tons; South branch Dreadnought, 1 ton: total, 201,430 tons.

Waihi Grand Junction Gold-mining Company (A. J. Walker, Mine-manager).—No. 10 Level (at 1,540 ft. below the surface).—Empire Lode: The east drive was advanced 245 ft.; total, 359½ ft. Assays from 174 ft. east to 276 ft. east average £1 7s. 8d. for a width of 65 in. The balance of the driving done exposes low-grade ore with scattered samples of higher value.

The foot-wall drive east started at 170 ft. from the shaft and advanced 102 ft. At 83 ft. east a crosscut was driven 5 ft. to the north and holed into the main east drive. Assays from 43 ft. to 74 ft. east average £1 14s. 2d. for a width of 50 in. The balance of the drive is low-grade.

The west drive was advanced 345 ft.—total, 461 ft.—and was stopped, being close to the western boundary. Assays from 200 ft. to 220 ft. west average £1 11s. 3d. for a width of 68 in. The balance of the assays are low, except for isolated ones of higher value.

The north drive at 27 ft. west of the south-east crosscut was driven 26 ft. into the north wall of the Empire lode following a band of quartz from the main drive. Nothing of value was discovered, and the work was stopped.

The 290 ft. crosscut: At 290 ft. west on the west drive a crosscut to the north was started to cut the Martha lode which was intersected on the 325 ft. crosscut on No. 9 level. This crosscut advanced 41 ft. through country rock.

The foot-wall drive west was started under No. 7 rise to locate a band of material intersected at the south end of the 55 ft. crosscut west. Nothing of value was found till the drive holed into the 55 ft. crosscut. From the south-east crosscut the drive was advanced 117 ft., when it holed into the main west drive at No. 6 rise. Assays from 50 ft. to 98 ft. average £2 1s. 1d. for a width of 74 in.

No. 9 Level (1,440 ft.).—Martha lode cut in 325 ft. crosscut west on Empire lode.

The drive west advanced 75½ ft.—total, 81 ft.—and was stopped, being close to the western boundary. Assays from 5 ft. to 75 ft. west average 9s. 6d. for a width of 64 in.; walls not exposed.

The 80 ft. crosscut west was driven through the lode against the west boundary. The width of the lode is 45 ft., and the average value is 8s. 3d. Both walls are exposed.

The drive east advanced 36½ ft.; total, 53½ ft. Assays from 17 ft. east to 50 ft. east average 8s. 11d. for a width of 74 in.

The above values have been checked by bulk samples.

Empire lode east: The 200 ft. crosscut east was advanced 49½ ft.; total, 102 ft. This crosscut was driven to locate the Empire hanging-wall lode east (cut 52 ft. north in the 210 ft. crosscut east on the Empire lode No. 8 level). The crosscut passed through a low-grade reef formation, much shattered and vuggy for its whole length.

The hanging-wall drive at 10 ft. north of the Empire main drive was driven 27 ft. east and 32½ ft. west from the 200 ft. crosscut. On the east end only 2 ft. of cross-cutting was necessary to hole into the main drive. On the west end a crosscut 8 ft. long through country rock was driven to connect. Assays from 80 ft. west to 20 ft. east of the 200 ft. crosscut gave an average value of 12s. 7d. over a width of 57 in. At 33 ft. north of the main drive 5 ft. of driving was done to the eastward of the 200 ft. crosscut on some promising mineral; it proved to be only a patch, which cut out, and no further work was done.

No. 8 Level (1,320 ft.).—An intermediate level at 46 ft. above No. 8 level was started from the above rise. The drive east advanced 7½ ft., and holed into the filling of the Nos. 5 and 6 rise stopes on the Empire foot-wall lode.

The drive west advanced 97½ ft.; total, 97½ ft. The following average values were obtained: From 5 ft. to 26 ft. west, £3 3s. 2d.; width, 48 in.; from 28½ ft. to 43½ ft. west, 13s. 9d.; width, 28 in.; from 51 ft. to 80 ft. west, £1 10s. 3d.; width, 47 in. From 28 ft. to 43 ft. west the drive followed the edge of the filling of the Nos. 4 and 5 rise stopes of the Empire foot-wall lode: this is probably the reason of the narrow width and low values.

Empire hanging-wall lode east: Drive west from the west end of the No. 1 rise stopes advanced 119½ ft.; total, 119½ ft. Assays from 5 ft. west to 96 ft. west average £1 2s. 4d. for a width of 53 in. An intermediate drive, 68 ft. above the level from the west end of the same stope, was driven 35 ft. west; assays averaging £2 6s. 3d. in value over 56 in. in width were obtained. Stoping is now being done on this block of ore.

Empire foot-wall lode west: No. 2 winze was sunk 66½ ft. at the intersection of the 415 ft. crosscut, Empire lode west. This winze had to be sunk in the foot-wall country to avoid interference with trucking from the stope overhead, and the lode was first sampled at 47 ft. below the level. Assays from 47 ft. to 65 ft. gave an average value of 13s. 1d. and width of 17 in. A crosscut at 40 ft. down was driven 23½ ft. to the north. The lode matter exposed was ill-defined and composed of a mixture of quartz stringers and country rock. Samples of the first 16 ft. average 3s. 1d.

No. 6 Level (1,082 ft.).—Mary lode: The drive east advanced 124 ft.—total, 1,233 ft.—from the north crosscut. The lode averages 42 in. wide, and is of low value.

Martha lode: Exploratory work to locate the north section of the Martha lode discovered on No. 5 level was undertaken on this level. Some side stripping and 47 ft. of driving was done in the north crosscut from the east end of the Dominion lode shrinkage stopes.

No. 5 Level (944 ft.).—Martha lode: The foot-wall drive east of the north-west crosscut advanced 50½ ft.—total, 50½ ft.—and holed into the main east drive. Values were low.

A foot-wall drive was advanced 176 ft.—total, 176 ft.—east of the 160 ft. crosscut east on the main drive. Assays: From the 160 ft. crosscut to 93 ft. east, average value £1 3s. for a width of 146 in.; from 93 ft. to 157 ft. east, average value £1 6s. 6d. for a width of 153 in.; from 157 ft. to 173 ft. east, average value £1 6s. 8d. for a width of 110 in. This drive proved to be on a north section of the Martha lode, while the original drive had been on the south section, and the 245 ft. and 350 ft. crosscuts from the latter were not driven far enough to expose the north section.

No. 2 Level (500 ft.).—Martha lode: At 150 ft. west on the Martha lode a prospecting-crosscut was driven 26½ ft. —total, 30½ ft.—to the north to explore the foot-wall country near the western boundary: 111 in. of low-grade quartz was passed through, being part of the Martha lode. The balance of the crosscut was in solid country rock with no signs of reef showing. No. 1 shaft was sunk 97 ft.—total, 1,670 ft.—below the surface, through country rock. No. 2 chamber, at 1,639 ft. below the surface and 99 ft. below No. 10 level, was excavated.

Stoping: The following shows the sources of ore sent to the mill during the current period:—

Lode.	No. 3 Level.	No. 4 Level.	No. 5 Level.	No. 6 Level.	No. 8 Level.	No. 9 Level.	No. 10 Level.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Mary	3,853	9,165	15,884	7,272	..	..	..	36,174
Martha	..	939	3,226	74	..	242	..	4,481
Royal	..	..	..	679	..	..	..	679
Republic	..	..	..	77	..	..	..	77
Empire	..	..	..	..	15,614	12,322	3,745	31,681
Dominion	..	..	..	915	..	..	..	915
Totals ..	3,853	10,104	19,110	9,017	15,614	12,564	3,745	74,007

Development work produced 6,457 tons of ore, making the total output of the mine 80,464 tons.

Rising Sun Gold-mining Company, Owharoa (A. McGruer, Manager).—At a depth of 90 ft. in the main shaft below No. 3 level a chamber was cut out, a crosscut driven, and No. 1 reef intersected. This reef varied from 8 in. to 12 in. in width and was low grade. Owing to lack of sufficient power to work the pumps to deal with the incoming water work was suspended. At a point 220 ft. north of the shaft a winze was sunk to a depth of 87 ft. on the lode. The first 50 ft. carried payable ore over a width of 15 in.; the remaining distance proved the lode to be small and of low grade. Stoping operations are now in progress at various points on No. 1 reef above No. 3 level. 46 tons were treated for bullion, valued at £244 9s.

New Waitekauri Syndicate, Waitekauri.—The low level was extended during the year a farther distance of 180 ft. Two small lodes were intersected, but values were low.

Great Northern Waihi Gold-mining Company, Wharekirauponga (J. R. Paepker, Mine-manager).—Three men employed. Work in this mine during the year has been confined to surface prospecting, without discovering anything of importance.

New Zealand Crown Mines (Limited), Karangahake (G. N. McGruer).—Eight men employed. The Rose low-level crosscut was extended 284 ft., making the total distance 608 ft. At 245 ft. the crosscut passed through what is known as Sheehan's leader—width, 1 ft.; values low. At 402 ft. a reef formation 14 ft. in width was passed through; assay value, 9s. per ton. At 607 ft. a leader 1 ft. in width was intersected; average value, 14s. per ton.

Imperial Claim, Karangahake (E. D. White and party).—Half a ton of ore treated produced bullion valued at £58 11s. 6d.

Woodstock, Karangahake (Ratcliff and party).—Operations by this party have been confined chiefly to prospecting in No. 5 Woodstock level: 93 tons of ore treated yielded bullion valued at £129 12s. 9d.

New Talisman Gold-mining Company, Karangahake (R. M. Aitken, Owner).—Area, 62 acres, which includes the richest portion of the late Talisman Gold-mining Company. During the year an effort was made to raise further capital to drive on a large reef formation exposed on the tramway, but, owing to the depressed state of mining, Mr. Aitken was unable to raise the capital required for this purpose.

Ohinemuri Gold and Silver Mines, Maratoto (J. O'Sullivan, Manager).—During the year the drive on the Camoola lode was driven for 308 ft. 6 in. south of the low-level crosscut, making the total distance 661 ft. Two crosscuts through the reef proved it to be 73 ft. in width; values low. No. 4 crosscut is now being extended with the object of proving whether other ore-bodies exist in the foot-wall of the Camoola lode.

Majestic Gold-mining Company, Maratoto (J. W. Smith, Manager).—This was formerly known as the "United Gold-mining Company." Operations by the Majestic Company were commenced on the 8th January, 1923, by extending the drive north on the Maratoto lode at No. 7 level. This has been driven a total distance of approximately 2,000 ft. on the Maratoto reef, which averages about 8 ft. in width. For a distance of 1,190 ft. this reef was sampled by me, and the average assay value proved to be 11s. 1d. per ton. The Maratoto lode is one of the most consistent in the Hauraki Goldfields. At No. 7 level the ore shows distinct evidence that leaching has taken place. In order to prove whether the values will improve at a greater depth it is proposed to extend a drive north and south on this lode from what is known as Adam's level in McBrinn's Creek, which is 117 ft. below No. 7 level. On the foot-wall portion of this reef in Adam's level there is a small band of sulphide ore, which the management seem confident indicates that this level is below the leached zone. A suction plant, air-compressor, and rock-drills have been purchased with the object of vigorously pushing on with the development of the Maratoto reef.

New Waiotahi Gold-mining Company, Thames (H. Brownlee, Manager).—Work in this mine is still confined to prospecting the Cure reef and other veins from the lowest level attainable above high-water mark. Five men were employed. Twenty-two loads of quartz and 30 lb. picked stone treated yielded 102 oz. 17 dwt. of gold, valued at £274 17s. 1d.

Alburnia Gold-mining Company, Thames (Thomas Gillan, Manager).—Operations were recently resumed in this mine with the object of testing a block of ground said to have been left in the early days of this goldfield on Dixon's reef from the Clune's level. Two men were employed.

Nonpareil Gold-mining Company, Thames.—Two men were employed. The work in progress in this mine consists of driving on the Cambria reef, which shows a width of 12 ft. Mineral indications were favourable, but no gold has been seen.

Caledonia-Kuranui Moanataiari Gold-mining Company, Thames (S. G. Baker, Manager).—The crosscut behind the main slide was extended during the year a farther distance of 720 ft., making the total distance 1,494 ft. A number of reefs were intersected, ranging in width from a few inches up to 10 ft., but, on account of lack of ventilation, very little work was done on any of the reefs intersected. Early this year a connection was made with Kidd's surface level, 230 ft. vertical above the tunnel level, which provides adequate ventilation, and will enable the Waiotahi, Cambria, No. 9, and other reefs passed through in the crosscut to be further tested. A little gold was seen in a foot-wall dropper from the Cambria reef in the winze sunk from Kidd's level. The work of proving the reefs referred to is now in progress.

New Sylvia, Tararu Creek, Thames (J. H. Benny, Manager).—Ten men employed. During the year the work in this mine has been confined to driving, rising, and stoping on the west branch of the Norfolk reef. The ore won is put through a washer, and the mullock picked out before sending to the mill. 1,420 tons treated yielded bullion valued at £1,381 14s. 2d.

Mount Zeehan Consolidated, Thames (H. F. Shepherd, Manager).—Six men employed. During the year work was confined to extending No. 5 level, 681 ft. above sea-level, to intersect other reefs known to exist on the surface. The first lode cut varied from 9 in. to 2 ft. in width, and at the point of intersection 4 lb. or 5 lb. of fair picked stone was obtained. The next lode proved to be 6 in. in width, crossing the level at an angle; this also showed strong blotches of gold through its length in the level. 20 ft. farther ahead another reef, 15 in. in width, running at the same angle, was met with carrying silver sulphides and gold along with copper-pyrites. Erection of a 30 horse-power suction-gas plant is well under way, also an air-compressor for working rock-drills, a Ross mill for ore-treatment, and a sawmill for cutting the necessary timber.

Golden Hills, Tairua.—Work in this mine was confined to stoping and surface prospecting: 34 tons treated yielded bullion valued at £90 16s. 9d.

Four-in-hand Mine, Coromandel (W. J. Paterson, Manager).—Eight men employed. This claim was worked by a small syndicate until the 9th July, 1923, when it was taken over by a new company, which was registered as the "Four-in-Hand Limited." Since the new company commenced operations a considerable amount of prospecting-work has been done in the Tainui section. The reef varies from a few inches up to 2 ft. in thickness. A few pounds of picked stone has been obtained. It is also proposed to test the Four-in-Hand reef above No. 5 level. In order to minimize the cost of transport between the mine and battery a ground and aerial tramway is under construction. 2 tons 17 lb. of picked stone treated yielded gold valued at £74 3s. 7d.

Try Again (Success) Mine, Coromandel.—Mr. Samuel James, owner of this mine, has had two men surface prospecting, but the results so far have proved disappointing.

Sterling Syndicate Dredging Claim, Coromandel.—This claim is worked by Messrs. J. F. Brunton and Thomas Maude. A small experimental dredge was put on the property with the object of proving that it was possible to disintegrate the pug and mud and save the concentrates. Being satisfied with the results of the test, the owners discontinued operations pending arrangements for further capital in order to put on a larger dredge. Only samples of concentrates of wash were obtained, from which the gold has not been separated.

Owera Gold-mining Company (Limited).—Two men have been employed cleaning out and repairing the low level, also the winze between Nos. 1 and 2 levels, in order to provide ventilation. It is proposed to commence stoping at an early date.

Muir's Gold-reefs (Limited) Te Puke (William MacConachie, Mine-manager).—During the year just over 15,000 tons of new payable ore were developed. At the end of the year the ore reserve was approximately 2,000 tons, which, though more than payable if it could be mined at the rate of 3,000 tons per month, would yield little or no profit when mined at the slower rate at which it would now have to be broken out in consequence of the restricted number of working-places from which it could be attacked. Under these circumstances the directors decided to stop all mining with the exception of shaft-sinking, and to close down the battery pending the development of payable ore in the deep levels of the mine, which are to be opened up from the shaft. No. 3 winze was sunk to a depth of 146 ft. below No. 3 level on Muir's reef. Water-level was reached at 142 ft. down, but this has since receded about 3 ft. No. 4 level was started from the winze at 140 ft. below No. 3 level, and driven 109 ft. south and 51 ft. north of the winze. The reef is very much wider at No. 4 level than at No. 3, four cross-cuts at the former level showing an average width of 13 ft. Apparently the true ground-water level has not been yet reached, as the reef at the bottom of the winze and at No. 4 level is very much leached, with the exception of a band of solid stone on the east wall which carries values. In one crosscut this band is 18 in. wide and assays £2 2s. 5d. per ton, and in many other places in the drive its value exceeds £1. In driving No. 4 level from the winze fragments of mineralized quartz and country rock were met with, which would seem to indicate that at no great farther depth the change from oxidized to mineralized stone will be experienced. The main shaft was sunk 303½ ft. during the year, making a total depth of 339½ ft. From 100 ft. to 190 ft. the shaft advanced through a soft sandy formation saturated with water. This caused much trouble and delay, as the heavy pressure made it necessary to replace some of the shaft-timbers and also to adopt a closer system of timbering. From 190 ft. down the sinking has been through a good firm class of country rock containing a number of small quartz veins. Latterly, highly mineralized rock has been occasionally passed through.

Quicksilver-mining.

New Zealand Quicksilver-mines, Puhipuhi.—No work has been done in this mine during the year.

Mount Mitchell Mercury-mine, Whangarei.—Operations during the year have been confined to prospecting. A surface trench, 400 ft. long to a depth of 4 ft., has been cut through this deposit and disclosed five different ore-shoots; from picked samples the highest value obtained was 5·8 per cent. mercury. A few pounds of mercury was produced by retorting for a special purpose. The Dominion Analyst reported this mercury to be free from impurities and well suited for dental purposes.

Rising Sun, Puhipuhi.—No work has been done in this mine during the year.

Accidents.

FATAL.

I am pleased to report that no fatal accident has occurred in the district under my supervision during the year.

SERIOUS.

Waihi Mine.—12th January, 1923: A miner named David McClure received serious injuries to his spine by falling down a pass. 28th June, 1923: A serious blasting accident occurred in the drive on the Martha lode above No. 9 level, whereby a miner named F. G. McLean lost the sight of both eyes.

Waihi Grand Junction Mine.—10th January, 1923: A serious accident occurred in the Waihi Grand Junction Company's battery to a man named Edward Pendergrast, who, whilst engaged oiling the bearings of a counter-shaft, got caught in the belting and, besides other injuries, had a portion of his finger torn off. 10th March, 1923: James Dunlop, working in a stope, received serious injuries to his right knee and severe cuts on both legs, head, and body, due to a fall of calcite.

Oil-wells.

Taranaki Oil-wells.—No work has been done during the year; oil produced was 120 barrels.

Paritutu Oil Company (Limited).—The depth of the well is approximately 6,000 ft. The Paritutu Company has withdrawn most of the casing below the 2,000 ft. level, and it is probable, therefore, that the well below the 2,000 ft. level has caved in. This well has been running fairly consistently during the year, but no record has been kept of the exact quantity produced; it is estimated, however, that the quantity which flowed from the well during the year would not be less than 36 barrels.

Waipatiki Wells.—No drilling has been done in this well during the year, and all efforts to free the obstruction failed.

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

Quartz-mining.

MARLBOROUGH DISTRICT.

Dominion Consolidated Mining and Development Company (Limited).—This company has been idle throughout the year.

NELSON AND LYELL DISTRICTS.

No quartz-mining was done in these districts for the year.

REEFTON DISTRICT.

Blackwater Mine.—During the year the average number of men employed amounted to 141. The development-work carried out consisted of 1,665½ ft. of driving, rising, and winzing, of which 921½ ft. was on reef averaging 14·28 dwt. over a width of 30½ in. The details of the work are as follows: Low level, extended branch drive, 86½ ft.; No. 5 level extended 41½ ft., of which 33 ft. were on reef; No. 6 level south extended 26 ft., off reef; No. 7 level north, 30½ ft., off reef; No. 7 level south, 166 ft., off reef; No. 7 level rise at 1,515 ft. south, 40½ ft., off reef; No. 8 level north, 180½ ft., of which 164½ ft. were on reef; No. 9 level north, 159½ ft., of which 139½ ft. were on reef; No. 9 level, rise at 520 ft. south, 19½ ft., on reef; No. 9 level north, rise at 20 ft. north, 79 ft., of which 48 ft. were on reef; No. 9 level, rise at 820 ft. north, 84 ft., of which 28½ ft. were on reef; No. 9 level, winze at 200 ft. north, 106½ ft., on reef; No. 10 level north, 276½ ft., of which 164½ ft. were on reef; No. 10 level north (south branch), 49½ ft., 39½ ft. on reef; No. 10 level north (intermediate from rise 220 ft. north), 28 ft., on reef; No. 10 level south, 9 ft., off reef; No. 10 level, rise at 200 ft. north, 31½ ft., on reef; No. 10 level, rise at 220 ft. north, 49 ft., on reef. Winzes were also sunk from low level and No. 8 level, at 1,380 ft. south in the former and 850 ft. north in the latter, to 109½ ft. and 29 ft. respectively, all of which was on reef. Some 63¼ ft. of crosscutting was also done. For the year, 39,730 tons of quartz were crushed, being approximately the same quantity as during 1922. The quantity of gold won amounted to 19,295 oz. 16 dwt., which was 182 oz. less than during the previous year; but the amount realized for it, £75,438 0s. 6d., shows a slight increase on the 1922 figures. Shortage of suitable labour greatly handicapped progress.

North Blackwater Mine.—No active mining-work was done on this claim during the year, the company not having completed the rearrangement of its financial affairs.

Murray Creek Mine.—This mine has also been idle the whole year, but funds have been raised to give it another trial, and a resumption of work is expected at the New Year.

New Big River Mine.—An average of thirty-nine men were employed in mine and treatment plant. 4,324 tons of quartz were crushed, an increase of 358 tons on last year. The recovery was 3,804 oz. of gold, valued at £15,609 7s. 10d., a decrease in quantity and value respectively of 439 oz. and £2,780. The stone put through was thus evidently of lower grade than previously. The main development during the year was in the extension of the new level, No. 12, a farther 878 ft., making 1,028 ft. in all. At 866 ft. from the shaft the reef was entered, and was driven on for 140 ft.; it was, however, rather small and broken, but should improve in size a little farther ahead.

New Keep-it-Dark Mine.—A tribute party has worked continuously at this mine throughout the year, taking out a block of quartz left over No. 1 level. Sixteen men were employed. Some 2,549 tons of quartz was treated, which yielded 1,306 oz. 17 dwt. gold, valued at £5,068. The party, I understand, has done fairly well out of its tribute, but the amount of stone left is strictly limited, and work cannot be continued for more than a few months longer.

North Big River Mine.—A considerable amount of work in the way of winzing, rising, driving, and crosscutting was carried out with a view to tracing downwards a small reef said to carry gold in No. 1 intermediate level. So far, however, this reef has not been traced below the level mentioned.

New Millerton Mine.—This mine was idle during the early part of the year, but has since been worked in a small way with from four to six men. Stoping was carried out in Nos. 1 and 2 levels, and 285 tons of quartz were mined and treated for 89 oz. 13 dwt. gold, valued at £365 1s. 6d. No cyaniding was done, the sands being stacked for future treatment by this process.

New Discovery Mine.—This property was idle since the early part of the year, but preparations are now being made for a resumption of work.

Ready Bullion Mine.—This has been idle the entire year.

Progress Mine.—The only work carried out was a little further retreatment of tailings, from which a recovery of 477 oz. 16 dwt. gold, valued at £1,422, was made.

Wealth of Nations Mine.—Work has gone on steadily throughout the year, an average of thirty men being employed. The main shaft was continued down a further 135 ft., and a new level, No. 13 (2,270 ft. from collar of shaft), extended out to the south a distance of about 400 ft. It is expected very shortly to cut the shoot of rich stone which was sunk on for 80 ft. from No. 12 level. A considerable amount of further repairs have been effected also to the old levels. In September crushing was started, the stone treated coming from the old stopes over No. 11 level north, and No. 12 level south. To the end of the year 984 tons of quartz were treated, which yielded 316 oz. 12 dwt., valued at £1,240. The average value of the stone treated was approximately 6½ dwt. This low value was, however, attributable to some extent to the fact that much of the material crushed came from repair work, and was consequently not as clean as it would have been had it come directly from stoping operations.

Scotia Mine.—This mine is also known as the "Justification." During the year work was resumed by a small syndicate. The machinery was overhauled and a start made to unwater the shaft, a task which had not been completed up to the end of the year.

Alexander River Reefs.—Prospecting-work has been carried on vigorously throughout the whole year, from four to six men being employed. Most of the work has been carried out in the vicinity of the Bull reef outcrop, and upwards of 500 ft. of driving and crosscutting was done in the endeavour to locate the downward continuation of the reef exposed in this outcrop. Down to the lowest adit put in (about 500 ft. below outcrop) the country was found to be shattered, and no sign of the reef was seen. Towards the latter end of the year, however, prospecting in another direction was more successful, a strong reef apparently carrying good gold-values having been located about 20 chains north-east of the Bull outcrop. This new find has now been sunk on for 120 ft., and, on the surface, trenches have picked it up for a length of about 3 chains. Wherever it was cut it carries gold. The prospectors now purpose putting a small battery on the ground before doing any more prospecting, and have already started the construction of a water-race with which to generate electric power for the driving of the battery. The locality of the reefs is very difficult of access, and a new track will need to be made for about four miles to admit of the battery being got in. The party have applied for assistance from the Department for the making of a track from the head of Brown's Creek. A good deal of assistance by way of subsidy in prospecting was given the party during the year by the Mines Department.

STILLWATER DISTRICT.

Victory Mine.—Throughout the year a pair of men were employed continuously in an endeavour to locate in the low level the gold-bearing reef which was touched by a borehole put up from this level. After driving, however, about 40 ft. in the direction in which this reef was expected to be picked up a vertical fault was met with and no sign of reef was seen. An effort was then made to pick up what is known as Curtis Brothers' No. 2 adit, with a view to sinking on the reef from it, but, after getting this adit in order for 40 ft. in, lack of funds compelled a temporary stoppage of operations.

GENERAL REMARKS.

The Wealth of Nations Mine should reach a position when larger output and better returns may be looked for, and the Alexander River Mine will probably enter the list of gold-producers. The discovery at the New Millerton Mine of a small reef on the south side of the Snowy River, which is said to carry fair values, may also better the returns from that mine, and the opening-up of stoping operations at the New Big River Mine on the new level should also improve the position in that property. Mining in the Reefton district is, however, being badly hampered for want of a supply of good miners, and if the various mines mentioned open up as is anticipated a good many more men will be required.

I am pleased to report that during the past year, as during the previous one, there have been no fatalities at any of the mines or quarries in the district, and only two accidents of a serious nature were reported. In one of these a miner at the Big River Mine had a leg fractured by a fall of stone, and in the other a shift-boss at the Blackwater Mine lost an eye through being struck by flying debris from a blast.

Dredges.

The Rimu Gold-dredging Company's dredge at Rimu Flat, Hokitika, continues the successful work carried out by it during 1922. This year it turned over 1,577,444 cubic yards of gravel for a return of 12,852 oz. gold, for which £56,189 15s. 4d. was realized. This meant an increase in turnover for the year of nearly half a million cubic yards of material as compared with 1922. The amount of gold recovered showed an increase of 2,689 oz. of gold, and the increase in value recovered was £11,388. The value of the ground treated was 8·5d. per cubic yard.

The Awatuna dredge, after being idle for some months, was altered to some extent, a larger area of tables being put in, also a grizzly for the removal of large stones, and once more put into commission towards the end of the year, since when it has recovered 626 oz. gold, valued at £2,424. With the improvements effected it is hoped that the dredge will now be able to work profitably.

Alluvial Mining.

This branch of mining has moved backward again during the year, there being fifty-two less men employed at it, and the recovery and values of gold decreasing by 641 oz. and £2,690 respectively.

Howard Diggings.—Returns show that only nine men were employed, recovering 283 oz. of gold, worth £404.

Murchison.—Throughout this district ten men were employed, recovering 83 oz. of gold, valued at £356.

Charleston and Brighton.—Powell's Claim at Brown's Terrace was the only producing one worked, 96 oz. of gold, worth £384, being won.

Fairdown.—A number of sea-beach claims yielded gold valued at £60.

Kumara.—On the Kumara, Greenstone, Callaghan's, and Stafford fields sixty men were employed, recovering 1,174 oz. gold, valued at £4,781. The principal producers were Linklater's Sluicing Company (Stafford), 59 oz., valued at £239; Havill Bros. (Callaghan's), 335 oz., valued at £1,315; Hohonu Gold-sluicing Company (Greenstone), 140 oz., valued at £1,254; Stubbs and Steel (Greenstone), 307 oz., valued at £1,230; Blackmum Bros. (Stafford), 166 oz., valued at £654; and McLachlan's (Payne's Gully), 319 oz., valued at £1,254.

Hokitika.—In this district 215 oz. gold was recovered, valued at £869. Twelve men were employed.

Reefton.—In this district only ten men were employed, mining 112 oz., valued at £496.

Mining other than Gold.

Iron.—At the Onakaka Ironworks no actual smelting was done throughout the year. The burning-down of portion of the plant during the year necessitated considerable rebuilding operations. Apart from that work the company erected a wharf at Onakaka, about 1,000 ft. in length, for convenience in landing coke and shipping its products. The coke-ovens were also completed, and a start made to produce coke from coal brought from Greymouth. Active smelting is expected to be resumed early in the coming year.

Prospecting for Petroleum.—The Kotuku Petroleum-Prospecting Syndicate put down a third borehole to a depth of 1,230 ft. without obtaining any satisfactory result. Subsequently an oil geologist brought by the company from America examined the whole area, and, as his report was unfavourable, the syndicate abandoned further effort.

SOUTHERN INSPECTION DISTRICT (Mr. A. WHITLEY, Inspector of Mines).

Quartz and Alluvial Mining.

WAITAKI COUNTY.

Livingstone and Maerewhenua.—Eight men were employed at alluvial mining in these localities. The gold won amounted to 279 oz., valued at £1,088. T. and J. W. Cooper were the principal producers, with 174 oz., valued at £680.

WAIHEMO COUNTY.

Golden Point Mine (Macrae's).—Operations were confined to stoping a block of ore on the Home reef at the intermediate level, from which 1,880 tons were mined, and treated for a return of gold valued at £2,068 11s. 11d. 30 tons of scheelite-ore were crushed and concentrated, producing 3 tons of scheelite concentrates, valued at £98.

H. Fraser produced 2 tons 9 cwt. of scheelite from 13 tons of ore, which was mined from shallow trenches on small quartz veins.

MANIOTOTO COUNTY.

Naseby.—The returns from this district show that twenty-one men were engaged in alluvial mining, and that gold valued at £3,821 was won. The principal producers were B. G. Brown (£807) and W. George (£730).

Kyeburn Diggings.—Three sluicing claims were in operation. The gold won amounted to 131 oz., valued at £502. Five men were employed.

Cambrian.—An increase in the gold returns from this locality is recorded. The production for the year amounted to 549 oz., valued at £2,006, as against 135 oz., valued at £551, for 1922. The increased production has resulted chiefly from the Vinegar Hill Sluicing Company's operations on the lead of quartz drift from which Morgan Bros. obtained highly payable returns in the past.

St. Bathan's.—Two sluicing and elevating claims, employing eight men, were in operation. The Scandinavian Water-race Company produced 400 oz. gold, valued at £1,635, and the United M. and E. Water-race Company 120 oz., valued at £464. The Kildare lead in the Scandinavian Claim has been worked to a vertical depth of 130 ft., which is the limit attainable with the available water-supply.

Patearoa.—Two claims were worked during the year. The gold won amounted to 165 oz., valued at £644.

Hyde.—Symes and Peak repaired some old mining races and installed an elevating plant to work the deep ground in this old field. Their operations have been hampered by a scarcity of water.

TUAPEKA COUNTY.

Lawrence Sluicing Company (Blue Spur).—The cement deposit in this company's claim continues to yield payable returns. The gold produced for the year was valued at £4,681, an increase of £1,975 on the previous year's output. Dividends amounting to £750 were paid.

Gabriel's Gully Sluicing Company (Blue Spur).—A falling-off is noticeable in the returns of gold by this company, due to the low grade and hard nature of the cement treated during the year. The gold won amounted to 641 oz., valued at £2,659. Fourteen men were employed.

Golden Crescent Sluicing Company (Weatherstone).—The auriferous cement in this company's claim is dipping steeply under Weatherstone Flat, and owing to the increasing depth of overburden is becoming unprofitable to work by hydraulic elevating. The yield of gold for the year amounted to 219 oz., valued at £904. Six men were employed.

Sailors' Gully Sluicing Company (Waitahuna).—Sluicing and elevating have been steadily carried on during the year. A shallow deposit of clay and gravel is being worked. Nine men were employed, and 568 oz. gold, valued at £2,393, was produced.

Havelock Sluicing Company (Waitahuna).—This company is working shallow ground between Waitahuna and Forsyth. Five men were employed, and gold valued at £1,246 was produced during the year.

Waipori.—Returns from this district show that five claims, employing ten men, were in operation during the year. The yield of gold amounted to 800 oz., valued at £3,196. The principal producers were R. J. Cotton, 287 oz., valued at £1,151; Gare Bros., 187 oz., valued at £751; Dunedin City Corporation, 192 oz., valued at £757; and Russell Bros., 122 oz., valued at £500.

VINCENT COUNTY.

Nevis.—Six sluicing and elevating claims, employing twenty-six men, were in operation during the year. Graham and party's claim continues to give payable returns, producing 667 oz. gold, valued at £2,686. The yield from the field amounted to 1,220 oz., valued at £4,809. Soper and party's prospecting operations at Upper Nevis resulted in the discovery of a payable run of gold, which is probably an extension of the auriferous ground which has been worked farther down the valley.

Clutha River.—An area of 1,500 acres of river-bed between Lowburn and the Lindis River junction has been taken up by an Australian syndicate. One of the Government Keystone drills is being used for testing the area. If payable prospects are obtained it is intended to install a modern-type dredge of large capacity.

Old Man Range.—R. T. Symes mined and crushed 55 tons of quartz from the stopes on White's Reef, at the battery level in the Advance Mine, for a return of gold valued at £236. Hesson and party were prospecting for a reef on Coal Creek Spur. Loose gold is found in the clay and soil, and surface indications are favourable for the existence of a reef in the locality.

LAKE COUNTY.

Shotover River.—Seven small parties of miners were employed in the Shotover River and its branches during the year. The total yield of gold amounted to 340 oz., valued at £1,283.

Cochrane and Party (Moonlight Creek).—A tunnel tail-race is being driven to provide fall for tailings from the party's claim on the terrace on the west side of Moonlight Creek. Water for sluicing is brought on from Dead Horse Creek.

Kawarau River Mining Syndicate.—This syndicate purposes damming the Kawarau River at the outlet to Lake Wakatipu, and the Shotover River at Arthur's Point, and the branches, and thereby reduce flow of water in these rivers to a level which will allow their beds to be worked for alluvial gold. Licenses for three dams and sixteen special dredging and river claims have been applied for by the syndicate. The scheme, if successful, will provide employment for a large number of men during certain periods of the year, and result in an increased production of gold.

SOUTHLAND COUNTY.

Muddy Terrace Sluicing Company (Waikaia).—Work was carried on intermittently during the year by Hamer and party. Paddocks were taken out in Maori and Mathewson's Gullies, which yielded 39 oz. 13 dwt. gold, valued at £141 14s. The claims and plant have been purchased by Mr. A. E. Usherwood, who intends to work an area in Muddy Creek by sluicing and elevating.

Break-em-all Claim (Waikaia).—A company has been formed to work the deep ground in the claim by sinking and driving, and the necessary plant for pumping and haulage is being installed.

Nokomai Hydraulic Sluicing Company (Nokomai).—The company's Nos. 2 and 3 claims in Victoria Gully worked steadily throughout the year, resulting in returns of gold valued at £4,501. As these claims are almost worked out, two prospecting-areas of 100 acres each have been taken up at Paddy's Alley with the view of providing for future mining operations.

A. Copeland and party's claim in Victoria Gully, Nokomai, produced gold valued at £691. Three men were employed.

Athol.—D. McLister and A. Mutch secured profitable results for the year. Their operations were hampered by a scarcity of water for sluicing.

WALLACE COUNTY.

Round Hill Mining Company.—This company purchased the Ourawera Company's claim, water-races, and plant, and is opening up a block of ground on the boundary of the two claims, which should yield payable returns. Two elevators were in operation during the year, producing 1,085 oz. gold, valued at £4,593.

Orepuki and Pahia.—Four small parties were engaged in working blocks of ground which had been left by former miners. The total yield of gold amounted to 124 oz., valued at £492.

Dredge-mining.

Six gold-dredges were in commission during the year. Thirty-nine men were employed, and gold valued at £9,389 was produced.

The Rise and Shine Gold-dredging Company went into liquidation, and the dredge was sold to a Cromwell syndicate. This company, which was registered in 1900 with a capital of £10,000, produced gold valued at £211,000, and paid £53,700 in dividends.

The Rising Sun Gold-dredging Company was also wound up and the dredge dismantled.

Minerals other than Gold.

Scheelite.—A small quantity of the mineral was obtained from the quartz-mines at Macrae's, where it occurs with gold in the reefs. The total production amounted to 5 tons 9 cwt.

Phosphate Rock.—2,383 tons of phosphate rock, valued at £2,383, were produced at Clarendon and Milburn by the Ewing Phosphate Company.

Accidents.

No serious accident occurred at metal-mines or dredges in the Southern Inspection District during 1923.

ANNEXURE B.

SUMMARY OF REPORTS OF GOVERNMENT WATER-RACE MANAGERS.

WAIMEA–KUMARA WATER-RACES (Mr. JAMES ROCHFORD, Manager).

Waimea Water-race.

The cash received from sales of water from this race for the year ended 31st March, 1924, was £516 2s. 4d., and the expenditure on management, gauging, maintenance, and repairs amounted to £808 9s. 9d., showing a debit balance of £292 7s. 5d. on the year's transactions.

The average number of miners supplied with water during the year was 5·25, a decrease of 3·50 on that of the previous year; and the approximate quantity of gold obtained by them was 443 oz., valued at £1,738 15s. 6d., a decrease of £474 18s. 6d. on that of the previous year.

The sales of water amounted to £560 16s. 4d., a decrease of £309 16s. 5d. as compared with the previous year. The falling-off in the sales of water, although large, is more than accounted for by the fact that the Linklater Sluicing Syndicate only used water to the value of £188 14s. 2d., as against £723 16s. for the previous year—a decrease of £535 1s. 10d. Although the sales of water show the decrease previously mentioned, a redeeming feature of the position, however, is that the cash received shows a decided improvement, and this, coupled with a reduction in expenditure, makes the loss on the working of the race £239 16s. 10d. less than the previous year.

The cash received was £184 17s. 2d. greater than the previous year, and the expenditure showed a decrease of £54 19s. 8d.

Although the last three months of the year were exceptionally dry, there was an excellent supply of water, and the Waimea inverted siphon was running full all the year.

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, 1924, was £115, and the expenditure on management, gauging, maintenance, and repairs amounted to £484 4s. 8d., showing a debit balance of £369 4s. 8d. on the year's transactions.

The average number of miners supplied with water was 2, a decrease of 3·41 on the previous year; and the approximate quantity of gold obtained was 288 oz., having a value of £1,130 8s., a decrease of £647 12s. 6d. on that of last year.

The cash received was £47 15s. 3d. less than for the previous year, and the expenditure showed a decrease of £63 12s. 9d.

Kumara Water-race.

The cash received from sales of water from this race for power-development purposes amounted to £127 10s. 8d., and for royalty from timber cut on the Reservoir Reserve £429 11s. 3d., making a total revenue of £557 1s. 11d. The expenditure on maintenance and repairs amounted to £22 5s. 6d., thus showing a profit of £534 16s. 5d. on the year's transactions.

No miners were supplied with water from this race during the year, the whole of the revenue derived from sales of water being received from the Okuku Sawmill Company. This mill was formerly held by Larsen and McGrath, and this company should purchase from £120 to £150 worth of water annually for some years to come.

The royalty on timber cut on the Reservoir Reserve should show an increase of at least £200 for the ensuing year.

Kumara-Trans-Taramakau Water-race.

The only party supplied with water from this race was the Payne's Gully Sluicing Company, who carried out sluicing operations intermittently during each month of the year. This company has to maintain the trans-Taramakau pipe-line at its own expense, and in consequence is being supplied with water at a reduced rate. The maintenance of this line has proved very costly to the company, and has been a very great drawback to the working of the property, particularly during the last four months of the year, when, owing to breaks taking place in the steel sections of piping, sluicing was only carried out on forty-two days. Notwithstanding the serious disabilities under which this company carried out operations, the gold returns for the year were highly satisfactory. Although the water supplied to this company is entered in this office as free water, and is not included in the sales shown on the attached tabulated statement, the water is being supplied in lieu of cash expended by the company in repairing the Government pipe-line some years ago. The gold returns for the year from the Payne's Gully Claim were so satisfactory for the small quantity of material treated that there is every probability of the company issuing a number of shares to raise sufficient funds to replace all the steel piping in the trans-Taramakau line with iron, and otherwise enlarge their mining operations generally.

The average number of miners supplied with water was 3·66, and the approximate quantity of gold obtained was 213 oz., having a value of £836 0s. 6d.

Wainihinihi Water-race.

During the first eight or nine months of the year Caretaker Millson was able to keep the Wainihinihi and the Waimea Water-race additional supply races in fairly good order, but eventually some of the timber sets in different sections of the tunnels became so badly decayed that it was absolutely essential that they should be replaced with new timber.

Waimea, Kumara, and Callaghan's Water-races.

The following is a summary of the revenue and expenditure of the above water-races for the year ended 31st March, 1924: Sales of water, £803 16s. 4d.; cash received, £1,188 4s. 3d. (including royalty on timber); expenditure, £1,314 19s. 11d.; approximate value of gold obtained, £3,705 4s.; average number of miners employed, 10·91. The sales of water show a decrease of £240 3s. 1d., and the cash received an increase of £497 10s. 10d., on the previous year.

In addition to the above sales, authorized free water to the value of £96 was supplied to the Payne's Gully Sluicing Company.

The total expenditure on the combined races amounted to £1,314 19s. 11d., as against £1,411 6s. 10d. for the previous year, a decrease of £96 6s. 11d. Comparing the cash received with the expenditure, the combined races show a loss of £126 15s. 8d., but from this should be deducted the sum of £96 for water supplied the Payne's Gully Sluicing Company in reduction of its account, which reduces the net loss to £30 15s. 8d.

Mount Ida Water-race, Central Otago (Mr. J. C. Buchanan, Manager).

The total sales of water during the year amounted to £472 12s. 10d., a decrease on last year of £190 9s. 9d. The expenditure on maintenance for the same period amounted to £716 11s. 8d., an increase on last year of £43 2s. 7d. The total cash received was £474 4s. 10d. The total amount owing for water supplied at 31st March, 1924, was nil. Free water was supplied for washing up to the value of £32 0s. 10d. The total value of water supplied from this race amounted to £504 13s. 8d., a decrease on last year of £217 3s. 11d. The approximate quantity of gold obtained by parties using water from this race was 497 oz., valued at £1,913 9s., an increase on last year of £161 14s. The average number of men employed was seven.

The past year from a mining point of view was the worst experienced in this locality for many years. Owing to frost during the winter months the claims were closed down for six weeks. This long winter was followed by an exceptionally dry summer: from the 19th January to the end of year there was no water available for mining purposes. During the year very little damage befell the race, which at present is in fairly good order.

ANNEXURE C.

STONE QUARRIES.

Summary of Report by Inspector of Quarries for the North Island (Mr. James Newton).

It has been my endeavour to visit the quarries as often as possible, and when it is remembered that the inspection district embraces almost the whole of the North Island, and for some months the Province of Canterbury in the South Island, it will readily be understood that the number of visits would not be many; besides which I have found that the clerical work during the year has increased a good deal. However, I have been enabled to visit the most important quarries twice at least, and some have been visited more; for instance, I have inspected the Auckland Harbour Board's Rangitoto quarry almost every four weeks, owing to the fact that a great variety of work was being carried out and a large number of hands have been employed throughout the whole of the year, at times as many as ninety. In a few cases quarries have been visited only once—those where the operations have extended over three or four weeks only.

I cannot pass over this report without informing you of the very great help received from most public bodies, particularly the Councillors of County Councils, who have instructed their Engineer and his assistants to give me all the help possible in order to facilitate my inspections, and in a great many instances the Councils' officers have motored me long distances and at times over very rough country under disagreeable conditions. Not only has the courtesy shown been the saving of very much time, but it has also been a very considerable saving to the Department in the matter of travelling-expenses. I may add that each year it is becoming more difficult to hire horses and horse-vehicles.

It is not necessary, I think, to enter into a statement regarding the actual conditions found at the quarries when visited (this may be found on reference to my monthly reports), with the exception that generally I have found operators quarrying in a reasonable and generally in a very satisfactory manner. I have increasingly found that inspection with a reasonable amount of exhortation has had the very desirable effect of winning quarry foremen to take more and more care in the handling and storing of explosives.

A very large percentage of the road-metal is quarried under contract with the public bodies, and I have to report that were not frequent inquiries made from such bodies, a very large amount of quarry-work would be executed with no knowledge of the same on the part of the Inspector. There is undoubtedly a laxity in complying with section 8 of the Act dealing with notification of the intention to commence quarrying, and also of the discontinuance of same. When the contractor is informed that a breach of the law has taken place, he invariably pleads that he was under the impression that it was the duty of the person who let the contract to attend to the matter.

I am indebted to public bodies for the return of yearly output, &c., required by section 6 of the 1920 Amendment Act. If these returns were only available from the "occupier" or "manager," who in a very great many instances is the contractor, it would be almost an impossibility to collect them, owing to the fact that very many of the "occupiers" are only employed for a limited period, and are here to-day, as it were, and away to-morrow, and it would be a very tedious and expensive matter to locate them.

Unfortunately, the period under review has not been free from distressing occurrences, and I am sorry to have to report that the following serious accidents have happened during the year:—

1. On the 10th February, Percy Ayden was fatally injured whilst employed in Stevenson and Son's sewerage contract, Sylvan Avenue, Mount Eden, Auckland. Whilst picking bottoms in the floor of the tunnel an explosion occurred which fatally injured him. Details of this occurrence may be found in my report of the 26th February to the Inspecting Engineer.

(2.) On the 2nd May, John Fowler was fatally injured in the Mangatuna Quarry, Tolaga Bay, owned and operated by the Uawa County Council. Fowler was struck on the head by rock projected by a blast. Full details of this accident may be had on perusal of my report to the Inspecting Engineer, dated the 12th May.

(3.) On the 27th October, Robert McLean, employed in Amners and Son's limestone quarry, Napier, was somewhat seriously injured by the premature explosion of a detonator, the cause being the wilful pricking of the interior of the detonator. (See my report thereon to the Inspecting Engineer and attached to my monthly report for November last.)

(4.) On the 31st October, P. Eady, employed by the Auckland Harbour Board in the Rangitoto Quarry, received a broken leg, the result of being struck by a falling crane-jib. (Details of the occurrence may be had on referring to my report to the Inspecting Engineer, dated the 2nd November.)

PARITU GRANITE QUARRY, COROMANDEL PENINSULA.—REPORT BY MR. M. PAUL, INSPECTOR OF MINES.

In compliance with instructions contained in memorandum dated 21st April, 1924, I beg to submit the following report:—

On the 9th of the month following, in company with Mr. J. W. Walker, Overseer of Buildings, I paid a visit of inspection to this quarry, which is situated on the western slope of the Moehau Range, about seven miles south of Cape Colville.

The rock is a quartz diorite of a greyish colour. This rock possesses rather better rift and general working-qualities than are usually associated with members of the diorite family, and fairly large blocks have been quarried and dressed for monumental and decorative purposes with effects equal to the best grey granite.

The steep slopes of the Moehau Range, besides being, in general, covered with heavy layers of surface debris, are heavily bushed; this renders it impossible to estimate the extent of suitable rock available.

The quartz diorite is exposed in several of the creek-beds in this vicinity. The location, however, of the rock in fresh condition is not so easy, for considerable areas have been affected by hydrothermal action.

The area held, comprised of 82 acres, is a Government quarry reserve with a frontage of about half a mile along the coast-line, and the diorite rock on this property consists mainly of loose boulders along the coast-line and the hillside.

There is also an outcrop, 4 ft. above high-water mark, running under the hill, near the loading-jetty, and, although no attempt has been made to test its extent, there is evidence that a good quality of diorite of uniform colour exists at this point under the decomposed granite overlying it. There is also an outcrop of granite about half a mile up the creek from the coast-line for a length of about 1 chain and of an average height of 15 ft., but practically nothing has been done to prove its extent and quality, and being so far away from the jetty it would prove expensive to work. It would therefore be advisable, in order to prove the extent of suitable stone for building purposes over this area, to spend money on prospecting operations, which would probably reveal that the outcrop exposed near the jetty runs under the hill, and would enable a large quantity of valuable building-stone to be opened up, which could be quarried at a low cost and cut up into blocks of any desired sizes or shapes.

Orders for building-stone at present are being supplied by cutting up boulders lying on the beach and hillside, which is most unsatisfactory from a builder's point of view, on account of the difficulty of getting uniformity of colour.

An engine to work the Blondin, an air-compressor, and pneumatic rock-drills have been installed, and during my visit two saws for stone-cutting were in the course of erection.

In conclusion, it is impossible to estimate the extent of building-stone available, and, although one could not say this is a mountain of granite, there is every indication that if the overburthen was removed from the outcrop near the loading-jetty it would probably prove that there exists a considerable amount of diorite of uniform colour available suitable for monumental and building purposes.

ANNEXURE D.

MINING STATISTICS.

STATEMENT SHOWING THE QUANTITY OF QUARTZ CRUSHED AND GOLD OBTAINED IN THE HAURAKI MINING DISTRICT FOR THE YEAR ENDED 31ST DECEMBER, 1923.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Value.
			Amalgamation.	Cyanide.	
THAMES COUNTY AND BOROUGH.					
Tararu Creek—		Tons cwt. qr. lb.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
New Sylvia	10	1,420 0 0 0	39 0 0	2,597 15 0	1,381 14 2
Waiotahi Creek—					
Waiotahi	5	0 0 1 2	102 17 0	..	274 17 1
Tairua—					
Golden Hills	2	34 0 0 0	61 19 0	..	90 16 9
Totals	17	1,454 0 1 2	203 16 0	2,597 15 0	1,747 8 0
WAIHI BOROUGH.					
Waihi—					
Waihi Goldmining Company*	582	179,848 0 0 0	..	523,535 4 11	322,830 0 6
Waihi Grand Junction*	381	76,705 0 0 0	..	82,111 7 14	104,792 5 9
Totals	963	256,553 0 0 0	..	605,646 12 1	427,622 6 3
OHINEMURI COUNTY.					
Owharoa—					
Rising Sun Goldmining Company	15	46 0 0 0	73 7 20	54 4 8	244 9 0
Karangahake—					
Woodstock	3	93 0 0 0	..	92 1 0	129 12 9
Talisman	2	0 10 0 0	8 2 16	..	15 3 8
Imperial	2	0 10 0 0	29 0 11	..	58 11 6
Shore and Inglis	2	..	31 0 19	..	39 4 8
Sundries	11	1,000 0 0 0	2,097 0 0	..	3,389 7 4
Prospectors	4	..	10 17 8	..	11 1 2
Totals	39	1,140 0 0 0	2,249 9 2	146 5 8	3,887 10 1
COROMANDEL COUNTY.					
Waikoromiko—					
Four-in-hand	8	2 0 0 17	24 0 0	..	74 3 7
TAURANGA COUNTY.					
Te Puke—					
Muir's Gold Reefs	136	28,887 0 0 0	..	24,579 0 0	75,213 5 10

* Waihi and Waihi Grand Junction Mines: Gold won from these mines valued at £4 4s. per ounce; silver, 2s. per ounce.

STATEMENT SHOWING THE QUANTITY OF QUARTZ CRUSHED AND GOLD OBTAINED, ETC.—*continued.*

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Value.
			Amalgamation.	Cyanide.	
SUMMARY.					
		Tons cwt. qr. lb.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
Thames County and Borough ..	17	1,454 0 1 2	203 16 0	2,597 15 0	1,747 8 0
Waihi Borough	963	256,553 0 0 0	..	605,646 12 1	427,622 6 3
Ohinemuri County	39	1,140 0 0 0	2,249 9 2	146 5 8	3,887 10 1
Coromandel County	8	2 0 0 17	24 0 0	..	74 3 7
Tauranga County	136	28,887 0 0 0	..	24,579 0 0	75,213 5 10
Totals, 1923 ..	1,163	288,036 0 1 19	2,477 5 2	632,969 12 9	508,544 13 9
Totals, 1922 ..	1,025	220,263 0 1 8	473 2 0	462,163 17 0	338,465 9 10

STATEMENT SHOWING THE QUANTITY OF QUARTZ CRUSHED AND GOLD OBTAINED IN THE WEST COAST INSPECTION DISTRICT FOR THE YEAR ENDED 31ST DECEMBER, 1923.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained by		Estimated Value.
			Amalgamation.	Cyanide and Concentrates.	
NELSON.					
Hukawai—		Tons cwt. qr.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
New Millerton Mine	7	285 0 0	89 13 0	..	365 1 6
Waiuta—					
Blackwater Mines	141	39,730 0 0	15,930 17 0	3,364 19 0	75,438 0 6
Globe Hill—					
Progress Mines (Limited) ..	4	..	..	477 16 0	1,422 0 11
Big River—					
New Big River Mine	39	4,324 0 0	3,717 14 0	86 10 0	15,609 7 10
Crushington—					
Wealth of Nations	30	984 0 0	291 6 0	25 6 0	1,240 12 1
New Keep-it-Dark	16	2,549 0 0	1,032 13 0	274 4 0	5,068 3 4
Totals	237	47,872 0 0	21,062 3 0	4,228 15 0	99,143 6 2
SUMMARY.					
Nelson	237	47,872 0 0	21,062 3 0	4,228 15 0	99,143 6 2
Totals, 1923 ..	237	47,872 0 0	21,062 3 0	4,228 15 0	99,143 6 2
Totals, 1922 ..	226	48,184 0 0	20,756 10 0	4,723 16 0	100,682 5 4

STATEMENT SHOWING THE QUANTITY OF QUARTZ CRUSHED AND GOLD OBTAINED IN THE SOUTHERN MINING DISTRICT FOR THE YEAR ENDED 31ST DECEMBER, 1923.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained by		Estimated Value.
			Amalgamation.	Concentrates.	
VINCENT COUNTY.					
Old Man Range—		Tons. cwt. qr.	Oz. dwt. gr.	Oz. dwt. gr.	£ s. d.
Advance	3	55 0 0	46 0 0	53 0 0	236 13 0
WAIHEMO COUNTY.					
Macrae's—					
Golden Point	6	1,880 0 0	496 13 22	134 4 0	2,068 11 11
SUMMARY.					
Vincent County	3	55 0 0	46 0 0	53 0 0	236 13 0
Waihemo County	6	1,880 0 0	496 13 22	134 4 0	2,068 11 11
Totals, 1923 ..	9	1,935 0 0	542 13 22	187 4 0	2,305 4 11
Totals, 1922 ..	5	162 0 0	84 17 7	..	341 11 10

SUMMARY OF INSPECTION DISTRICTS.

Inspection District.	Average Number of Persons employed.	Quartz crushed.	Bullion obtained.	Estimated Value.
		Statute Tons.	Oz. dwt. gr.	£ s. d.
Northern (North Island)	1,163	288,036	635,446 17 11	508,544 13 9
West Coast (of South Island)	237	47,872	25,290 18 0	99,143 6 2
Southern (Otago and Southland) ..	9	1,935	729 17 22	2,305 4 11
Totals, 1923	1,409*	337,843	661,467 13 9	609,993 4 10
Totals, 1922	1,256	268,609	488,202 2 7	439,489 7 0

* In addition, 111 persons were employed at unproductive quartz-mining.

APPENDIX B.

REPORTS RELATING TO THE INSPECTION OF COAL-MINES.

The INSPECTING ENGINEER AND CHIEF INSPECTOR OF COAL-MINES to the UNDER-SECRETARY OF MINES.

SIR,— Wellington, 24th July, 1924.

I have the honour to present my annual report, together with statistical information, in regard to coal-mines of the Dominion for the year ended 31st December, 1923, in accordance with section 78 of the Coal-mines Act, 1908. The report is divided into the following sections :—

I. Output.
II. Persons employed.
III. Accidents.
IV. Working of the Coal-mines Act—
  (*a.*) Permitted Explosives.
  (*b.*) Dangerous Occurrences.
  (*c.*) Electricity at Collieries.
  (*d.*) Prosecutions.
V. Legislation affecting Coal-mining.

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

SECTION I.—OUTPUT.

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

Class of Coal.	Output of Coal during 1923.				Total Output to the End of 1923.
	Northern District (North Island).	West Coast District (South Island).	Southern District (South Island).	Totals.	
	Tons.	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous	126,118	809,579	..	935,697	35,853,667
Brown	507,747	38,710	313,903	860,360	18,151,010
Lignite	..	740	173,037	173,777	3,516,464
Totals for 1923 ..	633,865	849,029	486,940	1,969,834	57,521,141
Totals for 1922 ..	520,153	879,983	457,683	1,857,819	55,551,307

The following is a table showing the annual production of coal and the quantity of coal imported since 1911 :—

Year.	Coal produced.	Coal imported.	Total Quantity of Coal produced and imported.	Year.	Coal produced.	Coal imported.	Total Quantity of Coal produced and imported.
	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.
1911 ..	2,066,073	188,068	2,254,141	1918 ..	2,034,250	255,332	2,289,582
1912 ..	2,177,615	364,359	2,541,974	1919 ..	1,847,848	391,434	2,239,282
1913 ..	1,888,005	468,940	2,356,945	1920 ..	1,843,705	476,343	2,320,048
1914 ..	2,275,593	518,070	2,793,663	1921 ..	1,809,095	822,459	2,631,554
1915 ..	2,208,624	353,471	2,562,095	1922 ..	1,857,819	501,478	2,359,297
1916 ..	2,257,135	293,956	2,551,091	1923 ..	1,969,834	445,792	2,415,626
1917 ..	2,068,419	291,597	2,360,016				

The output of coal for 1923 showed an increase of 112,015 tons over that for the previous year. The increase was wholly in the production of brown coal, which was 150,027 tons in excess of the production for 1922. Bituminous coal showed a reduction of 32,741 tons, due to the industrial trouble which stopped most of the West Coast mines for the last three months of the year, and lignite a reduction of 5,271 tons, due to a lessened demand for this class of coal. Ample supplies of coal were available for all purposes till the stoppage occurred on the West Coast. The combined capacity of the mines is now ahead of the demands, particularly in regard to mines producing brown coal or lignite. At some of the latter short time was worked through inability to dispose of the output. Mining by co-operative parties continues to be carried on to a considerable extent, and in some cases has proved very profitable to the parties engaged therein.

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

Name of Colliery.	Locality.	Class of Coal.	Output for 1923.	Total Output to 31st December, 1923.	Total Number of Persons ordinarily employed.
			Tons.	Tons.	
Northern District.					
Hikurangi (2 collieries)	Hikurangi ..	Semi-bituminous	51,265	1,440,288	155
Wilson's Colliery	,, ..	,,	48,701	122,800	138
Taupiri Extended	Huntly ..	Brown ..	111,029	3,096,310	322
Rotowaro	,, ..	,, ..	105,408	470,879	195
Pukemiro	,, ..	,, ..	149,923	882,062	235
Waipa	,, ..	,, ..	70,500	672,285	121
West Coast District.					
Westport-Stockton	Ngakawau ..	Bituminous ..	93,559	1,898,997	260
Millerton	Millerton ..	,, ..	212,634	6,625,537	527
Denniston	Denniston ..	,, ..	136,877	8,503,211	465
Paparoa	Roa ..	,, ..	34,030	421,984	101
Blackball	Blackball ..	,, ..	62,541	3,166,689	270
Liverpool (State)	Rewanui ..	,, ..	133,717	1,243,475	286
Southern District.					
Kaitangata and Castlehill (3 collieries)	Kaitangata ..	Brown ..	112,929	4,149,623	369
Taratu	,, ..	Lignite ..	33,965	537,102	67
Linton	Nightcaps ..	Brown ..	39,617	126,728	63
Wairaki (2 collieries)	,, ..	,, ..	31,200	99,095	55
163 other collieries	All coalfields ..	Various ..	541,939	24,064,076	1,371
Totals	..	..	1,969,834	57,521,141	5,000

SECTION II.—PERSONS EMPLOYED.

Inspection District.	Average Number of Persons employed during 1923.		
	Above Ground.	Below Ground.	Total.
Southern	326	782	1,108
West Coast	627	1,768	2,395
Northern	400	1,097	1,497
Totals, 1923	1,353	3,647	5,000
Totals, 1922	1,191	3,365	4,556

The following statement shows the tons of coal raised, persons employed, lives lost by accidents in or about collieries, &c., to 1923.

Year.	Output, in Statute Tons.	Persons ordinarily employed.			Tons raised per each Person employed below Ground.	Lives lost by Accidents in or about Collieries.		
		Above Ground.	Below Ground.	Total.		Per Million Tons produced.	Per Thousand Persons employed.	Number of Lives lost.
Prior to 1900	13,444,437	†	†	†	†	†	†	165
1900 ..	1,093,990	617	1,843	2,460	593	3·65	1·62	4
1901 ..	1,239,686	688	2,066	2,754	600	2·42	1·09	3
1902 ..	1,365,040	803	2,082	2,885	655	1·46	0·69	2
1903 ..	1,420,229	717	2,135	2,852	665	2·81	1·40	4
1904 ..	1,537,838	763	2,525	3,288	609	2·60	1·21	4
1905 ..	1,585,756	833	2,436	3,269	651	3·78	1·83	6
1906 ..	1,729,536	1,174	2,518	3,692	687	3·46	1·62	6
1907 ..	1,831,009	1,143	2,767	3,910	662	6·55	3·07	12
1908 ..	1,860,975	992	2,902	3,894	641	2·68	1·28	5
1909 ..	1,911,247	1,159	3,032	4,191	630	3·66	1·67	7
1910 ..	2,197,362	1,136	3,463	4,599	634	7·28	3·48	16
1911 ..	2,066,073	1,365	2,925	4,290	706	6·77	3·26	14
1912 ..	2,177,615	1,130	3,198	4,328	681	4·13	2·08	9
1913 ..	1,888,005	1,053	3,197	4,250	590	3·18	1·41	6
1914 ..	2,275,614	1,176	3,558	4,734	639	21·53	10·35	49*
1915 ..	2,208,624	1,050	3,106	4,156	711	4·07	2·16	9
1916 ..	2,257,135	988	3,000	3,988	752	2·65	1·50	6
1917 ..	2,068,419	1,090	2,893	3,983	715	1·93	1·00	4
1918 ..	2,034,250	1,102	2,892	3,994	703	2·95	1·50	6
1919 ..	1,847,848	1,095	2,849	3,944	648	5·41	2·53	10
1920 ..	1,843,705	1,152	2,926	4,078	630	0·54	0·24	1
1921 ..	1,809,095	1,218	3,149	4,367	574	5·52	2·28	10
1922 ..	1,857,819	1,191	3,365	4,556	552	3·23	1·31	6
1923 ..	1,969,834	1,353	3,647	5,000	540	2·53	1·00	5
Totals ..	57,521,141	..	..	..	..	..	..	369

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

SECTION III.—ACCIDENTS.

The following is a summary of accidents in and about coal-mines during 1923, 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 ..	..	..	..	..
Falls of ground	4	4	7	7
Explosives	..	..	5	5
Haulage	..	..	4	4
Miscellaneous—Underground	..	..	15	15
On surface	1	1	1	1
Totals	5	5	32	32

The fatalities being in the proportion of 1·00 per thousand persons employed, and 2·53 per million tons produced.

Of the fatal accidents the following is a short description :—

George Cleveland, at Ohai, on the 16th January. The deceased was shifting an empty railway-wagon and got crushed between the wagon and one of the uprights supporting the coal-chute, with the result that he was so seriously injured that he died on the 4th February. This accident would have been avoided if there had been sufficient clearance.

James Seddon, at Denniston, on 15th May. The deceased had fired a shot and was cutting the top coal when he was struck by a lump of coal which fell from the rib-side, and which in all probability had been loosened by the shot.

Albert Ambrose Wells, at Burke's Creek, Reefton, on 24th May. In the process of extracting a pillar the deceased had removed some top coal when a further fall of tops took place and buried him.

A. Baker, at the Liverpool Mine, on 19th July. The deceased was engaged in dropping top coal when a fall of coal, due to a bump, swung a set and caught the deceased.

Martin Tomic, at Millerton, on 15th August. The deceased was taking back top coal when a fall took place and caught deceased, who was so seriously injured that he died a few days later.

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

(*a.*) Permitted Explosives.

(Regulations 128 to 134 inclusive.)

The following is a table showing the quantity of permitted explosive used and the number of shots fired at New Zealand coal-mines during 1923 :—

Inspection District.	Quantity of Permitted Explosives used (lb.).			Number of Shots fired.	Number of Misfired Shots.				Approximate Quantity of Coal produced.
	A2 Monobel.	Ligdynite.	Bobbinite.		By Defective Explosive.	By Defective Detonators.	By Defective Leads.	Total.	
									Tons.
Northern (*i.e.*, North Island) ..	83,363	..	..	95,261	78	136	64	278	366,360
West Coast (of South Island) ..	82,395	44,933	..	165,864	53	235	64	352	829,122
Southern (*i.e.*, Canterbury, Otago, and Southland)	26,919	..	..	38,330	..	33	7	40	125,361
Totals	192,677	44,933	..	299,455	131	404	135	670	1,320,843

Sixty-seven per cent. of the coal produced in the Dominion during 1923 was broken down by permitted explosive, and the average production of coal per pound of explosive used was 5·6 tons, and per shot fired 4·4 tons.

(*b.*) Dangerous Occurrences reported.

(Regulation 81.)

The following is a short account of the more serious of these. A full list is contained in the District Inspectors' reports.

Denniston Mine.—A heating, followed by a serious fire, occurred in November in the Wareata Extended section of the above mine. Eventually it was sealed off with brick and concrete stoppings, but resulted in the loss of a large amount of coal.

Taupiri Extended Mine.—On the 9th December a fire broke out in the West section, the result of a crushing that had been taking place through the pillars in the first working having been driven too small to carry the cover. The fire spread so rapidly that it could not be controlled otherwise than by sealing off the whole of the workings on the west side below No. 4 level. The loss of coal as a result of this fire was very serious.

(*c.*) Electricity at Collieries.

(Regulation 160.)

During 1923 there has been a further 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	19
Number of continuous-current installations	10
Number of alternating-current installations	9
Number of collieries electrically lighted	19
Number of collieries using electrical ventilating-machines	10
Number of collieries using electrical pumping plants	10
Number of collieries using electrical haulage plants	10
Number of collieries using electrical screening plants	4
Number of collieries using electrical miscellaneous plants	10
Number of collieries using electrical locomotives	..
Total horse-power employed from motors on surface	2,972½
Total horse-power employed from motors below ground	1,484½

(*d.*) Prosecutions.

In April a coal-miner employed in the Taupiri Extended Mine was prosecuted and fined for taking a non-permitted explosive into the mine.

In April a coal-miner employed in the Huntly Coal-mine was prosecuted and fined for failing to set sprags in his working-place, and the manager of the mine was prosecuted for failing to provide a sufficient supply of timbers, but the latter information was dismissed.

In May the manager of the Wilson's Colliery was prosecuted and fined for failing to provide adequate ventilation.

In June the manager of the Reefton Coal Company was prosecuted and fined for failing to carry out the requirements of the Act as regards inspection of the mine before the shift started work, and a miner in the same mine was prosecuted and convicted for entering the mine before he had been informed that the mine had been examined.

In August the manager and also the agent of the Pukemiro Mine were prosecuted and fined for failing to comply with the provisions of the Act referring to the weighing of coal and payment for same.

In September a miner was prosecuted for having matches and tobacco while in the Millerton Mine, in which safety-lamps are required.

SECTION V.—LEGISLATION AFFECTING COAL-MINES.

No important alterations were made during the year. On the 8th February additional regulations were gazetted respecting the transfer of moneys in a coal-miners' relief fund to a sick and accident fund; on the 10th May a regulation was gazetted respecting the use of the explosive known as Samsonite No. 3; and on the 29th November a regulation was gazetted revoking paragraph (3) of clause 7 of the regulations of the 1st July, 1915.

I have, &c.,
J. A. C. Bayne,
Inspecting Engineer and Chief Inspector of Coal-mines.

ANNEXURE A.

SUMMARY OF REPORTS BY INSPECTORS OF MINES.

NORTHERN INSPECTION DISTRICT (Mr. WILLIAM BARCLAY, Inspector).

During 1923 the production of coal from the mines in the Northern District increased by 113,712 tons. The North Auckland District showed an increase of 36,543 tons, and the Waikato District an increase of 77,169 tons. The total output of both districts for the year is 633,865 tons.

Hikurangi District.

Hikurangi No. 1 Colliery.—The south dip reached the boundary during the year, and a commencement was made on the extraction of the available pillars. Owing to the inclination of the seam presenting difficulties in the way of systematic working and trucking of the coal it was decided to enter into a contract with a party of co-operative miners to win the available coal, truck it to the main haulage-road, support the roofs, attend to road-laying details and all other operations in connection with delivery of the output to a point agreed on, excepting only the management and statutory examinations of the mine. During the past six months I have made several inspections of the mine, and I can say that the Act and regulations were strictly observed by both parties, with special consideration to the timbering of the pillar places and the general safety of the men employed.

Hikurangi No. 2 Colliery.—Towards the end of the year No. 2 shaft was holed into the connecting level from No. 1 shaft. This shaft is 12 ft. 6 in. in diameter, and is sunk to a depth of 352 ft. complete with a lining of 8 in. of concrete, buntons, and guides for the cages. The development of the mine has been continued during the year by the advance of headings from No. 1 shaft. These headings are moderately inclined, and a number of bords are broken away in anticipation of increasing the output when No. 2 shaft is available for winding coal. The ventilation of No. 1 shaft workings was slightly deficient, due to the contraction of the paturn-air compartment in the shaft, and only thirty-three men were allowed to be ordinarily employed in the ventilating district, in order that that number should receive the amount of air as is prescribed by the regulations. Two Waddle fans have since been installed, but a larger and more modern fan is required for this colliery.

Wilson's Collieries (Waro Mine).—This colliery is under the control of the Wilson's Portland Cement Company (Limited), and the whole of the output of this sub-bituminous coal is utilized in the manufacture of cement at Portland and Warkworth. The abandoned No. 1 section was sealed off with substantial clay stoppings, and mining operations during the year were confined to Nos. 7 and 8 sections, which reached the boundary towards the end of the year, when the pillars were immediately and rapidly attacked in order to win a large proportion of the pillar coal. The district is subject to "creep," and the roadways are liable to become crushed to such an extent as to make the extraction of pillars difficult later on. A stone drive rising 1 in 3 from the fault at No. 6 level intersected a 10 ft. seam of coal at 2½ chains. An auxiliary fan has been installed in the return heading in order to provide ventilation to the development heading. The mine is difficult to ventilate owing to the humidity of the atmosphere acting on the friable roof fireclay, causing it to fall and fill up the return airways, and retarding, by increased friction, the quantity of air. Repair miners are daily employed in the return airways repairing and enlarging the roads. Electricity is used for power-transmission underground, and is conveyed by fully armoured three-core cables.

Kerr and Co. (McLeod's Freehold).—This small colliery is worked in two sections. No. 1 section is confined to the extraction of the remaining coal pillars under a number of houses, due care being exercised by the management and owners in seeing that little damage results to the houses through subsidence. No. 2 section is being developed in the bottom seam, which has increased in thickness from 3 ft. to 5 ft., with a stronger roof. Preparations are being made to drain the water from the abandoned West Byron Colliery and open out a section beyond the fault.

Silverdale Colliery (Foot and Doel's Crown Lease).—The coal-seam varies from 3 ft. to 6 ft. in thickness, and occurs at shallow depths. Several drives with free outlet for water are driven to win the coal. Sets used systematically to support the roof, and ventilation made easy by short shafts to the surface where required. The output is conveyed by road-wagons to Hikurangi Railway-station.

Northern Co-operative Mine (Cunningham's Crown Lease).—A small area of outcrop coal was mined occasionally as trade demanded. Small drives timbered, and regulations observed.

Kerr and Wyatt's Mine (Crown Lease).—The remaining coal pillars were successfully extracted during the first six months of the year. Water proving troublesome, the dip workings were abandoned. Prospecting to win an area of coal which can be obtained by water-free levels.

Glen Nell Colliery (Crown Lease).—A party of miners to work on a co-operative basis purchased this Crown lease (part Section 8, Block XVI, Hukerenui Survey District) from Doel Bros., and proceeded to open out a field of coal. Development consisted of laying 20 chains of tramway to the main road, and a drive several chains in a coal-seam which later proved unprofitable to work. Operations were subsequently suspended at the end of the year.

Ferndale Colliery (Cherrie and Co.'s Crown Lease).—Mining operations conducted by a party of co-operative miners were successful in winning out small pillars left by a former working. The coal on the outcrop was soft and unsaleable, and prospecting boreholes on the southern part of the lease did not disclose a marketable seam.

Foot's Coal-mine (Crown Lease).—During the year Foot Bros. were granted a coal lease over a portion of Crown land formerly worked by the Northern Coal Company. Following the seams from the outcrop an area of unworked coal was discovered of average thickness of 6 ft. Small bords were driven in the seam, enabling a high percentage of pillar coal to be removed in the second working. Thirty chains of inclined tramway connect with the main road, and the output is conveyed by motor-lorry to the Hikurangi Railway-station.

Christie's Colliery (Christie's Freehold).—A party of seven co-operative miners work this colliery, with a certificated mine-manager in charge of the operative details of the mine-workings. The headings from the dip have been advanced to the rise through a hard, clean coal area. Boreholes from the surface into the seams are kept in advance of the workings. Timber systematically set to support the roof, and the natural ventilation (by means of shafts) is adequate for present requirements.

Rautangata Colliery, Kamo.—This small colliery is the property of the Kamo Potteries Company (Limited). Early in the year a drain-level was driven at a low point and drained the water from the old Kamo Mine workings, and a number of standing pillars of coal were subsequently recovered by narrow roadways driven through the old workings. The coal is of a good quality, and the whole of the output is used on the property for brickmaking purposes.

Waikato District.

Taupiri Extended Colliery, Huntly.—During the past year mining operations were confined to Nos. 5 and 7 sections, north side, and Nos. 1 and 6 sections, west side. The fault at No. 5 north sectional boundary was pierced by a stone drive which intersected the coal-seam at a lower level. Owing to the creeping movement of the floor at No. 6 north necessitating heavy repairs to the roadways, it was deemed advisable at the end of the year to draw

out the plant from No. 7 section north. No. 1 section headings continue to advance between the north and west barriers in a hard seam of coal. The crushing movement which commenced in 1922 and settled over Nos. 3, 4, and 5 sections, north side, and resulted in a fire which was sealed off during that year, continued during the past year to squeeze the stoppings and roadways, necessitating frequent repairs and reheightening of same. In this area on Sunday, 9th December, another serious unlocated fire broke out in the vicinity of No. 5 section, west side, and it was subsequently sealed off with brick stoppings below No. 4 section level, and the area below that level is now abandoned. A large W.T. boiler is being installed to supplant the boilers at No. 1 shaft, and the machinery of a large modern air-compressor is being assembled to provide power underground.

Rotowaro Colliery, Rotowaro.—There are two separate sections, known as No. 1 mine and No. 2 mine. The development of No. 1 during the past year consisted of two dips driven in a westerly direction and the advance of the main haulage-road south headings. In the jig section the pillars of the bords that have reached the specified distance are being worked off by a series of lifts and the roof coal dropped, also at No. 3 section the pillars are being extracted, beginning at the outcrop boundary of that section. At No. 2 Mine the main heading has been advanced to a fault and suspended pending the installation of electric power in this mine to operate pumps and winches. A Waddle fan has been erected on the surface, and means provided for the reversal of the air-current. An endless-rope haulage has been installed from the screening plant to within a short distance of the working-faces. Additional accommodation, consisting of twenty approved cabinets and other suitable arrangements, has been added to the bathroom during the past year.

Pukemiro Collieries (Limited).—A record output from the colliery was derived chiefly from the bords of the first working. In the north-east section the pillars near the outcrop are being withdrawn. The method of extraction has been modified from time to time in order to find a system that would allow for completeness of extraction, consistent with safety and production of coal in the best possible condition. Owing to the short jointy character of the fireclay roof presenting unfavourable conditions for winning the roof coal it has now been found desirable in this colliery to work the pillar off in successive order by strips 10 ft. wide and usually 12 ft. high, the coal roof being supported on timber until the split is through; the roof is then fallen within the limits of the excavated space. The straight heading section in the north mine, where the first workings have been completed to a determined boundary, has been sealed up at the entrance of the section with brick stoppings. The north-east section working-places are proceedings on easy grades to the rise boundary. In the east section the floor is undulating, necessitating dip haulage. In the east section of the south mine the seam is being followed to the rise in a thick coal area. On the west side the seam is being opened out through the fault. The ventilation of the working-faces was well maintained during the year. A feature of the haulage system in this colliery is the use made of subsidiary endless-rope haulage in the headings and dips leading to the faces.

Waipa Colliery, Glen Massey.—The working-places in this mine are confined to the main extension section. Three sections—namely, Nos. 1, 2, and 3—have been opened out in the coal-seam through the fault. The seam shows an average thickness of 10 ft., and 1 ft. of coal is left to support the roof, which is additionally supported by two and sometimes three rows of props systematically set. At the farthest inbye point an auxiliary fan was installed, causing the air-current to be more effectively circulated throughout the working-faces. This seam is moderately inclined, providing simple haulage to the main endless rope. A stone drive for free level outlet for water, ventilation purposes, and providing means of another escape for the men underground, has been commenced from the surface at a point 44 chains from the face of the main heading. This colliery shows a lower percentage of accidents, as compared with the output, than any other colliery in the Northern District, due to a great extent to the inclination of the seam.

Waikato Extended Mine, Huntly.—During the past year this small mine, situated in close proximity to the west bank of the Waikato River, and two miles south from Huntly, continued to supply the river-boats with coal cargo for Hamilton, Cambridge, and Mercer. The bords are taken to a height of 14 ft. The roof is carefully trimmed, and is sufficiently strong enough to remain up with the aid of a few props.

Glen Afton Collieries, Glen Afton.—In June of the past year this colliery was connected to the railway by the completion of the Government railway from Pukemiro Junction to Glen Afton. Sections A, B, and C in the mine were developed, in view of the early railway connection, and supplied the commencing output. The main headings continue to advance northward in the coal-seam, which shows an increasing thickness at the face. An endless-rope haulage has been installed, and is in use in the main heading. A modern Sirocco ventilating-fan is installed, and connected with the return heading on the surface, and is capable of inducing 70,000 cubic feet of air per minute at 2½ in. W.G. A bathhouse is in course of erection, and, according to specifications, it will contain twenty cabinets for shower-baths and nine hand-basins, also suitable lockers and pulley-chains for drying clothes. Fifty workmen's houses are completed on sites convenient to the colliery.

Pukemiro Junction Colliery (Crown Lease).—The seam has been followed eastward to the outcrop, and pillars are now being worked. In coming back the roof is strengthened by additional props in the bords and pillar spaces, and a high percentage of the remaining coal is being won. Stoppings are erected sealing the various openings immediately the pillars are finished, whether there has been trouble from cob fires or not. Preparations are being made to open out a section in the west portion of the lease where the coal outcrops, disclosing a 14 ft. seam of coal.

Huntly Coal-mine, Huntly.—Shallow mining operations are continued on a lease granted by the Auckland University Council. The pillars have been extracted in the east section, and bords are being set away towards the west outcrop boundary. The output is conveyed by motor-lorry to Huntly Station, a distance of a mile and a half.

Huntly Brick and Fireclay Company (Limited), Huntly.—The opencast fireclay workings were inspected several times during the year, and I found Explosive and Mining Regulations properly observed by the workmen and management.

Taupiri East Coal-mine, Kimihia, via Huntly.—During the year operations were confined to the extraction of the remaining pillars and boring. The latter proved the seam at the base of the hill rising from the Kimihia Lake. Four miners working on a co-operative basis have acquired an interest in this property and propose to vigorously develop same.

Campbell Coal-mine, Whatawhata (Crown Lease).—Mr. Campbell Johnston secured a Crown lease of the coal on his leasehold property, and prospecting revealed a seam of brown coal of good quality. Upwards of 2,000 tons of coal was mined, and delivered to Hamilton by means of motor-lorries over the county roads. Later a registered company acquired the lease and laid down an iron-rail tramway to the road, and erected a loading-bank, also other facilities for increasing the output. The transport of this coal damaged the roads, and the Councils imposed a prohibitive road-tax, which was the means of causing a cessation of road cartage. The property is now being systematically prospected by boring.

Graham Coal-mine, Glen Afton.—Operations conducted on O'Sullivan's freehold property adjacent to the Glen Afton Colliery. The outcrop was followed in the coal to a seam measuring 7 ft. in thickness. A tramway and jig connect the mine with the county road, and the output is then carted to the Glen Afton railway-siding.

Kimihia Coal-mine, Kimihia.—Two miners opened out a small mine on a portion of the Auckland University College endowment at Kimihia. They constructed about 2 chains of jig tramway, a loading-stage, and broke away several bords in the seam; but, owing to the lease of the coal not being granted to them, operations were subsequently abandoned. A coal lease over this area had previously been granted to the Taupiri East Coal Company.

Bombay Colliery, Bombay.—A party of miners working on co-operative principles secured a lease of coal on freehold land at the foot of the Bombay Hill. Extensive prospecting operations by way of a number of small drives from the outcrop opened out a section of the coal, which, if the quality is good, should market easily in this closely settled district. The output is conveyed by road to Pukekohe.

Opaheke Colliery, Opaheke.—A few tons were mined from an outcrop of coal in the Drury Hills. The venture proved unprofitable, and was abandoned.

Hunua Coal-mine, Hunua.—Mining operations were resumed in this small coal-mine during the year, and one mile of roadway was formed to permit motor-lorries being taken to the mine-mouth to take delivery of the output.

Hauturu Coal-mine, Hauturu, via Kawhia.—I have been advised that a party of coal-miners during the year conducted prospecting operations on Native land at Hauturu. Owing to lack of capital necessary to build a wharf for steamers and scows on the Kawhia Harbour, work was suspended, and prospecting is being carried out on a Crown area recently acquired.

Old Stockman Mine, Mokau.—The coal-seam of this mine averages 4 ft. in thickness, and the mine is worked intermittently to supply local requirements.—(Report per Mr. Paul.)

Greencastle Coal-mine, Aria.—A small coal-mine worked to supply the demands of Aria and local farmers. Operations safely conducted, and regulations observed.

Dangerous Occurrences (Regulation 81).

Taupiri Extended Colliery.—On the 9th December, 1923, Manager Makinson reported an unlocated outbreak of fire in the west section of the mine.

Prosecutions.

On the 10th April, 1923, a coal-miner was convicted and fined £5 and costs for taking, for the purpose of use, gelignite, a non-permitted explosive, into his working-place in the Taupiri Extended Mine.

On the same date, a coal-miner was convicted and fined £1 and costs for failing to set prop-sprags in his working-place in the Huntly Coal-mine. The Mine-manager, acting as underviewer, was charged with failing to observe Special Rule 11. The information was dismissed. A remarkable feature of this prosecution was that the miners engaged in the mine tendered evidence hostile to the Department and the coal-miner who was convicted and fined for failing to set props. The miner admitted the charge because no props were available in his place or in the mine. The Department sought to prove that the manager was equally culpable in not supplying the necessary timber.

On the 22nd May, 1923, a mine-manager was convicted and fined £2 and costs for failing to provide adequate ventilation in a northern colliery on the 20th February, 1923.

On the 15th August, 1923, a deputy was charged with "being the deputy in charge of the withdrawal of props, he did unlawfully use a scantling to knock out a prop, contrary to the provisions of the Coal-mines Act." The case was treated as a first offence under the Justices of the Peace Act, and accused was discharged on the payment of costs.

On the same date, a mine-manager was convicted and fined £5 1s. and costs for failing to comply with the provisions of section 85 of the Coal-mines Act; and the owner-agent of a colliery was convicted and fined £5 1s. and costs for failing to afford reasonable facilities to the check-weighman for the purpose of taking an account of the weight of the mine-skips.

Serious Non-fatal Accidents during 1923.

Taupiri Extended Colliery.—5th February: Herbert Lancaster, trucker, whilst trucking, sustained a severe strain of the ligaments behind his left knee; off work 294 days. 31st May: James Butler, trucker, slipped whilst trucking and fractured his right patella; off work seventy-two days. 3rd July: Fred Slater, trucker, sustained compound fracture and subsequent amputation of fourth finger left hand, the result of jamming his fingers in the skip-wheel while spragging; off work 100 days. 26th July: Dan Fletcher, miner, sustained severe injury to his eye owing to a piece of coal from his pick-point embedding in it; off work ninety days.

Pukemiro Collieries.—10th April: Walter Ward, shiftman, whilst engaged drilling, caught and injured his finger in his drill, incapacitating him for eighty days. 6th June: Francis Angus, miner, sustained partial loss of the sight of his right eye due to a flying piece of coal from his pick-point lodging therein; off work fourty-six days. 7th June: James Greenwood, shiftman, sustained serious scalp-wounds owing to being struck by some timber whilst engaged drawing props; still off work. 10th September: E. C. Rodgers, trucker, sustained a severe hernia through lifting a full skip on to the road; off work eighty-one days.

Hikurangi Collieries.—19th January: James Pomfrett, miner, suffered the total loss of his right eye, due to being struck by a piece of flying coal from his pick-point; off work 112 days. 5th January: J. S. Leighton, shiftman, sustained hernia owing to undue strain whilst drawing a prop; off work sixty-two days. 10th April: Thomas Wright, miner, whilst descending the mine, caught his fingers in the shaft-lining, causing severe laceration of same; off work ninety-three days. 13th April: Fred Dunn, shiftman, severely strained his back whilst setting a prop; still off work. 11th October: John Pearson, shiftman, sustained ruptured muscle of calf whilst tipping a wheelbarrow; still off work.

Wilson's Collieries.—15th August: R. Turlington, miner, sustained severely strained hip, due to undue strain whilst working; still off work. 22nd December: James Bruce, shiftman, sustained compound fracture of right tibia, due to being struck by fall of stone whilst repairing return airway; still off work.

Waipa Colliery.—3rd January: J. Oliver suffered total loss of his right eye, due to being struck by a flying piece of coal; off work 134 days. 10th October: George Partis, shiftman, severely strained his right shoulder whilst carrying timber; off work seventy-seven days.

Opaheke Colliery.—6th April: A. W. Rix, miner, sustained total loss of his right eye, due to it being struck by a flying piece of coal whilst at work; off work sixty-four days.

General Remarks.

During the year notice was received of 583 accidents which occurred in and about the North Island coal-mines. Of these none proved fatal, and eighteen are classed as serious accidents whereby the persons were incapacitated for more than forty days. The remaining accidents were reported to the Mines Office for purposes of payment of coal-miners' relief. In the Waikato District there were ninety-five eye accidents, equal to 23 per cent. over all other accidents. A large number of these accidents resulted in either the total loss or impairment of vision of one eye. The bulk of these accidents are caused by flying fragments of coal from the pick-point, and it would appear that the only protection against such accidents would be some suitable form of face-protector. There is a widespread reluctance on the part of the workmen to wear goggles or face-gauzes even where they are provided free of cost. It is alleged that they are uncomfortable to wear, injure the vision, aggravate the deficiency of light, and increase the risk of other accidents. Recently the Hon. Minister of Mines offered to employ the services of an expert optician for the purpose of recommending a face-protector—one that would not decrease the miner's working visibility.

Ambulance-rooms on the surface fitted with cots and appliances for the exclusive use of first-aid treatment to injured miners have been erected at the Taupiri Extended, Rotowaro, Pukemiro, and Glen Afton Collieries.

Inspections on behalf of workmen: In all the principal coal-mines in the northern district advantage was taken by the workmen of the facilities afforded by the provisions of the Act, and the reports have been useful in furnishing the workmen's inspectors' opinions regarding the general safety of the mines, and indirectly in exercising a supervision of the firemen and deputies employed in the mines.

WEST COAST INSPECTION DISTRICT (Mr. C. J. STRONGMAN, Acting-Inspector).

Coal-output.

The output of coal for the year, 849,029 tons, shows a decrease of 30,954 tons on that of 1922. This is attributable to the labour trouble which caused the stoppage of the Paparoa, Blackball, Stockton, Denniston, and Millerton mines from the 14th September till the end of the year.

State Coal-mines.

Liverpool Colliery, No. 1 Section.—The output from the upper seam workings in this section for the past year was solely dependent on pillar-extraction. Owing to the presence of small creeks over the workings it was necessary to split and rob some of the pillars.

Morgan Seam, No. 1 Mine.—Coal-winning in this section was confined to pillar-extraction. The low-level tunnel has passed through two seams of coal. The first seam, of 11 ft., has proved dirty and unworkable, and has been abandoned; the second seam, 16 ft. in thickness, appears to be good clean coal, and is at present being prospected. Gas-reports from this section have been fairly frequent during the year.

Liverpool, No. 4 Section.—This is a small section of workings near the Morgan Low Level Tunnel. The main dip has been stopped owing to its faulted nature, and pillar-extraction commenced.

Liverpool, No. 3 Section.—This section is rapidly approaching exhaustion. Only six pairs of colliers are at present engaged on pillar-extraction. Owing to the collapse of the upcast shaft it was found necessary to remove the fan to another site near the stables.

Liverpool, No. 3 Extended Mine.—This is a small section of workings near the railway at present being developed. Six pairs of colliers employed on development work.

James Mine.—The main heading is still being pushed forward. The coal is of good quality and 6 ft. in thickness. A fault has been struck in a heading going north-west. The workings to the north-east continue to improve. The coal is of a very hard nature.

Grey District.

Paparoa Colliery.—During the year all coal has been won from pillars in No. 1 and Wilson's sections. Roadways in No. 7 section have been retimbered, and the section is ready to commence pillar-extraction. Prospecting has been commenced in the vicinity of the western fault with the object of proving the continuity of the coal in this direction.

Blackball Colliery.—At the commencement of the year a small area was worked on three shifts, six pairs of miners being employed on each shift extracting pillars. During April, 1923, the main stoppings, which were erected in November, 1922, to seal off all workings inbye of No. 3 heading on account of fire, were reopened, and the fire area was successfully confined to No. 4 heading (main level); this allowed access to workings inbye of No. 3 heading, and a commencement was made to unwater the flooded workings of No. 3 dip section. During July work in No. 3 heading ceased, the night shift was dispensed with, and coal-production was recommenced in No. 1 level workings of No. 3 dip section; there were then forty pairs of miners employed. During November a start was made to unwater No. 3 dip. On two occasions indications of heating in old workings were noticed.

CO-OPERATIVE PARTIES.

Scott and Party, Blackball.—This party, having exhausted the coal to the rise, are at present driving to the dip, but owing to the lack of machinery they are experiencing considerable difficulty with water, haulage, and ventilation.

Dixon and Party, Brunner.—This party, having secured a portion of the old Brunner lease, are at present engaged extracting pillars that have been left in the previous workings, the coal being carted to the Brunner Railway-station in drays. Three men are employed.

Hillside Mine, Dunollie.—This party having met with a fault in their main heading, a second dip heading was started to the right of the old dip in a south-westerly direction. The coal is of good quality, 5½ ft. in thickness. Eight men are employed.

Hunter and Party, State Coal Reserve, Runanga.—The dip workings having met a fault, operations were continued to the rise, where the coal became badly split with stone bands, rendering it unworkable. The drives were continued in stone to reach an area of workable coal known to exist to the rise. During December a borehole was put down, proving 4 ft. of coal beneath the prospecting-drives. It is the intention of the party to immediately commence a stone drive to intercept this seam. Eight men are employed.

McIvor and Party's Mine, Runanga.—The dip has been driven 5 chains and levels broken away. 5 ft. of clean coal is showing in the dip-face. Seven men employed.

Baddeley and Party's Mine, Runanga.—This party have continued opening out to the rise, where the coal maintains an average thickness of 5 ft.

Smith and Party's Mine, Runanga.—This party having reached the outcrop to the rise, pillar-extraction was commenced. As no gas had been met with the party were granted permission to use naked lights in this mine.

Manderson and Party's Mine, Runanga.—This party have continued their dip workings. The coal in the main level is badly split by stone bands, rendering it unsaleable, and has been abandoned. Safety-lamps only are used in this mine.

Boote and Party's Mine, Runanga.—The coal to the rise having proved dirty and unworkable, the party commenced a stone dip to intersect a seam 12½ ft. in thickness known to exist at a lower level.

Armstrong and Party, Runanga.—This party have worked steadily all the year. The coal in the main level has thinned to 4 ft., and is split by a stone band 15 in. in thickness.

Moody Creek Mine.—Commenced to produce coal, but their area appears to be much faulted. At present they are engaged opening up a top seam, 12 ft. in thickness, having temporarily abandoned the two lower seams owing to faults having been met with.

Duggan and Party, Rewanui.—This party continued working throughout the year. The coal is clean and of good quality, 3½ ft. in thickness.

Spark and Party, State Coal Reserve, Rewanui.—This party continue to drive their main level, which shows 8 ft. of clean coal. During the year, gas having been reported, safety-lamps were installed and a fan was ordered but has not yet arrived.

Buller District.

Westport-Stockton Colliery.—During the year the bulk of this company's output was produced from the new mine, E field. This new field (to the south of Fly Creek) was opened for coal-producing in the early part of the year. The main developing headings in this new E field have advanced a distance of 10 chains. The coal is of good quality, averaging 18 ft. in height. In the No. 1 section of E field seven pairs of men are engaged on pillar-extraction. The coal in this section ranges from 18 ft. to 30 ft. in thickness. In F dip six pairs are engaged in solid workings. In the old mine, C section, seven pairs of miners were engaged in pillar-extraction: thickness of coal, 16 ft. A new section in the old mine, called the D area, is being developed; the main heading shows 10 ft. of coal. The coal from this area is being carried to the main haulage system by a wooden flume plated on the bottom, approximately 90 chains in length, and having a section of 12 in. by 10¾ in. This flume has been in successful operation for several months. The grades vary between 1 in 25 and 1 in 15, with a small portion near the centre having a grade of 1 in 4. It is the intention of the management to erect a large main flume, 17 in. by 12 in., for the carrying of all the coal from their two mines direct to the bins at Ngakawau, thus doing away with the locomotive-traction haulage and endless-rope haulage between No. 3 loop near the new mine and the Ngakawau bins.

Millerton Mine.—The output from this mine was obtained from the following sections: Mine Creek, Old Dip, Mangatina, and Mangatina West. The Mine Creek section includes the major portion of the workings, and embraces south pillar section, Evans section, Evans Daylight section, fourth west solid, and fourth west pillars, third west extension, No. 1 dip pillars, No. 1 dip solid, and north-east. The coal won from these sections is of a friable nature, and is classed as a steam-coal, with the exception of coal from the north-east section, which is of a harder nature. The Mangatina and Mangatina West sections are producing good steaming-coal. The sections in the process of development are the fourth west, third west extended, and Mangatina west. Old dip section: About thirty pairs of miners are employed in this section, principally on pillar-extraction. West of this section an area remains to be developed. Prospecting: A boring plant has been obtained to further prospect the field. Owing to an ignition of gas on 15th December, 1923, whereby two men received personal injury, safety-lamps were installed throughout the mine, in conformity with section 8 of the Coal-mines Act, 1914.

Ironbridge Mine, Denniston.—Kiwi section: Pillar-extraction has been continued, and a considerable area still remains to be extracted. No. 2: Preparations are being made to reopen this section, where a fair area is standing on pillars. Deep Creek: The headings are opening out fairly well, and about sixteen pairs of miners are engaged winning coal in this section. Deep Creek haulage: The substitution of one brake for two has been accomplished, and a motor attached. Kruger's main section: Pillar-extraction continues in this section. No. 1 pillar section: Four to six pairs of miners are employed in this section on pillar-work.

Coalbrookdale Mine, Waratea Extension.—The main drive in process of extension in the direction of Waratea is still in coal about 6 ft. thick. The heading-face is now within 3 chains of Waratea. The difference in levels is 100 ft. A serious fire broke out in this area during November, but was safely sealed off by brick-and-concerte stoppings. No. 8 Cascade: Seven pairs of men are engaged in pillar-extraction. The roof is bad, being overlain by a bed of fireclay. Waratea: This is all in solid workings. The headings show 8 ft. of clean coal. A distance of 25 chains lies between the heading-face and the escarpment.

CO-OPERATIVE PARTIES.

Coal Creek Mine, Mokihinui.—Owing to a fire in the lower section workings of this mine the section was sealed off, and coal-winning was recommenced in the upper section. As the area in this section is limited the party have commenced prospecting operations to the west of the present workings.

O'Brien and Regan's Mine, Seddonville.—All the coal produced from this mine was from pillar-extraction.

Dove's Mine (Old Cardiff).—A party of co-operative miners have successfully reopened this mine with the object of extracting pillars. The pillars have been robbed in a former working, but owing to the strong nature of the roof a considerable quantity of coal can still be won with safety. The fire area has been sealed off with a concrete dam, and the temperature has been considerably reduced.

Bennett's Mine, Mokihinui.—Three men are engaged producing coal from this mine, but owing to difficulties with water they have not met with a great amount of success.

Marris and Murray's Mine, Seddonville.—The coal in this mine is very dirty, and intruding stone bands render it difficult to work.

Mulholland and Party's Mine, Seddonville.—The major portion of the output still continues to be produced from the Bridge section, but owing to the primitive machinery used the output is limited.

Mokihinui-Westport Coal Syndicate's Mine, Seddonville.—The outcrops on this property show good clean coal, but the coal is split by stone bands a few chains from the entrance. During the year this party have erected some 8 or 10 chains of fluming to carry the coal from the upper section to their tram-line. This having proved successful, it is the intention of the party to extend the fluming across Chasm Creek.

Chester's Mine, Seddonville.—Three men are employed in this mine. The coal is thin and dirty.

St. Helens Mine, Seddonville.—The old mine has been abandoned, and a stone drive put in higher up to strike the coal to the rise.

McGuire and Quinn's Mine, Seddonville.—This is a new mine just opening at Upper Mokihinui. Three men are employed.

Nelson District.

Puponga Mine, Puponga.—Work continues between dip and rise sections. The coal is split by a stone band, which is gradually getting thicker and stronger. It is the intention of the manager to reopen the old B section to extract pillars in that area.

North Cape Mine, Puponga.—Owing to trouble with the boiler plant coal-winning was suspended in this mine from July until December. A start has been made to prospect a nearly vertical seam lying about one mile from the present workings. The coal showing in the shaft is 7 ft. 6 in. in thickness.

Gladstone Mine, Motupipi (Golden Bay).—Coal from this mine finds a ready sale at Takaka. Coal is also shipped to Nelson. The coal is fairly clean, and 4 ft. in thickness.

Stone's Mine, Takaka.—The owner produced only 50 tons during the year, which was disposed of locally.

Enner Glynn Mine, Nelson.—No coal was produced from this mine during the year.

Inangahua District.

Reefton Coal Company's Mine, Reefton.—The output has been considerably increased, mainly from the No. 2 seam, pillar workings. Two shifts are employed. During December a start was made to drive to the dip. This drive is at present in faulted ground. A start has been made to erect a fan, which work should be shortly be completed.

Morris and Learmont's Mine, Reefton.—No new development work has been done in this mine, the output being maintained from No. 2 seam.

Victory Mine, Murray Creek.—This mine has changed ownership during the year and has been renamed the Calliope Mine. A start has been made to erect an aerial tramway, three and a half miles in length, estimated to cost £5,000. This tramway will deliver the coal to the Reefton Coal Company's railway at Burke's Creek.

Phœnix and Venus Mines, Murray Creek.—Four men are at present employed on solid work. The coal is being carted to Reefton in drays.

Big River Mine, Big River.—The coal in this mine is nearly vertical, is of a very soft nature, and is used for power purposes at the Big River Gold-mine.

Merrijigs Coal-mine, Merrijigs.—The main level continues in good coal, 6 ft. in thickness. The tramway to Taipoiti is nearly finished, when the coal will be delivered from the fluming to the station by a gasoline locomotive.

Empire Mine, Burke's Creek, Reefton.—Coal continues to be won from the solid workings to the rise.

Ferndale-Timaru Coal Company's Mine, Burke's Creek.—The coal to the rise in the area known as Lockington's lease being nearly exhausted, a new area, known as Lishman's lease, was opened up. Three pairs of miners are at present engaged producing coal from this lease.

Woodlands Coal-mine, Burke's Creek.—During the year the dip has been extended, also the level to the west. The seam is 5 ft. 6 in. thick. The roof, being of fireclay, is very tender.

Doran's Mine, Capleston.—This small mine at Capleston was the only one to produce coal in the Boatman's district during the year. Three men are employed. Coal is carted to the railway, three and a half miles distant, in drays.

Dangerous Occurrences requiring Notification (Regulation 81).

Coal Creek Mine, Upper Mokihinui.—On the 3rd June, 1923, the manager of Messrs. McGuire and party's co-operative mine on his arrival noticed large volumes of smoke issuing from the air-shaft of the bottom section of their mine. A stopping was immediately placed in the main intake, and later the air-shaft was filled up completely, sealing off the section, This section has not yet been reopened. On the 22nd June heating was discovered behind a fall in the pillar workings of the top section of the same mine. Stoppings were immediately erected, but are not completely effective, as the roof-breaks caused by the extraction of the pillars extend to the surface.

Ferndale-Timaru Coal Company's Mine.—On the 26th July, 1923, during a visit of inspection I discovered heating in the above mine. As the mine was about to be stopped I wired the company's representative at Timaru requesting immediate steps be taken to deal with the matter: this was given effect to. The mine has since been reopened, and the remaining pillars have been extracted.

Blackball Colliery.—On Monday, 5th November, 1923, there were indications of heating in the old workings to the rise of No. 4 bank, No. 8 section. Temporary stoppings were erected, with the result that on the afternoon of the 7th November all indications of heating had disappeared. Clay stoppings were then erected to complete the sealing off of the area. On the 18th November smoke was found issuing from old workings of No. 5 heading, No. 1 section,

Blackball Mine. As the No. 4 workings and old workings of No. 5 heading are connected, it was found impracticable to effectively seal off the heading workings as the roof and sides were crushed. Two stoppings of clay were therefore erected in the main intake and return respectively. Three working-places were sealed off as the result of this heating.

Wareatea Mine, Coalbrookdale.—On the 22nd November, 1923, a heating in the extended section of the Wareatea Mine developed into active fire, but was successfully sealed off with brick and concrete stoppings.

Fatal Accidents.

Four fatalities occurred in the West Coast Inspection District during the year, all of which were due to falls of coal.

On the 15th May a miner named James Seddon was killed in the Cascade Mine by a fall of side coal. Deceased and his mate were engaged splitting a pillar, and had fired a shot 4 ft. from the bottom. Seddon was engaged cutting the top coal when a bump dislodged a lump of coal from the rib side; the coal struck deceased on the back of the head and broke his neck.

On the 24th May a man named Albert Ambrose Wells was killed by a fall of coal while dropping tops in the Reefton Coal Company's mine at Burke's Creek. Deceased and his mate had removed part of the tops when the remainder came away, suddenly striking Wells and breaking his neck.

On the 19th July a miner named A. Baker was killed by a fall of top coal in the Morgan seam, Liverpool Collieries. Deceased and his mate were engaged dropping tops when a bump occurred, dislodging coal from the rib side, which, striking a set, knocked it out; the top coal then fell, striking Baker and breaking his neck.

An accident that resulted in the death of a miner named Martin Tomic occurred in the Millerton Mine on the 15th August. Deceased was engaged dropping top coal, and was standing on a pile of loose coal when a fall from the roof caught him, inflicting injuries which resulted in his death some days later.

Serious Non-fatal Accidents.

On the 23rd May an accident occurred in the Old Mine, Stockton, whereby an underviewer named Sidney A. Fox had his left hand badly shattered. Fox was straightening out the lead of an electric detonator when it exploded with the above result.

On the 26th May, in the Paparoa Mine, a miner named R. Manzoni was filling from the bottom of a large pile of loose coal when a lump rolled from the top and struck his leg, causing a simple fracture.

Prosecutions.

During the year the following informations were laid:—

Mr. E. W. Tattley, manager, Reefton Coal Company, was proceeded against under section 10 of the Coal-mines Act, 1922, for failing to examine the Reefton Coal Company's mine at Burke's Creek within two hours of the commencement of the afternoon shift. In this case the manager was acting as fireman-deputy. He was convicted and fined £5 and costs. Mr. Tattley was also proceeded against under section 22 of the Second Schedule for failing to appoint a sufficient number of competent persons to act as deputies at the mine, and was convicted and ordered to pay costs. Information was also laid against him under section 23 of the Second Schedule for allowing workmen to proceed to work before the mine had been inspected, but this charge was withdrawn.

Richard Currie, collier, Reefton Coal Company, was proceeded against under section 31 of the Second Schedule for entering the mine before it had been intimated to him by the fireman-deputy that the mine had been examined. On pleading guilty he was ordered to pay costs, 7s.

Information was also laid against Percy Stone, miner, of the Millerton Mine, that on the 5th September, he did have in his possession matches and tobacco in a part of the Millerton Mine where safety-lamps were used. On pleading guilty he was fined £1 and ordered to pay costs.

SOUTHERN INSPECTION DISTRICT (Mr. GEORGE DUGGAN, Inspector).

Mount Torlesse Collieries.—Two seams are now being worked at this mine. In the rise section the main seam pillars are almost exhausted. In the dip section places are being driven in the No. 2 seam, and a short stone drive is going to the west to intersect the main seam. This drive is ventilated by a 25 in. Sirocco fan connected to wooden boxes. In consequence of small quantities of inflammable gas having been found in the dip section safety-lamps are now in use there. The old dip—further to the westward—is still showing signs of fire, but the lower part of these workings is now flooded.

Springfield Mine.—No coal has been produced since September, and the dip is now full of water.

Homebush Colliery.—Two men are mining fireclay in the fireclay section, and two others are down a short steep dip on pillar-extraction. There is only one row of pillars remaining, and it is intended to drive another dip to get at some other pillars a good distance away. The seam is about 2½ ft. in thickness.

Bush Gully Mine.—Although most of the colliery plant has been removed, three miners are extracting some remaining pillars in the very steep seam, which is 3½ ft. in thickness. As the old mine-entrance was not covered, the miners were instructed to erect a fence around it.

St. Helens Mine.—A short steep dip was driven 35 yards until it cut the bottom seam, 6 ft. in thickness. A level has been driven about 3 chains in length alongside old workings. This level has been securely timbered throughout. An incline will be driven to the full rise (1 in 3) to the outcrop for ventilation, and will later be used for haulage purposes.

Steventon Mine.—The main dip is down 500 ft., the upper 400 ft. at the grade of 1 in 2 and the remainder 1 in 3. The seam is 5½ ft. in thickness. A downthrow fault was met at 430 ft. from the surface, and, although the coal is fairly clean at the face of the main dip, the places to the south are becoming very stony. The places on the north side met dirty coal when 9 chains in, and they were stopped on that account. These pillars are now being split.

Clearview Mine.—The main level is now in about 17 chains from the surface. An incline has been driven 3 chains up from the level, and is expected to reach the outcrop in another chain. This will considerably improve the ventilation. The seam is about 10 ft. thick, but only about 6 ft. is being worked. The level places are being driven 7 ft. wide and the inclines 9 ft. wide. Very little blasting is required, and the mine is in very good order.

Tripp's Mine.—This mine has been taken over by the Burnwell Coal Company, and is now worked in conjunction with the Burnwell Mine.

Burnwell Mine.—Development has continued in the two upper seams of lignite, which are both about 7 ft. in thickness. The bottom seam, which varies considerably, being sometimes 11 ft. thick, is not being worked owing to stone bands. All places are driven narrow, 6 ft. to 7 ft., and about 6 ft. in height. Ventilation good.

Cavendish Mine.—A small output was produced from this mine during the latter half of the year.

Albury Mine.—The output is now very small, as only a man and a boy are employed. The places going north have reached dirty coal containing many clay breaks, and these places have been stopped. The places going to the east are cleaner, but they cannot proceed far before reaching the line of the traffic-road. The old workings to the west are on fire, and, as there is not much cover, it cannot be sealed off to extinguish it.

Allanholme Mine.—The small output was steadily maintained during the year to supply Waimate and the surrounding district. The surface equipment has been overhauled recently and the necessary repairs made.

Meadowbank Mine.—Another small mine which supplies Waimate with lignite. Worked intermittently.

Wharekuri Mine.—The workings in the upper section are nearly exhausted. A tunnel is being driven at a lower level, and the highly inclined seam is expected to be met at 180 yards. The drive is now in about 50 yards.

Prince Alfred Mine.—The pillars having been withdrawn near the bottom of the dip workings, and a good fall not having taken place, a creep has occurred, and the return airway is blocked 5 or 6 chains from the surface. Good timber supports are being used in the workings and on the dip haulage-road.

Ngapara Mine.—The working-places are being driven about 9 ft. wide and 7 ft. high, and very little timber is required. The workings are dry, and the small amount of water which enters is let away by places being sunk into the underlying gravels. The ventilation is good, and the mine is in very good order.

Shag Point Mine.—In the north level, off a short steep dip, the coal became sooty, and the level was stopped when about 3 chains in. The coal is fairly clean in the south level, but it is inclined to be thin, being now about 3 ft. in thickness.

Shag Point Coal-mining Company's Mine.—A short dip, about 2½ chains in length, was driven from the inbye end of the west level off the main dip. A level is now in about 6 chains to the west from the bottom of this dip. The coal is fairly clean from this area, and most of the output is now obtained from there. In the places to the rise of the west level the coal becomes very stony and eventually unprofitable to work. The mine is well timbered and ventilated

Kyeburn Diggings Mine.—No output for the year.

Wedderburn (Shea's Mine).—A small seam of lignite overlain by about 4 ft. of gravel.

Gimmerburn Mine.—A small opencast pit from which coal is mined for local sale.

Botting's Mine.—No output for the year.

Rough Ridge Mine.—Very little work was done at this opencast pit during the year.

Idaburn Mine.—An oil-engine driving a small centrifugal pump has displaced a vertical steam boiler and pulsometer. There is only about 6 ft. overburden on the thick seam.

Oturehua Mine (Becker Bros.).—Another opencast pit where an oil-engine and small centrifugal pump are used.. The stripping is well ahead of the working-face.

Lowis's Mine.—No coal was produced during the year from this small opencast pit.

Dillon's Mine.—An opencast pit from which a small output, for private use, was obtained.

Wade's Mine.—This small seam of crushed lignite was not worked during the year.

Armitage's Mine.—A small opencast pit worked for private use.

St. Bathan's Mine.—A thick seam of lignite with only a few feet of overburden, which is carted away from the pit.

Cambrian Mine.—The overburden—which is fairly heavy—is sluiced away, by water, under pressure of approximately 100 lb. per square inch. The working-face is in good order.

Wheeler's Mine, St. Bathan's.—A small output was produced from this opencast pit.

Lauderlane Mine.—An opencast pit in which the seam is very steeply inclined and is in contact with the schist. This seam will need to be worked bord-and-pillar if it is further developed.

Alexandra Mine.—Pillaring was continued during the year, two miners being employed. Owing to the heaving floor the return airway needs frequent repair.

McPherson's Mine.—An opencast pit from which the overburden, up to 70 ft. in depth, is being sluiced away. The coal is conveyed to Roxburgh and Miller's Flat by motor-trucks.

Cromwell Mine.—Owing to the soft clay floor the main dip drive, formerly 6 ft. in height, is now only 3 ft. A new dip has been started a few chains nearer the town, and, when completed, this will be used for haulage purposes instead of the present dip. The working-places are being driven narrow, and the faces are fairly well timbered.

Shepherd's Creek Mine.—The pillars are now being worked about 500 ft. down from the mine-entrance, and they will last about three years. The workings are in good order, and the ventilation is fairly good.

Cardrona Mine.—An opencast pit worked for local requirements.

Nevis Mine.—The seam is almost vertical and up to 60 ft. in thickness. As the supply available for opencast work is nearly exhausted, it will soon be necessary to sink on the seam to supply the local requirements.

Nevis Crossing Mine.—At this mine also the available opencast work will soon be exhausted. Another pit further down the valley will shortly be opened, and the overburden will be sluiced away by the present water-supply.

Fernhill Mine.—Owing to heating occurring on the main heading, about 5 chains from the entrance, six stoppings had to be put in, and the available area of pillars is in consequence very much reduced. The large deposit of building-sand, which overlies the old mine, is being extensively worked.

Freeman's Mine.—Three pillar places are still being worked. Ventilation is produced by an underground furnace built twenty years ago.

Jubilee Mine.—The section of solid workings to the west of the main dip and north of the old Brighton Road has been proceeded with, and five of the working-places have reached the boundary. A block of pillars east of the main haulage has been successfully extracted, and pillaring was also continued in the upper seam. Those on the east side of the heading have been extracted to within two chains of the main level.

Saddle Hill No. 1 Mine (including Burnwell Mine).—The pillar section is nearing exhaustion. A new drive, going towards the Glenochiel old mine, is down 3½ chains, the last chain being in rather dirty coal.

Saddle Hill No. 2 Mine.—The mine was exhausted and the plant removed during March.

Walton Park Mine.—The dip was extended to the permanent water-level, and a horse-road driven above water-level through pillars in the old Prince of Wales shaft workings (1870–71) and through several pillars left in the early Walton Park workings (1878). The bords were found standing well, and were cleaned up, and the fallen roof coal, which was inclined to heat, filled away. Manuka props erected during the first workings remained in position and were perfectly sound, as were also several wooden brattice stoppings put in about 1900. The old pillars are very narrow, being only two or three yards in width, but they are being withdrawn safely and successfully. Top coal is also being worked back.

East Taieri Mine.—The flood which occurred in April caused a large landslide, which completely covered the old mine-entrance. It was deemed inadvisable to remove this large quantity of debris. The southern area has been worked bord-and-pillar up to the large fault, the throw of which has not been proved.

Willowbank Mine.—The altitude of this mine is the highest in the district. It is situated near the saddle at the foot of the lesser Saddle Hill. The main level has been driven about 3 chains in, and a place on the south side has met troubled ground. Another place going north has struck a large "roll." The seam is a large one, being about 20 ft. in thickness.

Brighton Mine.—This is another mine which was damaged by the floods early in the year. A considerable quantity of loose sand was carried into the mine, and another outlet had to be made for a return airway. The clay stoppings—put in about eighteen months ago—are standing well, and were successful in cooling off the area.

Ruanui Mine.—This mine was closed down at the end of January.

Waronui Mine.—As the coal at the face of the main dip drive thinned rapidly and became stony this drive was stopped in August. The stone is very irregular, and appears as intrusions rather than bands. From a point 200 ft. along the bottom west level another dip has been driven over 400 ft. Pillars have been extracted from another west level section. A few chains north-west of the mine-mouth a borehole was put down by hand. It was estimated to strike coal at 100 ft., but after drilling 200 ft. without success the hole was abandoned.

Crichton Mine.—This mine was worked continuously until August. It was then shut down, and again reopened early in December. The mine is about half a mile from the traffic-road, and the lignite is hauled up to the road by a steam-winch.

Lakeside Mine.—Closed down on the 3rd May.

Taratu Mine.—Shaft section: There was no development work at this section during the year, and all the output was produced from pillar-extraction from the eastern and northern districts. Barclay's section: Development to the east of the main drive (in Section 20) proceeded apace in clean coal 30 ft. in thickness. In a small pillar section south of these solid workings the pillars are being extracted and the top coals worked back.

Tuakitoto Mine.—Mining has been continued in a small way during the year. The natural ventilation is good.

Kaituna Mine.—The old dip heading closed through the heaving floor, and side coal was taken off in an endeavour to make a water lodgment, but owing to "crush" the dip was eventually abandoned and a crosscut was driven on the

eastern side, which is now down over 4 chains in good clean coal. The upper place going to the east off the crosscut met faulty ground when about 2 chains in. A place going west shows 6 ft. of coal. An explosives-magazine was erected about 3 chains from the mine-mouth.

Wangaloa Mine.—A very small output was produced from this mine.

Kaidale Mine.—Owing to the bad state of the traffic-road no coal was produced during the months of July and August. The main dip is now down 160 ft.

Kaibrook Mine.—A slip, caused by the heavy floods, occurred at the mine-entrance, and a good deal of retimbering had to be done. The main dip is now down 280 ft., and a bord is being driven to the south-east from the bottom of the dip.

Kaitangata No. 1 Mine.—This mine has been coal-producing only during the winter months of the past year. Work was confined to the 18 ft. seam district, which proved to be much disturbed by irregular faults. The stone drive in this district was extended through the No. 6 fault to the 8 ft. seam, a distance of 330 ft. The seams on the south side have been proved to a point in line with the ventilating-shaft. The examining deputy reported inflammable gas on thirty-six occasions during the year.

Kaitangata No. 2 Mine.—In the 6-ft.-seam-workings the pillars are now worked back to near the dip haulage-road and the goaf has been sealed off by stoppings. A level tunnel in stone has been driven in a westerly direction from the bottom of the dip haulage-road in the 6 ft. seam, and a fault was met when 200 ft. in. A heading was driven to the rise on the fault, and at a height of 20 ft. the main seam was met. A portion of this seam—to the north of the present workings—was worked forty years ago. Headings and levels have recently been driven to develop this seam, but owing to haulage difficulties work was stopped, and an inclined stone tunnel, dipping at a grade of 1 in 3, was driven from the surface. This tunnel connected with the workings at a distance of 450 ft., and the entrance is 300 ft. from the entrance to the No. 2 mine, and is close to the main haulage-road, to which connection will be made.

Main-seam workings: In the main north level section an 8 ft. seam of good coal was struck in an inclined stone tunnel dipping to the east. This is stopped until a convenient roadway can be made to connect with the seam from the main drive. Pillaring has been continued in the main seam, and the waste is sealed off as the various sections are exhausted. The main stone tunnel was extended a distance of 400 ft., when a seam of good coal, 15 ft. thick, was struck. Levels are being driven north and south.

Screening plant: New screens have been installed at the Kaitangata mines. A revolving screen replaces the old shaker screen to deal with the large coal, and another of the same type screens the smalls. These screens are proving a decided success, as the coal is delivered in a very satisfactory state.

Castle Hill Mine.—No output was produced until May, and the mine was again closed down in November for the summer months. A section of pillar coal was taken out on the north side in the Jordan seam. In the main top seam section very steeply inclined headings have been driven to the east. The levels going south off these headings are in rather soft coal. No reports of inflammable gas have been recorded during the year. The ventilating plant has been removed from the air-shaft to the top of the new inclined drive, which now becomes the main return airway. Men and horses may now travel through this drive to the surface. The large three-throw pump has been removed from its old site at the main seam to the bottom of the main inclined drive, and pumping is now direct to the surface in one lift. A new screening plant has been erected, and the coal is now sorted by a steam-driven revolving screen.

Benhar Mine.—The main dip was extended 2 chains during the year, being now down 14 chains. The bottom level going north—which was broken away alongside the 3 ft. upthrow fault—is now in 8 chains, and the level to the south about 4 chains. The pillars being formed on the north side are rather small, and the management was advised to increase the size in future. The ventilation is excellent owing to the stoppings between the intake and return airways having been erected of brick.

Pukerau Mine.—Production was steadily maintained during the year. The working-places are driven about 15 ft. in width and from 6 ft. to 7 ft. in height.

Rosedale Mine.—An opencast pit, from which a small output was obtained.

Whiterig Mine.—The main dip drive is about 9 to 10 chains in length, and the timber in the upper portion needed attention towards the end of the year. Three miners were steadily employed.

Green's Mine.—The pillars were formerly made 30 ft. square, and owing to increasing depth they are now being made 40 ft. square. The main dip has an average gradient of 1 in 8. The seam is 20 ft. thick, and the places are driven 12 ft. high. Fan ventilation good.

Riverview Mine.—A small pit worked opencast for private use.

Springfield Mine.—An opencast pit from which a small output was produced early in the year.

Glenlee Mine.—Pillar-extraction was continued during the year. A new dip drive has been commenced.

Ramsay's Mine.—Worked bord-and-pillar, the latter being 30 ft. square. Owing to very strong lignite very little timber is used. Two men employed underground.

Landslip Mine.—Very little work done during the past year.

Rossvale Mine.—The coal is almost exhausted from the present workings. Another stone tunnel has been commenced about 7 chains south to work pillars which are standing in that locality.

Argyle Mine.—There does not appear to be much coal which can now be worked opencast, and as the seam is dipping into the hill it will soon be necessary to commence bord-and-pillar workings.

Terrace Mine, Kingston Crossing.—A low level is being driven to get to the back of a large fall. The seam is 20 ft. in thickness, and about half of this is being worked. The area opened out is small, and the pillars already formed are rather small.

Princhester Creek Mine.—An opencast pit, worked to supply settlers in the Mararoa district.

Lynwood Mine.—An opencast pit. The small output was used for steaming purposes for the steamer plying on Lake Te Anau.

Forest Hill Mine.—116 tons were produced prior to the 16th May, when the mine was closed down.

Mataura Collieries Company's Mine.—An increased output was produced, as compared with 1922, from this mine. The high and wide working-places are well ventilated.

Boghead Mine.—No further underground mining done, and output produced solely from opencast.

Mataura Lignite-mine.—Bord-and-pillar workings are well ventilated by an open-running fan driven by a single-phase 440-volt A.C. motor.

Terrace Mine, Mataura.—170 tons were mined prior to 31st March, when the mine was abandoned.

Heatherlea Mine.—A small output for local requirements was produced from this opencast pit.

Ota Creek Mine.—During the year 588 tons were produced from opencast work.

Clarke's Mine.—An opencast pit, from which 806 tons were mined for the year.

Diamond Lignite-mine.—1,472 tons were produced from this opencast pit.

Wattle Mine (formerly Nightcaps No. 1 Mine).—This mine, which was closed down during 1922, was sold to a small party of miners, and they reopened Knight's section during August last. A few pillars have since been extracted, and a hand-bore was put down underground to prove if a lower seam existed. On account of the hardness of the conglomerate the hole was stopped when only 8 ft. down. They are now sinking a small circular prospecting-shaft about 100 yards south-west of the mine-entrance.

Black Diamond Mine.—As the coal makes a good strong roof very little timber is needed in this mine. The places are usually driven 14 ft. wide and 8 ft. in height. The inbye place going to the east from off the main dip is in very stony coal and is being driven narrow.

New Brighton Mine.—The main dip heading has been driven through the upthrow fault, which proved to be of only 12 ft. displacement. Beyond the fault the coal was proved to be at least 11 ft. in thickness, and it contains a band of stone 1 in. thick. Places were broken away, and at the end of the year five miners were working therein. Ventilation is very good throughout the mine. Owing to a "creep" in the pillar section some had to be abandoned.

Wairio Mine.—No work was done on the Resin seam during the year. The coal in the little dip below the former workings became very thin, and a large fault was met running north and south. Two hand-bores were put down on Quested's area, near the Nightcaps–Ohai Road, but with disappointing results, as no coal was met in either hole.

Mossbank Mine.—The development work during the year proved rather disappointing, as the coal in the little dip gradually became thinner, and the level going east off the main dip is also in very thin coal. The pillars are now being extracted both east and west of the main dip.

Wairaki No. 1 Mine.—Owing to the varying pitch of the seam the main dip has been deflected 40° and is now being driven about due south-west. In the bottom place going east stony coal was met, but in the main dip and all the places on the west side good clean coal is being mined. The ventilation is usually good throughout, but, owing to faulty bratticing, on the 27th September 30 cubic feet of inflammable gas was found in Smith's stenton. This was the only occasion on which gas was reported for the year. A new safety-lamp cabin was constructed towards the end of the year.

Wairaki No. 2 Mine.—In this mine, as in the No. 1 mine, timber is systematically used. Towards the close of the year a small shaft was sunk underground a distance of 21 ft., and boring was done from the bottom of this shaft to prove if a lower seam existed. The bore proved 7½ ft. of coal 10 ft. below the shaft-bottom, or 31 ft. between the seams. Development was continued in the lower places going to the west, but no work was done in the dip. On the east side is the large downthrow fault. Arrangements for the reversal of the air-current have been completed in the No. 2 mine and are being proceeded with in the No. 1 mine.

Linton Mine.—The coal in the 30 ft. seam became stony going north, and the bottom level going in that direction met the downthrow fault. The places above having reached the ash area, pillaring has now commenced. A borehole was put down west of the opencast area and towards the boundary of the Ohai Coal Company. It is reported that 35 ft. of coal was struck at a depth of 138 ft., or 30 ft. below the level of the Morley Stream. A second borehole was put down 14 chains east of the first bore, and struck 20 ft. of coal with only 16 ft. of overburden. A stone drive is now being put in to work this area. Pillaring is almost completed in the eastern area of the thin seam. A small area of workings has been opened out in the 7 ft. seam between the pillar section and the 30 ft. seam section. Timbering rules have been drafted and posted up at the mine-entrance.

Ohai Coal Company's Mine.—This mine is west of the Linton Mine. A dip drive, going 1 in 5, proved coal at about 2 chains from the surface, but it went through troubled ground for about a chain. When 5 chains down the seam was proved to be 20 ft. in thickness. The bottom 7 ft. is now being worked. A small prospecting-shaft sunk 10 chains ahead of the mine-entrance proved the seam at a depth of 82 ft. The seam is very hard and fairly clean except for the clay "backs" which are met in several places. A ventilating-fan, purchased from the old Nightcaps Coal Company, has been erected at the mine. The coal is at present conveyed by horse haulage, along a surface tramway, to the Linton Mine haulage-system.

Birchwood Mine.—The main dip met faulted ground when about 2 chains from the surface. Driving was continued through this trouble, and good clean coal was met. The seam proved to be 7½ ft. in thickness and rather a gaseous one. In consequence of an ignition during August, safety-lamps only are now used at this mine. Since their introduction, and prior to 31st December, there were twenty-six reports of inflammable gas having been found by the examining deputy. The main dip is now down 7 chains and continues in good clean coal. The main winning-places going east are in about 8 chains. No places have been broken off going westward.

The railway built by the Ohai Railway Board from Wairio to Ohai is nearing completion. It is anticipated that the line will be open for traffic before the coming winter.

Dangerous Occurrences notified under Regulation 81.

Mount Torlesse Collieries.—23rd February: G. G. Littlewood, underviewer, was slightly burned by an ignition of gas in the rise section.

Birchwood Mine.—25th August: J. Sheehan, miner, was burned on the face and arms by an ignition of inflammable gas which occurred at 8.30 a.m. in his working place in the 8 ft. seam section, dip workings. As a consequence naked lights were debarred from use in the mine.

Kaitangata No. 2 Mine.—25th September: At 12.30 p.m. an inburst of water occurred from a break in the side of Eatons level in No. 1 seam workings. Twelve men were safely withdrawn, and in half an hour the flow of water had slackened considerably. The mine-plan was in error regarding some of the old workings.

Kaitangata No. 2 Mine.—27th November: Fallen coal in a stenton off the back level, north side, in No. 5 seam was heating, and two miners were employed to fill away the heated coal.

Fatal Accident.

Wairaki Mine.—16th January: George Cleveland, 40, shunter and tip attendant—fatally injured by being crushed between a railway-truck and the loading-chute at the Wairaki Company's railway-siding. He sustained a fractured pelvis, and he died on the 4th February of embolism of the heart and lungs, the result of the accident. The Coroner 's verdict was in accordance with the medical testimony. The Coroner's jury added a rider that the clearance between the trucks and the chute should be made larger, with which the Coroner agreed.

Serious Non-fatal Accidents.

Black Diamond Mine.—10th February: George Dempster, 17, coal-screen attendant—fracture of the right thigh caused through his clothing being caught in the machinery. Stepping across a revolving shafting 18 in. above the floor, the head of a key of the flange-coupling caught his trouser-leg and he was thrown to the floor.

Kaitangata No. 2 Mine.—9th March: James Durrant, 40, miner—fractured left leg and fractured right fore-finger caused by a fall of stone from the roof of his working-place, in the 6 ft. seam. The fall was owing to a slippy back which before the fall was concealed by a skin of coal 2 or 3 in. thick. The place was timbered with props and cap-pieces.

Shag Point Mine.—12th March: James Wilde, 37, miner—injury to face and serious injury to left eye. He was firing two shots. He lit one fuse, but he thought the other did not spit and he decided to leave it. After the first charge exploded he returned intending to light the second charge. This exploded when he was a yard away, and he was struck by the flying coal.

Springfield Mine, Waikaka Valley.—17th March: William Bazley, 26, miner—laceration of lungs and fractured ribs caused by a fall of gravel and clay which he was stripping from above the coal-seam.

Wairaki Mine.—16th May: William Taylor, miner—injuries to chest and side caused by a large stone falling out from between two slippy facings.

Birchwood Mine.—19th May: James W. G. Baird, 48, miner—burns on the left hand caused by a spark from his naked lamp igniting a half cartridge of gunpowder which he was going to use for a shot.

Mossbank Mine.—20th July: Alex. Kane, miner—loss of left eye by being struck by a piece of coal which burst from the side of the pillar.

Waronui Mine.—26th July: Robert Robertson, 57, miner—corneal ulceration of the left eyeball through being hit by a piece of coal.

Wairio Mine.—30th July: John Duncan, 53, mine-manager—injury to spine and paralysis of both legs. Whilst examining a "pothole" about 10 yards back from a working-face he was struck and knocked down by a fall of stone and coal. The place was only 5 ft. in height, and was supported by props and cap-pieces.

Linton Mine.—4th September: Robert McDowell, 59, miner—burns to arms. Whilst carrying his powder-tin to the face he slipped on a bench of bottoms 18 in. high. His tin was projected forward and the lid burst open. The naked light he was carrying fell amongst the powder.

Mossbank Mine.—4th December: Charles Orr, 21, miner—fractured clavicle and abrasions, caused by being struck by a piece of coal from a shot which blew through from an inclined working-place into the level above.

Christie's No. 1 Mine.—13th December: John Stratton, 39, miner—sustained a compound fracture of his right leg through a lump of "doughboy" falling from the roof where he was engaged putting up a set of timber. In jumping back his foot slipped into the hole sunk in the floor for the leg of the set.

ANNEXURE B.

COLLIERY STATISTICS, 1923.

Name of Mine and Locality.	Name of Mine-manager.	Name and Address of Owner.	Number of Years worked.	Classification of Coal	Number of Seams worked.	Thickness of Coal-seams.	Thickness worked.	System of Underground working.	Number of Winding-shafts.	Total Output for 1923.	Total Output to 31st December, 1922.	Total Output to 31st December, 1923.	Number of Persons ordinarily employed.			Means of Ventilation.
													Above.	Below.	Total.	
						NORTHERN INSPECTION DISTRICT.										
North Auckland District.										Tons.	Tons.	Tons.				
Hikurangi Colliery, Hikurangi	A. H. Taylor	Hikurangi Coal Co., Ltd., Auckland	31	Sub-bituminous	1	8′ to 10′	8′ to 10′	Bord and pillar		31,116	1,388,894	1,420,010	12	33	45	Waddle fan.
Hikurangi New Colliery, Hikurangi	E. Nelson	Hikurangi Coal Co., Ltd., Auckland	1	Ditto	1	10′ 6″	8′	Ditto	1	20,149	129	20,278	40	70	110	Fan.
Kerr & Co. (McLeod's), Hikurangi	F. H. Kells	Kerr & Wyatt, Hikurangi	3½	,,	1	3′ to 7′	3′ to 7′	,,		7,312	8,986	16,298	4	13	17	Natural.
Silverdale Colliery, Hikurangi	C. J. Doel	Foot & Doel, Hikurangi	5	,,	1	3′ 6″	3′ 6″	,,		3,160	17,889	21,049	3	9	12	,,
Northern Co-operative, Hikurangi	E. A. Cunningham(P.)	E. A. Cunningham & Co., Hikurangi	5	,,	1	5′	5′	,,		26	27,681	27,707	1	2	3	,,
Kerr & Wyatt, Hikurangi	J. Hamilton (P.)	Kerr & Wyatt, Hikurangi	8	,,	1	4′ to 5′	4′ to 5′	,,		749	24,919	25,668	1	3	4	,,
Christie's Co-operative, Hikurangi	H. Tipton	Reyburn Lime Co., Whangarei	3½	,,	1	5′ to 8′	5′ to 8′	,,		6,852	10,846	17,698	2	7	9	,,
Foot's Coal-mine, Hikurangi	S. G. Foot (P.)	Foot Bros., Hikurangi	1½	,,	1	5′ to 7′	5′ to 7′	,,		1,305	196	1,501	3	4	7	,,
Ferndale Colliery, Hikurangi	R. C. Cherrie	Cherrie & party, Hikurangi	1½	,,	1	6′ to 7′	6′ to 7′	,,		2,244	1,704	3,948	3	4	7	,,
Wilson's Colliery, Hikurangi	G. Davidson	Wilson's Colls., Ltd., Auckland	6	,,	1	8′	8′	,,		48,701	74,099	122,800	32	106	138	Sirocco fan.
Waro Colliery, Whangarei	J. Cadman	N.Z. Coal & Cement Co., Whangarei	13	,,	1	5′ to 9′	5′ to 9′	,,		3,492	36,056	39,548	4	8	12	Fan.
Rautangata Colliery, Kamo	R. Dickson (P.)	Kamo Potteries, Ltd., Kamo	3½	,,	1	9′	7′	,,		908	240	1,148	..	2	2	Natural.
Glen Nell Colliery, Hikurangi	J. McIntyre (P.)	J. McIntyre, Hikurangi	½	,,	1	4′ to 5′	4′ to 5′	,,		104	..	104	1	3	4	,,
Waikato District (including Mokau)																
Taupiri Extended Mine, Huntly	J. Makinson	Taupiri Coal-mines, Ltd., Auckland	35	Brown	2	10′ to 34′	20′	Bord and pillar	2	111,029	2,985,281	3,096,310	66	256	322	Sirocco fan.
Rotowaro Colliery, Rotowaro	A. Penman	Taupiri Coal-mines, Ltd., Auckland	6	,,	1	6′ to 19′	6′ to 13′	Ditto		105,408	365,471	470,879	45	150	195	,,
Pukemiro Colliery, Pukemiro	A. Burt	Pukemiro Colls., Ltd., Auckland	8	,,	1	5′ to 18′	5′ to 14′	,,		149,923	732,139	882,062	70	165	235	Fans (2)
Waipa Colliery, Glen Massey	T. Thomson	Waipa Railway and Colls., Ltd., Wellington	10	,,	1	8′ to 10′	6′ to 8′	,,		70,500	601,785	672,285	31	90	121	Fan.
Waikato Extended Mine, Huntly	D. Nicholson	Roose Shipping Co., Mercer	7½	,,	1	16′	15′	,,		7,869	28,719	36,588	4	10	14	Natural.
Glen Afton Colliery, Glen Afton	P. Hunter	N.Z. Co-operative Dairy Co., Ltd., Hamilton	3½	,,	1	8′ to 17′	8′ to 9′	,,		42,220	6,082	48,302	60	121	181	Sirocco fan.
Pukemiro Junction Mine, Pukemiro	C. V. Molony	Clare & Partners, Pukemiro	3	,,	1	2′ to 25′	2′ to 12′	,,		11,440	11,016	22,456	6	9	15	Natural.
Huntly Coal-mine, Huntly	J. Lamont	Lamont & Starr, Huntly	2½	,,	1	14′	8′ to 12′	,,		5,181	4,789	9,970	3	7	10	,,
Taupiri East Mine, Kimihia	J. Holland (P.)	J. Holland, Huntly	2	,,	1	12′	10′	,,		552	1,446	1,998	1	2	3	,,
Campbell Coal-mine, Whatawhata	W. Wood	Campbell Coal Co., Hamilton	1½	,,	1	12′	12′	,,		2,117	1,728	3,845	2	5	7	,,
Greencastle Mine, Aria	A. Morgan (P.)	A. Morgan, Aria	7	,,	1	12′	9′	,,		308	1,616	1,924	..	2	2	,,
Old Stockman Mine, Mokau	C. Wright (P.)	Chambers Bros., Awakino	3	,,	1	5′	5′	,,		202	894	1,096	..	1	1	,,
Graham Colliery, Glen Afton	J. Spence	Spence & party, Pukemiro	½	,,	1	4′ 6″	4′	,,		300	..	300	1	3	4	,,
Bombay Coal-mine, Bombay	W. Brown (P.)	W. Brown, Bombay	½	,,	1	6′	4′	,,		163	..	163	1	4	5	,,
Hauturu Coal-mine, Hauturu	J. Fisher (P.)	Fisher & party, Hauturu	1	,,	1	7′	7′	,,		98	..	98	1	2	3	,,
Opaheke Colliery, Opaheke	J. W. Brown	J. W. Brown, Opaheke	½	,,	1	3′ to 4′	3′ to 4′	,,		49	..	49	1	1	2	,,
Kimihia Coal-mine, Kimihia	R. Johnson (P.)	R. Johnson, Huntly	½	,,	1	13′	8′	,,		341	..	341	1	3	4	,,
Hunua Coal-mine, Hunua	W. C. Davies	Hunua & Opaheke Coal Co., Ltd., Auckland	4	,,	1	6′	6′	,,		47	1,887	1,934	1	2	3	,,
Output of collieries included in previous statements at which operations are abandoned or suspended											4,788,946	4,788,946				

WEST COAST INSPECTION DISTRICT.

Nelson District.																
Puponga Mine	A. J. McHardy ..	Puponga Coal Syn., Puponga ..	20	Sub-bituminous	2	7′ 6″ & 3′ 6″	Full height	Bord and pillar	..	6,016	230,237	236,253	5	11	16	Natural.
North Cape Mine	Robert Alison ..	North Cape Coal Co., Puponga ..	13	Ditto ..	2	4′ 6″ & 7′	,,	Ditto ..	..	2,155	97,566	99,721	21	12	33	Fan and natural
Golden Bay Mine	J. McDougall (P.) ..	McDougall & Cotter, Takaka ..	4	Lignite ..	1	4′ 6″	,,	,, ..	..	728	990	1,718	..	3	3	Natural.
Waikohatu Mine	R. Stone (P.) ..	Stone Bros., Takaka ..	4	Brown ..	2	22″ & 19″	,,	,, ..	..	50	630	680	..	2	2	,,
O'Rourke's Mine	J. Burgess (P.) ..	A. O'Rourke, Murchison ..	4	,, ..	1	2′ 6″	,,	,, ..	..	48	188	236	..	1	1	,,
Buller District.																
Westport-Stockton Mine ..	James Fletcher ..	Westport-Stockton Coal Co., Ltd., Westport	15	Bituminous	2	4′ to 20′	Full height	Bord and pillar	..	93,559	1,805,438	1,898,997	90	170	260	Fans.
Millerton Mine	T. King	Westport Coal Co., Westport ..	32	,,	1	4′ to 20″	12′	Ditto ..	..	212,634	6,412,903	6,625,537	103	424	527	,,
Millerton Mine	W. Pearson ..	Westport Coal Co., Westport ..	32	,,	1	5′ to 14′	Full height	,, ..	..							
Ironbridge Mine	G. Smith	Westport Coal Co., Westport ..	32	,,	2	3′ to 30′	,,	,, ..	..	136,877	8,366,334	8,503,211	70	156	226	,,
Coalbrookdale Mine ..	W. Hewitson ..	Westport Coal Co., Westport ..	43	,,	1	4′ to 20′	,,	,, ..	..				70	169	239	,,
Regan O'Brien's (Dove's 5367) ..	G. Gilbert ..	J. T. Dove, Seddonville ..	3	,,	1	20′	,,	,, ..	..	15,356	32,872	58,687	4	16	20	Natural.
Dove's 5657	T. Murray ..	J. T. Dove, Seddonville ..	2	,,	1	20′	10′	,, ..	..	10,459			2	18	20	,,
Coal Creek Mine	W. McGuire ..	McGuire & party, Seddonville ..	8	,,	1	20′	8′	,, ..	..	13,111	48,788	61,899	3	15	18	,,
Cardiff Bridge Co-op. Mine ..	M. Forsyth ..	Mulholland & party, Seddonville	3	,,	1	8′ to 20′	9′ to 11′	,, ..	..	11,810	8,704	20,514	10	17	27	,,
McAllister & party's Mine ..	C. R. Martin ..	McAllister & party, Seddonville ..	5	,,	1	6′	Full height	,, ..	..	3,485	15,243	18,728	..	4	4	,,
Westport-Mokihinui Mine ..	W. O'Rourke ..	Westport - Mokihinui Coal-mines, Ltd., Seddonville	3	,,	1	6′ to 8′	6′ to 7′	,, ..	..	5,848	1,914	7,762	3	8	11	,,
Zealandia Mine	T. L. Bennett ..	T. L. Bennett, Seddonville ..	1	,,	1	3′ to 7′	Full height	,, ..	..	259	..	259	..	4	4	,,
Marris & Murray's Mine ..	Charles Murray ..	Marris & Murray, Seddonville ..	..	..	..	..	..	..	..	1,768	1,373	3,141	1	2	3	..
Chester & party's Mine ..	W. Jenkins ..	Chester & party, Seddonville ..	4	,,	1	3′	Full height	,, ..	..	2,200	4,571	6,771	1	3	4	,,
Whitecliffs Mine	James H. Burley ..	J. H. Burley, Berlin's	..	Brown ..	1	18′	10′	,, ..	..	147	..	147	..	2	2	,,
Ngakawau Mine	D. J. Rees ..	Ngakawau Mining Syn., Stockton Mine	1	Bituminous	1	3′ to 12′	3′ to 8′	,, ..	..	1,076	..	1,076	1	7	8	,,
Mitchell's Mine	F. T. Mitchell ..	F. T. Mitchell, Charleston ..	1	Lignite ..	1	40′	8′	Open cast	..	12	..	12	1	..	1	Opencast.
Rocklands Mine	John P. Burley ..	John P. Burley, Berlin's ..	21	Brown ..	1	27′	8′	Bord and pillar	..	358	7,779	8,137	..	2	2	Natural.
Reefton District.																
Coghlan's Mine	C. D. Curtiss (P.) ..	John Coghlan, Reefton ..	27	Brown ..	1	12′ to 40′	8′	Bord and pillar	..	102	10,618	10,720	..	2	2	Natural.
Doran's Mine	J. J. Doran (P.) ..	J. J. Doran, Capleston ..	3	,, ..	2	..	..	Ditto ..	..	521	900	1,421	1	2	3	,,
Reefton Coal Co's Mine ..	E. W. Tattley ..	Reefton Coal Co., Reefton ..	22	,, ..	2	8′ to 12′	7′ & F.H.	,, ..	..	17,776	73,107	90,883	20	52	72	,,
Phœnix and Venus Mine ..	W. Kearns (P.) ..	Collins & Kearns, Reefton ..	32	,, ..	2	40′ & 80′	10′ & 7′	,, ..	..	1,953	49,602	51,555	2	2	4	,,
Clele	Charles Skinner (P.)	Alborn & Pascoe, Reefton ..	37	,, ..	2	6′	6′	,, ..	..	820	20,834	21,654	1	3	4	,,
Big River	W. Kirwan (P.) ..	New Big River G.M. Co., Reefton	11	,, ..	1	8′ to 12′	Full height	,, ..	..	1,322	7,765	9,087	..	2	2	,,
Morris & Learmont's Mine ..	J. Baxendale ..	Morris & Learmont, Reefton ..	11	,, ..	3	6′ to 20′	8′	,, ..	..	3,042	22,702	25,744	..	10	10	,,
Victory Mine	P. H. Wood (P.) ..	Woods & party, Reefton ..	5	,, ..	1	12′	Full height	,, ..	..	1,332	6,355	7,687	..	4	4	,,
Woodlands Mine	A. Chadwick ..	McKenzie & party, Reefton ..	3	,, ..	1	9′	5′	,, ..	..	1,315	909	2,224	1	2	3	,,
Empire Mine	H. L. Morgan (P.) ..	D. Blackadder, Reefton ..	3	,, ..	2	7′ & 20′	7′	,, ..	..	2,013	2,656	4,669	2	4	6	,,
Bolitho's Mine	J. Bolitho (P.) ..	Bolitho Bros., Reefton ..	2	,, ..	1	6′ to 8′	6′	,, ..	..	1,336	470	1,806	..	4	4	,,
Ferndale-Timaru Mine ..	W. Lowden ..	Ferndale-Timaru Co., Reefton ..	21	,, ..	3	8′ to 20′	8′ to 10′	,, ..	..	5,905	22,600	28,505	5	16	21	,,
Slab Hut Mine	A. J. Grigg (P.) ..	A. J. Grigg, Reefton	1	,, ..	1	4′	4′	,, ..	..	60	..	60	..	2	2	,,
Golden Point Mine	A. Thompson ..	T. S. Patterson, Reefton ..	10	,, ..	1	7′	Full height	,, ..	..	610	15,481	16,091	1	4	5	,,
Greymouth District.																
Paparoa Mine	A. O'Donnell ..	Paparoa Coal Co., Roa ..	15	Bituminous	1	5′ to 25′	8′ to 25′	Bord and pillar	..	34,030	387,954	421,984	30	71	101	Fan.
Blackball Mine	W. Parsonage ..	Blackball Coal Co., Blackball ..	32	,,	2	17′	15′	Ditto ..	..	62,541	3,104,148	3,166,689	50	220	270	,,
Armstrong's Mine	V. Armstrong ..	Armstrong & party, Runanga ..	2	,,	1	3′ to 10′	Full height	,, ..	..	7,564	1,477	9,041	2	8	10	Natural.
Baddeley's Mine	J. Rowse	Baddeley & party, Runanga ..	3	Semi-bituminous	1	5′	,,	,, ..	..	4,434	5,096	9,530	2	5	7	Fan.
Boote's Mine	R. Gore	Boote & party, Runanga ..	2	Ditto ..	1	5′	,,	,, ..	..	1,909	2,590	4,499	2	6	8	Natural.
Dixon & party's Mine	G. R. Dixon ..	Dixon & party, Brunnerton ..	1	,, ..	1	14′	,,	,, ..	..	1,250	..	1,250	1	3	4	,,
Duggan's Mine	W. Richmond ..	Duggan & party, Runanga ..	2	,, ..	1	3′	,,	,, ..	..	4,426	2,076	6,502	..	7	7	,,
Hillside Mine	J. Guy	Hillside Co-op. party, Runanga ..	3	,, ..	1	7′	,,	,, ..	..	4,946	9,662	14,608	2	6	8	,,
Hunter's Mine	A. Hill	Hunter & party, Runanga ..	3	,, ..	1	4′	,,	,, ..	..	989	6,264	7,253	1	7	8	Fan.
Latcham Syndicate's Mine ..	W. J. Dennehy ..	Latcham Coal Prospecting Syndicate, Runanga	1	,, ..	1	4′	,,	,, ..	..	243	..	243	2	1	3	Water-blast.
Manderson's Mine	P. Manderson ..	Manderson & party, Runanga ..	2	,, ..	1	4′ 6″	,,	,, ..	..	4,439	..	4,439	2	7	9	Natural.
McIvor's Mine	J. Hadcroft ..	McIvor & party, Runanga ..	2	,, ..	1	5′	,,	,, ..	..	1,938	96	2,034	1	6	7	,,

COLLIERY STATISTICS, 1923—*continued.*

Name of Mine and Locality.	Name of Mine-manager.	Name and Address of Owner.	Number of Years worked.	Classification of Coal	Number of Seams worked.	Thickness of Coal-seams.	Thickness worked.	System of Underground working.	Number of Winding-shafts.	Total Output for 1923.	Total Output to 31st December, 1922.	Total Output to 31st December, 1923.	Number of Persons ordinarily employed.			Means of Ventilation.
													Above.	Below.	Total.	
						WEST COAST INSPECTION DISTRICT—*continued.*										
Greymouth District—continued.										Tons.	Tons.	Tons.				
Moody Creek Mine	W. Robertson ..	Moody Creek Syndicate, Runanga	1	Semi-bituminous.	1	9′	Full height.	Bord and pillar ..	..	3,551	..	3,551	2	5	7	Natural.
Smith's Mine	T. Halliday ..	Smith & party, Runanga ..	3	Ditto ..	1	5′	,,	Ditto	..	5,881	6,600	12,481	3	5	8	,,
Spark's Mine	W. Dutton ..	Spark & party, Runanga ..	1	,, ..	1	7′	,,	,, ...	..	3,422	..	3,422	3	5	8	,,
Liverpool No. 1 Mine	O. J. Davis ..	N.Z. Government, Greymouth ..	11	,, ..	2	4′ to 16′	,,	,, ...	..	87,220	1,109,758	1,243,475	64	131	195	Fan.
Liverpool No. 3 & Extended Mine	O. J. Davis ..	N.Z. Government, Greymouth ..	10 & 1	,, ..	2	4′ to 12′	,,	,, ...	..	30,014			23	40	63	,,
Liverpool Nos. 4 & 4A Mine ..	O. J. Davis ..	N.Z. Government, Greymouth ..	2	,, ..	2	6′ to 12′	,,	,, ...	..	16,483			5	23	28	,,
James Mine	J. Armstrong ..	N.Z. Government, Greymouth ..	2	,, ..	1	4′ to 8′	,,	,, ...	..	17,686	820	18,506	14	57	71	,,
Output from mines shown in previous statements and which have been abandoned			..	..	..	..	..	..	..	..	7,137,301	7,137,301	..	..	..	..
						SOUTHERN INSPECTION DISTRICT.										
Canterbury.																
Mount Torlesse, Avoca	W. Leitch ..	Mount Torlesse Coll., Christchurch	6	Brown ..	3	12′	All	Bord and pillar ..	..	7,481	55,115	62,596	10	15	25	Steam, fan, and natural.
Springfield, Springfield	J. Taylor (D.) ..	J. Taylor, Springfield	43	,, ..	1	4′	All	Ditto	..	145	92,565	92,710	1	1	2	Natural.
Homebush, Glentunnel ..	A. Smith (P.) ..	Homebush Brick & Coal Co., Ltd., Glentunnel	50	,, ..	1	3′ 6″	All	,, ...	..	1,755	339,402	341,157	..	4	4	,,
Bush Gully, Coalgate	J. McQueen (P.) ..	Ditto	6	,, ..	1	5′	5′	,, ...	..	206	37,579	37,785	1	2	3	,,
St. Helens, Whitecliffs	J. Sutherland (P.)	J. Sutherland, Glentunnel ..	42	,, ..	1	6′	6′	,, ...	..	580	31,242	31,822	1	2	3	,,
Steventon, Whitecliffs	D. Kane	Campbell & Leeming, Glentunnel	4	,, ..	1	4′ 6″	All	,, ...	..	4,369	4,542	8,911	3	7	10	,,
Clearview, Glenroy	C. G. Marsh (U.) ..	Smith & Marsh, Glentunnel ..	4	,, ..	1	9′	6′ 6″	,, ...	..	1,813	2,249	4,062	1	4	5	,,
Tripp's, Mount Somers	J. B. Harris (P.) ..	Burnwell Coal Co., Mount Somers	57	,, ..	1	20′	8′	,, ...	..	1,828	77,974	79,802	1	3	4	,,
Burnwell, Mount Somers ..	T. Harris (D.) ..	Burnwell Coal Co., Mount Somers	1	,, ..	1	6′	6′	,, ...	..	856	..	856	2	3	5	,,
Cavendish, Mount Somers ..	G. Harris (P.) ..	Mrs. F. J. M. Morgan, Mt. Somers	4	,, ..	1	14′	8′ to 6′	,, ...	..	130	1,056	1,186	..	1	1	,,
Albury, Albury	T. F. Slowey (P.) ..	T. F. Slowey, Albury	32	Lignite ..	1	15′	8′	,, ...	..	614	23,614	24,228	1	1	2	,,
Woodbank, Albury	W. H. Hogue (P.) ..	W. H. Hogue, Albury	..	,, ..	1	..	..	.. ..	..	8	..	8	1	..	1	,,
Allanholme, Waihao Forks ..	J. Campbell (D.) ..	Allanholme Coal Co., Waimate ..	8	,, ..	1	16′	8′	,, ...	..	541	9,258	9,799	1	1	2	,,
Meadowbank, Waihao Forks ..	J. Craig (D.) ..	A. E. Kirk, Waihao Forks ..	6	,, ..	1	26′	8′	,, ...	..	390	2,687	3,077	..	2	2	,,
North Otago.																
Wharekuri, Wharekuri	P. Campbell ..	J. C. & T. D. Shanks, Wharekuri	4	Lignite ..	1	30′	6′	Bord and pillar ..	..	457	3,063	3,520	..	3	3	Natural.
St. Andrew's, Papakaio	T. Barclay, jun. ..	Papakaio Coal Co., Oamaru ..	45	,, ..	1	9′	7′	Ditto	..	124	61,186	61,310	..	1	1	,,
Prince Alfred, Papakaio ..	A. Beardsmore (P.)	Mrs. J. E. Willetts, Papakaio ..	54	,, ..	1	12′ to 7′	7′ to 6′	,, ...	..	969	68,587	69,556	1	2	3	,,
Ngapara, Ngapara	W. Nimmo (P.) ..	W. Nimmo, Ngapara	45	,, ..	1	25′	10′ to 8′	,, ...	..	1,005	36,963	37,968	1	2	3	,,
Shag Point (old mine), Shag Point	W. McLaren (P.) ..	Waronui Coal Co., Dunedin ..	9	Brown ..	1	4′	All	,, ...	..	373	412,854	413,227	..	2	2	,,
Shag Point C.M. Co., Ltd., Shag Point	J. Hughes ..	Shag Point C.M. Co., Ltd., Dunedin	15	,, ..	1	4′	All	,, ...	..	16,770	125,819	142,589	13	47	60	Fan.
Central Otago.																
Gimmerburn, Gimmerburn ..	C. Dougherty (P.) ..	C. Dougherty, Gimmerburn ..	67	Lignite ..	1	12′	All	Open	..	24	3,385	3,409	..	..	..	..
Wedderburn, Wedderburn ..	M. Shea (P.) ..	M. Shea, Wedderburn	..	,, ..	1	5′	All	,, ...	..	120	..	120	1	..	1	..
Botting's, Idaburn	G. Botting (P.) ..	G. Botting, Naseby	1	,, ..	1	20′	12′	,, ...	..	..	74	74	..	..	..	..
Rough Ridge, Oturehua ..	E. Beck (P.) ..	Margaret Beck, Oturehua ..	37	,, ..	1	20′	All	,, ...	..	57	35,451	35,508	..	..	..	..
Idaburn, Oturehua	R. K. Deaker (P.) ..	R. K. Deaker, Oturehua ..	53	,, ..	1	20′	All	,, ...	..	617	50,496	51,113	3	..	3	..
Oturehua, Oturehua	J. R. Becker (P.) ..	Becker Bros., Oturehua ..	29	,, ..	1	17′	7′	,, ...	..	196	4,603	4,799	2	..	2	..
Lowis's, Blackstone Hill ..	T. A. Lowis ..	T. A. Lowis, Blackstone Hill ..	4	,, ..	1	10′	All	,, ...	..	..	76	76	..	..	..	..
Dillon's, Blackstone Hill ..	J. Dillon (P.) ..	J. Dillon, Blackstone Hill ..	26	,, ..	1	12′	All	,, ...	..	14	311	325	..	..	..	..
Wade's, Blackstone Hill ..	W. J. Wade ..	W. J. Wade, Blackstone Hill ..	1	,, ..	1	6′	All	,, ...	..	..	14	14	..	..	..	..
Armitage's, Blackstone Hill ..	J. Armitage (P.) ..	J. Armitage, Blackstone Hill ..	43	,, ..	1	16′	All	,, ...	..	8	4,726	4,734	..	..	..	..
St. Bathan's, Blackstone Hill ..	J. Enright (P.) ..	J. Enright, St. Bathan's ..	26	,, ..	1	30′	All	,, ...	..	103	6,843	6,946	1	..	1	..
Wheeler's, St. Bathan's ..	J. Wheeler (P.) ..	J. Wheeler, St. Bathan's ..	1	,, ..	1	6′	All	,, ...	..	18	79	97	..	..	..	..
Cambrian, Cambrian	O. Jones (P.) ..	Vinegar Hill Hydraulic S. Co., St. Bathan's	62	,, ..	1	18′	All	,, ...	..	359	50,468	50,827	1	..	1	..
Lauder Lane, Cambrian ..	M. Andrew (P.) ..	F. Kippenberger, Beck's ..	19	,, ..	1	12′	6′	,, ...	..	136	2,722	2,858	1	..	1	..
Alexandra, Alexandra	D. Mathias (P.) ..	Alexandra C.M. Co., Alexandra ..	42	,, ..	1	9′	6′	Bord and pillar ..	..	1,271	106,240	107,511	1	3	4	Exhaust steam.

McPherson's, Coal Creek Flat	J. Weatherall (P.)	N. Harliwich, Roxburgh	53	„	1	6′	All	Open	2,141	81,749	83,890	2	..	2	..
Cromwell, Cromwell	R. Thomson (P.)	A. Scott, Cromwell	9	„	1	12′	7′ to 10′	Bord and pillar	787	10,173	10,960	1	2	3	Exhaust steam.
Shepherd's Creek, Bannockburn	J. Hodson, jun.	Bannockburn C.M. Co., Bannockburn	46	„	1	12′ to 6′	..	Ditto	2,322	108,738	111,060	1	4	5	„
Cardrona, Cardrona	R. McDougall (P.)	R. McDougall, Cardrona	39	Brown	2	30″ & 20″	All	Open	108	26,590	26,698	1	..	1	..
Nevis, Nevis	E. J. Williams, (P.)	E. J. Williams, Nevis	23	„	1	10′	6′	Levels	91	7,235	7,326	1	..	1	Natural.
Nevis Crossing, Nevis	R. Ritchie (P)	R. Ritchie, Nevis	20	„	1	16′	6′	Open	503	15,403	15,906	2	..	2	..
South Otago.															
Fernhill, Abbotsford	J. Dunlop (P.)	Fernhill Coal & Sand Co., Dunedin	46	Lignite	1	8′	6′	Bord and pillar	821	176,759	177,580	1	3	4	Natural.
Freeman's, Abbotsford	W. Evans (D.)	Freeman's Coal Co., Green Island	43	„	1	14′ to 10′	All	Ditto	3,310	587,827	591,137	3	5	8	Furnace.
Jubilee, Saddle Hill	T. Barclay	Jubilee Coal Co., Ltd., Dunedin	26	„	1	11′ to 7′	All	„	16,237	420,377	436,614	7	20	27	Fan.
Saddle Hill No. 1, Saddle Hill	R. Hill	Christie Bros., Mosgiel, Dunedin	51	„	1	20′	All	„	3,256	280,765	284,021	3	5	8	„
Harris's Burnweil, Saddle Hill	R. Hill	Christie Bros., Mosgiel, Dunedin	..	„	1	20′	All	„	3,179	76,970	80,149	3	1	4	„
Saddle Hill No. 2, Saddle Hill	R. Hill	Christie Bros., Mosgiel, Dunedin	22	„	1	20′	All	„	640	316,468	317,108	1	1	2	„
Walton Park, Fairfield	R. Hill	Christie Bros., Mosgiel, Dunedin	3	„	1	10′	All	„	10,492	3,044	13,536	6	15	21	„
East Taieri, Riccarton	E. Charles	East Taieri Coal Co., Riccarton, Mosgiel	12	„	1	7′	6′	„	2,334	37,093	39,427	2	5	7	Natural.
Willowbank, Riccarton	A. Manderson (P.)	G. Scurr, Riccarton, Mosgiel	3	„	1	7′	5′ 6″	„	218	223	441	1	1	2	„
Brighton, Brighton	R. C. Wright (P.)	Smith & Wright, Brighton	8	„	1	7′	6′	„	423	7,732	8,155	1	1	2	„
Ruanui, Brighton	N. McColl (P.)	D. L. McColl, jun., Brighton	3	„	1	7′	6′	„	22	246	268	..	..	..	Exhaust steam.
Waronui, Milton	J. Carruthers, jun	Bruce Rly. & Coal Co., Dundin	19	„	1	7′	6′	„	19,860	264,200	284,060	15	25	40	Fan.
Crichton, Crichton	Geo. D. Cooper (P.)	Crichton Coal Co., Reefton	4	„	1	30′	8′	„	555	2,000	2,555	..	2	2	Natural.
Lakeside, Lakeside	C. Penman (P.)	C. Penman, Kaitangata	4	„	1	18′	7′	„	148	1,826	1,974	..	2	2	„
Taratu, Lovell's Flat	J. Hadcroft	Sargood & Cheeseman, Dunedin	22	„	3	35′ to 15′	15′ to 7′	„ 1	33,965	503,137	537,102	19	48	67	Fan.
Tuakitoto, Tuakitoto	J. Throp (P.)	J. Throp, Kaitangata	13	„	1	18′	7′	„	126	3,750	3,876	..	1	1	Exhaust steam.
Kaituna, Kaitangata	A. Cain	Kaituna Coal Co., Ltd., Dunedin	15	„	1	15′	6′	„	4,447	18,641	23,088	3	9	12	Fan.
Wangaloa, Wangaloa	T. Gage (P.)	T. Gage, Kaitangata	4	„	1	11′	7′	„	38	796	834	..	1	1	Natural.
Kaidale, Wangaloa	V. Wilson (P.)	Morrison Bros., Kaitangata	5	„	1	14′ to 10′	6′ 6″	„	542	7,510	8,052	1	1	2	„
Kaibrook, Wangaloa	T. Gage (P.)	J. Gage, Kaitangata	4	„	1	11′	6′ 6″	„	553	1,535	2,088	1	1	2	„
Roseneath, Wangaloa	T. Middleton	T. Middleton, Wangaloa	4	„	1	16′	7′	„	142	3,123	3,265	..	1	1	„
Kaitangata No. 1, Kaitangata	A. S. Gillanders	N.Z. Coal & Oil Co., Ltd., Dunedin	47	Brown	2	12′ to 6′	All	„ 1							
Kaitangata No. 2, Kaitangata	F. Carson	N.Z. Coal & Oil Co., Ltd., Dunedin	11	„	3	25′ to 6′	All	„	112,929	4,036,694	4,149,623	86	283	369	Fan.
Castle Hill, Kaitangata	J. Gillick	N.Z. Coal & Oil Co., Ltd., Dunedin	30	„	3	20′ to 12′	All	„ 1							
Benhar, Stirling	J. Walls (D.)	P. McSkimming & Son, Benhar	60	Lignite	3	14′	10′	„	9,377	220,066	229,443	1	6	7	„
Southland.															
Pukerau, Pukerau	W. Kyle (P.)	Miller Bros., Pukerau	5	Lignite	1	11′	7′	Bord and pillar	738	4,610	5,348	..	1	1	Natural.
Rosedale, McNab	A. Reinke (P.)	E. H. Reinke, McNab	4	„	1	12′	8′	Open	18	994	1,012	..	..	..	..
Whiterig, East Gore	R. Craig (P.)	R. Craig, East Gore	45	„	1	24′	14′	Bord and pillar	3,585	85,560	89,145	1	2	3	Exhaust steam.
Green's, Gore	J. Mason	T. Green & Co., Ltd., Gore	35	„	1	19′	12′	Ditto	13,220	267,662	280,882	2	9	11	Fan.
Riverview, Gore	J. J. Nicol (P.)	J. J. Nicol, Gore	36	„	1	10′	All	Open	10	2,084	2,094	..	..	..	..
Springfield, Waikaka Valley	R. L. Reid (P.)	R. L. Reid, Waikaka Valley	27	„	1	10′	All	„	86	59,673	59,759	1	..	1	..
Glenlee, Waikaka	A. H. Edge (P.)	A. A. Edge, Waikaka	30	„	1	14′	9′	Bord and pillar	1,179	23,838	25,017	..	2	2	Natural.
Ramsay's, North Chatton	P. Ramsay (P.)	P. Ramsay, North Chatton	20	„	1	20′	15′	Ditto	2,718	99,079	101,797	1	2	3	„
Knapdale, Knapdale	W. Kyle (P.)	M. A. Duggan, Knapdale	1	„	1	15′	11′	„	100	551	651	..	1	1	„
Landslip, Waikaia	T. Northcoat (P.)	T. Northcoat, Waikaia	24	„	1	5′	All	„	58	36,819	36,877	1	..	1	„
Rossvale, Waikaia	J. Henderson (P.)	J. Henderson, Waikaia	20	„	1	15′	8′	„	603	48,001	48,604	1	1	2	„
Argyle, Waikaia	P. R. Parker (P.)	Mrs. M. C. Hutton, Waikaia	32	„	1	10′	All	Open	439	8,127	8,566	2	..	2	„
Terrace, Kingston Crossing	G. Daley (P.)	E. Jones, Kingston Crossing	5	„	1	24′	11′	Bord and pillar	1,254	6,079	7,333	1	1	2	„
Princhester Creek, The Key	J. A. Denton (P.)	J. A. Denton, The Key	21	„	1	5′	All	Open	69	2,187	2,256	1	..	1	..
Forest Hill, Tussock Creek	J. C. McDonald (P.)	J. C. McDonald, Tussock Creek	3	„	1	10′	All	„	116	306	422	1	..	1	..
Mataura Collieries, Mataura	R. Brown	Mataura Colls. Co., Gore	27	„	1	18′ to 15′	12′ to 10′	Bord and pillar	8,441	236,212	244,653	2	5	7	Fan.
Boghead, Mataura	C. E. Rowe (P.)	C. E. Rowe, Mataura	18	„	1	15′	All	Open	2,803	25,255	28,058	4	..	4	..
Mataura Lignite, Mataura	T. Barclay	Beattie, Coster, & Co., Ltd., Mataura	47	„	1	18′	12′	Bord and pillar	11,397	250,305	261,702	4	5	9	Fan.
Terrace, Mataura	A. E. Peck (P.)	Peck Bros., Mataura	4	„	1	12′	All	Open	170	1,396	1,566	1	..	1	..
Heatherlea, Waimumu	P. H. Barber (P.)	P. H. Barber, Waimumu	4	„	1	10′	All	„	63	893	956	1	..	1	..
Ota Creek, Wyndham	E. Todd (P.)	E. Genge, Wyndham	43	„	1	8′	All	„	588	27,630	28,218	1	..	1	..
Clarke's, Wyndham	J. Bushbridge (P.)	J. Bushbridge, Wyndham	16	„	1	10′	All	„	806	19,613	20,419	1	..	1	..
Diamond Lignite, Seaward Bush	A. McMillan (P.)	S. McMillan, Invercargill	21	„	1	32′	17′	„	1,472	27,077	28,549	2	..	2	..

COLLIERY STATISTICS, 1923—*continued.*

Name of Mine and Locality.	Name of Mine-manager.	Name and Address of Owner.	Number of Years worked.	Classification of Coal.	Number of Seams worked.	Thickness of Coal-seams.	Thickness worked.	System of Underground working.	Number of Winding-shafts.	Total Output for 1923.	Total Output to 31st December, 1922.	Total Output to 31st December, 1923.	Number of Persons ordinarily employed.			Means of Ventilation.
													Above.	Below.	Total.	
SOUTHERN INSPECTION DISTRICT—*continued.*																
Southland—continued.										Tons.	Tons.	Tons.				
Nightcaps (No. 1), Nightcaps ..	W. Morgan ..	Nightcaps Coal Co.,Ltd.,Invercargill	42	Brown ..	1	7′	5′	Bord and pillar ..	..	1,392	1,426,961	1,428,619	1	6	7	Fan.
Nightcaps (No. 2), Nightcaps ..	W. Morgan ..	Nightcaps Coal Co.,Ltd.,Invercargill	7	,, ..	1	8′	All	Ditto ..	..	266			1	1	2	Exhaust steam.
Knight's (formerly Nightcaps No.1), Nightcaps	J. E. Lewis ..	Wattle Coal Co., Nightcaps ..	42	,, ..	..	..	..	..	..	417	..	417	1	5	6	,,
Coaldale, Nightcaps	H. Talbot ..	Coaldale Coll. Co., Ltd., Dunedin	6	,, ..	1	7′	All	Bord and pillar ..	..	197	12,287	12,484	2	3	5	,,
Black Diamond, Nightcaps ..	R. W. Duncan ..	Black Diamond Coal Co., Ltd., Nightcaps	8	,, ..	1	25′	8′	Ditto ..	..	28,342	53,262	81,604	9	23	32	Fan.
New Brighton, Nightcaps ..	W. Dixon ..	Southland Coal Co., Invercargill	17	,, ..	1	10′	7′	,, ..	..	14,153	90,146	104,299	7	21	28	,,
Wairio, Nightcaps	J. T. Mosley ..	Smith & Timpany, Invercargill ..	18	,, ..	1	8′	6′	,, ..	..	6,542	133,257	139,799	3	8	11	Exhaust steam.
Mossbank, Nightcaps	T. McMillan ..	Mossbank Coal Co., Ltd., Invercargill	9	,, ..	1	9′ to 8′	5′ 6″	,, ..	..	19,176	60,742	79,918	8	22	30	Fan.
Wairaki (No. 1), Nightcaps ..	A. W. Whittlestone	Wairaki Coal Co., Ltd., Nightcaps	10	,, ..	1	10′	7′	,, ..	..	12,053	67,895	99,095	5	16	21	,,
Wairaki (No. 2), Nightcaps ..	A. W. Whittlestone	Wairaki Coal Co., Ltd., Nightcaps	5	,, ..	1	16′	8′	,, ..	..	19,147			12	22	34	,,
Linton, Nightcaps	G. S. Langford ..	Linton Coal Co., Ltd., Invercargill	8	,, ..	2	25′ to 7′	All	,, ..	..	39,617	87,111	126,728	21	42	63	,,
Birchwood, Ohai, Nightcaps ..	J. B. Ross ..	Birchwood Coal Co., Ohai, Nightcaps	3	,, ..	1	18′	8′	,, ..	..	21,616	13,925	35,541	17	29	46	,,
Ohai Coal Co., Nightcaps ..	H. Talbot ..	Ohai Coal Co., Ltd., Invercargill	..	,, ..	1	20′	8′	,, ..	..	1,048	..	1,048	1	5	6	..
Lynwood, Te Anau	J. Porter (P.) ..	E. C. Govan, Te Anau	13	Lignite ..	1	8′ to 6′	All	Open ..	..	138	3,012	3,150	..		1	..
Output of mines included in previous statements at which operations have been abandoned or suspended						..	..	..	..	..	2,999,017	2,999,017	..	..	..	..
Totals, Southern District, South Island										486,940	15,053,479	15,540,419	326	782	1,108	
Totals, West Coast District, South Island										849,029	29,077,033	29,926,062	627	1,768	2,395	
Totals, North Island										633,865	11,123,438	11,757,303	400	1,097	1,497	
Grand totals										1,969,834	55,253,950	57,223,784	1,353	3,647	5,000	
Output of some collieries prior to 1890 not included in the above statement										..	..	297,336				
Shale exported, 1914										..	..	21				
												57,521,141				

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