

1910.
NEW ZEALAND.

THE GOLDFIELDS OF NEW ZEALAND

(REPORT ON).

Presented to both Houses of the General Assembly by Command of His Excellency.

INDEX.

	Page		Page
Accidents and fatalities	4, 20, 30, 33, 38		
Alluvial mining	9		
Marlborough, Nelson, and West Coast	42, 48		
Otago and Southland	10, 35		
Dividends	4		
Antimony	3, 24, 38		
Asbestos	29		
Auriferous ironsands, Southland	39		
Barewood Gold-mining Company	5		
Battery-superintendents,—			
Examination-papers, 1910	82		
Holders of certificates	86		
Beach-workings, Hokitika	48		
Blackwater Mines (Limited)	5, 8		
Cinnabar	10, 20		
Complex minerals, Preservation Inlet	39		
Consolidated Goldfields of New Zealand	5		
Copper	3, 10, 24, 29, 38		
Dividends	4, 9		
Dredge mining,—			
Marlborough, Nelson, and West Coast	29, 46, 48, 49		
Otago and Southland	38		
List of principal dredgers	9		
Holders of dredge-masters' certificates	87		
Dividends	4		
Examination-papers, 1910,—			
Mine-managers	79		
Battery-superintendents	82		
Gold-dredging (<i>see</i> Dredge mining).			
Golden Blocks (Taitapu Gold-mining Company)	5		
Gold-mining	4		
Government water-races	59, 61		
Hydraulic mining,—			
Marlborough, Nelson, and West Coast	27, 30		
Otago and Southland	35		
Hygienic state of quartz-mines	8		
Inspecting Engineer (report)	3-12		
Inspectors of Mines (reports),—			
Northern District	13, 21		
West Coast District	24, 30		
Southern District	33		
Iron	29		
Ironsands, auriferous	39		
Kauri-gum	3		
Keep-it-Dark Mine	5, 25		
Komata Reefs Mine	5, 18		
Kotuku, oil at	33		
Limestone	39		
Manganese	3		
Marl	39		
May Queen Mine		5, 7	
Mine-managers,—			
Examination-papers, 1910	79		
Holders of certificates	84		
Minerals other than gold	10, 24, 38		
Muddy Terrace Sluicing Company	10		
New Big River Mine	5, 8		
New Zealand Crown Mines (Limited)	7, 17		
Phosphate	39		
Persons employed	4, 8		
Petroleum	33		
Preservation Inlet	39		
Production of gold	3, 5, 9		
Production of minerals	3		
Progress Mines of New Zealand	5, 8		
Prospecting for gold, expenditure on	11		
Quartz-mining,—			
Northern District	5, 6, 13-20, 21-24		
West Coast District	5, 8, 32, 42, 45		
Southern District	5, 33		
Quartz crushed	65-68		
Ventilation and hygienic state of quartz-mines	8		
Quartz-mining companies, principal	5, 8		
Dividends paid by	4		
Reports,—			
Inspecting Engineer of Mines	3-12		
Inspectors of Mines	13, 21, 24, 30, 33		
Wardens	39-55		
Directors of Schools of Mines	55-58		
Water-race Managers	59, 61		
Ross Goldfields (Limited)	9, 32		
Scheelite	3, 10, 38		
Schools of Mines (Directors' reports),—			
Thames	58		
Coromandel	56		
Karangahake	57		
Waihi	56		
Nelson	57		
Reefton	57		
Westport	58		
Dunedin	55		
Schools of Mines, expenditure on	12		
Silver-production	3		
State aid to mining	11		
Statistical tables :—			
Gold duty credited to local bodies	69		
Gold exported, 1857-1909	69		
Gold exported, comparative return, years 1908 and 1909	70		
Gold exported, 1857 to 31st March, 1910	70		

INDEX—*continued.*

	Page		Page
<i>Statistical tables—continued.</i>			
Gold exported, comparative return for quarters ended 31st March, 1909, and 1910	71	Waihi Grand Junction Gold-mining Company (Limited)	5, 6, 14
Gold-production	3, 4	Waiotahi Gold-mining Company	5, 6, 21
Goldfields revenue, quarter ended 31st March, 1910	64	Wardens' reports,—	
Goldfields revenue for year ended 31st December, 1909	63	Thames District	39
Gold purchased by banks	68	Blenheim District	42
Price of provisions, &c.	71	Nelson District	43
Quartz crushed	65-68	Westport District	43
Rates of wages	72	Grey District	45
Statement of affairs of mining companies	73	Westland District	47
Talisman Consolidated (Limited)	5, 7, 16	Invercargill District	54
Thames Deep-levels	7	Queenstown District	53
Tungsten	10	Lawrence District	52
Ventilation and hygienic state of quartz-mines	8	Naseby District	50
Waihi Gold-mining Company (Limited)	5, 6, 13	Water-race Managers' reports,—	
		Kumara District	59
		Naseby District	61

ILLUSTRATIONS.

	Page.
Waihi Goldfield: General plan showing quartz veins, &c., and cross sections showing lodes	4
Blackwater Mines (Limited): Reduction-works	3
Blackwater Mine, transporting machinery to	8

REPORT.

Mr. FRANK REED, M.Inst.MM., Inspecting Engineer, to the Hon. RODERICK MCKENZIE, Minister of Mines.

SIR,—

Mines Department, Wellington, 30th June, 1910.

I have the honour to present the annual reports of inspection of mines, together with reports of Wardens and other officers, accompanied by statistical information in regard to the goldfields and metalliferous mines of the Dominion, for the year ended the 31st December, 1909.

In accordance with the usual practice, the tables showing expenditure through the Mines Department on roads, bridges, tracks, prospecting operations, &c., are for the period covered by the financial year—viz., from the 1st April, 1909, to the 31st March, 1910.

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

- I. Production of Minerals.
 - II. Persons employed.
 - III. Accidents.
 - IV. Goldmining—
 - (1.) Quartz.
 - (2.) Dredging.
 - (3.) Alluvial.
 - V. Minerals other than Gold.
 - VI. State Aid to Mining.
 - VII. Schools of Mines.
- Annexures.—Reports of—
- (a.) Inspectors of Mines.
 - (b.) Wardens.
 - (c.) Directors of Schools of Mines.
 - (d.) Water-race Managers.
 - (e.) Mining Statistics.
 - (f.) Examinations under the Mining Act, 1908, and Lists of Certificate-holders.

I. PRODUCTION OF MINERALS.

A substantial increase has taken place in the value of the mineral-production for the year 1909; this increase, amounting to £182,800, has occurred in the value of the exports of gold, silver, manganese, and kauri-gum.

The total value of the output from the metal mines and gumfields of the Dominion during 1909 amounted to £2,752,387.

The appended statement shows the value of the output from the 1st January, 1853, to the 31st December, 1909:—

Classification.	1908.	1909.	Increase or Decrease.	Total from the 1st January, 1853, to the 31st December, 1909.
	£	£	£	£
Gold	2,004,925	2,006,900	1,975*	75,540,803
Silver	175,337	180,872	5,535*	1,446,960
Copper-ore	275	100	175†	19,198
Scheelite	6,055	4,263	1,792†	37,207
Manganese-ore ... ..	...	79	79*	61,936
Antimony-ore	73	60	13†	54,849
Other minerals	10,124	7,415	2,709†	218,396
Kauri-gum	372,798	552,698	179,900*	14,948,401
Totals	2,569,587	2,752,387	182,800*	92,327,750

* Increase.

† Decrease.

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.
	Northern.	West Coast.	Southern.	
Gold and silver	2,778	2,505	2,212	7,495
Antimony	2	...	4	6
Copper ... ..	...	14	...	14
Iron ... ..	...	13	...	13
Platinum ... ..	...	...	10	10
Scheelite	6	...	60	66
Marl ... ..	...	...	4	4
Tin ... ..	...	...	2	2
Phosphate ... ..	...	...	35	35
Asbestos ... ..	...	6	...	6
Totals	2,786	2,538	2,327	7,651

About a thousand diggers are engaged upon the kauri-gum fields; the actual number is not known.

III. ACCIDENTS.

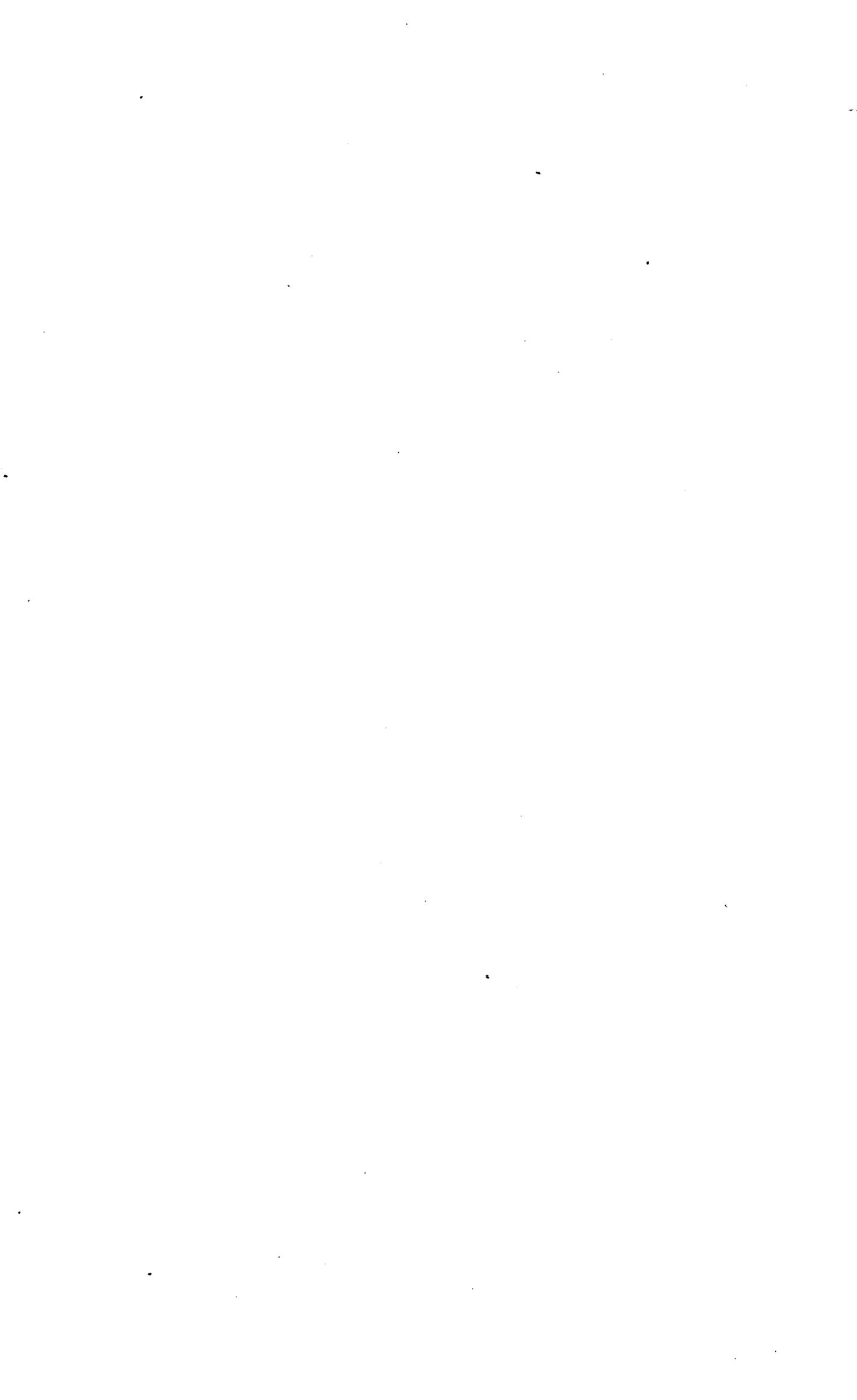
The following is a classification of fatal and serious mining accidents that have occurred during the year at all metalliferous mines:—

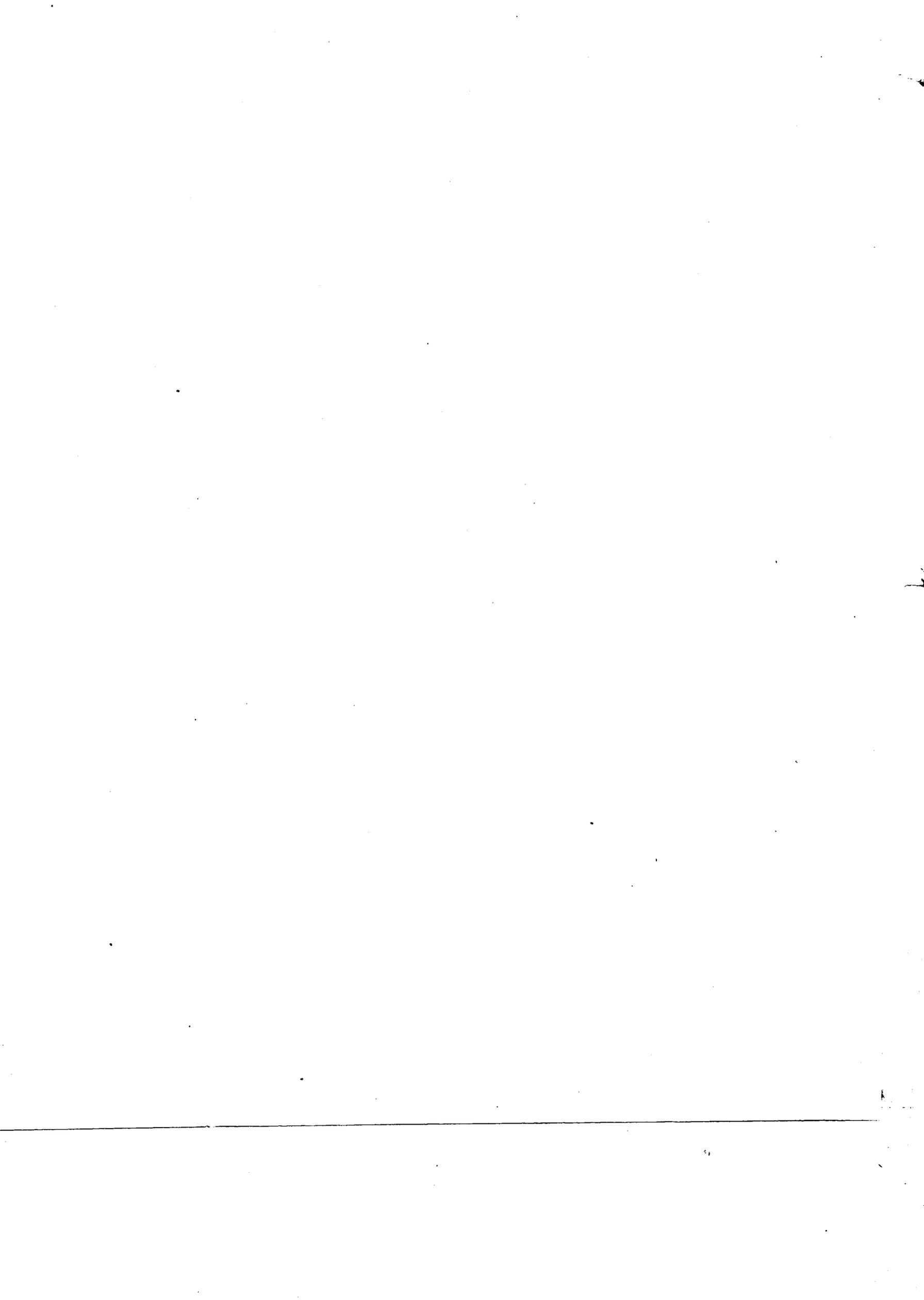
Inspection District.	Explosions.		Falls of Ground.		In Shafts.		Miscellaneous Under-ground.		Surface.		About Dredgers.		Total.	
	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.
	Northern	1	1	1	1	2	1	1	...	2	1	7	4
West Coast	1	...	...	1	1	...	...	...	3	1	1	...	6	2
Southern ... ..	...	...	...	...	...	...	...	...	...	1	1	1	1	2
Totals	2	1	1	2	3	1	1	...	5	3	2	1	14	8

Being at the rate of 1·83 fatalities per 1,000 persons employed.

IV. GOLD-MINING.

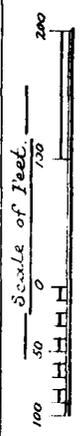
The past year has been a profitable one for the gold-mining industry; the slight decline in the value of bullion from our gold-mines which was noticeable during the two previous years has been arrested, and an increase of £7,510 has taken place. For this improvement the alluvial and quartz-mines may be credited, these mines having increased their annual production to a greater extent than the gold-production by dredgers has declined. Dividends to the amount of £666,548 have been declared by those of the mines and dredgers which are the property of registered companies, equivalent to 30 per cent. of the value of the total bullion-production from all gold-mines and dredgers in the Dominion. The profits from the privately owned mines and dredgers, which are considerable, are unobtainable; these, if known, would considerably increase the above value of dividends distributed during the year.



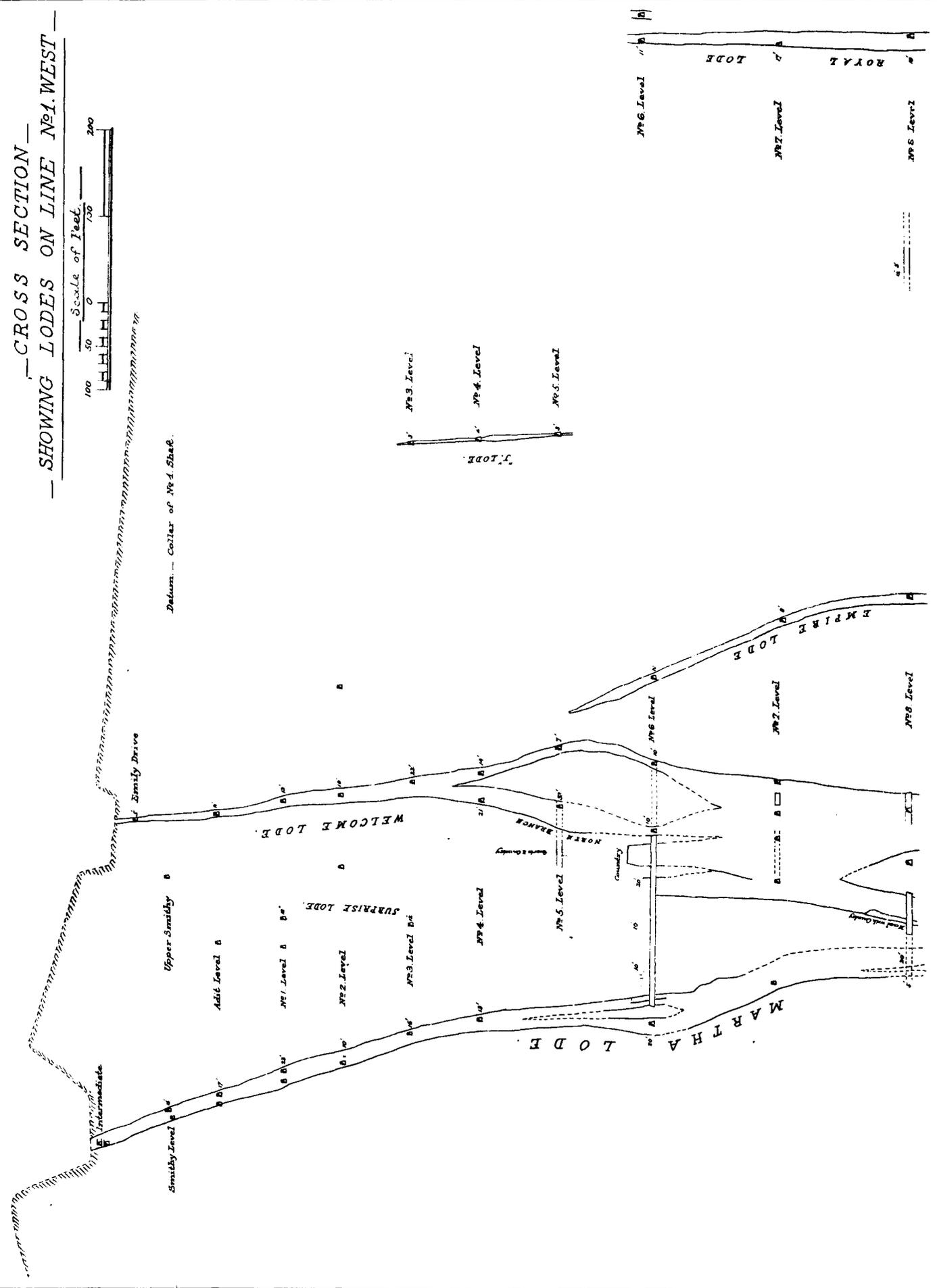


MINES DEPARTMENT NEW ZEALAND.

WAIHI G.M. Coy Ltd.
CROSS SECTION
SHOWING LODES ON LINE No. 1. WEST



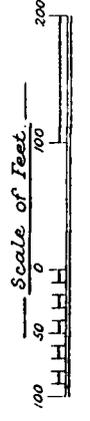
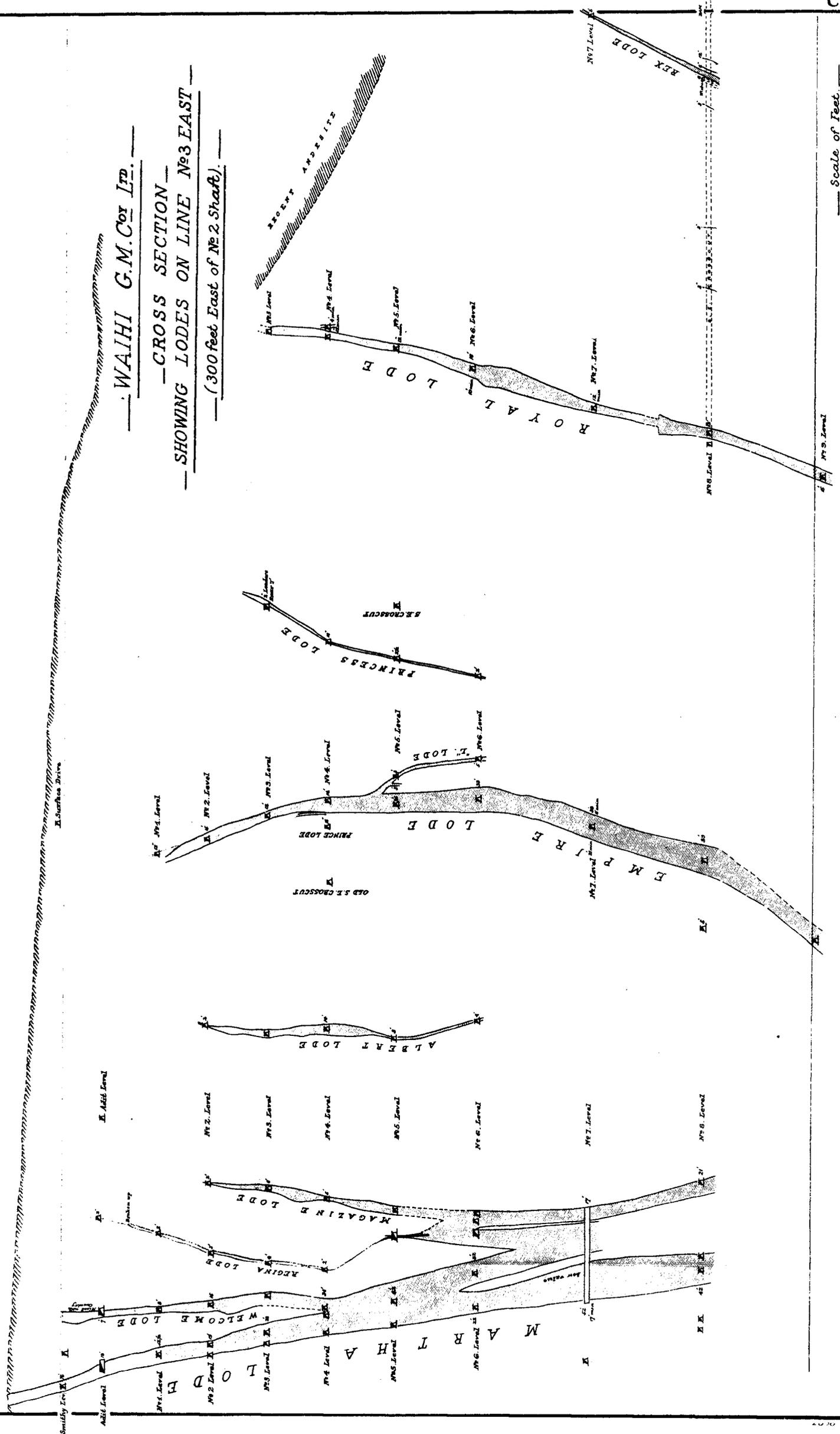
Delum. - Collar of No. 1 Shaft.



COMP. 17/10/12

WAIHI G.M. Coy Ltd.

CROSS SECTION — SHOWING LODES ON LINE N°3 EAST — (300 feet East of N°2 Shaft).

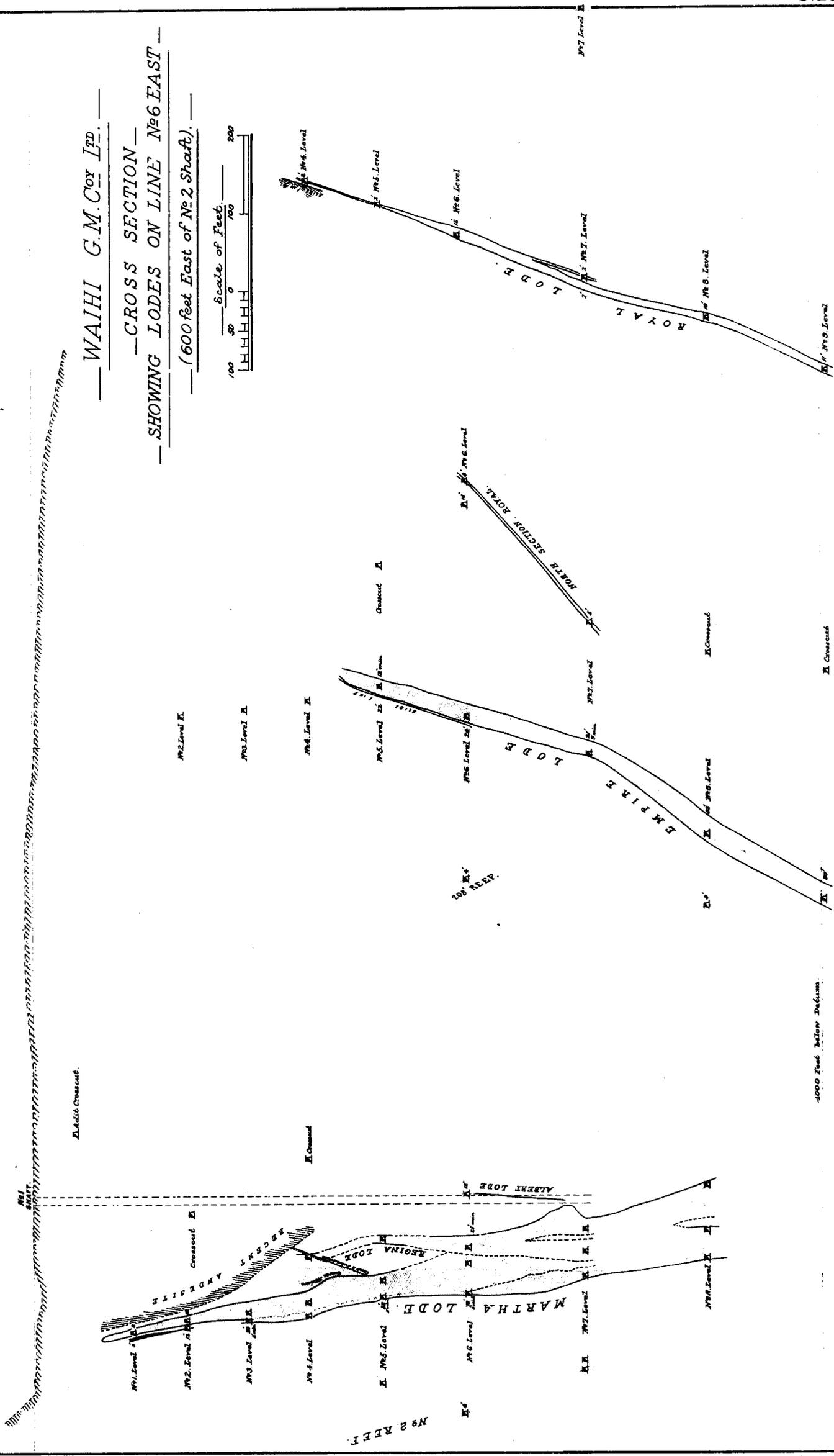
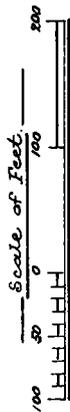


— WAIHI G.M. Coy Ltd. —

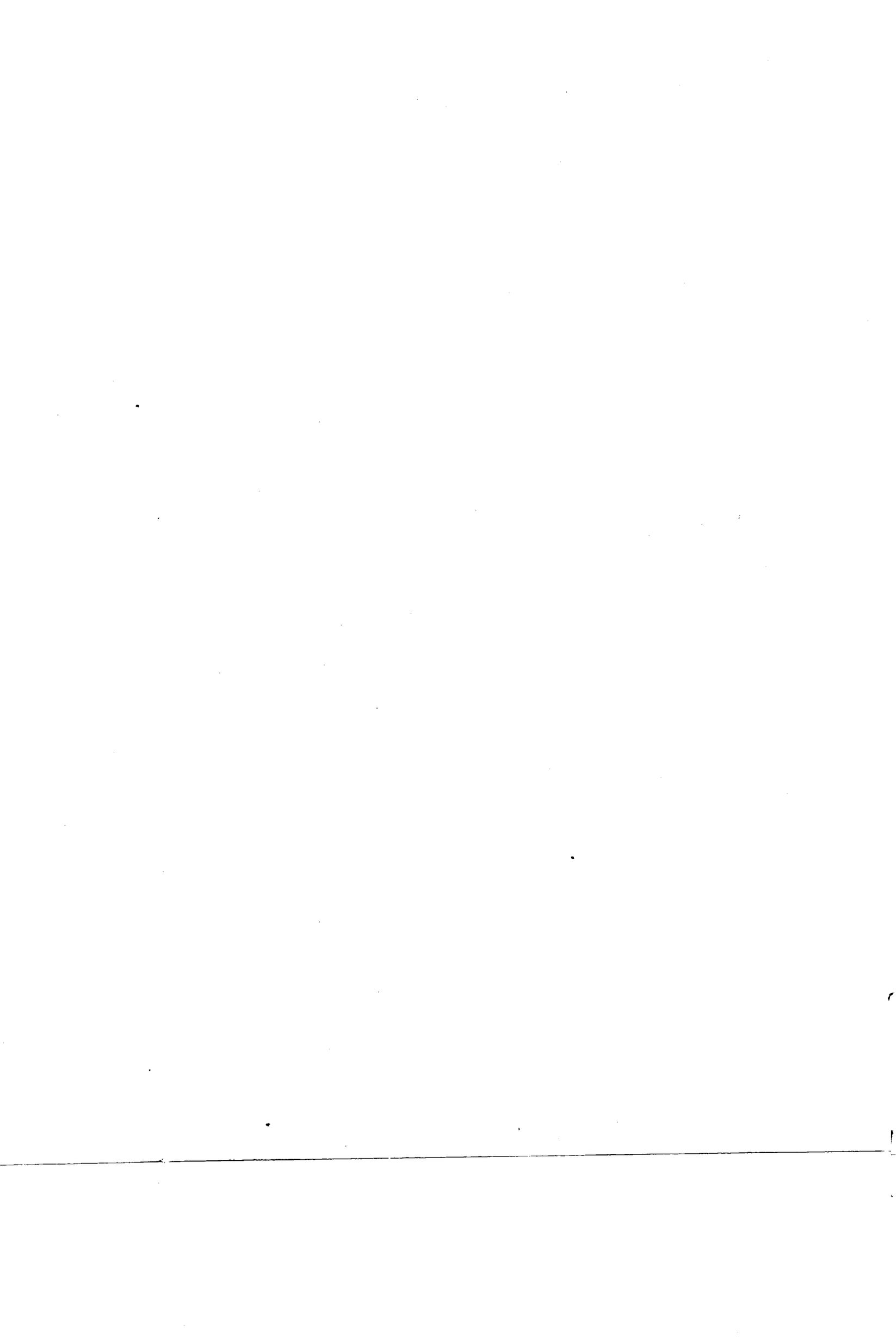
— CROSS SECTION —

— SHOWING LODES ON LINE N°6 EAST —

— (600 feet East of N°2 Shaft). —



4000 Feet Below Datum



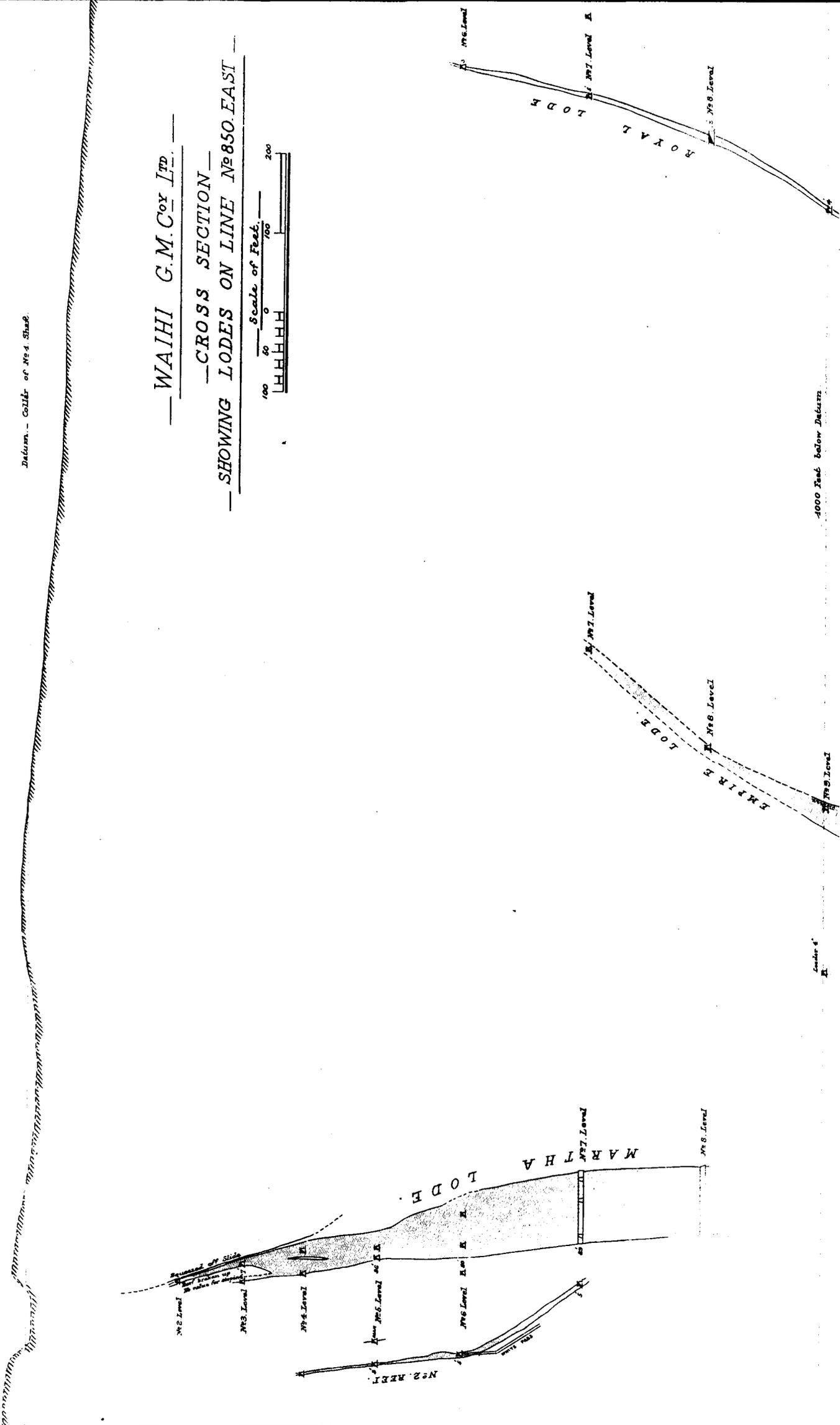
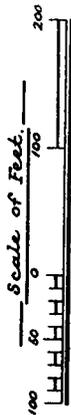
MINES DEPARTMENT NEW ZEALAND.

Datum. - Collar of No 4 Shaft.

— WAIHI G.M. COY LTD. —

— CROSS SECTION —

— SHOWING LODES ON LINE N° 850 EAST —





The following statement shows the value of the bullion-production and the proportion of the same paid in dividends during the year :—

	Production of Bullion, 1909.* (All mines.)	Dividends paid, 1909. (By registered companies only.)	Number of Persons ordinarily employed.	Number of Working Mines, Dredges, and Claims.
	£	£		
Quartz-mining ...	1,526,861	598,271	3,727	159
Dredger mining ...	327,676†	56,788†	893	111
Alluvial mining ...	333,235‡	11,489‡	2,875	280
Totals, 1909 ...	2,187,772	666,548	7,495	550
Totals, 1908 ...	2,180,262	668,726	8,685	...

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

† The bullion-production is from 111 dredgers, but the dividends given are only from 37 of these, the property of registered companies. The profits of privately owned dredgers and mines are unobtainable, which renders this statement incomplete.

‡ The bullion-production is from 280 alluvial claims, but the dividends are only ascertainable from 16 of them, the property of registered companies.

(1.) QUARTZ-MINING.

This branch of gold-mining continues to increase in importance, and there is satisfactory evidence that this prosperity will continue. During 1909 bullion to the value of £1,526,861 was obtained by the reduction of 693,006 tons of ore, being an increase of £49,849 and 38,699 tons above the output of the previous year. The dividends declared from these mines amounted to £598,271, equivalent to 40 per cent. of the total value of the bullion produced.

The Waihi, Karangahake, and Inangahua goldfields have increased their annual yield of bullion, the last-named field having revived remarkably, showing for the year an increase of £54,720 in value of bullion and £27,355 in the amount of the dividends declared.

The Thames, Coromandel, and Otago quartz-mining fields have not maintained the prosperity of former years; but deep-level developments are being carried out which it is reasonable to believe will add new life to the Thames Goldfield, formerly the most productive in the Dominion.

On all the goldfields improvements and additions are being made to the reduction-works at the mines by the installation of the Waihi system of tube mills, "B and M" agitators, and vacuum-filters, the result of which will be extremely beneficial, as ore of lower grade than now operated will thus be rendered payable.

The following is a statement showing the tons of ore treated, the value of bullion produced, and the amount of dividends paid by quartz-mining companies in each of the inspection districts during the years 1908 and 1909 :—

Inspection District	Tons of Ore treated.		Value of Bullion.		Dividends paid. (By registered companies only).	
	1909.	1908.	1909.	1908.	1909.	1908.
Northern ...	573,470	546,905	£ 1,301,002	£ 1,302,665	£ 554,316	£ 545,233
West Coast ...	108,136	95,156	214,876	160,156	43,955	16,600
Southern ...	11,400	12,246	10,983	14,191	...	...
Totals ...	693,006	654,307	£ 1,526,861	1,477,012	598,271	561,833

Northern Inspection District.

Waihi Goldfield.—Waihi Gold-mining Company (Limited): By the courtesy of Mr. H. P. Barry, M.Inst.M.M., superintendent of the company's mine and operations, I am able to present cross-sections showing the remarkable vein system operated upon at this mine, these sections have never previously been published. The magnitude and unique characteristics of this the most important gold-mine in Australasia, and one of the greatest gold-mines in the world, will be at once seen from these sections, and the small accompanying plan which has been prepared from the official mine-plans in this office.

The total value of the output at the end of the year was £8,180,218, of which £959,594 was obtained during 1909. The total quantity of quartz reduced at the end of the year was 2,827,137 tons (of 2,000 lb.) dry weight, of which 416,813 were milled during 1909. The total value of dividends declared at the end of the year was £3,561,111, of which £446,316 was declared during 1909. The capital account of the company is about £330,000; consequently it will be seen that the subscribed capital has been returned tenfold in dividends, and that during 1909 the dividends paid were equivalent to 130 per cent. on the total capital subscribed. The average value of

the ore reduced during the year was £2 13s. 1d. per short ton (2,000 lb.), at an average cost of 16s. 2¼d. In addition to this satisfactory record, equally interesting information is contained in the annual reports of the superintendents of the mine—Messrs. H. P. Barry and R. E. Williams—addressed to the chairman and directors of the company, which set forth the total amount of ore of average milling-value in sight each year. A comparison of these reserves will show that they are being annually increased, notwithstanding the constant additions to the reduction-works and the increased quantity of ore treated each year. The reserves thus proved and reported were as follows:—

31st December, 1906	1,029,658 tons (of 2,000 lb.)
„ 1907	1,299,979 „ „
„ 1908	1,329,872 „ „
„ 1909	1,335,586 „ „

It will thus be seen that the present ore-reserve would supply the existing reduction-works for three years' constant work, without the addition of any ore of later development.

The most important developments during the year have been carried out in the bottom or No. 9 level (1,000 ft.), where the Empire lode, varying in width up to 46 ft., the Martha lode, in width up to 80 ft., and the Royal lode have been driven upon for about 3,000 ft. in the aggregate. The rich lenticular shoots of sulphide-ore which were so strongly in evidence in the No. 8 (850 ft.) level are again found in the bottom level, but whether as strongly defined or of such high values is open to question; and this cannot be determined accurately until such time as the veins on the bottom (or No. 9) level are as fully developed as those in No. 8 level above.

The magnitude of the operations at this mine may be gauged from the fact that during 1909 227,000 tons of filling material for the stopes have been obtained from the surface and passed into the mine; the total footage driven, risen, and crosscut was 11,571; and 416,813 tons (of 2,000 lb.) of ore (dry weight) have been mined and crushed; this ore was obtained from nine separate lodes, but the famous Martha was responsible for about one-half of it. The tonnage crushed exceeds that of the previous year by 23,600 tons. The shafts Nos. 2, 4, and 5 have each been sunk to depths of 1,075 ft., 1,002 ft., and 1,035 ft. respectively.

The total average number of stamps running during the year was 314·25, out of a complement of 330 stamps installed. The total average daily duty per stamp was 4·492 tons, an increase of 0·325 tons above the daily duty during the previous year.

The reduction-works have been further augmented by the addition of more B and M agitating tanks, and the number of tube mills has been increased to fifteen. For the purpose of effecting a further reduction in working-costs, and thereby being enabled to treat profitably and in greater quantities ore of lower grade than at present possible, the company have obtained a forty-two years' lease from the Government of water from the River Waikato, to be taken for the generation of hydro-electric power at the Horahora Rapids, in that river, and from thence transmitted to the company's mine and mills at Waihi, a distance of approximately fifty-one miles. The static head obtainable at these rapids is 24 ft., and 4,580 cubic feet per second (*i.e.*, sluice heads) will be required to develop 10,000 brake horse-power, which is the maximum amount of power for which the lease of water is issued. It is proposed to at once lay down the necessary head-works and machinery to develop and transmit 6,000-horse power, at an estimated cost of about £150,000, of which sum £40,778 was provided at the annual meeting of the company.

During the year the Hathorn and Davey pumping machinery at the mine, consisting of plunger pumps having a capacity of 1,500 gallons per minute, operated by a compound condensing Cornish single-acting engine of 900 I.H.P., have been supplemented by electrically driven three-throw ram pumps of equal capacity by the same makers. These pumps have cylinders 12 in. in diameter, with a stroke of 2 ft. 6 in. The maximum speed will be 105 ft. per minute. They will work in two lifts—*viz.*, from the 1,000 ft. level to a cistern at the 540 ft. level, and from thence to the surface.

Waihi Grand Junction Gold-mining Company (Limited): Operations at this mine have also been very satisfactory, and any doubts as to the extension of the Waihi vein system into this property have been absolutely dispelled by the results of underground development in the No. 5 (or 944 ft.) level, where the Martha, Empire, and Royal lodes have been traced from the Waihi Company's boundary, and have been driven upon for 800 ft., 1,150 ft., and 570 ft. respectively in the Junction ground at the above level (see the accompanying plan of the Waihi Goldfield). The lodes have become more defined, and carry stronger bodies of sulphide-ore as depth has been attained, which also has been a characteristic at the Waihi Mine; and it is quite reasonable to suppose that with further depth this mine will become a formidable rival as a gold-producer to its great neighbour.

During 1909 the total tonnage of ore reduced at this mine was 59,609 long tons (2,240 lb.), for a yield of £99,839, being an average of £1 13s. 4½d. per ton, the cost of mining and treating being 19s. 2d. per ton.

During 1909 a valuable run of good ore, about 120 ft. in length and 15 ft. in width, was proved in the Royal lode, and this was traced to the boundary.

The production of milling ore during 1909 from five separate veins was as follows:—

Empire (or No. 4) lode	12,701 tons (of 2,000 lb.)
Royal lode	6,324 „ „
Martha (or No. 1) lode	22,273 „ „
No. 2 lode	18,276 „ „
Waihi West Mine	95 „ „
Total	59,669 „ „

The total footage in levels driven was 2,434.

The reduction-works have been increased by four extra tube mills, together with more agitators and concentrators; and a new air-compressing plant has been installed.

For the year 1909 an increase of 11,192 tons of ore milled, and £26,716 in the value of the bullion obtained, has to be recorded, in addition to which the value extracted per ton (of 2,000 lb.) was £1 13s. 48d., being an increase of 3s. 3d. per ton on the value obtained during the previous year.

Karangahake Goldfield.—Talisman Consolidated (Limited): For a considerable time the lower levels of this mine were inaccessible, owing to an influx of water; but in June, 1909, additional pumping plant having been installed, the mine was unwatered, and the south drive of the No. 13 or bottom level advanced to and beyond the boundary of payable values as obtained in the level above. After further driving at a distance of 711 ft. south of the crosscut, highly payable sulphide-ore was again obtained, and this continued for 120 ft., varying in width up to 7 ft., the present southern face of the level being 1,263 ft. from the incline shaft, and the northern face 416 ft. from that shaft. Winzes sunk prove the maintenance of high values underfoot in the southern level. It has been recently decided by this company to vigorously develop the Woodstock section of their mine by enlarging and sinking the Woodstock shaft to connect with the lowest workings of the Talisman section. At the present time the bottom of this shaft is about 40 ft. above the No. 13 level of the Talisman workings, and a considerable distance therefrom. A horizontal compound pumping-engine is being installed in a chamber at drainage level in this shaft to work rope-driven Cornish pumps of 26 in. diameter by 10 ft. stroke. A reorganization of the reduction-works is being carried out. Three new tube mills and eight pneumatic slimes agitators have been installed, and further additions have been contemplated. This company treated 46,456 tons of ore (2,240 lb.) for a yield of £208,886, and paid dividends amounting to £105,000 during the year. The average yield per ton was £4 10s., and the cost of production £2 0s. 4d. per ton.

New Zealand Crown Mines (Limited): Since November, 1908, operations in this mine have been suspended pending the installation of electrically driven pumps, now completed. When the mine is unwatered operations will probably be directed to the considerable body of rich sulphide-ore which was proved in the No. 5 level prior to cessation of work. This company is under reconstruction.

Coromandel Goldfield.—This field is, with the exception of two or three small mines, in a moribund condition. The total output of bullion for the year amounted in value to £3,857, being a decline of £1,545 below the previous year. Some excitement was caused during 1909 by the discovery at the 400 ft. level in the Old Hauraki Mine of a new body of ore, which was subsequently driven upon, and in an uprise specimen stone was found. This reef has since been located at the 300 ft. level, where it also carries specimen ore. There are therefore reasonable prospects of a revival of this once important mine.

Thames Goldfield.—The prosperity of this field has been gradually declining since the exhaustion of the Waiotahi bonanza about two years ago. During 1909 the yield of bullion amounted in value to £15,191, of which £13,636 was the product of two mines—viz., the Waiotahi and the May Queen.

Waiotahi Gold-mining Company (Limited): At this mine operations, consisting of driving, rising, and stoping, have been confined to the levels between 320 ft. and 428 ft. from the surface, but most of the gold obtained—viz., £10,116—came from the former level.

May Queen Company (Limited): This company deepened the Government (Queen of Beauty) pumping shaft, with the help of a subsidy, to the 1,000 ft. level, where promising altered andesite country was proved. A crosscut was then driven about 200 ft. in a southerly direction from the shaft, but nothing of importance has yet been discovered therein.

Thames Deep Levels: An agreement has been entered into by the Minister of Mines and the May Queen, Saxon, Victoria, Waiotahi, and Kuranui-Caledonian mining companies to drive a main crosscut at the 1,000 ft. level in a direct line from the Queen of Beauty shaft to the Kuranui-Caledonian shaft, a distance of about 2,726 ft., with subsidiary crosscuts connecting the main crosscut with the aforementioned mine-workings. A contract is being let, and work will be immediately commenced. The future of this once famous goldfield depends upon the result of this work, and there are reasonable prospects of success. From the ore-bodies worked in the properties traversed by this crosscut, bullion to the value of several millions of pounds sterling has been obtained above the 500 ft. level, below which a barren zone was encountered, and a lengthy crosscut driven at the 640 ft. level connecting the Shotover shaft with the Victoria Mine proved nothing of value. It is hoped that an improvement will be found at the 1,000 ft. level, and the promising character of the country rock recently exposed at this level in the Queen of Beauty shaft is favourable evidence that these hopes will be realised. The main crosscut will intersect the estimated lines of no less than ten reefs, which at the upper levels gave profitable returns. This work is controlled by a board of management consisting of a representative from each of the interested mining companies, together with the member for the district, Mr. E. H. Taylor, M.P. (chairman), and Mr. A. Bruce, of Thames. The work will be subsidised by the Government to the extent of £5,000.

West Coast Inspection District.

Inangahua Goldfield.—There has been a revival of prosperity upon this goldfield, the yield from the quartz-mines amounting to £214,876, an increase of £54,720 over that of the previous year: and the dividends declared amounted to £43,955, an increase of £29,355.

Wealth of Nations Mine (Consolidated Goldfields of New Zealand, Limited): During the extension of levels Nos. 8 and 10 quartz of fair value was proved. The main shaft has been sunk to a depth of 1,861 ft., and development is now being carried out at this level. The reduction-works have been increased by the addition of a tube mill, five B and M agitators, also settlers and vacuum filters. This company obtained £28,359 from 15,577 tons treated during the year.

Progress Mines of New Zealand (Limited): This company has re-entered the list of dividend-payers, the amount so declared during 1909 being £13,750, as the result of treating 35,414 tons for a yield of £52,030. Several large blocks of quartz of fair value have recently been developed in the upper level of the mine. Smelting-works for the treatment of concentrates, pyritic slimes, and residues from chlorination-works have been erected.

New Big River Gold-mining Company (Limited): There has been a slight decline in the annual output from this mine, but dividends amounting to £15,600 have been declared, which is equal to those distributed during the previous year. The main shaft has been sunk to the 1,575 ft. level, preparatory to active development at that level.

Blackwater Mines (Limited): This mine has opened up in a satisfactory manner, and a very long run of reef with payable values has been proved. The Joker adit tunnel, which is on the No. 2 (307 ft.) level, the main artery of the mine, is now over 2,600 ft. in length, and for the last 1,500 ft. is practically on reef. Lengthy blocks of ore have been developed by the extension of all the levels in a northerly direction. The main shaft has been sunk 77 ft. below the No. 3 (432 ft.) level, and it is proposed to continue sinking to develop several levels. A tunnel is being put through connecting the mill with the main shaft at a depth of 472 ft. in the latter, and 165 ft. below the level of the present drainage and haulage adit (the Joker tunnel). The reduction-works have been increased by the addition of a tube mill and slimes plant consisting of four B and M agitators, also settlers and vacuum filters, and the power, at present developed by Peltons, will be supplemented by a suction gas plant of 100-horse power. A vigorous campaign is being pursued at this mine, and further discoveries may be expected at this the youngest goldfield in New Zealand. During the year this company paid £12,500 in dividends, as the result of treating 29,955 tons for a yield of £73,281.

The Ventilation and Hygienic State of the Quartz-mines.

During the period between the 10th October, 1908, and the 24th December, 1909, when the Workers' Compensation Act was amended by the removal of pneumoconiosis (miners' phthisis) from that Act as a disease for contracting which an operative must be compensated, the Government Accident Insurance Department accepted the risk to obviate a threatened serious disagreement between the mine-owners and their employees, yet during that period not a single claim was made on that Department for compensation on account of the risk undertaken, which fact should set at rest any suspicion that the miners of this Dominion are affected to any appreciable extent with phthisis, although it is possible that workers from other countries migrating to this Dominion who may be suffering from the disease in an active state may spread the infection after their arrival. To obviate this, however, the strictest precautions are taken both as regards medical examination before landing and by the management of the mines. Provision is made in the Mining Act for adequate ventilation, and for the observation of sanitary requirements, and the principal quartz-mines are following the practice adopted in large collieries by installing centrifugal fans of the Sirocco or Sturtevant type, or Roots blowers, to enable a more constant and adequate ventilation to be maintained than was possible by natural means.

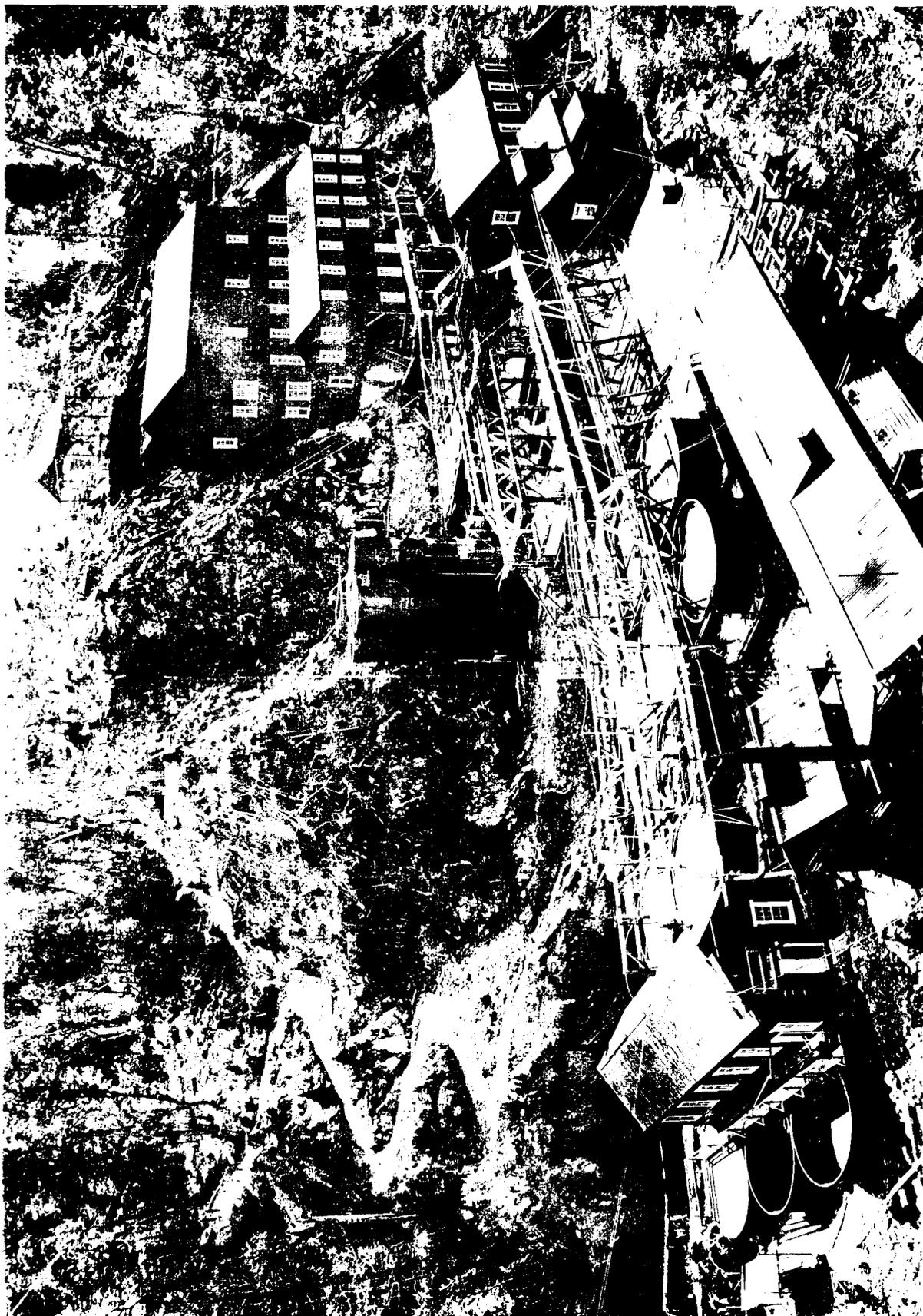
The Inspectors of Mines are provided with anemometers and hygrometers for recording the state of ventilation in the mines, and samples of mine air are taken and subjected to analysis when necessary.

(2.) DREDGER MINING.

During the past year, as will be seen from the following statement, the average yield per working dredger was £2,952, being a decline of £87 on that obtained during the previous year; a decline of £46,142 has to be recorded in the value of gold-production by dredgers, and the number of working dredgers has decreased by twelve.

The following statement shows the number of dredgers, the gold produced by them during 1908 and 1909, and the number of persons employed:—

Inspection District.	Number of Dredgers.				Number of Persons ordinarily employed.	Yield during 1909.	Average Yield per Dredger, 1909.
	1908.		1909.				
	Idle.	At work.	Idle.	At work.			
West Coast	4	23	1	19	158	£ 53,179	£ 2,800
Southern	13	100	19	92	735	274,497	2,983
Totals	17	123	20	111	893	327,676	2,952



REACTION WORKS, BLACKWATER MINES (LIFTED)
Showing the Mill of 30 Heads Capacity, with Tube-mill, Agitating-tank, Cyanide Plant, and Vacuum Filters, all actuated by Hydraulic Power.



TRANSPORTING MACHINERY TO THE BLACKWATER MINES, WEST COAST, UP THE BUDONNOVA RIVER.

The dividends paid by thirty-seven of these dredgers, the property of registered companies, amounted to £56,788 during the year; the profits of privately owned dredgers is unobtainable. The following is a statement regarding the most productive dredgers during the year:—

Name of Dredger.	Production during 1909 of all Dredgers.	Dividends paid by Thirty-seven Dredgers owned by Registered Companies.	
		During 1909.	To 31st December, 1909.
West Coast District—			
Hessy, Cameron, and Tacon (Limited) ...	£ 5,028	£ 1,875	£ 2,475
Worksop	6,295	2,100	4,800
No Town Creek	6,661	3,600	27,000
Pactolus	6,736	1,875	58,125
Southern District—			
Crewe (2)	7,033	2,750	3,250
Waikaka Syndicate (2)	8,159	3,500	16,800
Koputai	8,100	4,463	9,276
Earnsclough (3)	13,875	1,100	23,100
Masterton	6,705	3,500	28,500
Mystery Flat	8,314	5,650	25,769
Hartley and Riley	4,486	1,788	83,037
Rise and Shine (2)	16,856	7,200	22,800
Rising Sun	8,424	3,600	11,600
Magnum Bonum	4,929	1,500	5,000
Muddy Creek (2)	7,488	1,101	9,132
Waikaka United (2)	10,284	4,480	38,080
Other working dredgers (both districts) ...	198,253	6,706	...
Totals	327,676	56,788	...

From the foregoing statements it will be seen that this branch of gold-mining continues to decline, and no new developments either in the extension of dredging fields or improvements in machinery have occurred during the year, with the exception of the successful installation of producer-gas plants on the Kyeburn and Lady Annie dredgers, operating in Central Otago.

(3.) ALLUVIAL MINING.

For the second year in succession there has been an increase in the annual production from the alluvial mines of the Dominion, which is extremely satisfactory, as it was generally believed that this branch of mining was in a rapid state of decline. For this increase the extremely low working-cost of the hydraulic sluicing and elevating system of mining may be credited, for by this method ground containing an average of 1 gr. of gold per cubic yard will generally pay working-expenses.

The production from 280 alluvial claims, both large and small, amounted in value to £333,235; on some of these 110 hydraulic sluicing plants are at work in Otago; but, as most of these claims are privately owned, the gross amount of dividends paid is not known. Sixteen claims, however, the property of registered companies, paid £11,489 to their shareholders during the year. Among the most profitable of these dividend-paying claims may be mentioned the Mont d'Or (Ross, Westland), £2,400; Roxborough Amalgamated (Otago), £2,187; and the Round Hill (Southland), £2,119.

During the year a nugget weighing 99 oz. 12 dwt. was found in shallow ground adjoining the property of the Ross Goldfields (Limited), on the banks of Donnelly's Creek, at Ross, by Messrs. Sharp and Scott, who were working old alluvium which had previously been turned over during the first rush to these diggings in the early sixties. This nugget, which had obviously been overlooked by the early miners, is the largest ever discovered in the Dominion, and was appropriately named the "Hon. Roderick," in honour of the Minister of Mines.

Ross Goldfields (Limited): The most important deep alluvial mining in the Dominion is being carried out by this company. The hydro-electric mining and pumping installation described in my reports for 1907 and 1908 having been completed, the old Ross United main shaft was during 1909 recovered and retimbered, and the mine, which has remained inundated since the influx of water during 1887, has been unwatered by Worthington electrically driven turbine pumps. The timber in the mine and shafts (heartwood of New Zealand rimu or red-pine) was, after twenty-two years' submersion, found to be in an excellent state of preservation, which is valuable evidence as to the durability of this timber under water. Stationary pumps of Worthington multistage turbine type (2 units) of high capacity have been installed in a chamber at a depth of 260 ft. below the 90 ft. adit level, and 350 ft. from the surface, which will enable seven different auriferous layers, which were proved in this shaft above the level of this pumping chamber, to be developed when required. During the operations of the old Ross United Company immediately prior to the inundation in 1887, from which the mine has just been recovered, that company, at the 315 ft. level, carried a drive for about 400 ft. under the flat in the direction of the old Cassius workings (in which some very rich deposits were found and worked until 1872,

when those workings were flooded and irrecoverable by the machinery then obtainable). In their drive the Ross United Company found washdirt, and during thirty-five working-days, within an area of 6 chains by $1\frac{1}{2}$ chains, obtained 614 oz. of gold, when the mine was inundated also, as the result of approaching too near to the workings lost by Cassius in 1872. The pumps employed by the Ross United Company which failed to deal with the water in 1887 were of Cornish type, $14\frac{1}{2}$ in. in diameter, having a maximum capacity of 450 gallons per minute. I am informed by the general manager of the Ross Goldfields (Limited), Mr. J. F. Welch, who recently unwatered the mine, that the average quantity of water at present being dealt with is about 800 gallons per minute. The pumps now installed are stated to be capable of dealing with double this quantity if necessary. Since the unwatering of the mine the old workings have been re-entered, and the faces which were so hastily deserted during 1887 have been sampled, with satisfactory results. The Government granted to this company a subsidy of £15,000 towards the recovery of this once famous gold-field, which has now been accomplished. Active mining operations are now commenced. On the 22nd June, 1910, the first "wash-up" was made, and resulted in 60 oz. of gold being obtained from 8,000 cubic feet of wash, being at the rate of 21.6 dwt. of gold per fathom, which is highly payable. One-half of that average yield if maintained should cover working-costs.

Muddy Terrace Sluicing Company (Limited): This company has expended £26,000 in the construction of their hydraulic sluicing and elevating plant and upon a water-race (in length $16\frac{1}{4}$ miles) of 45 heads capacity, connecting Dome Creek with their sluicing claims near Switzers. During October, 1909, the claims were officially opened by Mr. E. R. Green, Inspector of Mines for the Southern District. Operations were then commenced and carried on successfully for some time, but shortage of water, due to a prolonged drought and a badly leaking dam across Dome Creek at the headworks, hampered proceedings for a considerable time, and additional water from a subsidiary water-race had to be obtained. The claim is worked in two sections, the terrace section being operated by ground-sluicing with water under pressure, while the flat section adjoining the Waikaiti River is worked on the hydraulic sluicing and elevating principle. When an adequate supply of water is available a large amount of auriferous material will be turned over, and the returns should be extremely satisfactory to the shareholders. Electric light is installed at the claim. The whole of the engineering-work upon this undertaking, with the exception of the dam at the headworks, was carried out under the engineering supervision of Mr. C. C. Rawlins, M.E., F.G.S.

V. MINERALS OTHER THAN GOLD.

CINNABAR.

During the year systematic operations were undertaken for the development of the cinnabar-deposits of the Auckland Province by the Ascot Cinnabar Syndicate, who have laid down at their property, Mackytown, near Karangahake, a Novak furnace of the latest type—21 ft. in height by 8 ft. diameter—with necessary condensers, cooling-chambers, and pipes, the whole having a capacity of 8 to 10 tons per day. The cinnabar-deposit outcrops within the company's property, on the face of the hill, above the township, and consists of a strong vein of flint and quartz traversing andesite country, the cinnabar occurring in the form of shoots in the vein matter. The ore proved contains about 10 per cent. cinnabar, but some very much richer pockets have been found. The vein has been traced for about 15 chains on the surface, and a drive has been put in from the face of the cliff, and the cinnabar followed for about 30 ft. About 50 tons of ore has been obtained, the treatment of which is now being carried out. Development-work has not proceeded far enough to enable an estimate of the extent of the deposits to be made, but operations are being conducted in an unostentatious and practical manner, and deserve success. A company is being formed to work this property, the efforts of the syndicate in testing the property proving satisfactory.

COPPER.

In the Auckland Province operations at the alleged copperfield near Whangaroa have been suspended, and the reported discovery of copper near Kaipara Harbour has not been substantiated by the development of the same.

The lease formerly held by the Maoriland Copper Company at Aniseed Valley, near Nelson, which company suspended operations during 1908, has been taken over by the Copper Development Company, who have obtained 764 tons of ore from the United section of the property, from which concentrates to the estimated value of £1,872 have been obtained and shipped to the Progress Mine at Reefton, to be there smelted.

SHEELITE OR TUNGSTEN.

There has been a slight decline in the value of the concentrates of this mineral exported during 1909. This has been due no doubt to the fall in market value for tungsten from £2 16s. per unit in 1907, to £1 in 1908, and even lower during 1909.

In Otago, to which province this branch of mining is confined, eight scheelite-mines, situated at Macrae's, Mount Highlay, and Glenorchy, produced during the year 139 tons of concentrates. Sixty persons were actively employed upon the production of the mineral, and twenty others on non-productive works.

Scheelite-mines are also held at Waipori, Bendigo, and Alexandra, but they were not actively worked during the year.

VI. STATE AID TO MINING.

ROADS CONSTRUCTED BY DIRECT GRANTS.

The following statement shows the expenditure on authorities issued on roads from direct grants to the several local bodies during the year ending the 31st March, 1910:—

Name of Local Body.	Expenditure for the Year ending 31st March, 1910.		
	£	s.	d.
Coromandel County	6,631	10	6
Thames County	5,645	7	10
Thames Borough	162	9	10
Ohinemuri County	5,081	14	5
Piako County	116	7	6
Pelorus Road Board	391	8	6
Takaka County	1,218	16	10
Collingwood County	1,039	11	0
Waimea County	650	0	0
Riwaka Road Board	50	0	0
Buller County	7,203	5	11
Inangahua County	3,574	10	8
Grey County	910	0	0
Brunner Borough	6	15	0
Westland County	1,382	7	0
Ross Borough	65	0	0
Waihemo County	110	0	0
Tuapeka County	372	7	10
Vincent County	1,011	16	10
Lake County	950	10	6
Maniototo County	300	0	0
Southland County	550	0	0
Wallace County	600	0	0
Stewart Island County	516	7	6
Public Works Department	1,780	19	1
Compensation for injuries, &c.	87	4	5
Contingencies	421	7	1
Totals	40,829	18	3

PROSPECTING FOR GOLD.

The following statement shows the expenditure on authorities issued in subsidies to prospecting associations and parties of miners in the different counties for the year ending the 31st March, 1910:—

Name of County, &c.	Expenditure for the Year ending 31st March, 1910.		
	£	s.	d.
Coromandel	686	15	0
Te Aroha Borough Council	121	10	0
Tauranga	150	0	0
Ohinemuri	432	4	8
Wairau Road Board	100	0	0
Inangahua	166	15	0
Buller	254	4	0
Grey	255	19	6
Westland	867	13	0
Ross Borough Council	50	0	0
Lake	15	10	5
Tuapeka	37	10	0
Vincent	143	15	0
Prospecting associations, &c.	1,654	7	2
	£4,936	3	9

VII.—SCHOOLS OF MINES.

EXPENDITURE ON SCHOOLS OF MINES.

The following table shows the expenditure by the Government on schools of mines since their inception, exclusive of subsidies paid to the University of Otago towards the School of Mines in connection with that institution:—

Financial Years.	Subsidies towards the Erection of Schools of Mines, and Maintenance.	Chemicals and Apparatus, also Mineralogical Specimens supplied to Schools of Mines.			Scholarships.	Salaries of Teachers, and Travelling-expenses, &c.			Total Sum paid by the Department towards the Schools of Mines.					
		£	s.	d.		£	s.	d.	£	s.	d.			
1885-86	36	19	9	...	1,223	9	10	1,260	9	7	
1886-87	...	257	16	6	409	1	4	...	2,716	9	3	3,383	7	1
1887-88	...	253	15	9	253	14	1	...	1,714	9	6	2,221	19	4
1888-89	...	42	10	0	6	12	9	...	1,139	4	1	1,188	6	10
1889-90	...	142	2	0	181	14	10	...	716	3	10	1,040	0	8
1890-91	...	217	6	6	54	8	0	...	620	9	9	892	4	3
1891-92	...	181	14	0	...	...	...	...	689	5	9	870	19	9
1892-93	...	312	3	4	...	...	...	...	670	1	0	982	4	4
1893-94	...	197	0	5	...	...	...	...	858	19	4	1,055	19	9
1894-95	...	390	0	0	45	10	10	...	773	17	8	1,209	8	6
1895-96	...	820	0	0	...	...	...	50	849	3	0	1,719	3	0
1896-97	...	352	14	11	58	18	6	100	834	12	8	1,346	6	1
1897-98	...	1,089	18	6	29	19	9	100	780	19	0	2,000	17	3
1898-99	...	740	15	2	32	19	7	50	729	10	11	1,553	5	8
1899-1900	...	990	3	4	24	3	8	50	52	16	3	1,117	3	3
1900-1901	...	866	10	11	56	3	4	98	77	7	10	1,098	2	1
1901-1902	...	1,155	12	3	63	5	1	49	69	16	4	1,337	13	8
1902-1903	...	1,379	15	6	134	18	8	158	111	0	0	1,783	14	2
1903-1904	...	1,575	15	3	88	18	8	92	109	15	10	1,866	9	9
1904-1905	...	1,401	2	11	17	3	0	100	362	19	6	1,881	5	5
1905-1906	...	1,806	19	5	87	2	1	49	440	9	4	2,383	10	10
1906-1907	...	1,836	6	6	11	15	8	100	388	18	5	2,337	0	7
1907-1908	...	2,428	19	3	94	6	2	150	345	15	11	3,019	1	4
1908-1909	...	2,738	11	1	328	9	3	100	642	9	4	3,809	9	8
1909-1910	...	1,882	2	6	692	2	8	100	587	3	2	3,261	8	4
Totals ...		23,059	16	0	2,708	7	8	1,346	17,505	7	6	44,619	11	2

The schools of mines annual examinations were held in December, 1909, and exactly 100 students, from seven goldfields schools, presented themselves, and contributed 189 papers on some of the twenty subjects examined into. The standard of efficiency desired is to qualify the students for the Government examinations for mine-managers' and battery-superintendents' certificates of competency in New Zealand and other countries, and this object has been well attained during 1909, for all the four successful candidates for first-class certificates of competency as mine-managers under the Mining Act, 1908—viz., Messrs. L. E. Autridge, K. M. Barrance, R. Broad, and G. A. C. Ulrich—were ex-students of these schools, and the three successful candidates for battery-superintendents' Government certificates—viz., Messrs. P. H. McDonnall, J. McPadden, and Noel Carless—were all ex-students of these schools. The last-named student had the distinction of obtaining nine first-class passes in mining subjects, thus winning the Government scholarship, which entitles him to three years' tuition at the Otago University free, together with £50 per annum for that period.

It is to be regretted that the colliery districts of the Dominion and the young miners on the West Coast goldfields do not avail themselves more of the excellent tuition imparted at the schools by the Directors, who are all thoroughly practical men. Probably in no country in the world do better opportunities exist for a mining student to obtain all-round practical experience in so many different branches of mining in such close proximity to the schools of mines. On the West Coast, within a radius of ten miles of the Westport and Reefton schools, are important collieries with outputs of 1,000 tons a day; quartz-mines, approaching in depth 2,000 ft., and employing hundreds of men; also, hydraulic alluvial mining on the flats and gold-dredgers on the rivers. In proximity to the Waihi, Thames, Coromandel, and Karangahake schools are the great Waihi and Talisman Mines, the important reduction-works at Waikino, and the Taupiri Collieries. Under these favourable conditions it is quite natural that New Zealand is turning out some very promising young mining-engineers, who readily find employment in other countries, as well as within the Dominion.

I have, &c.,

FRANK REED,
Inspecting Engineer of Mines.

ANNEXURE A.

Mr. MATTHEW PAUL, Inspector of Mines, Waihi, to the UNDER-SECRETARY OF MINES, Wellington.—

Inspector of Mines' Office, Waihi, 31st March, 1910.

I have the honour to furnish herewith my report on the gold-mining industry in the Hauraki Mining District, together with statistics, for the year ended 31st December, 1909.

Waihi Gold-mining Company (Limited).

The following report bears principally on the operations carried out in the Nos. 8 and 9 levels, where the most important development-works have been conducted:—

No. 9 Level (1,000 ft.).—No. 4 shaft north crosscut was advanced 726 ft., making a total of 1,001 ft. from No. 4 shaft, and a connection effected with No. 6 shaft at this point. At 224 ft. the Empire lode, 46 ft. in width, was passed through. The Martha lode was met at 644 ft., the diagonal width of the lode along the crosscut being 96 ft., and the estimated width at right angles 80 ft.

Royal Lode: This lode has been opened up for a total length of 1,016 ft., of which 726 ft. is east and 290 ft. west of No. 5 shaft south crosscut. The east face was extended from 256 ft. to 726 ft. during the year, but the western face was not extended owing to the No. 5 shaft single cage not being able to cope with all the development-work at this level.

Empire Lode: This lode has been opened up for a distance of 530 ft. east and 556 ft. west of No. 4 shaft north crosscut. Bath, Snape, Rolker, and Paul passes have been connected with No. 8 level, and give good ventilation.

Martha Lode: This lode has been opened up for 101 ft. east and 212 ft. west on the south section of the lode. No driving has yet been done on the North or Regina sections of the lode. This level was flooded from the 4th January to the 10th May owing to the coal-supplies being limited, due to labour troubles in the Huntly coal-mines.

No. 8 Level (850 ft.).—*Royal Lode:* A total of 2,329½ ft. has now been driven on course of this lode. East of North section of Royal Junction the level was extended from 873 ft. to 952½ ft. The only wall seen was the south, from 940 ft. to 952 ft. West of Edward Junction the level was extended from 175 ft. to 314 ft., the width of the lode varying from 5 ft. to 9 in. The level was widened from 45 ft. to 115 ft., and a payable lens of ore 15 ft. wide was opened up. Stopping is in progress in several blocks on this lode.

Empire Lode: This has now been driven on its course a total of 1,625 ft. East of No. 4 shaft crosscut the level was driven from 505 ft. to 620 ft. East of 753 ft. crosscut the Empire lode was driven on 60 ft., where it junctions with a reef 3 ft. in width (probably the Albert lode).

Alexandra Reef: The level was heightened to 11 ft., and the full width of ore taken out from Empire Junction to 234 ft. east of Bull's crosscut. In Rata pass, at a depth of 51 ft., 3 ft. of sulphide-ore is exposed, and the south wall seen.

Edward Lode: Stopping is in operation on this lode, and in the stope between Eel and Spratt passes the top stope is 50 ft. up. In the block between Trout pass and the Welcome Junction the top stope is 25 ft. up.

Martha Lode: The total length opened up on course of this section is 1,594 ft. East of No. 4 shaft north-west crosscut the level has been driven from 724 ft. to 854 ft. South section: Stopping is proceeding between Deer and Yak passes and between Foster and Britannia passes. Regina section: The total length opened up on course of this section is 810 ft. West of No. 4 shaft crosscut the level has been driven from 492 ft. to 706 ft., when a connection was made with the level on the Welcome lode.

Trout North-west Prospecting Crosscut: The diamond drill horizontal borehole was extended from 97 ft. to 725 ft. Further boring was stopped owing to hole caving and giving trouble at 700 ft. in.

No. 7 Level.—*Royal Lode:* A total length of 2,539 ft. is now opened up on this lode.

Martha Lode: North section: In the shrinkage block between Hogson and Bullson passes the breaking of ore is completed, and the ore is now being drawn off. Two horses are being used to draw the trucks to No. 6 shaft.

Shafts.—No. 2 shaft has been sunk to a total depth of 1,074½ ft. from the surface. No. 4 shaft has been sunk to 1,002 ft. and the No. 9 level opened out at 1,000·4 ft. The ladder compartment of this shaft is being lined off from the winding compartments to receive the 14 in. diameter column for the discharge of the electrically driven three-throw ram pumps. No. 5 shaft is being sunk, and is now a total depth from the surface of 1,035 ft.; telephones have been installed in this shaft. No. 6 shaft is now a total of 997·7 ft. from the surface, and will be sunk a further 22 ft. to allow the skips to be used at No. 9 level. Telephones have been installed at the surface and No. 7 levels.

Approximately, 227,000 tons of filling-material have been obtained from the various filling-cuttings and deadwork crosscuts underground for the purpose of filling in the depleted stopping areas. Nine shafts, varying in depth from 635 ft. to 850 ft., are in use for conveying this filling into the mine. The total footage driven, risen, crosscut, and sunk for the year was 11,571 ft., and the total diamond drilling 628 ft. The total quantity of water raised from No. 9 level to the surface was 738,934,160 gallons, the B pump raising 216,614,560 gallons and the C pump 522,319,600 gallons. The total quantity of ore crushed for the year amounted to 416,813 tons, of 2,000 lb. dry weight. The ore was obtained in the following proportions from the various reefs worked during the year: Martha, 203,726 tons; Royal, 70,216 tons; Welcome, 45,290 tons;

Empire, 42,420 tons; Edward, 36,108 tons; Regina, 14,944 tons; No. 2 Reef, 2,089 tons; Alexandra, 1,289 tons; Albert, 731 tons. The total tonnage crushed—416,813 tons—exceeds that of the previous year by 23,599 tons. The product was 1,224,052 oz. of bullion, exclusive of concentrating scrapings, concentrates, slag, and slag tailings and Victoria Mill scrapings, which were shipped. A total of 6,339·5 tons of concentrates was treated during the year in the concentrates-treatment plant at the Victoria Mill, producing bullion to the amount of 399,462 oz., valued at £169,178 5s. 5d.

Gas-electric Pumping Plant.—The power-station is erected at No. 5 shaft, and accommodates two 370 brake horse-power Crossley gas-engines each direct coupled to Siemen's dynamos, working on a direct current circuit of 550 volts. Two Crossley producer plants are also installed. The pumps are being erected at No. 4 shaft, one at the No. 6 level (535 ft. from the surface), and one at the No. 9 level (1,000 ft. from the surface). They are built by Hathorn, Davey, and Co., and are of the horizontal three-throw type (ram), fitted with special valves for dealing with dirty and gritty water. They are gear-driven by variable speed motors. The capacity of each pump is 1,500 gallons per minute.

The gas-engines are so arranged that when not in use for pumping they will drive the existing air-compressing plant and supply power to the Waihi Mill.

Reduction-works.—The tonnages crushed at the three mills, together with the totals crushed during 1908, were respectively as follows:—

Waihi Mill (90 stamps and average of 3·56 tube mills running full time)	1909.	1908.
	119,065	116,570
Victoria Mill (200 stamps and average of 7·39 tube mills running full time)	273,917	249,293
Union Mill (40 stamps and one tube mill started during August)	23,831	27,351
Totals	416,813	393,214

The increased tonnage for the year thus amounts to 23,599 tons. The total average number of stamps running during the year, exclusive of Sundays and the period at Christmas during which the mills were stopped, was 314·253 out of 330 stamps. The total average duty per stamp per diem was 4·492, representing an increase of 0·325 ton per stamp compared with the previous year. The respective figures for the past five years are as follows: 1905, 3·124 tons daily duty per stamp; 1906, 3·504 tons daily duty per stamp; 1907, 3·794 tons daily duty per stamp; 1908, 4·167 tons daily duty per stamp; 1909, 4·492 tons daily duty per stamp.

Waihi Mill (ninety stamps and four tube mills): Two ferro-concrete agitator-vats, 13 ft. diameter, 55 ft. high, have been erected to cope with the increased slimes. The wheel of the vertical turbine, being badly worn, has been replaced with a new one. A new horizontal vacuum pump, made at the Victoria Mill workshops, has been erected and brought into use. The dam at the head of Waihi low-pressure race was repaired. The wings have been raised, and some new supports put in. The by-wash around it has been enlarged, which will relieve the stress upon the dam in time of flood. As a standby for driving the various dynamos, a steam-engine not in use at Victoria Mill has been transferred to Waihi Mill. In order to use surplus power from the mine electric plant when not required for pumping, it will be transmitted to the Waihi Mill. The total rainfall for the year 1909 amounted to 104·45 in., being 22·96 in. above the average for the past ten years.

Victoria Mill (200 stamps and ten tube mills): Ten more tall steel conical-bottom agitator-vats have been erected and brought into use. The vacuum plant for removing surplus water from the slimes before cyaniding has been erected and brought into use, enabling a reduction to be made in the amount of cyanide used in the slime treatment. A Pelton wheel has been erected to drive the vanner plant when water is available in the wet season. By using a mixture of scrap, wrought, and cast steel stamp-dies giving satisfactory results are now being cast. Producer-gas and Tube-mill plant: This plant has run satisfactorily. A third producer unit has been erected and brought into use, and a 250-horse-power tandem engine is being erected at the tube-mill plant with three more tube mills. A water scrubbing tower has been added to the producer plant to still further clean the gas before it enters the mains.

Union Mill (forty stamps and one tube mill since August): During the year the mill was stopped for twenty-five days for alterations and repairs. One of our standard-pattern tube mills has been installed, and is working well. A new elevator-wheel of larger capacity has been erected on the site of the old one. The main shafting has been replaced with a larger size, in order to drive the tube mill. All launders have been overhauled and replaced with new ones where necessary. The vertical turbine has been repaired, and better arrangements fitted to carry the weight of vertical spindle, which gave some trouble in the past, owing to the large quantity of tailings in the water. A Martin filter-press for the slimes when cyanided and a Johnson filter-press for dewatering the pulp have been brought from the Victoria Mill, erected, and brought into use.

Hydro-electric Plant.—A license has been granted by the New Zealand Government to the company to generate up to 10,000-horse power at the Hora-Hora Rapids, on the Waikato River, and to transmit the same to Waihi, a distance of fifty-one miles. Plans are being prepared so that work can be commenced as soon as possible.

Waihi Grand Junction Gold Company (Limited).

The following is a short report of the operations carried on during the year:—

No. 1 Shaft.—Preparations are being made for sinking to No. 6 level, the intention being to instal a stationary electric sinking pump at No. 5 level for raising the water to the Cornish

pump at No. 4 level. The electric pump will be used below No. 5 level, having proved to be very reliable for sinking purposes. A new cage-way has been fitted up in a portion of the pump-shaft, and will be used for handling men and for timber.

No. 5 (or 944 ft.) Level.—South-east crosscut: This was extended 988 ft., making a total of 1,005 ft. from the shaft. The Empire (or No. 4) lode was cut at 130 ft., and proved to be 61½ ft. wide, and at 969 ft. the Royal lode, 22 ft. in width, was cut through. North crosscut: This was extended 329 ft., and at 210 ft. the hanging-wall of the Martha (or No. 1) lode was encountered. This lode is 38 ft. wide at the point of intersection.

Empire (or No. 4) Lode: A distance of 308 ft. west and 451 ft. east has been driven on this lode. In the west section there is a width of 14 ft. of good ore, and in the east section the average width is 5 ft.

Royal Lode: West on No. 4 level a total of 362½ ft. is now opened up. This driving opened up a valuable run of good ore about 120 ft. in length and 15 ft. in width, extending to the boundary. Going east a distance of 207 ft. was driven, the first 20 ft. being in good ore, and the balance low grade.

Martha (or No. 1) Lode: At No. 5 level 390 ft. has been driven west on low-grade ore and 241 ft. east on low-grade ore. Crosscuts at intervals along the drives disclose a very wide reef, portions of which are payable. Stopping is in progress at Nos. 2, 3, and 4 levels. The following table shows the amount of development-work done during the year: Driving on reef, 2,434 ft.; crosscutting on reef, 594 ft.; crosscutting through country, 1,382 ft.; rising, 277 ft.; sinking winzes, 1,936 ft.

Stopping.—The production of ore was as follows: Empire lode, 12,701 tons; Royal lode, 6,324 tons; Martha lode, 22,273 tons; No. 2 lode, 18,276 tons; Waihi West Mine, 95 tons: total, 59,669 tons.

Since the end of the year the following development-work has been done:—

No. 5 Level.—Martha (or No. 1) Lode East: This has been advanced 113 ft., making a total of 354 ft. Crosscuts show the reef to be 53 ft. in width at 245 ft. and 57 ft. in width at 350 ft.

No. 1 Lode West: This was advanced 8 ft., making a total of 398 ft. The drive on the footwall of lode from 250 ft. crosscut advanced 59 ft., width of lode at 250 ft. being 45 ft.

North Crosscut to No. 2 Lode: This is now a total of 471 ft., 143 ft. having been done since the end of the year.

Empire (or No. 4) Lode West: This has been driven a further distance of 14 ft., making a total of 322 ft. The lode is 20 ft. in width at the 200 ft. point.

No. 4 Lode East: This was advanced 249 ft., making a total of 700 ft. The width of lode at 530 ft. is 16 ft., and at 630 ft. is 8½ ft.

No. 6 Lode West: A further 120 ft. has been driven, making a total of 226 ft. The lode is 5 ft. in width at 160 ft. west.

No. 6 Lode East: This was advanced 85 ft.; total, 191 ft. The width of lode at 160 ft. east is 27½ ft. At this point a branch lode junctions with main body on the footwall side, and this has been followed for 24 ft., proving to be 12 ft. wide. The width of the main lode at 190 ft. east is 12 ft.

General.—Large hoppers to facilitate the handling of filling have been constructed at Nos. 2 and 3 levels. A direct connection was made from the main air-shaft to the No. 2 level, and this has greatly increased the ventilation of the mine. A large exhaust fan is now being installed at the collar of the air-shaft, and it is anticipated that this will further improve the ventilation.

A new Ingersoll Rand compressor has been installed at the mine. This machine has a rated capacity of 925 cubic feet of free air per minute, at a pressure up to 100 lb. per square inch. A 5 in. air-main has been put down the No. 1 shaft.

A large and well-fitted-up change-house has been erected near the No. 1 shaft, and this is much appreciated by the men.

Battery.—The plant has been increased by the addition of four extra tube mills, each 16 ft. by 4 ft.; a large tailings-wheel; and eight new concentrating-tables. Two more of the 13 ft. by 55 ft. air-agitation tanks have been erected.

The vacuum-filtration plant has been increased by the erection of two extra tanks and extra baskets. A sampling arrangement has been installed at the rock-breaking department.

The process of crushing in cyanide solution has been continued, and the ore is now being ground to pass through 200 mesh, and everything is treated as one product, the result being very satisfactory.

Waihi Extended Gold-mining Company (Limited).

The work in this mine has been chiefly confined to opening up No. 5 level at 960 ft. from the surface. Upwards of 300 ft. of driving has been done on the course of No. 2 lode, two winzes being sunk from No. 4 level to insure ventilation.

A crosscut has been driven from the shaft for 477 ft. in a south-easterly direction. At 230 ft. a lode formation, 15 ft. wide, was met with, faces being opened up on it both north and south preparatory to driving. At 410 ft. in the crosscut the Martha lode was intersected, and proved to be 28 ft. in width. Driving both ways on this lode is now in progress.

Early in the year an air-compressing plant and a rock-drilling plant were installed, and recently a most powerful winding-engine has been erected, and is now being utilised.

Waihi Reefs Consolidated.

This company has recently been reconstructed, and preparations are being made to sink the shaft, which is now down 539 ft., to 1,000 ft. before opening out. For this purpose a compound tandem steam-engine is in the course of erection, 16 in. and 26 in. cylinders by 3 ft. stroke, and an air-compressor capable of producing 631 cubic feet of air per minute. Some alterations are also being made to the pit-head gear and winding-engine.

Waihi-Paeroa Gold-extracting Company (Limited).

This company has worked continuously during the year, an average of twenty-three men being employed. The appliances for lifting the tailings out of the river, and the machinery installed for treating same, have proved so satisfactory that a start has been made to erect a new plant near Paeroa. 23,950 tons of tailings from the river was treated.

Waihi Beach Gold-mining Company (Limited).

In the early part of the year a start was made to unwater the mine down to the 360 ft. level by means of a Cameron pump. Considerable difficulty was experienced owing to the large body of water to contend with. Eventually, however, the lowest level was drained, and a distance of 75 ft. driven on the reef without disclosing any values. A large cross-lode was then intersected, and, although a little gold was visible, the pump could not cope with the volume of water, and work from the shaft was suspended.

Waitekohe Syndicate.

Two men have been constantly engaged driving a low-level crosscut for the purpose of intersecting the reef-formation, which gave good prospects on the surface. Several small veins have been passed through, and another 60 ft. should see this formation to hand.

OWHAROA.

Rising Sun Mine.

Operations during the year have been chiefly confined to driving a low-level tunnel to intersect the reef, on which a winze was sunk for a distance of 60 ft. below No. 2 level, with satisfactory results. Owing to difficulty with water, work had to be suspended in the winze, and the low-level tunnel is for the purpose of draining this section of the mine and facilitating the handling of the ore.

WAITEKAURI.

New Waitekauri.

The whole of the work carried out in this mine throughout the year has been of a prospecting nature. Two small blocks of payable ore were met with in different sections of the mine, and were broken out and treated at the battery. At present the work in hand is repairing the Queen level for the purpose of working a block left in by the old company. 146 tons of ore was treated, for a return of £216.

Maoriland.

At the beginning of the year a crosscut was driven in an easterly direction for a distance of 174 ft., and the Young New Zealand reef intersected, showing a width of 8 ft. A total distance of 120 ft. has been opened up on line of lode, and a rise connected with the surface 116 ft. for ventilation purposes. 36½ tons treated at the mill proved to be worth £2 3s. 6d. per ton.

New Zealand Jubilee Mine.

In this mine 100 ft. has been driven on what is known as Christie's reef, and a branch leader, also a considerable amount of surface-prospecting. On Christie's leader portions of the ore gave a high assay value, but, being of a refractory character, samples have been sent to Australia for treatment. The results are not yet to hand.

Scotia Gold-mining Company.

No. 1 level was extended a distance of 137 ft., the lode averaging 2½ ft. in width. A winze was also sunk to a depth of 30 ft., the lode maintaining the same width. No. 2 or low level was driven 240 ft., but so far nothing of importance has been discovered. 116 tons of ore produced bullion to the value of £201 6s. 2d.

KARANGAHAKE.

Talisman Consolidated (Limited).

A considerable amount of development-work was carried out in this mine during the year. The No. 8 crosscut at No. 11 level was extended to the Crown boundary, or a distance of 1,030 ft. from starting-point. At 540 ft. the Welcome reef was intersected, at a point where it is about 4 ft. wide and carrying low values. A little driving has been done north and south on this reef without disclosing any improvement, but further development will be done during the ensuing year. The No. 10 crosscut at No. 11 level has been driven westward from face of south drive for over 500 ft. without intercepting anything of value. It is intended that this crosscut shall be advanced to the western boundary.

No. 12 Level.—Considerable driving has been done southward in the Dubbo section, disclosing varying widths of quartz, giving low values. Several crosscuts were driven east and west off main drive in this section without intersecting any parallel ore-bodes. The north drive at No. 12 level has been advanced about 300 ft., with varying results. This drive will be extended considerably further, so as to prospect the ground below Woodstock No. 5 level.

No. 13 Level.—This level was drained in June last, and subsequently the south drive was advanced to and beyond the boundary of payable values. Although the southern boundary of the ore-shoot was reached earlier than expected, the length of payable ore at this level is fully as great as at No. 12 level. After the south drive got beyond the ore-shoot the reef became small and very poor, but at the close of the year an improvement occurred both in width and values.

Highly payable values reached at 711 ft. south of the crosscut, and the same continued for 120 ft., with a width varying from $2\frac{1}{2}$ ft. to 7 ft. From 831 ft. to the present face (857 ft.) the width of the reef is 6 ft., but the values in this last section are much lower. The south drive is measured from a crosscut that is 406 ft. south of shaft, therefore the present face is 1,263 ft. south of shaft. The five winzes that are being sunk below No. 13 level show that the average of the conditions existing along the level are being maintained.

The north drive at No. 13 level is 416 ft. from the shaft. The north drive at No. 12 level is 993 ft. north of shaft. It is intended to continue driving south on this level until the Dubbo section is reached, a distance of about 600 ft. A little crosscutting has been done, both east and west, of south drive, without intersecting anything of value. About 150 ft. of driving has been done northward on the east vein, and this progress has disclosed a short run of good ore. Further driving on the reef will be necessary before getting under the section carrying the best values on levels above.

Shaft-sinking was resumed in the last quarter of the year, and shortly thereafter a fissure was cut that drained the water that hitherto flowed along level from the southern section of the mine. This has stopped shaft-sinking for the time being, but has enabled the sinking of the winzes mentioned before. As soon as these winzes overtake the water pumps will be put in some of them. This will relieve the shaft pumps considerably, and should make shaft-sinking thereafter much easier.

A chamber at the Woodstock, 110 ft. by 30 ft. by 25 ft., has been cut out and timbered. In this chamber will be installed the pumping-machinery that will ultimately drain the whole of the mine. A large part of this machinery has arrived, and the necessary arrangements for its installation are well in hand.

Treatment Plant.—Considerable additions and alterations to this plant have been made. In consequence of this rearrangement of reduction plant, further power was required, and a new 500-horse power Fraser and Chalmers' compound engine has been erected and brought into use. This engine has cylinders of 18 in. and 35 in. respectively by 3 ft. 6 in. stroke, and runs at 75 revolutions per minute. A new surface condensing plant for main engine and auxiliaries has also been installed. Additional boilers will be installed at the power plant during the next year. Also, a new boiler plant is to be erected at Woodstock No. 5 level to supply steam for the Woodstock shaft pumping and winding machinery.

The following additions have been made to the treatment plant: Complete new assay office, with latest appliances; new smelting-room, with tilting, oxidising, and bullion furnaces; slag-reduction plant and prospecting stamps; new slimes, Spitzkasten's; eight new pneumatic slime-agitators, each 30 ft. by 8 ft.; one new slime-dewateriser; three tube mills, each 4 ft. by 12 ft., on the Abbe roller principle; also five classifiers and two sand-elevators.

New Zealand Crown Mines (Limited).

Since the month of November, 1908, the development of the mine has been suspended, and the attention of the staff has been devoted to the erection of a new electrical-power plant, the completion of which is essential to the opening-up of the mine below No. 5 level. The power-house and boilers are situated close to the Government railway, and consists of two Babcock boilers, designed to raise 6,000 lb. of steam per hour at a pressure of 160 lb. The boilers are connected to superheaters capable of imparting 500° Fahr. of superheat to the steam produced from the boilers. The machinery in the power-house is as follows: One 550 B.H.P. high-speed triple-expansion engine; one 550 K.W. generator, 25 periods, 2,900 volts, 300 revolutions per minute; one 25 K.W. exciter, 110 volts, 750 revolutions per minute; one two-panel switchboard; one Francis turbine; one condenser; one feed-water heater.

Transmission Line.—From the power-station to the mine the distance is 92 chains, and the transmission is by single circuit, consisting of three bare stranded conductors, each made up of thirty-seven wires of No. 4 standard gauge. The conductors are carried on ironhack and kauri poles, which in the Waitewheta Creek are bolted to the solid rock, and stayed by struts and guy-ropes. Under the aerial tramways in the gorge the cable is laid in 3 in. galvanised pipes under the ground. The machinery was started on the 10th July, and worked without the slightest hitch. On the 12th August a start was made to drain the mine with the old pumping plant, and the water has been drained down to No. 4 level. When the water is drained to No. 5 level one of the electrically driven pumps will be installed, and a start will be made to sink on the rich shoot of ore in the bottom of this level, which total length is 227 ft. For a distance of 128 ft. the width of lode is over 4 ft., and the assay-value £6 per ton. North of this shoot of ore a winze has been sunk 284 ft. in good ore, and near the bottom some very rich sulphide-ore was obtained. There is also evidence of a body of sulphide-ore at greater depth.

Dominion Mine.

The low-level crosscut to intersect the Dominion lode has been driven a distance of 648 ft. Owing to the lack of ventilation, work has been stopped for the present, and the men removed to prospect the surface of the mine. A new reef was discovered, and a winze sunk on it proved it to be 12 ft. wide, and giving fair values. A crosscut is now being put in to intersect this lode at 100 ft. down, in solid country.

Comstock United.

Work in this mine has also been chiefly confined to surface prospecting. No. 1 level was driven 310 ft., No. 2 level 273 ft., and No. 3 level 260 ft. A considerable amount of crosscutting was done on this last level also. The average number of men employed was seven.

Karangahake Mine.

During the past year 1,500 ft. of driving in crosscuts, 250 ft. of driving on reefs, 90 ft. of rising, and 40 ft. of sinking has been done in this mine. The ore treated (45 tons) produced gold to the value of £39 7s. 6d.

Crown Royal Mine.

Operations on behalf of this company were started on the 24th August. Since then an adit level has been driven 240 ft., and at this point the hanging-wall of No. 1 reef was intersected and penetrated for 9 ft. without sign of foot-wall. Three assays taken gave the following results: 9s. 9d., £1 10s., and £8 1s. per ton. An average of six men have been employed.

KOMATA.

Komata Reefs (Limited).

The return from this mine shows a considerable falling-off as compared with last year. Very little development-work has been done, and operations have been chiefly confined to stoping at Nos. 5, 6, and 8 levels. An average of seventy men have been employed during the year, and 13,391 tons of ore treated at the battery produced bullion to the value of £24,417 1s. 7d.

TE AROHA.

Murphy's Find Syndicate.

During the year the crosscut was extended to a total distance of 446 ft., but as yet there is no sign of the lode in which the rich specimen stone was found on the surface. At the mouth of this tunnel a reef 6 ft. thick has been driven on a total of 40 ft., carrying no values. Four men have been employed.

Hardy's Mines (Limited).

Operations by this company were commenced at the beginning of the year on what is known as the east branch of the Hero lode, at No. 5 level. This lode was driven on in a northerly direction for a distance of 105 ft., and also southerly for 100 ft., without disclosing anything of a payable nature. Work was therefore discontinued, and crosscutting resumed. After driving a distance of 10 ft. the west branch of the Hero lode was intersected, and proved to be 12 ft. in width, 5 ft. of which is high-grade ore. At 165 ft. west of the Hero lode the Colonist lode was passed through, and proved to be 25 ft. in width. An average of ten men have been employed.

Bendigo Mine.

Work has been principally confined to surface prospecting on several reefs outcropping on this claim, with satisfactory results. Owing to lack of capital, the owners have been unable to fully develop these lodes. Besides work done on the surface, the drive on the Silver King lode has been extended 100 ft., and a leading stope carried along. The ore is refractory; 5 tons treated by cyanide, however, produced gold valued at £17 10s. A small crushing plant is now in course of erection.

COROMANDEL.

Four-in-Hand.

In June last this company was reconstructed, the chief object being the development of the lower level in the Waikoromiko Creek side of the range, in order to intersect the Four-in-Hand Reef, which was worked in the upper levels with high payable results. The level is now in 1,007 ft., and the country being penetrated is of a very hard nature. Another 50 ft. should see the reef sought for to hand. Stoping and sinking has also been carried on in the upper levels. There was 35 lb. of picked stone treated, which produced gold to the value of £83 2s. 6d.

Royal Oak Mine.

The principal work carried out in this mine during the year has been prospecting the Tributers' leader through the "hard bar." 150 ft. of driving and 70 ft. of rising has been done on this reef, with satisfactory results. Gold to the value of £1,791 8s. 3d. was obtained. An average of thirteen men have been employed.

Pride of Tokatea.

A new company was formed, and work commenced on this property in July last. The No. 3 or low level was cleaned out and repaired for a distance of 700 ft., and a block on what is known as the cross lode opened up for stoping. The lode averages 4 in. in width, and produces a little picked stone occasionally. In all, 3 tons of general ore and 200 lb. of picked stone was crushed for a return of 56 oz. 17 dwt. of gold, valued at £160 12s.

Monte Christo.

An average of seven men have been employed during the year, and work has been principally confined to the extension of the low level. A considerable amount of surface prospecting has also been done on several leaders, with encouraging results.

Mount Welcome.

This company was formed in July last to work the property on the western slope of the Tokatea Range, the object being to drive a low level to intersect several known gold-bearing lodes lying to the east of the big reef, better known as the "Blow." Up to date a distance of 230 ft. has been driven, and the Pukatutu reef intersected, which gives promise of payable results, as gold has been freely seen.

Exalt.

This claim is owned by J. D. Regan and party, and is situated near the Omoko Creek. Surface prospects are very encouraging, and loose gold-bearing stones have been found. An effort is now being made to locate the source of these stones.

Kapanga.

During the year a new pumping plant has been erected, and comprises a horizontal condensing-engine by Holman Bros., of Camborne, Cornwall. The cylinders are 25 in. diameter, and geared to balance-bob with two sets of spur wheels of 6 tons weight. There are three boilers, providing ample power. The plunger is 10½ in. diameter by 7 ft. stroke, working at seven and eight strokes per minute. The plant is capable of lifting 2,400 gallons of water per hour. It is the intention to unwater the mine to the 1,000 ft. level.

Hauraki Freehold.

This mine has been in the hands of De Renzy and party, who during the year erected a fifteen-stamp mill for the purpose of treating a large quantity of surface said to contain values. The results obtained proved disappointing, and the men were removed to try the lowest adit levels. There was 222 tons treated, which produced gold to the value of £1,941 14s. 6d.

Old Hauraki.

During the year a considerable amount of development-work has been done on the 300 ft. and the 400 ft. levels. At the 400 ft. level, in driving seaward to cut the No. 9, or Green Harp reef, a new body of ore was discovered, running at right angles. This was followed until the intersection of No. 9 lode was met with. A rise was put up on the Junction 30 ft., in which specimen stone was met, and has every appearance of continuing. At the 300 ft. level this new reef has also been located, and specimen stone secured. There is every probability, therefore, of this once famous mine again coming to the front as a gold-producer.

Pukewhan Tiki.

Work carried out on this property during the year has been purely of a surface-prospecting nature. The results were very unsatisfactory. The company have recently acquired another property further down the creek, which contains several well-defined reefs, in one of which a few pounds of specimen stone has been obtained.

KUAOTUNU.

Mountain King.

At the low level the Mountain King reef has been driven on for a distance of 240 ft. north and 50 ft. south, and a rise 233 ft. put through to No. 2 level. An intermediate level has also been formed in the centre of this block, and the reef driven on for 110 ft. The reef varies from 6 in. to 2 ft. 6 in. in width. Gold has been freely seen in the ore broken out, and a new five-head stamp battery is now in course of erection, with an up-to-date cyanide plant. Thirty tons of ore treated at the Thames produced gold valued at £214 16s. 1d.

Handsworth United Gold-mining Company.

During the year a company was formed to work this claim, and the leaders worked by the former owner were intersected at the low level, with very encouraging results. Sixteen tons of ore treated yielded gold to the value of £650 9s. An average of seven men have been employed.

New Waitaia.

This claim was acquired from the previous owners, a Glasgow company, and a new company formed in March last. At two distinct points payable gold has been located, that from the intermediate level giving a return of £5 per ton, and at No. 5 level a large blow of quartz 20 ft. in width has so far yielded £2 per ton. A low level giving 150 ft. of backs is now under way. A distance of about 1,000 ft. will require to be driven to intersect the reef. The battery of ten head of stamps has also been thoroughly overhauled.

Otama.

This claim is owned by J. Vernon. Three tons of ore won from small leaders, whilst receiving assistance from the Mines Department, produced 197 oz. of gold, valued at £462 19s.

MERCURY BAY.

Moewai.

For the greater part of the year this mine was under protection. Work, however, was resumed in October last with four men, and a winze is being sunk to connect with the low level and to facilitate the handling of the ore. The assays taken from the winze, so I am informed, have proved satisfactory.

Mahakarau.

This claim consists of 20 acres, and three men have been employed by a syndicate trying a reef cut by a party of prospectors some years ago. Good dish-prospects have been obtained, and the reef, which averages 3 ft. in width, has been driven upon both on the eastern and western slopes of the spur.

GREAT BARRIER.

Barrier Reefs Gold-mining Company.

Work during the year has been principally confined to extending the surface-prospecting drive, which is now in a distance of 1,000 ft. Several lodes have been intersected containing low values, and it is intended to push this drive on to the boundary. An average of five men have been employed.

Ngatiawa Consolidated Mines (Limited).

Operations in this mine have been resumed, four men being employed stoping on the Ngatiawa lode from the upper level, with satisfactory results.

ASCOT CINNABAR-MINE.

This mine is situated on the east side of Mackytown, on the Rahu Road, about one mile north of the Talisman Mine. The property consists of 176 acres, a mill-site of 5 acres, and timber reserve of 20 acres, together with aerial tram and dam-site. The cinnabar-deposit outcrops on the face of a steep escarpment about 800 ft. above the Rahu Road. Here there is a very strong body of very flinty rock, above which is a layer of from 4 ft. to 8 ft. of andesite. The cinnabar occurs in well-venned almost horizontal veins striking east and west along the contact of the flint rock and andesite, also penetrating the latter, and as kernels and veins in the former. Its full extent has not yet been determined, but it has been traced for a distance of 15 chains. The situation of the deposit enables it to be opened up with comparative ease by removing the overburden and dumping over the edge of the cliff. Some 5 chains in length has been dealt with in this manner, proving the cinnabar-formation to vary from 6 in. to 10 ft. in width. It carries an average of about 10 per cent. of cinnabar, but there are some rich pockets containing almost pure cinnabar, assaying some 70 to 80 per cent. mercury. A drive has been put in at right angles to the face of the cliff, and follows the cinnabar for a distance of 30 ft., when it pinches out. At about 15 ft. a soft formation, 18 in. in width, was passed through, carrying pug rich in cinnabar, and also nodules of pure cinnabar, the whole averaging about 25 per cent. of mercury. A drive running parallel to the face of the cliff was carried along on this soft formation, good ore being obtained from it. The rich pug is going underfoot in the drive, and appears to be contained in a series of pipes; these are doubtless connected with the source of the deposit. About 10 chains west of the main working, and on the same line, the cinnabar is found again outcropping. A cut put in at this point exposed rich cinnabar, assaying 70 per cent. of mercury. No further work has been done at this point, so that its extent is not yet known. Although comparatively little work has been done, and that chiefly of a prospecting character, there are some 50 tons of ore stacked at the mine awaiting treatment which averages about 15 per cent. of mercury. Development-work has not proceeded far enough to enable any useful estimate of ore in sight to be made, but it is certain that a few hundred tons of ore, averaging about 10 per cent., can be obtained without much deadwork.

The Novak furnace installed for the treatment of the ore is of the latest type, it being double walled, 21 ft. in height by 8 ft. diameter externally. The inner wall is of firebrick and the outer of ordinary brick, the whole being surrounded by an iron jacket, which serves to prevent the escape of fumes. The ore and fuel (charcoal) are charged at intervals at the top of the furnace, which is covered by a "bell," with water-seated lid, which enables the charging to be effected without escape of vapour. The spent ore is drawn off through openings at the bottom of the furnace.

The mercurial vapours are drawn from the furnaces into condensers, consisting of a series of Y-shaped stoneware pipes 12 in. in diameter, of which there are three sets side by side. The liquid mercury collects in water-filled troughs running under the condensers. From the condensers the fumes are led into two large chambers containing water-sprays, where dust and residual mercury are collected in the form known as "soot," which is subsequently re-treated. The fumes are further conveyed through 150 ft. of 12 in. pipes laid underground, with cesspits every 10 ft. for retention of any mercury which may have passed the condensers and chambers.

An 11 in. suction-fan, with capacity of 5,000 cubic feet per minute, and driven by a Pelton wheel, gives the reduction of pressure required to produce the necessary draught through the furnace, condensers, chambers, and pipes.

ACCIDENTS AND FATALITIES.

Fatal.

Waihi Gold-mining Company (Limited).—17/2/09: Joseph Hearn was killed by falling down a quartz pass. 18/10/09: Edward J. Liddy was killed by a fall of stone in the stopes. 3/12/09: R. G. Stone was killed whilst pulling down trestles supporting a small flume by a piece of 4 in. by 3 in. striking him on the head.

Waihi Grand Junction.—25/8/09: G. A. Roycroft lost his life by falling off a cyanide-tank whilst in the course of erection.

Waihi Beach Mine.—8/7/09: Stanley Foster lost his life by falling down the shaft, a distance of 360 ft.

Talisman Gold-mining Company.—26/4/09: John Wills was killed by a blasting accident.

Non-fatal.

Waihi Gold-mining Company (Limited).—23/4/09: Joseph Sullivan injured by a fall of stone. 8/10/09: Charles Cavanagh fell a distance of 25 ft. in a shaft, seriously injuring his back.

Talisman Gold-mining Company.—12/8/09: Robert Harrison was badly cut about by a blasting accident.

I have, &c.,

MATTHEW PAUL,

Inspector of Mines.

Mr. BOYD BENNIE, Inspector of Mines, Thames, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Inspector of Mines' Office, Thames, 2nd April, 1910.

I have the honour to present my report on the gold-mining industry in the Thames district for the year ended the 31st December, 1909.

Waiotahi Gold-mining Company (Limited), (George Warne, mine-manager).—During the year mining operations were carried on at Nos. 4, 5, and 6 shaft levels. No. 4 level (320 ft.): Driving, rising, and stoping have been done on the main reef and hanging-wall, which is from 6 in. to 15 in. wide. Most of the gold obtained from the mine comes from this hanging-wall. Three stopes in height on this leader have been taken out for a length of 180 ft. The total amount of driving and rising for the year at this level was 1,030 ft. No. 5 level (380 ft.): The main reef has been driven on east and west and a connection made with No. 4 level. Stoping is being carried on on the foot-wall dropper and Cure reef, between Nos. 4 and 5 levels, and an intermediate level from the rise at the junction of the main reef with the hanging-wall leader is also in progress. Fully 739 ft. of driving and rising was done for the year. No. 6 level (428 ft.): Operations have chiefly been confined to the foot-wall dropper above and below this level. About 342 ft. of rising, driving, and stoping was done for the year. The yearly return shows that the company treated 1,495 tons 1 cwt. 94 lb. of material for a yield of 3,724 oz. 16 dwt., valued at £10,115 11s. 2d. Twenty-eight men were employed. The mine was inspected periodically, and found to be in good order.

Kuranui-Caledonian Gold-mining Company (Limited), (George Horn, mine-manager).—Prospecting-work was undertaken early in the year in connection with several quartz leaders in Nos. 1, 3, and 4 shaft levels, but the work proving unremunerative, operations were suspended at these levels. A surface block in the Kuranui section was then vigorously prospected. Graham's leader being eventually located, it engaged the company's attention for the remainder of the year. The total amount of rising, driving, and stoping for the year was fully 1,100 ft. During the year 9 tons of general ore and 15 lb. of specimen stone were treated, for a return of 22 oz. 2 dwt., valued at £62 1s. 3d. Five men were employed. The mine was inspected on two occasions, and found to be in good order. Rules posted, and reports entered to date.

Old Alburnia Gold-mining Company (Limited), (George McNeil, mine-manager).—The rise was continued in the Moanataiari tunnel, and when a height of 550 ft. had been attained a connection was effected with the Sons of Freedom level, which was cleaned up, and crosscuts were then driven through the reef (Sons of Freedom) near the junction of the reef with the rise, and a few colours of gold were secured. A winze is being sunk, and a rise has also been made in order to more thoroughly prospect the reef. The reef in the long rise from the Moanataiari tunnel proved disappointing, very little gold having been seen for the total height risen. Towards the end of the year the 540 ft. level (Alburnia shaft) was being cleaned up and repaired, with a view to further prospect the reef at a point below a run of gold that was worked in the higher level. During the year 9½ tons of material and 170 lb. of specimen stone were treated, for a yield of 202 oz. 14 dwt., valued at £519 19s. Twelve men were employed. The mine was inspected, and found to be in good order.

Moanataiari Gold-mining Company (Limited), (N. Taylor, mine-manager).—On the expiration of their period of protection, early in the year, the company resumed operations in No. 3 shaft level. The drive was extended only a few feet when the Cambria reef was intersected close to the boundary of the Waiotahi Mine. A connection was then made between these mines for ventilation purposes. It is intended to thoroughly prospect the reef from a rise that has already attained a height of 65 ft. on the lode.

Saxon Gold-mining Company (Limited), (George Warne, supervisor).—A little driving and stoping have been done on No. 2 reef, No. 4 level. The mine is at present under a period of protection, pending the finality of arrangements in connection with the deep-level-development scheme.

Victoria Gold-mining Company (Limited), (Charles Williams, mine-manager).—Mining operations were continuously carried on at Nos. 1 and 3 levels. At No. 1 level a block of ore is being worked, with profitable results. At No. 3 level a reef has been driven on and generally prospected by rising, sinking, and stoping. As but little work has ever been done in this section, it is hoped that something will be located. Thirty-nine loads of general and 23 lb. of specimen stone were treated, for a yield of 70 oz. 5 dwt. of gold, valued at £196 2s. 11d. Seven men were employed.

Thames Gold-mining Company (Limited), (James Sheehan, mine-manager).—The Cambria reef has been driven on in the Moanataiari tunnel with fairly encouraging prospects. The country incasing the reef is very hard, no timber being required in the first working. Ventilation is produced by an air-compressor. Six men were employed.

Thames-Hauraki Pump and Shaft (W. Baker, mine-manager; A. C. MacDiarmid, chief engineer).—The initial step in deep-level development was taken by the May Queen Gold-mining Company (Limited) when they sunk the Queen of Beauty shaft to the 1,000 ft. level. They were enabled to undertake this very expensive yet extremely important work through the financial aid rendered by the Government (at the rate of £1 for £1) and the Borough and County Councils. When the shaft had attained the required depth, and the chamber has been made, the permanent drawlifts were at once installed. This work was completed in June last, and the May Queen Company subsequently commenced work at the 1,000 ft. level. The pumping-machinery worked well until one of the couplings of the drawlift-rods broke, fortunately without any serious damage resulting. Scarcely had this difficulty been surmounted when another breakdown occurred. On the advice of the Drainage Board's engineer and head pitman, a thorough examination of the rods and couplings was made, and revealed the fact that they were of poor quality, and

faultily constructed. It was then decided to let a contract to Messrs. Price Bros., engineers, Thames, for the supply of a new improved sleeve and coupling. The rods have been installed in the shaft, and the pump is working very satisfactorily. The mine has been unwatered to the 1,000 ft. level, and it is hoped that the development of the deep levels, which is to so vitally affect the welfare of the Thames, will be shortly undertaken with all due earnestness. The pumping-engines, &c., are in good order.

May Queen Gold-mining Company (Limited), (W. Baker, mine-manager).—May Queen section: At the No. 6 level (750 ft.) a lot of driving and stoping has been done on the small leaders in the footwall and hanging-wall of the No. 4 lode. The leaders vary in thickness from 2 in. to 4 in., and the ore is of good general grade. Queen of Beauty section: At the No. 9 level (750 ft.) a considerable amount of work has been done on the No. 4 reef, a branch leader in the hanging-wall of No. 4 reef, and on the Queen of Beauty reef on the south side of the shaft. The prospects have been very encouraging. At the No. 10 level (1,000 ft.) a drive has been driven through the Government reserve into the Queen of Beauty section for a distance of 200 ft. The Queen of Beauty reef is expected to be cut at any time. Operations at Nos. 9 and 10 levels have been interrupted a good deal owing to the accidents which caused stoppages of the Thames-Hauraki pump. During the year 1,315 tons of ore and 350 lb. of specimen stone were treated, for a return value of £3,519 10s. 2d. Thirty-two men were employed.

Occidental Consolidated Gold-mining Company (Limited), (Thomas Gillan, mine-manager).—The company is directing its energies to the opening-up of the No. 4 Una level. Connections will also be effected with an upper level, in order to improve the quality of the ventilation, and to allow the prospecting of several small reefs which exist in the claim. Seven men were employed.

Lord Nelson Special Quartz Claim (James Middleton, mine-manager).—Little or no development-work has been done during the year, the owners being content with locating rich leaders in the adit levels. It would appear, however, that the property is well worth being worked on a more comprehensive scale. Sixteen tons of material was crushed for a return value of £696. Three men were employed.

Reliance Gold-mining Company (Limited), (George Comer, mine-manager).—The mine is being worked from the Moanataiari tunnel. Before the company reached their ground 40 ft. had to be driven, and it is proposed to continue the crosscut to intersect the Reuben Parr reef. The country rock is hard, and no timbering is required. Four men were employed.

Claremont Mine (George Briant, owner).—Very little work has been done on the claim. The owner, who works the claim himself, managed to secure 130 lb. of specimen stone, which he treated for a yield of 129 oz. 1 dwt., valued at £348 8s. 6d.

Magnet Gold-mining Company (Limited), (J. W. O'Sullivan, mine-manager).—A short distance has been driven on the main reef at the low level, and two rises made to a height of 105 ft. and 54 ft. respectively. The lode is highly mineralised, but, owing to the defectiveness of the ventilation, work has been suspended in this particular quarter for the time being. A new crosscut drive was driven at a point 127 ft. vertical above the low level a distance of 212 ft., when the main reef was cut into and driven on for some distance. There yet remains 120 ft. to be driven before reaching a point immediately over No. 1 rise, where it is intended to sink a winze which, at a depth of 45 ft., should connect with the rise referred to. This will facilitate the ventilation of the mine, and also enable a vigorous policy of development being carried out in the higher level areas. Six men were employed. The mine was in good order when inspected.

Point Russell Gold-mining Company (Limited), (Henry Brownlee, mine-manager).—The company is working on a well-defined reef, and is also operating on a section of the lode left in by a former company. Twelve loads of quartz was treated, for a value of £79 6s. 9d. Eight men were employed.

Arrindell Syndicate (Limited), (George A. Dougall, mine-manager).—The syndicate's properties have been under protection during the whole of the year, pending the formation in London of a new company to work the properties. The latest information to hand is to the effect that a new company, to be called the Maori Gold-mining Company (Limited), will shortly be registered, having a capital of £150,000, and it is anticipated that work will be commenced within the next three or four months.

Dart Extended S.Q.C. (D. Dunlop, owner).—The present owner came into possession of the property last June, and all his attention has been occupied with cleaning the old drives and repairing the shaft ladder-way, &c. Two men were employed. Fifteen loads of quartz gave a return of 25 oz. 13 dwt. of gold, valued at £69 17s. 4d.

New Day Dawn and Norfolk Mines (Limited), (W. T. McCormick, mine-manager).—There has been 250 ft. of driving done on the City of Dunedin reef, which is a large body of ore, 20 ft. wide and highly mineralised, though carrying low values. Connections have been made with the upper levels for ventilation purposes. The reef in the main rise averages from 6 ft. to 8 ft. in width, and is very hard, rock drills having to be used. There was 966 tons of material crushed, for a yield of 369 oz. 16 dwt. of gold, valued at £676 1s. Fourteen men were employed.

Watchman Gold-mining Company (Limited), (H. A. Hill, mine-manager).—No. 1 rise has been carried to a total height of 115 ft. on the lode. No. 1 winze was sunk to a depth of 102 ft. on the lode; and at a depth of 100 ft. a crosscut was driven, and it showed the reef to be 22 ft. wide. The reef has been driven on in an easterly direction for 60 ft. A low level will be driven to intersect the lode at the bottom of the winze. Five men were employed.

Bonanza Gold-mining Company (Limited), (Robert Wilson, mine-manager).—A new level has been driven in the Sunbeam Creek section, but nothing of importance was disclosed. The drive has now been driven a total length of 200 ft., and it is expected that a reef located outcropping on the surface will be intersected. Four men were employed.

Tararu Mines (Limited), (James Jobe, mine-manager).—This company took over the Eclipse Claim during the year, and nearly all their attention has been taken up with cleaning and repairing an old level. It is proposed to prospect the Vulcan reef and the Royal Sovereign surface sections. Six men were employed.

New Sylvia Gold-mining Company (Limited), (F. Daldy, mine-manager).—The reef has been driven on north-east a distance of 290 ft., and south-west for a length of 190 ft. The lode maintained throughout a uniform width of 6 ft. The main crosscut was advanced through the lode a distance of about 74 ft., when two small leaders of an unpayable character were intersected. The ore is highly mineralised, and necessitates special milling treatment. Nine men were employed.

Adventure Special Quartz Claim (Charles Prescott, owner).—The owner, who has done only a limited amount of prospecting successfully, located some good ore, which, when treated, gave a return value of £89 17s. 9d.

Scandinavian Gold-mining Company (Limited), (W. McConnell, mine-manager).—In the No. 3 level a rise has been made through the reef to prove the ore-values. In the No. 2 level a crosscut has been driven some considerable distance to endeavour to pick up the reef, and make a connection with the rise referred to above. The development-work is well in hand, and a large block of ore is ready for stoping.

Dixon's Consolidated Gold-mining Company (Limited), (Allan Wilson, mine-manager).—The reef at the low level was found to carry low values, and operations were then concentrated in the higher level, where a good deal of driving has been done. Six men were employed.

Mount Zeehan Gold-mining Company (Limited), (L. E. Autridge, mine-manager).—The company have done a large amount of crosscutting and driving on the main reef. A parcel of ore has been sent to one of the local mills for treatment, and it is hoped that the return will make it profitable for the company to undertake the vigorous development of their property. Five men were employed.

Ferguson's Mining and Smelting Company (Limited), (William Cock, mine-manager).—The company did a little prospecting-work in the early part of the year, but the claim has since been under protection. Six men were employed.

Monowai Gold-mining Company (Limited), (William Hollis, mine-manager).—The Ferguson's Mining and Smelting Company (Limited) surrendered their option over this property. The present holders intend to systematically work the mine, and are about to expend £7,000 on the erection of an aerial and ground tram-line, which will connect with the mine; and the old battery will be renovated. Very little work has been done during the past year. The mine was examined, and found to be in good order.

Kapowai Gold-mining Company (Limited), (Richard Tierney, mine-manager).—The low level has been extended a total distance of 703 ft., and it is expected that the lode will be cut into when a few more feet have been driven. The ventilation has been bettered since the connection was made with No. 2 level. A small parcel of ore was sent from this level for treatment, and gave a return value of £96 17s. 10d. Five men were employed.

Kirikiri Mines (Limited), (W. Moorecraft, mine-manager).—The company is extending its low level under the old mine-workings, where payable ore was discovered in former years. There yet remains 500 ft. to be driven before this object is achieved. The mine was in good order when inspected. Six men were employed.

Champion Mines (Limited), (E. Cartwright, mine-manager).—Operations have been confined to the Day Dawn and Champion sections of the company's property. The main reef has been prospected, but it carries very low values. Towards the end of the year a little surface prospecting was done on the Champion North section. It has been reported that a reef enters the property from the Golden Belt Mine, and the company intend putting on a few men to pick it up. During the year 900 tons of ore was treated for a return of 175 oz. 4 dwt., valued at £451 15s. 11d. Eight men were employed. The mine was in good order when inspected.

Phoenix Gold-mining Company (Limited), (J. A. Gordon, mine-manager).—Eight men were employed on work of a prospecting nature, for the purpose of proving the extent and value of the ore-body. A parcel of 13 tons of ore was treated at Thames, for a return value of £31 8s. 1d.

Golden Belt Gold-mining Company (Limited), (A. A. Adams, mine-manager).—Mining operations have chiefly been confined to the Bluffs section, where a large reef-formation intermixed with quartz veins has been worked. Close to this locality a new reef has been located, and driven on for some distance. The ore-body carries very fair values. Work on the quartz boulders section has been abandoned owing to the barrenness of the ore. During the year the company treated 1,175 tons of ore, for a return value of £1,548 6s. 9d. Twelve men were employed.

Tairua Broken Hills Gold-mining Company (Limited), (W. Goldsworthy, mine-manager).—The ore reserves in the old section of the mine being nearly exhausted, a crosscut level was commenced with a view of cutting into the reefs existing south-west of the old mine. It is proposed to sink a shaft from the new crosscut, and work the old mine section reefs at a greater depth than has yet been worked. The ventilation will be improved when the new and old crosscuts are connected. For the year, 1,117 tons of ore was treated, for a return value of £1,850 8s. 6d. Eighteen men were employed.

Luck at Last Gold-mining Company (Limited), (Samuel Carlyon, mine-manager).—A new low level was commenced late in the year, and at the close it had been driven 150 ft. It is expected that when 1,750 ft. have been driven the main reef will be intersected. Machinery is being erected at the mine, and rock-drills will be used. Five men were employed.

Tairua Golden Hills Gold-mining Company (Limited), (J. Rickard, mine-manager).—The development of the reefs at Nos. 1 and 2 levels has been vigorously pushed on, and there are now several blocks of ore ready for stoping. The levels are connected by means of two rises, each 140 ft. high, through the reef. The ore-body is from 3 ft. to 7 ft. wide. The No. 3 lowest level

crosscut has been driven 716 ft., and it will give a vertical height of 270 ft. on the reef to the floor of the level (No. 2 level). The reefs are strong, well-defined ore-bodies. The company is now erecting an up-to-date mill with ten head of stamps on the south bank of the Tairua River. Three tube mills will be used in connection with the fine grinding of the ore. A suction-gas plant (350-horse power) is to be installed, and will be used for driving the mill machinery. The mill will be lighted by electricity, and compressed air will be used both at the mill and the mine. It is expected that crushing will begin early in March. Twenty-seven men were employed. The mine is in good order.

Tairua Monarch Gold-mining Company (Limited), (C. Hansen, mine-manager). The low level has been extended a total distance of 712 ft. A large reef-formation was met with at 500 ft., and was driven on for 250 ft., but so far no values have been found. On the western portion of the property two reefs, averaging 3 ft., are being worked. Seven men were employed.

Tairua Extended Gold-mining Company (Limited), (D. Gaw, mine-manager).—An adit level has been driven a distance of 650 ft., but nothing of an important nature has been discovered. Five men were employed.

Reports having been circulated periodically as to the discovery of gold-bearing stone at Russell and Whangarei, I made visits to the localities, and personally investigated the matter. At Russell I was shown the locality from which it was said that quartz had been secured and sent away for treatment. I was not by any means favourably impressed with what I saw. At the same time, if a party of intelligent prospectors undertook to explore the country in a thorough and systematic manner, an important discovery might be made.

At Whangarei a local syndicate has been prospecting on the hills near the town wharf. A little quartz was found in a creek, and a small quartz vein located in the side of the Parahaki Hill. The leader has been driven upon, and samples have been taken for assay purposes. It is the intention of the party to prospect further.

MINERALS OTHER THAN GOLD.

Copper.

Ferguson's Syndicate (Whangaroa).—The syndicate suspended operations at the latter end of 1908, and no work has since been done on the property.

Hare-Ratjen Syndicate.—No work has been done at the mine during the year. It is reported that negotiations are proceeding for the sale of the property to an Australian syndicate.

Northern Copper Company (Limited).—Owing to the fact that the dispute with the Natives as to the right of way through the company's ground has not yet been settled, and mainly to the low prices which are now ruling, the company has been hindered from prosecuting development-work during the year.

Antimony.

Lanigan's Mines (Limited).—Early in the year a few men were employed on prospecting-work, but, following on the change of management, the number was reduced.

I have, &c.,

BOYD BENNIE,

Inspector of Mines.

Mr. A. WHITLEY, Inspector of Mines, Reefton, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Inspector of Mines' Office, Reefton, 31st March, 1910.

I have the honour to present my report on the gold-mining industry in the Marlborough and Nelson Provinces for the year ended 31st December, 1909.

QUARTZ-MINING.

BLenheim.

Wairau Valley Gold-mining Company (Limited).—Operations during the year have been confined to driving a low-level tunnel in the Lord Hopetoun section, at a depth of 250 ft. below the upper workings. A distance of 600 ft. has been driven from the surface. Ventilation of the workings is produced by means of a small blower. An average of four men were employed.

Tasman's Choice.—This mine is situated at Arm Chair Creek. Two men have been employed in prospecting-work, which comprises driving 115 ft. and sinking 50 ft. on a reef-formation averaging 3 ft. in width.

Mount Patriarch.—P. Slattery and party, owners of this mine, erected a light three-stamp battery for the purpose of testing a reef they had opened up at a surface level. As crushing operations did not show satisfactory results, all work was suspended towards the latter part of the year. Six men were employed.

Collingwood.

Golden Blocks, Taitapu.—No development-work was undertaken during the year, operations having been confined to stopping out the payable stone between No. 3 level and the surface. This is now practically exhausted, and preparations are being made to sink on the reef from No. 3 level. For this purpose, plant comprising oil-engine, air-compressor, winding-engine, and pump have been purchased, and will be installed early in the present year. During the year 1,299 tons of ore was crushed, for a yield of 1,348 oz. gold, valued at £4,957 4s. 4d. An average of twenty-five men was employed.

WESTPORT.

Red Queen, Mokihinui.—Avery and party, tributers in this mine, crushed 67 tons of quartz, for a return of 52 oz. 4 dwt. 14 gr. gold, valued at £203 13s. 9d. Two men were employed.

Britannia.—The extension of the tunnel from the old workings on Gardiner's reef in No. 2 section was undertaken during the year, but did not result in the discovery of payable stone. Operations have been again resumed in the Early Bird section, where the prospects are considered favourable. An average of three men was employed; and 89 tons of ore was treated, for a yield of 47 oz. 8 dwt. 18 gr., valued at £154 0s. 3d.

LYELL.

New Alpine Gold-mining Company (Limited).—Operations have been confined to No. 14 level, where drives were projected north and south on the reef, and a rise put up to connect with the winze sunk from No. 13 level. The block of payable stone opened up by these works has been stoped out, and produced 5,311 tons, which on treatment yielded 2,048 oz. 19 dwt. 3 gr. gold, valued at £6,765 7s. 11d. The extension of No. 14 level north was continued to a total distance of 460 ft., with the view of locating another block of stone, but nothing of a payable nature was discovered. An average of forty-three men was employed.

BOATMAN'S.

Caledonian United Gold-mining Company (Limited).—This company's main shaft was sunk to a total depth of 295 ft., and a crosscut extended west therefrom intersected a reef-track at 220 ft. This has been driven upon, north 55 ft., and south 340 ft. From the latter drive two crosscuts have been driven out under the old Caledonian Company's workings, but no payable stone has been discovered. Operations have been considerably hampered by the amount of water making in the shaft, which necessitated almost continuous bailing. An average of ten men was employed.

Golden Arch Gold-mining Company (Limited).—This company's operations during the early part of the year did not result very satisfactorily, and the mine was let on tribute to Dunstan and party, who have been engaged in stoping out a small block from the low level. A total of 307 tons of ore was mined and milled, for a return of 218 oz. 19 dwt. 6 gr. gold, valued at £790 19s. 4d. An average of ten men was employed.

Victoria Range Syndicate (late Kirwan's Reward).—Messrs. Pettigrew and party purchased this mine and battery, and started operations in the early part of the year. A total of 230 tons loose surface stone sent to the battery yielded 39 oz. 15 dwt. gold, valued at £145 13s. 11d. The handling of ore could not be successfully carried on, owing to the tramway requiring extensive repairs. This being considered too costly, crushing was stopped, and work confined to prospecting for the reef, which shed the loose gold-bearing stone, so far without success. An average of four men was employed.

Welcome.—Subsidies amounting to £50 were granted to the Welcome Prospecting Syndicate to assist them in extending their No. 2 adit level. During the year 496 ft. were driven from the surface, and several reef-tracks intersected, but none carried stone of any value. A company has been formed to take over this claim. The principal work to be undertaken will be repairing Boatman's low-level tunnel and prospecting therefrom for the Welcome North Block.

Just in Time.—Walker and party, owners of this mine, have been prospecting for the western line of reef, which in former years produced stone of high grade. A subsidy of £37 10s. was granted towards the work, which so far has proved unsuccessful. Efforts are being made to raise capital to open up the Just in Time shaft, and develop the mine at deeper levels.

REEFTON.

New Ulster Gold-mining Company (Limited).—The extension of No. 2 or battery level south on the line of reef, which was the principal work undertaken during the year, did not show satisfactory results. The country passed through was very much disturbed, consequently the blocks of stone met with were crushed and broken and of low grade. Connection was made with the winze sunk from surface, and a small block of payable stone near the surface stoped out. The quartz obtained from development and stoping operations, amounting to 234 tons, yielded on treatment 140 oz. 5 dwt. gold, valued at £412 1s. 2d. An average of seven men was employed.

Golden Fleece.—This mine is being worked on tribute by J. Oats and party, with satisfactory results. During the year 2,813 tons of ore were mined and milled, for a return of 2,495 oz. 11 dwt. gold, valued at £9,368 1s. 1d. The greater portion of the ore treated was won from the stopes on the north block at No. 15 level, while a small tonnage was also obtained from the stopes at Nos. 14 and 10 levels. Development-work in progress consists of driving No. 15 level south on the reef track to locate and open up the south block of stone. An average of thirty-four men was employed.

Keep-it-Dark Quartz-mining Company (Limited).—This company's operations during the year comprise the following works: No. 7 level has been driven south 84 ft. and north 410 ft. The south drive is being extended with the view of locating the downward continuation of the block of stone which was worked in the upper levels of the mine, with good results. In the north drive stone was met at 90 ft., and, with the exception of a break of about 70 ft., the whole of the remaining distance (250 ft.) is in stone varying from 2 ft. to 16 ft. in width. To test this block below the level a winze is being sunk 30 ft. back from the north face; 24 ft. has been sunk on stone, giving an average assay value of 12 dwt. 3 gr. per ton. The crosscut towards the blind shaft has been driven 363 ft., leaving 191 ft. to drive to the plumb of the shaft, from where a further 175 ft. of crosscutting should intersect the block of stone left underfoot in the bottom

level of these workings. No. 6 level is being extended north to intercept the block on which stoping is proceeding over No. 7 level. The stone opened up by the several works is not high grade, but it is expected it will pay working-costs, and also enable some development-work to be carried out. Total development-work for the year consists of 1,322 ft. of sinking, driving, and rising. To expedite this work a rock-drilling plant, together with engine and boiler, was installed. Stopping operations have been carried on generally from Nos. 5, 6, and 7 levels. The treatment of 11,163 tons of quartz won from all parts of the mine gave a return of 3,065 oz. 5 dwt. gold, valued at £11,312 19s. 5d. An average of forty-five men was employed.

Wealth of Nations.—Development-work carried out during the year comprised driving south at Nos. 8 and 10 levels, sinking main shaft 125 ft., and cutting chamber and driving the new No. 11 level crosscut out to intersect the reef. The depth of the main shaft from brace to the lowest level (No. 11) is 1,861 ft. Total development-work for the year amounts to 1,525 ft. of driving, rising, and sinking. The extension of Nos. 8 and 10 levels resulted in opening up nice blocks of stone of fair value, which will be useful additions to ore-reserves. Stopping has been carried out at Nos. 7, 8, and 9 levels during the whole year on the main reef, and to a small extent on the foot-wall reef. The ore milled amounted to 15,577 tons, yielding 7,222 oz. 14 dwt. gold, valued at £28,358 16s. 8d. At the battery, the erection of a tube mill, five B and M tall tanks, settlers, and vacuum filter plant were completed. It was found necessary to instal a steam-driven air-compressor for the slimes plant, while arrangement was made whereby the extra steam-power from the plant can be utilised for the battery in case of shortage of water for power purposes. An average of 105 men was employed.

Progress.—During the year development-work consisted of 1,872 ft. of driving and cross-cutting and 581 ft. of rising and sinking. This work was carried out from Nos. 4, 5, 6, 9, and 11 levels, and resulted in opening up several large blocks of stone of fair grade. Stopping operations have been proceeding at all levels from No. 11 to No. 4. The ore won from the several works was treated at the company's battery for a return of 14,100 oz. 1 dwt. gold, valued at £52,030 7s. 2d. Mining operations were suspended in B shaft during September and October, to allow for retimbering of the shaft from No. 7 to No. 9 levels. A considerable amount of repairs were carried out to the drive timbers at nearly all levels, while attention was also directed to filling and securing the stopes throughout the mine. A great deal of care is necessary in this direction, owing to the ore-bodies lying very flat, and the heavy and broken nature of the hanging-wall country. At the surface the erection of the smelting-works was vigorously pushed, and the smelter, mechanical roasting furnace, and condensing-chambers for arsenic and antimony were completed in November, and smelting operations commenced. The process promises to be successful, and will enable the company to profitably treat their concentrates and pyritic slimes, as well as a large quantity of valuable residues which had accumulated while the chlorination plant was in use. Coal for smelting purposes is obtained from the company's coal-mine, situated within a mile of the works. Limestone for fluxing purposes is obtained from a quarry, also within a mile of the works. The only flux which has to be imported from a considerable distance is copper-ore, which has been procured from Nelson. An average of 335 men was employed.

Bonanza.—This claim is situated in the Auld's Creek Watershed Reserve, and mining has been allowed thereon subject to special conditions approved of by the Inangahua County Council. The work carried out consists of surface-trenching, and has revealed a reef outcrop which gives good values by assay.

New Big River.—The main shaft has been sunk 210 ft., the chamber of the new No. 10 level formed, and the crosscut driven therefrom a distance of 18 ft. The total depth from collar of shaft to No. 10 level is 1,575 ft. At No. 9 level No. 1 or branch winze was sunk to a total distance of 100 ft. The last 30 ft. of sinking did not disclose any stone. No. 2 or eastern winze was sunk to a depth of 70 ft., the reef varying in width from 1 ft. to 6 ft. In the early part of the year a drive was put in from the eastern side of the south end of No. 9 level, and disclosed a body of stone from 1 ft. to 6 ft. in width. This stone was stoped for a height of 40 ft., when it narrowed down to merely a boulder. The stopes on the old eastern block on the north end of the winze have been carried through to No. 8 level. On the branch block there yet remains 18 ft. in height to be stoped to reach No. 8 level. Cosgrove's Block, below No. 1 level: A winze was sunk 40 ft. on the reef when it cut out. To prospect this part of the mine, and to facilitate the handling of the stone from this block, No. 1 intermediate level (136 ft. below No. 1 level) was driven 160 ft., and a rise put up and connection made with the winze. This work also gave good ventilation for the workings. The average width of the reef was 4 ft. Engine level: A block of stone was located in this level, but has not been sufficiently developed to prove its value. A total of 5,434 tons of ore was mined and crushed, for a return of 5,886 oz. 4 dwt. gold, valued at £23,837 0s. 6d. At the cyanide plant 3,650 tons of tailings was treated, for bullion valued at £2,433 8s. 11d., and concentrates to the amount of 72 tons 12½ cwt. was sold for £1,088 2s. 7d. An average of fifty-five men was employed.

Big River South.—During the year this mine was taken over by a company, and operations directed to driving a tunnel from the surface to give 200 ft. of backs on a reef from which the former owners secured encouraging prospects in two winzes sunk. In driving the level a block of gold-bearing stone was cut at 330 ft. in from the surface, but no work has been done upon it to prove its extent and value. An average of four men was employed.

St. George Syndicate.—Very little work was done by this syndicate during the year. Efforts were being made to raise capital to test the ground by means of a low-level tunnel from the Snowy River side of the property.

W. Kirwan and Party.—This party has been conducting prospecting operations to the north of the New Big River Mine, and were successful in locating a reef outcrop showing very favour-

able prospects. A tunnel is being driven to cut the reef at a depth of 50 ft. below the outcrop. A subsidy of £25 was granted towards the work.

Reefton Prospecting Association.—Two parties of two men each were assisted by the association to prospect for reefs in the locality of Burke's Creek. The work, which was conducted during the early part of the year, did not prove successful.

BLACKWATER.

Blackwater Mines (Limited).—Successful results have attended this company's operations during the year. Extensive development-work has been carried out. Nos. 1 (or 150 ft.), 2 (or 307 ft.), and 3 (or 432 ft.) levels have been advanced north on the reef 919 ft., 499 ft., and 580 ft. respectively, resulting in the opening-up of large blocks of stone of good value. The main shaft has been sunk 77 ft. below No. 3 level, and it is proposed to continue sinking for two or more levels. A tunnel is being driven from battery level, which will connect with the main shaft about 40 ft. below No. 3 level. When completed all quartz won from the upper workings will pass by gravitation to this level, thereby effecting a considerable saving in haulage. The east and west crosscuts at No. 3 level were advanced 67 ft. and 158 ft. respectively, but did not disclose anything of value. Total footage under development-work for the year amounted to 3,505 ft. of driving and crosscutting, 1,060 ft. sinking and rising. Timbering, filling of stopes, and all requirements for the safety of the workmen have been satisfactorily attended to. Stopping has been carried on generally at Nos. 1, 2, and 3 levels. The quartz won from all points, amounting to 29,955 tons, was treated for a return of 19,087 oz. 16 dwt. gold, valued at £73,281 12s. 2d. At the battery a tube mill has been installed, resulting in an increased tonnage treated by approximately 25 tons per day. Slimes plant, comprising four B and M tall tanks, three settlers, and three each decyaniding and dewatering filters, have been erected. To provide power for working this additional plant, preparations are being made to erect 100-horse-power suction-gas plant, which is now on the ground. An average of 190 men was employed.

Prohibition Claim.—A low-level tunnel was driven 900 ft., close to the Blackwater Company's boundary. Several reef tracks were intersected, but none of them carried payable stone. An option having been secured by Mr. David Ziman over this claim and two adjoining prospecting licenses, it is expected that development will be carried on more vigorously in the future.

Blackwater Miners' Association.—A further subsidy of £100 was granted to enable the association to continue its prospecting operations in the Blackwater district. No payable reefs were discovered, but an extensive area of auriferous wash was proved to exist at a high elevation. This deposit, owing to its elevation and the want of an efficient water-supply, cannot be profitably worked.

PAPAROA.

Mount Paparoa Syndicate (late Taffy Mine).—Operations during the year have been directed principally to making alterations and additions to plant. These comprise replacing the old water-wheel with a Pelton, erecting water-race at high elevation with necessary piping, constructing incline tramway from mine to mill, and sawmill plant for own requirements. These improvements are completed, and should result in better returns being secured in the future. The quantity of ore treated during the year amounted to 150 tons, which yielded 35 oz. 19 dwt. gold, valued at £145. An average of five men was employed. Considerable difficulty was experienced in getting material to the mine, owing to its inaccessible situation and absence of road.

Garden Gully Gold-mining Company (Limited).—Two men were employed intermittently during the year. A rise was put up from No. 2 level to the surface, but nothing of importance was discovered.

Mitchell and Hargreaves.—This party is prospecting in the Upper Moonlight district. An extension of 66 ft. has been driven in their subsidised tunnel without cutting any reefs.

GENERAL REMARKS.

Reviewing the returns as furnished by the owners of quartz-mines for the years 1908 and 1909, the ore milled for 1908 was 95,156 tons, yielding bullion valued at £160,156, against 755 persons employed; whilst for the year 1909 the ore milled was 108,136 tons, yielding bullion valued at £214,876, against 868 persons employed. In comparing the returns, an all-round increase is shown for 1909: in tonnage milled, 12,980 tons; value of bullion, £54,720; and number of persons employed, 113. Dividends paid during 1908 amounted to £16,600, and during 1909 to £43,955, an increase for 1909 of £27,355. During the year one fatal accident occurred in connection with quartz-mining.

HYDRAULIC AND ALLUVIAL MINING.

MARLBOROUGH.

Enchanted Creek.—Larkin and party are erecting a hydraulic sluicing and elevating plant to work the deep ground in the lower portion of Enchanted Creek. A water-race over a mile in length is being constructed, which will deliver the water required for elevating purposes at an effective elevation of 300 ft. This party's operations are being watched with interest throughout the district, for, if successful, there are other deep alluvial flats in the locality supposed to contain payable gold which will be taken up and worked on similar lines. Subsidy to the amount of £150 was granted towards this work.

COLLINGWOOD.

Parapara Hydraulic Sluicing and Elevating Company.—This company continues to successfully operate on the deep gravels in their freehold section. From an area of ground comprising

about 2½ acres, and worked to an average depth of 40 ft., gold to the value of £9,300 has been obtained. The yield for the year amounted to 888 oz. 12 dwt. of gold, valued at £3,410 13s. 2d. Ten men are employed. Workings and plant are maintained in good order.

MURCHISON.

Walker Maruia Gold-sluing Company.—Up to July of this year operations were conducted by the company. Since then the claim has been worked on tribute by M. Dwan and party. The total yield of gold for the year amounted to 147 oz. 3 dwt., valued at £557 18s. 3d.

Horse Terrace Claim.—Richardson, Beilby, and McNee, owners of this claim, have had a fairly successful year. Water-supply has been regular, enabling a large quantity of material to be treated.

Mammoth Claim.—Mr. J. Ritchie has taken up this claim, and proposes to conduct operations on extensive lines. A water right for ten heads from Half-way Creek has been secured.

BULLER RIVER.

Newton Flat Claim (Beilby, Kane, and Clerk, owners).—This party's operations have only been moderately successful during the period under review. Three men were employed.

Thompson's Creek (Ryan and Alborn).—A subsidy of £75 was granted to this party towards the construction of a tail-race to effect free drainage of the deep auriferous gravels. The completion of the work has enabled the party to secure profitable employment.

WESTPORT.

Golden Basin Syndicate.—This syndicate is sinking a shaft at the foot of the terraces between Giles Creek and Fairdown, to prospect for a deep lead of auriferous wash supposed to exist in the locality. The ground to be tested is very wet, and to contend with the water a Tangye vertical sinking pump, capable of lifting 5,000 gallons per hour, is to be installed. When visited the shaft was sunk to a depth of 70 ft. Sinking was then suspended, owing to influx of water.

North Beach.—Efforts were made by Millard and party to work a back lead of auriferous black sand. An oil-engine and centrifugal pump were installed for elevating purposes, but unsatisfactory working of plant and want of fall for tailings caused the project to be abandoned.

Waimangaroa River.—A subsidy of £60 was granted to the Waimangaroa Miners' Association towards testing the bed of the river above the Beaconsfield reef. A shaft has been sunk 20 ft., and a small centrifugal pump actuated by steam-power installed to deal with the incoming water. It is estimated the shaft will bottom at 40 ft.

Giles Creek.—A few parties continue to work the elevated terraces on the banks of the creek, with favourable results.

Mokihinui (Stuart and party—three men).—This subsidised party were prospecting the country towards the head of the Mokihinui River during the summer months. Nothing of importance was discovered.

ADDISON'S.

McCann and Party.—This party's operations were greatly hindered through their storage-dam breaking away and blocking the tail-race tunnel with *débris*. When visited, clearing and repairing the tunnel was in progress.

Senior and Party.—All the available ground in the vicinity of the party's elevator having been worked, a deviation from the tail-race tunnel is being driven prior to removing plant and opening up a new paddock.

Neill and Party.—Satisfactory returns are being secured from the new area recently opened, and future success is practically assured for a considerable period.

Carmody and Party.—An extension of the tail-race tunnel has enabled this party to resume sluicing operations, with profitable results.

Addison's Long Tunnel Gold-mining Company (Limited).—This company's operations have been disappointing. A ridge of cement came in on the lower side of the lead, reducing the payable ground to a very narrow strip. Subsequent cutting out of the cement resulted in the lead widening considerably, with indications of payable ground ahead.

Millikin and Party.—Operations are still directed to mining and crushing a deposit of auriferous cement. This deposit extends to a depth of 6 ft. below the surface, and is overlying highly payable gravels, which will be treated by hydraulic sluicing and elevating when the cement is worked out.

Shamrock Lead.—Messrs. Wright, of Westport, and Lee and Roberts, of England, have undertaken to drive a tunnel tail-race to provide free drainage for working the Shamrock lead. The work, which has been commenced, is one of considerable magnitude, for the tunnel will require to be driven a distance of 113 chains to effect the desired object. The greatest depth below the surface will be 90 ft., and ventilation will be provided by means of shafts sunk along the course of the tunnel. Water for sluicing purposes will be brought on from the Totara River.

CHARLESTON.

Powell's Elevating Claim.—The front lead having been practically exhausted, the whole of the available water-supply is to be concentrated on to the back lead, where the height to which the auriferous sands will require to be elevated will probably amount to 50 ft. The plant, which is kept working almost continuously, is maintained in good order. An average of ten men is employed.

GREY VALLEY.

Blackwater.—Erriekson and party, who have erected an elevating plant and constructed head and tail races, are working on sound lines, with the view of overcoming the difficulty of disposing of tailings, which has heretofore prevented the profitable working of their claim.

Upper Blackwater.—A few parties continue to sluice the elevated alluvial deposits in this locality when water is available. Prospecting operations carried out under the Blackwater Miners' Association proved the existence of a large area of auriferous alluvial country, which, however, cannot be profitably worked owing to absence of a reliable water-supply.

Duffer's Creek.—Mining in this locality is very quiet. P. Carrol's subsidised tunnel was driven 317 ft. into the terrace on the south side of Teviot Creek to prospect for a continuation of the old Teviot lead. The work did not prove successful. D. Baybutt is continuing his sluicing operations on Sullivan's lead, with profitable results.

Oruell Creek.—The right to divert twenty heads of water from Allen River and Randall's Creek has been secured by a private syndicate, who have also taken up an area of ground on Napoleon Hill, and propose constructing a race to deliver the water at an elevation which will command an extensive area of good sluicing country. The length of the water-race will be fourteen miles, and a large amount of capital will be required to carry out the scheme, which, however, offers great possibilities of success.

Moonlight Creek.—The Shetland Sluicing Company has suspended operations. Alluvial workings in this locality are now confined to small parties of two or three men.

Healey's Gully Sluicing Company.—Very little sluicing has been done by the company during the year. Water is supplied to other claims in the locality, and the race has required a deal of attention in the way of repairs to wooden fluming and timber in tunnels.

Hillier and Marsden.—This party has opened up a new face of wash, which promises to give payable results.

Montgomery's Terrace Sluicing Company.—Operations on the company's behalf were suspended early in the year, and the claim leased to Steel and party, who have found it more advantageous to purchase water for sluicing purposes from the Healey's Gully Company than to maintain the company's own race.

Nelson Creek.—A considerable amount of driving has been done by P. Donnellan and party towards prospecting the high terraces at Welshman's and Allen's Creeks. A small deposit of auriferous wash was opened up, which should give the party wages for blocking out, but no continuous run or lead was discovered. Several small parties are engaged in sluicing operations on the terraces and in the small creeks in this locality.

Bell Hill Syndicate.—This syndicate has at considerable expense constructed a tail-race tunnel a distance of 565 ft. through hard rock. Loss of fall on the old tail-race rendered this work necessary, to enable sluicing to be carried on from free level. A large face of wash is being operated upon. Plant and general equipment are maintained in good order.

DREDGING.

A gradual decline is taking place in this branch of the mining industry. During the year four of the working dredgers in the Nelson District ceased operations and were dismantled—viz., Callaghan's Creek, A 1 (Boatman's), Mosquito Creek, and Pactolus No. 1. The Slab Hut Creek and New Mokoia Companies disposed of their dredgers to private syndicates, who are continuing operations on their own behalf.

OTHER MINERALS.

COPPER.

Copper Development Company.—This company has acquired a lease of the Maoriland Company's property at Aniseed Valley. Since commencing operations work has been confined to mining the ore from the United section, and subjecting it to a process of concentration, comprising crushing through a Gates crusher and set of rolls, with subsequent treatment through a jigger. During the year 764 tons of ore treated at the company's plant produced 374 tons 6 cwt. 3 qr. of copper concentrates, of an estimated value of £1,871 13s. 4d. The concentrates, as produced, are shipped to the Progress Mines' smelter at Reefton. The mine, when visited, was in good order, and well ventilated. Stopping operations were in progress at Nos. 1, 2, and 3 levels. An average of fourteen men was employed.

IRON.

Parapara Iron Lease.—When visited during the year operations were directed to sluicing off surface gravels and clays overlying the iron-deposit, and preparing a ten-ton lot of ore for shipment for special treatment. The development of this property is proceeding very slowly. An average of nine men was employed.

Turnbull's Lease.—This lease has been worked intermittently during the year. Four men have been employed on surface works.

ASBESTOS.

A mineral-prospecting warrant for asbestos, comprising an area of 1,000 acres, has been taken up by Mr. H. R. Cooke, in the Mount Arthur district. Five men have been employed, under the supervision of Mr. Charles Holland, when weather-conditions permitted during the year. Asbestos veins have been found at several places over the area, and the prospects are so far considered satisfactory.

ACCIDENTS AND FATALITIES.

QUARTZ-MINES.

Fatal.

New Big River.—5/3/09: Frank Nankervis, miner, was killed by an explosion of gelignite, caused by striking portion of an unexploded charge remaining unnoticed in the butt of a hole.

Non-fatal.

Keep it Dark Mine.—8/4/09: Thomas Burns, miner, was crushed about the lower part of the body by a fall of stone while working in a stope.

Progress Mines.—27/11/09: T. McArthur, vanner-man, sustained a broken arm while putting on vanner-belt.

ALLUVIAL MINES.

Fatal.

23/1/09: Abraham R. Hayman, miner, was killed by a fall of earth while working on his alluvial claim at Giles Terrace.

12/2/09: John Sutherland Campbell, miner, was killed by a log he was cutting slipping and carrying him over a bank. Campbell was working alone on his claim near Lyell.

DREDGES.

Fatal.

Smeaton Syndicate Dredge.—28/5/09: Charles Henry Perkins, engine-driver, was drowned by falling overboard into dredge-paddock.

I have, &c.,

A. WHITLEY,

Inspector of Mines.

Mr. A. H. RICHARDS, Inspector of Mines, Hokitika, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Office of the Inspector of Mines, Hokitika, 27th May, 1910.

I have the honour to report as follows on the gold-mines of Westland during the year ended 31st December, 1909.

The Maori Gully Gold-mining Company.—This mine has been worked successfully, and is now a dividend-payer. All works are in a satisfactory condition.

With the exception of this mine and a few fossickers working when there is any water available, this once famous portion of the goldfields is practically deserted.

BARRYTOWN.

Messrs. McKay and White have worked their claim successfully, employing thirteen men. The method adopted for dealing with this extensive sand-deposit is by elevating and sluicing over a wide range of tables, thereby saving a large percentage of the gold contained in the sands.

CAPE TERRACE.

Burr and Party (three).—Having only an intermittent supply of water this party earned an average wage. With a plentiful water-supply this claim could be very profitably worked.

Loughman and Party (four).—This party has a much better supply of water, but they could do with more, as they have good facilities for disposing of tailings. They continue to earn a most comfortable wage.

Tansie and Party.—This party has the best water-supply in this district, and continue to work their property in a successful manner. All works in good order.

HAYE'S TERRACE.

The various parties that have hitherto made a livelihood with only an intermittent water-supply are now sanguine of reaping their reward as soon as the extension of the Government water-race across the River Taramakau is completed.

Kumara No. 5 Channel.—F. G. Thorn continues to work profitably, with an average of eight men during the year. As this channel is a long one, they find the upkeep with such a small party a very heavy tax.

No. 9 Channel.—Since the completion of the deviation the Long Tunnel Company has driven their tail-race from the deviation, and are now sluicing. Five men employed.

Pug Hill, owned by Mr. T. McGrath, has been worked most successfully, with an average of twelve men. All works in first-class order.

CALLAGHAN'S.

J. Manzoni, during the past year, has carried out very profitable mining in addition to a considerable amount of development.

Quite a number of claims were taken up in Mosquito Gully, owing to the rich wash struck by Reeder and party (four), Linklater and Honey (four), Hyndman and Thorp (two), Masherine (one), Havel and party (six), R. I. Hunt and son (one), Wells and party (four.) Since they are entirely dependent on the rainfall, there being no convenient sites for dams, with catchment-areas of adequate area, the number of miners has greatly decreased on the hillside.

The sluicing-channel subsidised by the Mines Department is completed, and sluicing operations should soon be commenced.

GOLDSBOROUGH (OR MIDDLE BRANCH).

William Hanrahan and party of three still continue to sluice on very payable returns.

Shannon and Party (four).—The returns from this party for the past year have been most satisfactory.

Carmini and Party.—Works are all of a development character.

STAFFORD.

Linklater and party of six are energetically working their three small claims, with profitable results. The returns, since they have used Government water, have improved.

Mitchell Bros. have two small claims worked conjointly by five men. The returns are most satisfactory.

Morgan Bros. (two).—This party has been working under favourable conditions during the last year.

Wheel of Fortune Syndicate (Mr. Samuel Perry in charge—eight men).—This property is worked on the hydraulic sluicing and elevating principle. In carrying out these works, auriferous ground formerly driven upon was exposed, thus very materially reducing the gold *in situ*.

KELLY'S TERRACE.

In the early part of the year Sullivan and party (five) worked a portion of their claim very successfully. Owing to a breakdown in the drainage-tunnel operations were suspended. Since then trustees have been appointed, and it is anticipated a large number of claims that were dependent on the tunnel for drainage will now resume work.

In some of the small tributaries of Stafford Creek there are a number of aged men and a few Chinese miners fossicking in the creeks.

ARAHURA.

Humphries Gully (Consolidated Goldfields of New Zealand; Mr. W. Greenbanks in charge; ten men employed).—Total value of gold won during the year was £1,519 11s. 5d. All workings are in a most satisfactory condition.

Mrs. S. Harcourt is the owner of a 12-acre claim in this district. All work done consisted of development. Two men working intermittently.

Minerals.—Three men employed intermittently, owing to the shortage of water.

BLUE SPUR.

Sweeney and Party (four).—This party still continue to obtain payable returns by hydraulic sluicing.

There are also a few aged men working singly in some of the gullies, obtaining a few penny-weights of gold occasionally.

TUCKER FLAT.

Hutchenson Bros. are engaged hydraulic sluicing and elevating auriferous gravel. The returns are very satisfactory.

There are several one-man claims in the various gullies in this district.

BACK CREEK AND SEDDON'S TERRACE.

Hartwidgen and party (three), Brooks and party (three), Spence and Knight (four), Spence, Clifton, and Oniel (four), Cooper and party (four), Sloop, Dean, and Boyd (four). These parties continue to earn a remunerative wage driving out. All workings in good order.

Wells and McBeart continue to carry on hydraulic sluicing profitably.

Rimu Sluicing Syndicate (Herman Hartake in charge; nine men employed).—During the year this property has been worked, giving satisfactory profits to the shareholders.

Clifton and party (four) are also working with satisfactory results.

Governor's Terrace Tunnel (two men at work intermittently).—This tunnel has been driven 2,396 ft. with the assistance of the Government subsidy. Owing to a disagreement amongst the shareholders work has been suspended indefinitely.

There are other parties working in the locality intermittently.

LAKE MAHINAPUA.

Under the management of Mr. Robert Williamson, development-work on an extensive scale has been carried out.

GENTLE ANNIE (OR MOUNT GRAHAM).

This once flourishing district has dwindled down to the employment of two men—Messrs. Irwin and Jones—who have driven on a nice body of washdirt. Work is now suspended, pending arrangements to cut races and the construction of a dam for hydraulic purposes.

ROSS.

Mont d'Or Gold-mining Company.—This company's operations still continue to be of a very profitable character. The gold won this year amounted to 1,015 oz. 14 dwt. 18 gr., valued at £4,012 2s. 3d. Dividends for the year, £2,400; total to the end of the year, £48,000. Mining plant and equipment are well maintained and in good order. Fourteen men employed. Development during the year: Starting a low-level tail-race to enable the auriferous gravels on the deeper strata to be successfully operated on.

Ross Goldfields (Limited) (area of claim 200 acres).—During the year the old Ross United main shaft has been timbered and repaired where necessary to a depth of 300 ft., leaving another 90 ft. to clear out and repair before reaching the bottom. On the surface electrically driven pumping and winding machinery have been erected—viz., two Worthington centrifugal sinking-pumps, with a capacity of lifting from 500 to 700 gallons per minute per unit, at a speed of 1,730 revolutions per minute. Pumping was commenced in August, 1909. As soon as the bottom is reached the two stationary pumps are to be installed. These stationary pumps are also of the centrifugal turbine type, with a capacity of 1,250 gallons of water per minute each unit, travelling at the rate of 1,160 revolutions per minute. The motors of the stationary pumps are of 220-horse power each, and the motors of the sinking-pumps are of 120-horse power each. The winding-machinery is driven by 75-horse power motor, and two powerful winches are installed for the raising and lowering of the pumps. Over the shaft, headgear has been erected, together with feeders and 50 ft. of sluice-boxes. The adit (90 ft.) level has been cleared out and repaired. 300 ft. at the shaft is boxed with sawn timber, to prevent any soakage. Engine-shed, blacksmith's shop, office, store-room, and change-house has been erected. Transmission-line and all electric plant has been completed at the mine and at Kanieri Forks, distant twenty-two miles apart; also a water-race. A subsidiary water-race has also been made, with the exception of the pipe-line, which is to be completed early in 1910. This race connects with Johnston's flume, on the main water-race, about a mile in length from the penstock.

The Prior Bros. (three) are still working their claim in Donnelly's Creek, with payable results.

Sharp and Scott were successful in unearthing some very nice nuggets of gold during the year. One, christened the "Hon. Roderick," is supposed to be the largest nugget ever found in the Dominion; weight, 99 oz. 12 dwt. 12 gr.

Ellis and party have also been very successful in their sluicing operations when water was available.

There are also a few miners working singly up some of the branch creeks when water is available.

OKARITO.

A few miners raise a little gold occasionally by combing the black sand on the beaches.

OAMARU.

Nicholson and party (four) have made extensive alterations in their water-races. When completed a much larger quantity of the auriferous gravels may be dealt with.

WAIKUKUPA.

Hende and party are now making steady progress in the erection of a hydraulic-sluicing plant towards the head of the Waikukupa River. The penstock will be situated about 2,500 ft. above the bridge, or 3,500 ft. above sea-level.

Waikukupa Beach.—Messrs. Gibbs Bros. still devote their attention to the removal and treatment of all the auriferous black sand available upon the beach after the tides have deposited the same.

DREDGING.

The total number of dredges working in this district is five. The value of gold won for the year was £9,154 8s. 8d.

At present there are two dredges standing idle—viz., Perotte's and the Prince of Wales. Negotiations for their dismantling and re-erection in another locality are now taking place.

A new dredge, one of the largest on the West Coast, is being built in the Shallow Rush Flat. The ground to be dredged was thoroughly tested by boring.

QUARTZ-MINING.

ROSS.

Osmers and Party (five).—This party has a small quartz-mill (water-power), five stamps. The returns have been remunerative. During the year 123 tons was crushed, for a yield of 170 oz., valued at £680. The work has been carried on in a most satisfactory manner.

MOUNT GREENLAND.

With the exception of the clearing-out of two tunnels and retimbering of same (under the supervision of Mr. S. Evans), little or no quartz-mining has been done in this district for the year.

WILBERFORCE REEFS.

The principal developments have been those carried out on the ground formerly held by Bauke and Feddis. During the year 232 ft. has been driven on a lode that will average 15 in. in width. Assay values are encouraging. Work is suspended at present, pending the formation of a company, to erect a quartz-mill.

Callaire and party (two) have erected the necessary hut accommodation and started the tunnel on the outcrop of a lode.

Hewar and party have taken up that area known as the Wilson Reward, and now employ two men in clearing out the old workings, and retimbering where required.

PETROLEUM.

Kotuku Oil Springs.—Since operations were commenced on this field—some three and a half years ago—twelve bores have been put down, ranging in depth from 80 ft. to 450 ft., besides numerous shallow holes. From all of these oil has been obtained in small quantities. In addition to the bores, a shaft 6 ft. by 3 ft. was sunk to a depth of 83 ft., from which a number of barrels of oil has been obtained. At a depth of 400 ft. the measures are mostly composed of shales, conglomerates, and sandstone. At about 400 ft. a limestone formation was met with, giving a heavy discharge of gas and salt water, which in nearly every case prevented a further continuance of the bores. The latest bore on the terrace is down 450 ft. into limestone. The salt water as yet has not given any trouble in this bore. Work is now temporarily suspended, awaiting a heavier plant to arrive to enable this bore to be deepened to 1,000 ft. or 1,500 ft. if necessary. The cost of this bore is approximately £300.

Arrangements are now completed with the Consolidated Goldfields of New Zealand (Limited), who will put on a heavier plant, capable of boring to 3,000 ft.

ACCIDENTS AND FATALITIES.

FATAL.

Kumara.

Pug Hill Alluvial Claim.—16/9/09: John McGlone was killed by a stone falling from a sluicing face. Coroner's verdict: Accidentally killed; no blame attachable to any one.

Ross.

Ross Goldfields.—1/11/09: Alfred Steadman was killed by a piece of wood falling down the shaft. Coroner's verdict: Accidental death.

I have, &c.,

A. H. RICHARDS,

Inspector of Mines.

Mr. ROBERT McINTOSH, Inspector of Mines, Clyde, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Office of Inspector of Mines (Southern District), Clyde, 5th April, 1910.

I have the honour to present my report on the quartz and metalliferous mines, hydraulic sluicing, and alluvial mines, together with the dredges of the Southern Mining District, for the year ended 31st December, 1909.

QUARTZ-MINES.

OTAGO.

Shotover.

New Discovery Quartz Reef, Upper Shotover (Peat and Johnston, owners).—A small amount of development-work was done, but the mine was idle for several months. A fresh start has been made to take out quartz, which will be crushed in the Shotover Company's battery. The quartz promises to be payable.

General.—There are numerous reefs in this district, but it is useless to attempt to work them without a proper expenditure of capital. The Wakatipu Prospecting Syndicate employed several prospectors in this district during the year, but no extensive finds were made.

Macetown.

New Zealand Consolidated Mines (Limited), (L. O. Beal, attorney, Dunedin).—It is pleasing to report that active development-work was undertaken on this property during the year. The chief places of activity were the Garibaldi and Homeward Bound Mines, in both of which good stone was discovered. A working test of this stone made at the Tipperary battery proved satisfactory. As an indication of the future policy of the company, it may be mentioned that the large OPQ battery at Waipori has been purchased, and is now under removal to Macetown. It may therefore be expected that this extensive property will be developed on progressive lines during the present year.

Anderson, Hannah, and Party's Quartz-mine, Scanlan's Gully.—Operations were seriously retarded during the year by shortage of water for power purposes. The mine affords employment of a temporary nature to the members of the party. A self-acting aerial rope-line has been installed during the year.

General.—The district was well prospected for reefs during the year by the Wakatipu Prospecting Syndicate, but nothing sensational was unearthed.

Bannockburn.

Systematic prospecting has been carried on by Messrs. Iles and Moen, in order to explore the refractory stone, which could not be treated in former years. I understand that the results of their efforts are satisfactory, and definite arrangements are being made to thoroughly develop the property.

Alexandra.

Butcher's Gully Reef, near Alexandra.—An old shaft has been unwatered by the Campbell-Carr syndicate, which installed an oil-engine and pump. Preparations are now being made to test the reef.

Bald Hill Flat.

Advance Mine, Obelisk Range.—R. T. Symes continues to work this property with satisfactory results. He generally has one or two men employed. The pyritic contents of the quartz are saved, and shipped to Australia at a small profit.

Waipori.

Canton Reef, Mitchell's Flat (New Canton Gold-mining Company, owners).—A small syndicate unwatered this old mine, and extended the shaft in depth. Some good stone was reported to have been discovered, and the water was allowed to rise in the mine. More efficient appliances have now been installed, and the mine is being further developed.

Nenthorn.

Messrs. Rillstone Bros., Dunedin, pegged out and applied for an area embracing the most favoured reefs, but there is yet no evidence of the mines being reopened. This field is worthy of further attention being devoted towards its development.

Macrae's.

The principal centres of activity are the mines of Messrs. Donaldson Bros., which are situated at Golden Point and at Mount Highlay. The mines are worked on a progressive scale, and both gold and scheelite are produced. Operations are conducted on good lines, and the mine-workings are in good order. The proprietors have 169 acres under lease, and employ about thirty-five men. The treatment process at the works consists of crushing, amalgamation, concentration, and cyaniding.

Mount Highlay Quartz-mining Party (H. Renfree, Dowling Street, Dunedin, secretary).—The old Mount Highlay Mine is being opened up with a view to the production of gold and scheelite. A suspension bridge having a span of 920 ft. is being erected across the Mareburn Creek to connect with the tram-line which leads to the battery, about two miles distant. The mine should soon reach the productive stage.

Maritana Reef, Golden Point.—This mine will shortly be reopened by a Timaru syndicate for the production of gold and scheelite.

Mitchell's Mine.—This mine is also in the hands of a Timaru syndicate, and operations may soon be resumed, principally for scheelite. The workings are not extensive.

Barewood.

Barewood Gold-mining Company (H. S. Molineaux, mine-manager).—Progressive works have been undertaken at this mine during the year. Improvements were effected early in the year by the erection of a new shaft-head frame and the rearrangement of the winding-plant engine and boilers. Later in the year an improved large winding-engine was installed. Arrangements were also made to instal suitable mine-pumping appliances. Satisfactory working results are obtained from the battery since the installation of the gas plant. A total of 5,477 tons of quartz was crushed for an average value of £1 4s. 5·3d. per ton, and the average cost of production averaged £1 0s. 8·7d. per ton. The mine requires careful handling, as the ore is of low value, and the margin of profit between value and production is small. The mining operations are well conducted by the mine-manager, assisted by the supervising engineer, Professor Waters. Explosives carefully stored and handled; rules posted; report-book kept.

Deep Stream.

Welcome Quartz-mine, Deep Stream (N. Thomas, mine-manager).—Some surface work had been done on this reef some years ago, and this company put in a low level to prove the reef in depth. Operations are still confined to driving and rising to open up the reef. Adequate ventilation is obtained by a rise to the surface. There is no machinery in the mine. Five men employed.

Lawrence.

Gabriel's Gully Reef, Lawrence.—McDonald Bros., aided by a small Government subsidy, are engaged driving a crosscut towards the reef. This tunnel will require to be driven 590 ft., of which distance about 150 ft. remains to be driven. The work is purely of a prospecting nature.

SOUTHLAND.

Waikaia.

Some excitement was caused early in the year by the reported discovery of rich quartz in the region of the Blue Lake, near the head-waters of the Waikaia River. Several areas were pegged out, but anticipations were not realised. Several reefs are known in this district, but it is only accessible for a few months in the year.

West Waiau.

This heavily timbered country has never been properly prospected, and a well organized prospecting party has been engaged there during the year. The results of the search are not known.

HYDRAULIC SLUICING AND ELEVATING.

OTAGO.

During the year there were 110 plants in active operation, and, in addition, there were numerous smaller claims at work. Several new ventures were started, and continued interest is shown in the extension of this branch of alluvial mining. In the following reports matters of interest only are related.

Waitahuna.

Havelock Sluicing Claim (F. Whelan, manager).—This plant continues to operate on some difficult ground neglected by the dredging company. Electric lighting is in use. Knight and O'Brien's automatic nozzle-operator is employed.

Waitahuna Gully.

Four claims are in operation in this locality in connection with the cement, which is a continuation of the once famous Blue Spur deposit.

Reedy Creek.

Two privately owned plants are at work, with success.

Tuapeka.

A small plant fitted with rolls for crushing the cement was tried in Gabriel's Gully. The crushed material passed over quicksilver troughs, but the machine was inadequate, and the venture was not a success.

Six claims were in operation throughout the year, although seriously hampered through shortage of water.

The Tamaiti Gold-mining Company's property was disposed of to Messrs. Montgomery.

Wetherstone's.

Two claims were in operation in this locality, one of which—the Golden Crescent Claim—is now operating on the cement, which is a continuation of the Blue Spur deposit. These claims have electric-light installation.

Waipori.

The most interesting feature in this district is the continued successful operation of the Bakery Flat Claim, on the Waipori deep lead. Assistance by way of Government subsidy was granted three years ago to enable this lead to be prospected, and the results continue to justify the expenditure.

Six plants are in operation in this district, but there is little variation from year to year in the method of working.

Beaumont.

Two new privately owned claims have been started at Greenhills, Beaumont River, and I understand the ground has been proved to be payable. Four claims are at work in this district.

Island Block.

As indicated in my annual report for 1908, extensive boring with the Keystone machine proved the existence of payable auriferous ground at the upper end of this flat. The Golden Run water-power dredge is now at work there, and the directors of the Island Block Company maintain a waiting policy pending satisfactory working-results from the dredger.

A small plant, owned by Meyer and party, is working successfully at Gunton's Beach.

Dumbarton.

Extensive boring operations were conducted during the year by Mr. John Ewing. The Keystone drilling-machine was used. The results are not generally known, but they are said to have been satisfactory.

Roxburgh.

Messrs. Hayes and party undertook the arduous task of restoring the old Commissioner's Race from Shingle Creek, and of extending it to command Coal Creek Flat. The work has now been completed, and I understand the claim is being worked with satisfactory results. Several new ventures were started on the Pomahaka River, but slow progress was made during the year.

The large claims in the immediate neighbourhood of Roxburgh were worked on the usual lines, with satisfactory results.

Upper Taieri River.

This locality is full of interest, owing to the extensive works being carried on there by the Lammermoor Hydraulic Sluicing and Elevating Company. Twenty men were employed in the construction of the water-race and in laying down the hydraulic plant. These works have been in progress for two years, and are now approaching completion. Other claims are held awaiting results from this one. Further down the river the Canadian Flat Company commenced operations, but work soon ceased pending the installation of extra-pressure pipes. It is to be hoped that these ventures will meet with success, as there are large areas of ground commanded by excellent water-supplies.

Luggate.

Luggate Creek Sluicing Claim, Luggate.—I am pleased to report that the operations of this company, which started in 1909, are being attended with success. There is a large area of ground ahead.

Arrow River.

Arrow Falls Sluicing Company, Arrow River.—This claim continues to be worked with good results. The gold won is of a heavy nature, including small nuggets.

Arrowtown.

Shamrock Sluicing Claim.—The Wakatipu Prospecting Syndicate, which is being subsidised by the Mines Department in its prospecting operations, prospected this claim, and found it payable. A registered company was formed, and plant was purchased. The manager is now engaged in installing the necessary plant.

Macetown.

Macetown Sluicing Company.—Reid and party's water and plant have been transferred from Red Hill to high-level terraces near Macetown, and sluicing has been commenced. There are several small alluvial claims at work.

Shotover.

About forty-five men continue to find employment in alluvial mining in the valley of the Shotover River. Most of the claims are new riverbed claims, in which the river is diverted from one side to the other by walls, and the gravels are lifted by hydraulic power.

In the Upper Shotover district some importance may be attached to the operations of Collins and party, who are opening up new ground, which, if payable, will indicate possibilities of payable ground in the extensive Upper Shotover Flat.

At Skipper's Point, important development-work is being undertaken by the Skipper's Sluicing Company in opening up Pleasant Creek Terrace.

Messrs. Oxenbridge Bros. completed their tunnel to divert the river at Arthur's Point, but it was found to be too small to carry flood-water. The party is now engaged in enlarging the dimensions of the tunnel.

Crown Terrace.

Extensive prospecting-work was carried on for alluvial ground in New Chum Gully, Cain's Freehold, and around Mount Beetham. This work was undertaken by the Wakatipu Prospecting Syndicate, but the prospects were not encouraging.

St. Bathans's.

The Scandinavian Water-race Company is now operating on the Kildare Hill Claim. The lead is found to maintain a high value as it is worked to depth, but the increasing amount of barren overburden tends to lower the gold-returns. The adjoining ground has been pegged out by Neil Nicholson, who proposes that a shaft should be sunk and the lead driven out. It is claimed that this method would be more economical than that of hydraulic elevating, as only the payable washdirt would be handled.

The United M. and G. Claim continues to be worked on the usual lines.

NORTH OTAGO.

Livingstone.

Mosquito Sluicing Claims.—John Christian brings in ten heads of water a distance of twenty-seven miles from the south branch of the Maerewhenua River. The claims are worked by ground-sluicing, and the gold is saved in boxes fitted with heavy snow-tussocks. Five men are employed.

MAEREWHENUA.

This field is chiefly supplied with water from the Mountain Hut Water-race and storage-dams, from which nineteen heads of water are distributed over the field to ten parties, consisting of twenty-four men. These parties are engaged ground-sluicing the green sand-beds. The gold is so fine that a percentage escapes, and several "trappers" earn a living on the tailings from the claims.

Six privately owned water-races are in use on the field, and about twenty miners are afforded employment thereby.

The Awamoko Goldfield remains idle owing to the holders of riparian rights objecting to the flow of sludge-water down the Awamoko Stream.

Naseby.

The water used on this field is principally drawn from the Government water-race. There are twenty-four claims using eighty heads of water per diem, and giving employment to thirty-nine men, of whom only eleven are wages-men. Work is mostly carried on during the day, to allow of the conservation of water at night in dams. The Government water-race brings in twenty-seven heads of water. The claims are worked either by ground-sluicing or by hydraulic sluicing and elevating.

Three private races are brought in from the East and West Eweburn Creeks, and these afford employment to about six men. There are several claims at work at Kyeburn, near Naseby.

SOUTHLAND.

Nevis.

Four sluicing claims continued to work on the usual lines at the Lower Nevis, where there is an abundant supply of water, and this branch of the mining industry was represented at the Upper Nevis by five large sluicing claims.

Work is continuous in this locality, with the exception of a few weeks in mid-winter.

Several of these claims are highly payable, but there is little of interest to relate regarding their progress. The claims are all worked on the principle of hydraulic sluicing and elevating.

Waikaia.

The principal feature in this district was the completion of the Muddy Terrace Company's water-race from Dome Creek and the installation of the hydraulic plant. Operations were commenced and carried on successfully for some time, but shortage of water hampered proceedings during the latter part of the year. The claim is worked in two sections. The terrace section is worked by ground-sluicing with water under pressure, while the flat section is worked on the hydraulic sluicing and elevating principle. The claims present no special difficulties, and, provided that a good supply of water is maintained, a large amount of material can be turned over, and in this fact lies the keynote to success. About twenty men are employed in connection with the race and claims. The electric light is used on the claim. Knight and O'Brien's automatic nozzle-operator is successfully used.

Another matter of interest is the proposed establishment of works for the generation of electricity with power derived from Welshman's Creek. A large amount of power can be obtained, and it is proposed to transmit the electrical power to Waikaia to supply power for dredgers and for high-lift pumps for sluicing purposes. The water-rights have been secured, and steps are being taken to raise the necessary capital.

Nokomai.

This locality holds special interest through the extensive works carried on there. The Sew Hoy Gold-mining Company has three claims at work in this valley, worked by the principle of hydraulic sluicing and elevating. The ground varies in depth from 42 ft. in the upper claim to 52 ft. in the lower claim. The claims are well conducted, and each claim is supplied with electric light. Work is greatly hampered during summer through shortage of water. The total number of men employed, including managers, shiftmen, and race-caretakers, totals forty-eight.

The Victoria Gully Claim affords work for two men.

Orepuki.

Dawson and Company's Claim, Orepuki (A. M. Dawson, manager).—Four men ground-sluicing in the usual way. Heavy clay overburden, 20 ft. in thickness, is mainly broken up with gelignite, of which a fairly large quantity is used. I arranged with the mine-manager for posting a copy of the general rules under the Mining Act, also that a proper magazine should be provided for storage of six cases of gelignite and a separate magazine for storage of 1,000 detonators; also that proper canisters were to be used for carrying explosives and detonators.

Orepuki Goldfield.—Some thirty sluicing claims are working on the field, employing about fifty men, generally two men in a claim. Owing to the dryness of the season water is scarce, and full work is impossible in all the claims. There is now little or no underground driving on this field, as most of the ground available is worked out, and the old driving claims are being sluiced away, with, it is understood, in most cases, satisfactory results. Some ten miners continue working at the outlets of Taunoa and Sandy Creeks, on the beach claims, of which the principal is Murie and Wakefield's Sluicing and Elevating Claim. They were sinking to a depth of 9 ft. in the auriferous beach sands, in which black sand is present in large proportions. A small proportion of platinum is found associated with the gold and concentrates from the mats. So far as I could learn, the extra beach claims and water-races applied for during the recent black-sand boom are not being operated upon, and therefore I did not consider it necessary to pay an extended visit to these. The boom, if worthy of being called such, does not appear to have been warranted, as, although the smelting-works have been erected some months, they do not appear to have fulfilled the purpose for which they were ostensibly erected. In fact, I heard complaints that miners, having collected considerable quantities of black sand, are now unable to find buyers for it.

Round Hill Mining Company, Round Hill (John-Shanks, mine-manager).—Owing to the dry season, No. 1 paddock has been idle for two months, and available water concentrated at No. 2 paddock. Elevating, 65 ft.; average depth of face, 30 ft., but becoming less, owing to the reef rising toward the western side of the Ourawera Valley. Hydraulic hauler in use for removal of buried timber and large rocks contained in the wash-layers and overlying burden. An average of twenty-eight men employed, unfortunately working only half-time during the shortage of water.

Hart and Party, Round Hill (Fred Hart, manager).—Claim on western bank of Ourawera Valley. Driving and blocking-out on a seam of wash, which varies from 8 in. to 7 ft. in thickness. Ground well and securely timbered. A prick through into the Round Hill Company's paddock is to be made for ventilation and second outlet. Continuance of underground driving is dependent upon the working of the Round Hill Company's No. 2 paddock, which keeps both mines dry by pumping. Three men.

Ourawera Gold-mining Company, Round Hill (James Couling, mine-manager).—Working in Italian Gully, where good gold was obtained at shallow depths by early miners ground-sluicing. The ground being treated is proving poor, or, rather, the cost of dealing with the rough stony ground is almost equal to gold-values obtained. Wire ropes on stone-sledge haulers apparently safely anchored, and the mine-manager understands the liability to serious accident which the men are subject to in the event of the ropes breaking or carrying away, the men being instructed to keep on the outside bights of ropes in paddock when strains are on. Ten heads of water in

use; pressure at elevator, 130 lb. per square inch; average depth working-face, 35 ft. Two acres worked during the year for 572 oz. of gold. Seven men.

Smith, O'Brien, and Party, Round Hill.—Sluicing and elevating on a small scale, as the limited supply of water serves. The area worked being virgin ground, fairly good gold-returns are expected.

GOLD-DREDGING.

In connection with this branch of the mining industry I have to report that the usual number of visits were made to the dredgers at work in this district. Generally speaking, the regulations have been well complied with. Owing to the nature of the work and the construction of the machines, there is a peculiar risk attendant upon dredging operations, and every care is exercised to have machinery efficiently guarded and appliances provided so as to minimise the risk.

I am unable to chronicle any improvement in dredging-machinery or methods other than the successful installation of a 90 B.H.P. Mersey producer-gas plant on the Kyeburn Syndicate dredger near Naseby. An 80 B.H.P. producer plant is in course of erection on the Lady Annie dredger, Alexandra.

Circulars have been issued to all dredgemasters, giving such particulars of accidents as will enable the men to avoid similar risks.

During the year 1909 there were 111 dredgers in Otago and Southland, of which number fifty were in active operation in Otago and forty-two in Southland. A number were standing idle, and a few were dismantled.

ACCIDENTS.

HYDRAULIC AND ALLUVIAL MINES.

Non-fatal.

23/4/09: Thomas Kitto, nozzleman, Kitto and party's claim, Blue Spur, sustained fracture of the leg through being struck by a piece of cement which rolled from the face.

DREDGING.

Fatal.

3/6/09: James Brodie Patterson, winchman, Pringle and party's dredger, Miller's Flat, was drawn between the spur wheel and the crown wheel and instantly killed. This occurred while deceased was oiling machinery in motion.

Non-fatal.

10/11/09: — Neilson, a fireman employed on the Golden Bed dredger at Ettrick, lost his right hand through being caught between the elevator buckets and the top tumbler.

OTHER MINERALS.

SCHEELITE.

The principal centres of production are Macrae's, Mount Highlay, and Glenorchy, while the mineral also occurs at Waipori, Bendigo, and Alexandra. Messrs. Donaldson Bros. are the only producers at Macrae's and Mount Highlay, but the Mount Highlay Mining Company is undertaking extensive development-work. At Glenorchy, the Glenorchy Scheelite Syndicate is the most consistent producer, but the mineral is also mined by the Alaska and Bonnie Jean Companies. Several smaller parties sell their scheelite to the Glenorchy Scheelite Syndicate, as there are only two crushing plants on the ground, belonging to the Glenorchy Company and the Bonnie Jean Company. The several mines are not worked on an extensive scale, and the workings generally are well conducted.

There are approximately sixty men actively engaged in the production of scheelite in Otago, with a further twenty men engaged in preparatory works. During 1909, 139 tons are returned as having been produced from the mines at Macrae's, Mount Highlay, and Glenorchy, and when the mines now being opened up reach the productive stage, the output will be considerably increased.

The following is a list of those holding scheelite-mines: Golden Point Mine, Macrae's (Donaldson Bros.); New Zealand Gold and Tungsten Mine, Mount Highlay (Donaldson Bros., owners); Mount Highlay Mining Company, Mount Highlay, Glenorchy Scheelite Syndicate, Glenorchy, Bonnie Jean Mining Company, Glenorchy, Amateur Mine, Paulin and Pink, Glenorchy, McKenzie's Mine (Glenorchy Syndicate, owners, Glenorchy); Alaska Scheelite Mine (Birley and party, Glenorchy).

There are several others worked on a smaller scale.

COPPER.

The lodes at Queenstown and Waipori are still unproductive, although the latter was taken up during the year by Messrs. Moen and Robertson, of Waitahuna.

I understand that some attention is still being given by some Auckland people to the copper occurrence at the head of Wet Jacket Arm, Dusky Sound.

ANTIMONY.

Alexandra Antimony-mine, near Alexandra (Charles Rillstone, mine-manager).—During the early part of the year some excellent ore was produced from this mine. A smelting plant was erected under the guidance of an expert from Sydney, but, while needle antimony was finely pro-

duced, the process was lengthy and not altogether satisfactory. Owing to the collapse of the walls of the cooling-chambers, the plant and mine have been idle for several months, pending further information being obtained regarding the efficiency of the plant for the class of ore handled.

Antimony also occurs at Waipori and at Macetown, but none of these deposits have been opened during the year.

AURIFEROUS IRONSANDS.

A number of beach-combers continue to find employment on the south and south-eastern beaches. During the year a plant was erected at Orepuki for the extreme treatment of sands for the recovery of gold and platinum. A rush ensued for beach claims, and concentrates were saved, but from present appearances the activity was not justified.

The Te Wae Wae Claim, owned by Muni and Wakefield, is the largest claim on the Orepuki Beach. The sands are elevated, and run over tables covered with plush.

Platinum is recovered in small quantities from the beach claims.

LIMESTONE.

Limestone is of widespread occurrence, but the chief centres of production are Milburn, Fairfax, Oamaru, and Wakatipu.

MARL.

From the Burnside deposit 7,750 tons were raised, and four men were employed.

COMPLEX MINERALS.

Preservation Inlet.

Tarawera Lode, Isthmus Sound.—During the year a company was formed and some capital subscribed. Some preparatory work was undertaken at the mine, and a smelting plant was purchased. I understand this plant is now in course of erection at the mine.

PHOSPHATE.

Thirty-five men were employed in the production of 10,000 tons of phosphate from the mines at Clarendon.

I have, &c.,

ROBERT MCINTOSH,
Inspector of Mines.

ANNEXURE B.

REPORTS OF WARDENS.

Mr. Warden BURGESS, Thames, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Thames, 20th May, 1910.

I have the honour to forward herewith my report on the Hauraki Mining District for the year ended 31st December, 1909.

There is not much change to record in the position of the mining industry in this district since the date of my last report; but, on the whole, I think progress has been made during the past year. The actual yield of gold has not increased; on the contrary, it shows a small decrease on the returns of the previous twelve months. The total return of gold obtained from the ore mined during the past year, and crushed at the various mills on the northern goldfields, amounts to £1,301,001 12s. 3d. For the year 1908 the figures were £1,302,665 7s. 9d., showing a decrease for the year 1909 of £1,663 7s. 9d. This decline is, however, more than accounted for by the falling-off in the yield of the Waiotahi Mine at the Thames, and the fact that mining was suspended for nearly the whole year in the New Zealand Crown Mines at Karangahake during the erection of a hydro-electrical plant designed and erected to secure the efficient drainage of the mine below the No. 5 level. The district has, therefore, practically kept its position as to the production of gold, and I feel justified in saying that we may look for increased returns at the end of the present year.

The mines of the Ohinemuri district continue to constitute the chief source of the gold won from the whole goldfield.

The Waihi Mine still maintains its position as the premier mine of the Dominion. Extensive operations were carried on during the year; the Martha, Royal, and Empire reefs have been intersected in the 1,000 ft. level, and the tests made show that the values are maintained as the depth increases. The company is now engaged in sinking the shaft to another level. During the latter part of the year preparations were being made for erecting the transmission-line which is to carry electricity from the Horahora Falls, on the Waikato River, to their crushing-mills at Waihi and Waikino. This work will probably be completed within two years. By the employment of electricity as the motive power at the company's works, a large saving in the cost of treating the product of the mine will be effected, enabling ore of lower grade to be profitably dealt with, adding to the output from the mine, and finding increased employment to a number of men.

In the Grand Junction Mine active and extensive operations have been maintained throughout the year, and it is gratifying to be able to report a marked improvement in the company's pro-

spects, the yield of gold this year having exceeded that of the previous year by £29,000. Operations on the Martha lode have not turned out as remunerative as hoped, but the Royal and Empire reefs of the Waihi Mine have been proved to carry values into the Grand Junction, and will provide substantial blocks for profitable working in the future. Preparations are being made for sinking another level, and when that is completed it is confidently expected that the values will be found to be maintained, if not increased.

None of the other mines at Waihi have added to the return of gold, although several have been carrying on mining operations through the year, particularly the Waihi Extended and the Waihi Beach.

At Karangahake, the Talisman Mine, which is second only to the Waihi Mine in its annual output of gold, is the only claim that has yielded returns throughout the year. The difficulty experienced with the water in the mine, which prevented operations at the No. 13 level, has been overcome by the employment of a system of pumps, which have drained the water from this level. A very complete pumping plant is being installed in the Woodstock shaft, which will, when completed, effectively secure the permanent unwatering of the mine. Work has been resumed in the No. 13 level, and has disclosed reserves of payable ore for future operations.

The only other prominent mine at Karangahake—the New Zealand Crown Mines—has been closed down during the past year, while an electrical plant of a very complete and effective character was being installed. This work, which has involved the expenditure of about £20,000, is nearing completion, and mining-work is being resumed. The unwatering of the mine which will be effected by this plant will enable operations on an extensive scale to be conducted at greater depth than previously, and successful development may be expected during the coming year.

There are other claims at work at Karangahake, but they have not reached the stage of gold-production, the operations so far being of a prospecting nature. There is only one claim at work at Komata—viz., the Komata, which still continues to employ a large number of men. It yielded gold last year to the value of £80,000.

Although the interest in mining in the district centres chiefly in the Ohinemuri mines as the principal gold-producers of the Hauraki Mining District, there is a good deal of quiet work going on from one end of the district to the other which is scarcely heard of, because, unfortunately for the owners, these properties have not so far met with the success hoped for, and they have contributed very little to the production of gold for the year. Many of these claims are, however, being regularly and systematically worked, though not in an extensive manner, and I have good reason to believe that, if work is persisted in, some of them, at any rate, will reward those who have so far persevered in the face of disappointment. At Waihi a number of old claims have recently been taken up afresh, and agents now in London are endeavouring to procure financial assistance for the owners, to enable them to undertake the very costly work of sinking shafts and erecting pumping-machinery for these claims. The continued success of the Waihi Mine, and the greatly improved prospects of the Grand Junction Claim, encourage the hope that capitalists may be induced to turn their attention to this locality, where there are several holdings which, from their position, appear to offer a very legitimate field for the investment of capital.

In several portions of the mining district, such as Kuaotunu, Tararu, Waiomo, and Te Aroha, old ground that has been abandoned and unoccupied for a long time has been taken up and operations have been recommenced. In many instances this consists of putting in low-level tunnels to work at a greater depth auriferous lodes which yielded payable, though not large, returns near the surface. At Kuaotunu, particularly, there has been a marked revival in mining operations. Old claims have been reoccupied, water-races constructed, and a crushing-mill erected, and work is being energetically prosecuted in several instances, with promising results.

The successful nature of the operations in the Sylvania Claim, at Tararu, and of the Waitangi and Watchman, at no great distance away, has led to the occupation of several new claims in the vicinity, and ground has also been taken up in the Upper Tararu Creek, for a long distance above the Sylvania. Steps are being taken to obtain capital for developing these claims, and in a few instances operations have already begun with, at present, a limited number of men, until further development will enable more workmen to be employed. At Waiomo work has been vigorously resumed in the Monowai Mine. This claim was held under option by the Ferguson Smelting Company, whose smelting-works in the beach at Waiomo were looked forward to as the means of bringing success to this portion of the district by its suitability for treating the refractory ores found there. That company, however, exhausted its capital in the execution of their works, and, for want of means to carry on, closed down the furnace and plant before any practical use had been made of it. With the closing of the furnace the great incentive to working the claims in the neighbourhood was removed, and very little work has been done in most of them. The proprietors of the Monowai Claim have, however, decided to employ an ordinary crushing-battery, with cyanide plant, for dealing with the ore, and are now engaged in completing the arrangement for carrying this into effect. They are also constructing tramways and water-races and making all preparations for efficiently working the claim. If their operations prove successful, and demonstrate the fact that the ore of the Waiomo Mine can be made to pay by the ordinary methods in use in the district, it will lead, no doubt, to the reoccupation of much of the ground now unused.

At Te Aroha and Waiorongomai vigorous prospecting of a very encouraging nature is being carried on by the Hardy Mines (Limited) and the Bendigo Company (the latter of which is now engaged in erecting a battery to crush the ore coming from the mine). In addition to these, several old claims have been reoccupied within the last year, and work of a prospecting nature is now going on upon them. Some of the claims recently taken up have been acquired for the purpose of making another effort to deal with the refractory ores which exist in considerable quantity in the vicinity of the Te Aroha Mountain. Very little has been done in this direction

within recent years, former attempts having ended unsatisfactorily. The present owners are, however, satisfied that these ores can be made to yield payable returns if known methods of treatment (in use outside the Dominion) are brought into operation in this district. Efforts are being made to obtain capital to procure the necessary plant and appliances to give the reefs in the locality a fair trial.

In the Coromandel district the outlook is more promising than it has been for some years. The find of gold in the Royal Oak Claim, in the Tokatea Range, gave a fresh impulse to mining in this district, and the more recent discoveries of rich ore in the Old Hauraki Claim, near the shore of the Coromandel Harbour, led to a considerable activity in marking out claims in different parts of the district. On several of these operations have been begun, but others are under protection, waiting the acquisition of the necessary capital to enable them to undertake the work of putting in expensive low-level tunnels, for many of these claims have been worked in the past, and the gold of the upper and more cheaply worked portions has been practically all taken out. Prospecting has been going on for some time in the neighbourhood of Cabbage Bay, in quite new ground. Auriferous ore has been found, and several claims marked out; but sufficient work has not yet been done to speak with certainty of the prospects. Prospecting is also being carried on at Mahakirau and other places in the district. Recently a number of claims have been taken up at Maratoto, a locality lying between Thames and Ohinemuri. Some prospecting-work has been done, but, except upon the "Silver Stream," no attempts at permanent developments have been made. The ore of the district is remarkable for the large proportion of silver it contains. Gold is said also to exist in combination with tellurium. The ore is difficult of treatment, and trials made have shown that it cannot be successfully dealt with by any process at present in operation in the district. Efforts are now being made in Australia and London to procure the means to work these mines and to erect furnaces or other satisfactory means of dealing with the ore. Unless this can be done there does not appear much prospect of the immediate development of this field.

Mining in the neighbourhood of the Thames Borough cannot be said to have been very successful during the past year, although a number of claims, mostly old ground retaken up, are being worked with small parties of men. The returns are small, the work carried on being mostly of a prospecting nature. Work in the area drained by the Thames Drainage Board has not been prosecuted with great vigour, except in the case of the Waiotahi and May Queen Companies' claims. The latter company has shown great energy and determination in developing their mine, and have, with some assistance from the Government, sunk the Queen of Beauty shaft to a depth of 1,000 ft., the greatest depth yet obtained in the portion of the goldfield, and have started operations at this level. Operations in the other claims have been curtailed, waiting the completion of the deep-level scheme. The difficulties attending this important work, I am glad to say, have been at length overcome, and the companies concerned have decided upon a scheme of operations, and have agreed upon the direction which the low-level crosscut shall take. The proposal is to carry the tunnel from the Queen of Beauty shaft to the Kurunui-Caledonian shaft, a distance of 2,726 ft., with subsidiary crosscuts connecting with the Saxon, Victoria, and Moanatairi claims. Each of the companies interested has contributed £2,500 to the amount required. The sum thus raised has been subsidised by the Government to the extent of £5,000, and preparations are being made to commence the undertaking. This tunnel will not only prospect this portion of the field at the depth of 1,000 ft., but by draining the country adjoining will enable the companies interested to carry their workings to a greater depth than they have yet been able to do, owing to the difficulty in the past of overcoming the water met with in their present lower workings. The undertaking and progress of this work are looked forward to with great interest by the people of Auckland and Thames, for on its success depends in a large measure the future existence of what is known as the Thames portion of the Hauraki Goldfield.

During the year two licenses to mine for coal in the Ohinemuri district have been granted by me. The existence of coal in small quantities has been known for many years, but no seam of any commercial value has been yet discovered. The present licensees are, however, of opinion that they have found something of a permanent character, which will repay further prospecting. In each case a few men have been put on to further test the value of the find, and are now engaged upon the work.

The cinnabar-mine taken up by a syndicate near Mackaytown, Karangahake, has been well prospected during the past year, and a considerable amount of development-work has been done. Some specimens of the ore obtained are exceptionally rich, and the prospects are generally sufficiently good in the opinion of the owners to justify the erection of an expensive plant for the extraction of the metal from the ore. The construction of the plant has already been begun in convenient position, not far from the mine.

Mining is still being carried on at the Great Barrier Island, but the operations have not resulted in an addition to the gold-returns for the year. Mr. H. Brett, of Auckland, who has continued most persistently in his efforts to develop the Barrier Reefs Mine, and has spent large sums of money on the enterprise, is now putting in a long low-level tunnel to work at a greater depth lodes found near the surface.

The only other mines at work are the Sunbeam and the Ngatiawa, owned by the Ngatiawa Company, which has been formed out of the amalgamation of the Sunbeam and Ngatiawa Companies. The new company have infused considerable energy into their operations, and are actively engaged in prospecting-works with a view to the systematic development of their property.

Taking a review of the year's work and the present position of mining in the Hauraki Peninsula, I think it is safe to say that the outlook of the coming year is distinctly encouraging, and an improvement on that of several years past. A considerable amount of local capital is being found from time to time and invested in mining ventures in different parts of the district:

and, although I can only point to a few instances during the past year in which the outlay of this capital promises immediate success to the investors, I do not think there is any reason to believe that the projects already entered upon will not be continued during the present year. To insure, however, the successful working of the auriferous areas of this goldfield demands the expenditure of money on a scale greater than it is within the power of many of the companies now working to supply. There are many claims in different portions of the peninsula which are well worthy of systematic development, but which are at present idle or inadequately worked, because their owners have not the means to carry on operations in the manner and on a scale that is necessary for success. The time has long gone by when lands on this goldfield can be taken up by small parties of miners or companies possessing only a limited capital and worked by them with any reasonable prospect, except in very rare instances, of achieving success before they have reached the end of their resources. The quartz-mines of the district, with a few exceptions, need for their development a considerable outlay of capital, and much work of an unremunerative character must generally be undertaken before any profit can be hoped for from the venture. If the necessary capital were more easily obtainable for the proper development of our mines, we might expect to see them worked on their merits, and for what they are worth, regardless of the fluctuations of the sharemarket.

I have, &c.,

FRED. J. BURGESS, Warden.

Mr. Warden FLORANCE, Blenheim, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Blenheim, 30th May, 1910.

I have the honour to present my report upon the goldfields under my charge for the year ended the 31st December, 1909.

My experience here has been confined to the last three months, and I have not had the opportunity of personally inspecting the district under my charge, and have therefore to depend upon second-hand information, but derived from the most reliable sources.

The mining operations here may be divided into two heads—viz., (1) Quartz-mining and (2) alluvial mining.

QUARTZ-MINING.

Mr. Thomas Fowler was granted a prospecting license for the year 1909 in respect of 50 acres at Wairau Valley.

The Wairau Gold-mining Company, at Top Valley, has confined its operations to driving a low-level tunnel in the Lord Hopetoun section of the property. The tunnel, when completed, will give 250 ft. of backs on the reef, which it is estimated will be cut at 700 ft. from the surface.

At Mount Patriarch, situate at the head of the valley on the divide between Marlborough and Nelson Provinces, a small battery was erected by Messrs. Slattery and party for the purpose of testing a reef they had opened up at a surface level. As crushing operations were not attended with satisfactory results, all work was suspended towards the end of the year.

Messrs. Humphries Bros., as owners of the Dominion Consolidated Mine (late Golden Bar), are erecting a crushing plant comprising twelve heads of stampers and four berdans. A large quantity of ore was broken out at the mine by former owners, which will be available for treatment on completion of the battery, and should give an idea of the value of the property.

There are about 800 ft. of work done here on adits and tunnelling. If this venture turns out a success it should be of great value to the district and Dominion, as there will be a revival of mining in connection with reefs, as there was for alluvial gold in 1865.

A little work was done on reefs at the Tasman's Choice Claim, Arm-chair Creek, and at the Blue Bell Claim, Timms Creek. In each case the prospects were considered to be very encouraging.

Besides the above activities, prospecting licenses were issued for Blenheim during the year 1909 to the following persons: Robert W. Dunn, over 100 acres, Endeavour Inlet; Charles McGill, for 71 acres, Endeavour Inlet, 82 acres, Endeavour Inlet, and 40 acres, Endeavour Inlet—a total of 193 acres; Richard Cragg, 30 acres, Linkwater Survey District. Robert McFarlane was granted a special quartz claim in respect of 50 acres in the Sounds district. Henry Homes, two lots of over 30 acres each in Wakamarina. At Havelock, three grants of water-races were made during the year. Special quartz claims were granted to Mr. Reed at Wakamarina over 46 acres, and to Messrs. Morton and Nyberg over 5 acres, and to Newmann and Edmonds over 4 acres, at Cullensville. Also Mr. John Mason was granted an extended claim at Wakamarina.

ALLUVIAL MINING.

Messrs. Larkin and party have done a considerable amount of work in the direction of constructing a water-race and erecting a hydraulic sluicing and elevating plant for testing the deep alluvial ground in this creek. As this is the first elevating plant to be erected in the district the results will be watched with interest, and, if successful, should have the effect of stimulating this class of alluvial mining.

At Bartlett's and Top Valley Creeks, in the Wairau district, and also at Wakamarina River, several small parties are engaged in sluicing operations on a small scale, and in some cases manage to make a living-wage.

I enclose the usual general returns, as asked for.

I have, &c.,

R. STONE FLORANCE, Warden.

Mr. Warden EVANS, Nelson, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Nelson, 5th April, 1910.

I have the honour to report on the mining industry in the Nelson portion of the Karamea Mining District for the year ended 31st December, 1909, as follows:—

NELSON.

I have been in charge of this district since May, 1909, and from that time up to the present no mining applications or suits of any kind have been heard or determined in the Nelson Warden's Court, and no mining operations are being carried on in the vicinity of Nelson.

MOTUEKA AND TAKAKA.

No mining applications or suits have been heard in these Courts, and I know of no mining in the neighbourhood.

COLLINGWOOD.

In this Court very little mining business has been disposed of, and the main part of what has been dealt with consists of renewals or surrenders and applications for reduction of men.

The Oarere Sluicing Company.—This company took over the property of the Slate River Company (in liquidation), and have done a considerable amount of repairing. They commenced sluicing with six men towards the end of last year, with satisfactory results.

The Parapara Hydraulic Sluicing and Mining Company.—This company has employed eleven men during the year, working three shifts, with satisfactory returns. The ground has proved to be payable, and the outlook of the company is promising.

Golden Block Mine.—This company has carried on its mining operations during the year with satisfactory results, and has paid a fair amount in dividends.

The Parapara Ironworks.—Work on this property has been carried on by a reduced number of men, pending the raising of larger capital at Home.

Generally the mining industry outside the above claims is not very flourishing in this district.

I have, &c.,

J. S. EVANS, Warden.

Mr. Warden RAWSON, Westport, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Westport, 18th April, 1910.

I have the honour to report as follows upon the gold-mining industry in the Westport portion of the Karamea Mining District for the twelve months ended 31st December, 1909.

There were granted twenty-two alluvial and 24 quartz claims, as compared with ten alluvial and four quartz claims for the year 1908.

At Stony Creek, Waimangaroa, the Britannia Gold-mining Company, during prospecting operations, discovered a small block of stone of about 50 tons, which yielded about 30 dwt. There were indications that the track trended towards the old Republic workings, from which good returns were obtained in the old days.

At Addison's the Long Tunnel Sluicing Company's returns have been disappointing. After crossing the creek a distance of several chains had to be traversed before the lead made into a payable formation. The company is now on payable gold.

Millikin and party are sluicing with payable results. They have several years' work ahead of them.

The Victoria Company (Senior and party) have lately taken up a fresh piece of ground further east, and obtained some splendid prospects. During the last six months they have been preparing tunnels, and the new ground should soon be at work.

McNight and party (Addison's Township), after a long struggle to get their "rig" in order, during the last six months have got on highly payable ground.

Schlichting and party have bought out Fletcher and party at Bradshaw's, and are erecting a cyanide plant.

Millard and party have taken up 35 acres as a special claim at the Wet Lead. They have also obtained a prospecting license over 100 acres in the same locality. It is proposed to bring water from Lake Rochfort, and work the ground by means of a "blow up." The promoters of the venture are highly sanguine of success.

At Giles Terrace the Golden Basin Gold-mining Company have a prospecting license over 100 acres. They have sunk a shaft 80 ft. deep, and, crosscutting on the wash, they found gold right through. It is said that the prospects are very good.

LYELL.

The gold-mining industry in this district continues to decline. During the past year only one special quartz claim was granted—viz., to F. and M. Harrison, at Lyell Creek.

For a few months during the year the New Alpine yielded good returns, and upwards of sixty men were employed for a time; but towards the latter end of the year the reef ran out, and about forty men were discharged. Some twenty or so are engaged driving levels, crosscutting in Nos. 12 and 7, prospecting for the reef, but so far without success.

A few parties have been out prospecting, but have nothing to report.

The two dredges working on the river—viz., Hansen and Gilstrom at Old Diggings, and that belonging to Smeaton's Dredging Syndicate at Rocklands—have been working steadily during the year, with fair average results; but the New Mokoia, at Three-channel Flat, the property of a Greymouth syndicate, has met with indifferent success.

There are a few alluvial claims being worked, which, however, are yielding but poor returns.

GRANITY.

Beyond a couple of men prospecting on behalf of the Britannia Gold-mining Company (Limited) there are no mining operations being carried on in this locality.

SEDDONVILLE.

Very little gold-mining is being done in this subdistrict. The Red Queen Mine is working steadily, but there is nothing of importance to report in connection with it.

KARAMEA.

At Fenian Creek, Oparara, Low and party, and at Donaldson's old claim at Oparara, Dixon and Heaphy, are sluicing with satisfactory results.

A few prospectors are carrying on operations along the old beach from Karamea towards the Heaphy.

MURCHISON.

At Upper Maruia the Walker Maruia Gold-sluicing Company's claim is being worked on tribute by Dwan Bros.

W. Ronaldson and party have been prospecting for some months for alluvial gold, with a fair amount of success.

UPPER MATAKITAKI.

Mr. John Ritchie, having purchased the Mammoth Sluicing Claim from Mr. T. G. McCarthy, intends floating a company to work it. Mr. Ritchie intends to prospect the ground, and has obtained a prospecting license for that purpose.

Mr. Hunter's sluicing claim is being worked, with fair results.

Beilby, Richardson, and McNee's Sluicing Claim is yielding good returns.

All the terraces at Glenroy and Matakitaiki would pay well if a large volume of water was brought on to them. Miners with two or three heads of water are getting good results.

THE SIX-MILE.

Mr. Walter Gibbs has a number of men working at the Six-mile Sluicing Claim, but with what effect is not ascertainable.

A party of Chinamen at Johnston's Creek are reported to be doing well.

LOWER MARUIA.

A number of European and Chinese miners are making fair wages in this locality.

NEWTON FLAT.

Barclay Bros. are about to commence work in their sluicing claim.

Fairhall and Prebble, who have had a lot of dead work to do, expect to be sluicing again shortly.

Newton Claim is working, but as it is the property of a private company, the results cannot be ascertained.

A number of smaller claims are being worked between Newton Flat and Fern Flat.

Mr. Robert McNee and a small party prospected Mont Urua for quartz reefs. They found six well-defined reefs, which were found to be more or less gold-bearing, but owing to the smallness of the party and the rough nature of the locality they were unable to bring away many specimens. Mr. McNee thinks that if a party of four good men were to prospect the mountain they would get good results.

Forty-one applications were granted during the year, and there are some twenty-two pending.

On the whole, there are indications of increasing activity in mining operations in this subdistrict.

CHARLESTON.

The Messrs. Powell are still working their claim on the Nine-mile Beach with three shifts, and are reported to be doing very well. Butterworth Bros., in Constance Bay, are making more than wages. Parson Bros. and Hampton Bros.' (formerly Woodger and Hampton) cement-crushing batteries at Brown's Terrace are yielding good returns. A little time at the end of the year was lost through want of water, but on an average the party are said to have done well. Mr. Shepherd and the Dwyers, at the Back Lead, are very much hampered through want of water. The beach claims have been working broken time, and the quantity of gold saved does not compare very favourably with that of previous years.

The value of the gold sold during the year was about the same as the previous year.

During the last six months of the year a Melbourne company, represented by Mr. E. P. Carter, obtained a grant of three prospecting licenses of 100 acres each. The company has leased the Argyle Water-race from the Buller County Council for twenty years, at a rental of £75 per year. This race has been useless for some time past, having broken away in many places, and consequently those mining at the Back Lead with the water from the race had to discontinue operations. Now, however, the company have undertaken to put the race in repair, and supply those requiring water at moderate cost, mining in the locality is expected to look up again. The company proposes to work the extensive cement-leads by the cyanide process, and has taken options over several claims. The promoters are highly sanguine of success. It is believed that these cement-leads are extremely rich. In fact, the surface-working which hitherto was

the only method employed has proved the existence of valuable deposits. It is understood that the company will be shortly employing a large number of hands, which in itself will be sufficient to give a fillip to the district, which has rapidly gone down through lack of enterprise.

On the whole, the mining outlook is decidedly brighter as regards this subdistrict.

I have, &c.,

E. RAWSON, Warden.

Mr. Warden CROOKE, Greymouth, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Greymouth, 24th May, 1910.

I have the honour to present my annual report on the mining industry in the mining district under my charge.

GREYMOUTH SUBDISTRICT.

The prospects of alluvial mining are generally of a brighter description than for some years past. In the Maori Gully and Dunganville districts prospecting operations are being carried on by the Eight-mile Syndicate, Irving and party, and Waugh and party, the last named receiving a subsidy from the Mines Department. In each instance tunnels have been driven to reach supposed or known leads of gold at the back of high terraces.

At Kaimata Tunnel prospecting has been prosecuted with the assistance of Government aid.

At Maori Gully (Arnold district) a sluicing company has been continuously working on a fairly large scale, with, it is said, satisfactory returns.

At Nine-mile (North Beach) a syndicate has taken up as a sluicing claim an area of 100 acres formerly held by a company, and are at present engaged in prospecting the ground.

At Barrytown the sluicing claims of Mr. A. McKay and Messrs. McKay and White have been constantly worked, the black sand being treated by a blow-up and an extensive spread of tables. Some new ground was taken up by these parties during the year.

The North Beach dredge has been working consistently, but the results are not known.

An important find of auriferous quartz at Poerua was reported towards the end of 1909, about 800 acres being subsequently taken up. The line of country is identical with that of Blackwater, Big River, and other mines in the Reef-ton district. It is understood that on his last visit to New Zealand Mr. David Ziman, on behalf of English investors, secured options over several of the areas.

At Kotuku boring for petroleum oil has been vigorously prosecuted on both the areas held by Mr. Taylor and Messrs. Ormond and McLean. During the year Mr. Charles Taylor visited the principal oil-fields in America, and gathered much valuable information and experience in the methods of prospecting and working adopted in that country. He has now assumed the general direction of operations at Kotuku. During Mr. Ziman's recent visit to New Zealand options over both properties were, it is understood, secured by him. Recently three additional areas, aggregating 25,500 acres, situate between No Town Creek and Taranakau River, have been applied for by Messrs. Ziman and Felix Campbell, and additional energy will shortly, no doubt, be applied to prospecting operations.

REEFTON SUBDISTRICT.

Quartz-mining.

The various mining companies doing business in this field have, on the whole, met with a good measure of success during the past year. Notable among these are the Consolidated Goldfields of New Zealand (Limited), the Progress Mines of New Zealand (Limited), the Blackwater Mines (Limited), and the New Big River Gold-mining Company (Limited). These mines have given consistent returns during the year, and regular dividends have been paid to the shareholders.

In the Blackwater district, Mr. David Ziman, of London, has taken an option over three prospecting licenses, together with other mining privileges to the north of the Blackwater Mines property. These licenses are now being systematically prospected, with the hope of locating the Blackwater line of reef. Should this reef be struck a very large area will be proved in this district.

A number of other prospectors are at work in the same locality, and the Blackwater field has every appearance of being a large producer of gold in the near future. There is already a population of three or four hundred people at Waiutu, which is the name given to the settlement at the Blackwater Mine.

About three miles to the eastward of this mine, at the head of the Snowy River, the St. George Extended Quartz-mining Syndicate has done a considerable amount of prospecting during the year, and the prospects obtained have warranted the formation of a company under the style of the "St. George Quartz-mining Company (Limited)." This company has now been floated, and operations on a more extensive scale will be commenced forthwith.

Adjoining this company's property on the north is the Big River South Gold-mines (Limited). This is also a new company formed during the year. A tunnel is now being driven at a lower level to intercept the reefs that are showing on the surface.

W. Kirwan and party are engaged in prospecting the ground to the north of the New Big River Gold-mining Company (Limited). A surface outcrop showing gold has been traced for some considerable distance, and a tunnel is now being constructed to strike the reef on a lower level.

The Keep it Dark Mine, one of the oldest mines in the district, has been continually worked during the year, but, unfortunately, without profit to the shareholders. It is confidently expected, however, that the development-work now being pushed ahead will strike stone of a payable nature. An additional area of 100 acres adjoining the present holding has been acquired during the year.

In the Capleston district the Golden Arch Gold-mining Company (Limited), has been carrying on operations on its claim at Italian's Gully, with a certain amount of success.

At Larry's Creek, the Caledonian United Company have sunk their shaft to the required depth, and are now driving north and south to endeavour to locate the rich reef that is known to exist in that locality.

The syndicate formed to work the old Welcome Mine has done a considerable amount of prospecting during the year, and a company is now being formed for the purpose of once more testing this ground.

A company is also being formed to systematically work the Just in Time ground adjoining the Welcome.

At Kirwan's Hill, Victoria Range, Pettigrew and party have met with a good deal of success since acquiring the property, and several other prospecting licenses have been applied for in the locality during the year.

The New Ulster Quartz-mining Company (Limited), carrying on operations in the Painkiller district, has not met with a great amount of success so far, and has been forced to ask for protection in order to obtain more capital.

Very little work has been done on the Inglewood-Victoria Mines, at the head of Murray Creek, but recently Messrs. McMahon and Lee have acquired an option over the properties, with a view to forming a company to work the mine in a systematic manner.

The Morris Bros. (Bonanza Syndicate), who have held a special claim at the head of Auld's Creek for some years, have now commenced to develop the property. The restrictions placed upon mining in this locality, owing to Auld's Creek being the source of the Reefton water-supply, have been modified to a certain extent during the year, and, as an English syndicate have acquired an option over the areas held by the local syndicate, in all probability next year will see a number of men at work in this mine, which is very close to the Town of Reefton.

During the year there were forty-five prospecting licenses granted out of the Warden's Court, of a total area of 3,417 acres. Of these, forty-one were for quartz-mining and four for dredging. There were also two coal-prospecting licenses granted—one over 25 acres, and the other over 30 acres of Crown lands.

Dredging.

There are now only five dredges at work in this subdistrict, viz.: Hessey, Cameron, and Tacon (Limited) operating on freehold land at Boatman's Creek; the Antonio's dredge (Hessey and Cameron) and the Worksop Gold-dredging Company (Limited), at Antonio's Flat; the Blackwater River Gold-dredging Company (Limited), at Blackwater Creek; and the Slab Hut Creek Gold-dredging Company (Limited), at Tawhai, about five miles from Reefton. This latter company decided to go into voluntary liquidation during the year, and the property is now being worked by a private syndicate.

Alluvial.

Very little alluvial mining is carried on in this district. About eighty Europeans and fifty Chinese, however, still manage to make a fair living at this class of work, principally in the Blackwater district.

Wills and party, at Merrijigs, have been engaged in sluicing a high face of alluvial wash for many years, with payable results.

The great drawback to alluvial mining in most cases in this district is scarcity of water.

Coal-mining.

There are thirty-three coal leases in existence in this district, of a total area of 881 acres. The majority of these leases consist of only 10 or 20 acres, and are worked on a small scale, either for household purposes or the supply of fuel for engines at the various mines and dredges.

The coal in this locality is of excellent quality, but so far the output of the mines has only been sufficient for local consumption.

Messrs. Gibson and Harris have recently acquired a lease at Bourke's Creek, and are now laying down a tranway to connect their mine with the Reefton Railway-station. When this is completed the company will be enabled to greatly increase the output of coal for the district.

AHAURA SUBDISTRICT.

South Side of Snowy Creek.—Absalom and party are working and testing ground for quartz and continuation of the Blackwater reefs, but so far have not met with any payable results.

Noble's, Duffer's, and Half-ounce Creeks.—No new developments have occurred in this part of the district, about thirty-five miners being employed about old workings. During the past year there have not been any fresh discoveries of gold.

Orwell Creek and Ahaura.—About twenty men are working old and well-known ground. There is a prospect of water from Randall's Creek being brought on to Napoleon Hill. Should this eventuate there will be a considerable increase in population and prosperity for the district.

Moonlight and Blackball.—There have not been any new developments in these districts. About forty men are employed at alluvial mining and about twelve at quartz-mining. Mitchell and party, at Upper Moonlight, are still driving for a quartz reef, and anticipate some tangible result during the coming year. Taylor and Curtis continue to work at the old Taffy Claim, with, it is said, satisfactory results. The Garden Gully Company is still prosecuting work, with every hope for the future. Mining matters in this locality are generally more promising than for some years past. One dredge is working in Moonlight Creek, owned by a private party, who are stated to be satisfied with the returns.

Nelson and Callaghan's Creeks.—The population in this district is maintained better than the majority of districts solely dependent on alluvial mining, there being about sixty men employed, but no new developments are reported. The Pactolus, Nelson Creek, and Trafalgar Company's dredges are in constant operation. A new company has been formed to work the upper portion of Gow's and Surprise Creeks, styled "Gow's Creek Sluicing Company." Should this be successful the value of mining property in this locality will be considerably enhanced.

No Town.—The population has steadily decreased to about twenty-five alluvial miners. The No Town Gold-dredging Company still obtain good results from their dredge. No new developments have occurred during the year. This district is stagnant for want of water at high levels for sluicing purposes. Were a fair supply available a large area of terrace leads could be profitably worked by hydraulic sluicing.

These remarks apply equally to a number of other localities—notably, Orwell Creek, Noble's, and Nelson Creek.

I have, &c.,

ALFRED CROOKE, Warden.

Mr. Warden HEWITT, Hokitika, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Hokitika, 4th April, 1910.

I have the honour to report as follows concerning the mining industry in the district under my jurisdiction for the year 1909:—

HOKITIKA SUBDISTRICT.

Alluvial Mining.

Perhaps the more important localities in the district are Governor's Terrace, Arch Creek, Back Creek Terrace, Tucker Flat, Humphrey's Gully, and the Rimu Flat.

Governor's Terrace.—The drainage tunnel to this terrace was completed in the year 1908. The miners holding the ground on which the shaft was sunk did some prospecting adjacent to the shaft during the opening months of the year, but other claimholders who occupy the greater portion of the ground on the terrace, and who contributed to the cost of driving the tunnel, have not so far proceeded to extend the same so as to drain their claims. Messrs. Gordon and party some twenty-odd years ago got a little gold in the Brighton formation, but their operations were carried on some considerable distance from the shaft referred to. The gold for which the drainage tunnel was driven, therefore, yet remains to be found.

Arch Creek.—Messrs. Hyndman and party, obtaining a supply of water from Mr. Gaylor, are sluicing some 30 ft. or 40 ft. above the Hokitika River at Arch Creek, and as they are steadily going ahead, it would appear that they are at least profitably employed.

Seddon's Terrace.—Messrs. O'Connor and party have their own storage-dams and plenty of room for the deposit of tailings, as, notwithstanding their sluices having a grade of 12 in. to the 12 ft., and being about a quarter of a mile in length, they still have a drop of some 50 ft. at their tail-boxes. The great drawback to the profitable working of their mine, however, is the lack of a continuous supply of water, but mining is energetically carried on whenever a supply of water is available.

Messrs. Clifton and party are still working their claim, which has during the past ten years yielded good returns, notwithstanding that the supply of water obtained from the Rimu Miners' Water-race Company has been intermittent.

In the neighbourhood of Clifton and party's claim is the property of the Rimu Sluicing Company, which has been profitably worked for some ten years, and which will continue to provide profitable employment for years to come.

Messrs. Phelan and party have carried on sluicing operations whenever a sufficient supply of water has been available.

Back Creek Terrace.—The bottom along this terrace rises in benches. The two lower benches have been sluiced at considerable profit. Messrs. Baucke and party, Wells and party, and Stoop and party, who are engaged on this terrace have almost run out of bottom on the second bench. Between the faces where Baucke and party and Stoop and party recently ceased sluicing operations there is a deep gutter carrying good gold that cannot be sluiced for want of fall. A portion of this gutter was, however, driven out before sluicing operations blocked access to it. Messrs. Stoop and party have two blocks on this terrace to sluice. When these are worked out they will probably drive for the remaining wash, which cannot be sluiced. Messrs. Wells and party have ground in the line that can be sluiced, but when this and the property of Stoop and party is worked out the greater part of Back Creek Terrace will be worked out so far as sluicing is concerned, as the existence of the Jubilee Water-race may prevent the working of the next bench.

Messrs. Weiblitx and party have a large claim here, and have employed a number of men from time to time since the year 1904. They have been engaged during the year driving a deep run of wash which was first struck on the property of Cooper and party. The wash, however, has become poorer during the last year. A new tunnel is being driven, with the hope of again picking up the wash, which has given good return during the last few years, and operations in this drive will be carried on under more favourable conditions than in the old tunnel, in which foul air proved a great drawback.

Messrs. Cooper and party are engaged on the same level on excellent wash.

Messrs. Knight and party, working in the vicinity of Cooper's property, are getting good returns on the average.

Messrs. Brooks and party and Boyd and party are engaged driving on the same level, but the gold in their properties appears to be more scattered, owing probably to the unevenness of the

bottom. Further south again is the prospecting tunnel of Maloney and party. This party has spent considerable sums of money in driving back into the terrace, but have so far failed to strike the wash. During the last year they were employed in putting in jump-ups, and there is now little doubt that there is a break in the level, as well as in the washdirt, which has extended from Weibnitz's to Brooks's ground, as some of the rises in the tunnel are over 40 ft., whereas the dip should have been cut by the tunnel.

About half a mile further south Bryan and party are engaged on a subsidised tunnel for prospecting. The ground here resembles that of Maloney and party, the bottom being much higher than that along which the gold has been traced. The tunnel is, I understand, only workable intermittently, and may at any time have to be abandoned on account of bad air.

Tucker Flat.—Operations have been steadily carried on here by Messrs. Hutchison and party and Marks and party, who have valuable properties and an adequate water-supply for their sluicing operations.

A number of other claims on this Flat will be thoroughly prospected when the subsidised tunnel being brought in by Hewer and party is completed, and I feel confident will provide years of profitable work for a number of men.

Humphrey's Gully.—The property formerly held by the Humphrey's Gully Sluicing Company, and now let on tribute by the Consolidated Goldfields to Messrs. Harris and party, has been worked continuously throughout the year, eight men having been employed thereon. The gold-yield from this property during the year is 384 oz. 13 dwt. 21 gr., of a value of £1,519 11s. 5d., the yield for the six months ended the 31st December, 1909, being 292 oz. 17 dwt. 12 gr., of a value of £1,154 3s. 7d.

Rimu Flat and Hau Hau.—The Rimu Flat, which comprises approximately 1,600 acres, has been almost entirely neglected since 1897, up to which time driving operations were carried on upon wash that was payable by that method of working. Since the scheme for the generation of electrical power by means of the To Aroha Falls for the purpose of pumping water from the Hokitika River to this flat for sluicing purposes was propounded, considerable interest has centred in this locality, and almost the whole of the flat is now held under application (pending the completion of the necessary surveys). A large amount of money has been expended in prospecting operations which have been carried out in various places on the flat, and the results prove the existence of a very large field of payable wash, if worked on a large scale. The electrical scheme has, however, apparently been abandoned, and it is now proposed to bring in by gravitation 120 heads of water from the To Aroha River by means of three water-races of a capacity of forty heads each, having their points of intake above the To Aroha Falls. The construction of these races is a matter of considerable expense, the estimated cost of each race being £75,000. This water, if brought in, will command not only the Rimu Flat, but a large area of known auriferous ground along the course of the race, and the consummation of the undertaking is earnestly hoped for, as the result will undoubtedly be a great revival of mining in the Hokitika district. The large area of auriferous land at Hau Hau will also be commanded by these races if constructed.

Mahinapua District.—Little has been done in the way of mining on the Mahinapua Company's claim at Mahinapua during the year. A contract has, however, been let by the company for the construction of three miles and a half of piping, and the construction of 189 chains of water-race is being pushed on with, and should be completed and mining operations commenced during the year 1910.

Dredging.

There is at present in course of erection at Shallow Rush, for Messrs. Hessey and Cameron, the most powerful gold-dredger ever erected on the West Coast. Prior to the commencement of construction of the dredger the claim was prospected by Mr. Hessey personally, and the prospects obtained fully justify the construction of the powerful and costly dredger.

There are now no dredgers working in the Hokitika subdistrict.

Quartz-mining.

Wilberforce District.—During the year Messrs. Baucke and Fiddes have driven 232 ft. on a lead 15 in. wide, the quality of the stone throughout being very rich in gold. Work on the reef has been suspended pending the erection of machinery.

Two men have been employed at Messrs. Caliari and party's claim throughout the year.

Messrs. Hewer and party have taken up the claim lately held by Mr. J. S. Wilson, and known as Wilson's Reward, and have been engaged cleaning out the old workings, and retimbering where necessary.

Another claim in the locality has been unworked.

Beach Workings.

The operations of the Dominion Gold and Ironsand Company on the Hokitika beach, where the treatment of the auriferous black sand by electro-magnetic extraction after concentration was carried on, ceased during the year, the operations proving unsuccessful.

A number of men have found profitable employment cradling the black-sand deposits along the beach between the Hokitika and Arahura Rivers, but the deposit of auriferous sand has been intermittent, though at times very rich.

KUMARA SUBDISTRICT.

Alluvial Mining.

Several new claims have been taken up in the vicinity of Westbrook during the year and at Hayes's Terrace, in anticipation of the extension of the Government water-race across the Taramakau River. Tenders for the work have been called for. When this work is completed all these

claims can be worked continuously, and the locality will doubtless develop into an important field.

The Long Tunnel Gold-mining Company has carried on its mining operations continuously during the year, and their returns show an increase over the previous year.

McGrath and party have been working fairly regularly, and have continued driving their prospecting tunnel under very heavy expense. They have now driven a distance of about 3,000 ft., and there now only remains 500 ft. to complete. When completed a considerable area of auriferous ground will be opened up.

Garner and McConnon are progressing very well with the driving of their tail-race, having completed some 300 ft. It is expected that the full length—1,800 ft.—will be completed during the next six months. On the completion of this work their special claim situated at the head of Larrikin's may be worked advantageously.

Cape Terrace.—There is very little new to report concerning mining operations in this locality, owing chiefly to the fact that the supply of water to this terrace is very limited. A few claims are still working, of which Mr. T. Lohmann's is the principal. Towards the end of the year an application was filed for a branch water-race having its point of intake at the eastern Hohonu water-race, and terminating in Fuchsia Creek, a distance of eight miles. The cost of construction of this water-race is estimated at £8,000, and the construction will take some twelve months. The application has not been finally dealt with, pending the consent of the Grey County Council. When constructed this race will be used for distributing water over the large area of proved country known as Paddy's Gully and Cape Terrace. This race will carry some twenty heads of water.

Dredging.

There is now only one dredge working on the Greenstone Creek, and this, I understand, has paid little more than working-expenses. A second dredge was worked by the Kumara Syndicate up the same creek for about nine months of the year, when operations were suspended, and the claim surrendered.

STAFFORD SUBDISTRICT.

Sluicing.

During the year 1909 this class of mining has been the principal means of winning gold and giving employment to the miners of this district. Early in the year, on the completion of the extension of Kelly's Terrace drainage tunnel, the contractors, Sullivan and party, commenced sluicing operations on their claim, which yielded satisfactory results. A considerable area of ground in the vicinity was pegged out, and application lodged in the Warden's Court. At the hearing of these applications the Warden decided that, as no provision had been made for the claimholders to contribute to the maintenance of the tunnel, he would adjourn all applications until such time as the Westland County Council took charge of the tunnel, and framed regulations as to the future upkeep and maintenance of the tunnel by the claimholders. At the end of the year the applications were still in abeyance.

The Wheel of Fortune worked continuously during the year, with satisfactory results.

At Italian Hill, Callaghan's, good returns were obtained, and considerable attention was drawn towards that locality. A large area of ground was applied for and granted to several parties. The only means of working this ground, owing to its elevation, is by driving. Some of the parties did remarkably well, while others did not obtain satisfactory results, and after considerable prospecting had to abandon their claims. In other parts of the district, particularly at Middle Branch and Tunnel Terrace, all claims have been worked continuously, the yield being fully equal to last year. The number of miners in the district is certainly on the decrease, owing principally to the limited area of ground which can be worked with the present water-supply. There are large areas of auriferous ground on the high country which will pay handsomely and give employment to a large number of miners when water is brought on to them, but until some scheme for doing this is obtained, the ground is of little value for mining.

Dredging.

The Stafford Gold-dredging Company has been continuously working at their claim in the bed of the Waimea Creek. The results have been satisfactory.

During the year 104 mining applications were dealt with, as against seventy-four for the previous year. The goldfields revenue collected showed an increase.

ROSS SUBDISTRICT.

Mining operations in this district have shown a slight improvement compared with previous years, the most important work being the unwatering by the Ross Goldfields (Limited) of the Ross Flat deep levels, which were abandoned some twenty years ago owing to the difficulty experienced in coping with the water. The company installed a complete electrical plant with turbine pumps, and commenced pumping operations towards the end of the year. The old pumping-shaft, which formerly belonged to the old Ross United Company, was cleaned out and put in order to the depth of 350 ft. The work is still proceeding, and the unwatering of the mine should be completed and mining operations commenced early in the year.

Alluvial mining is being carried on by individual miners throughout the district. Good returns have been obtained from several claims, while in other cases the miners have at least made good wages. The chief drawback is the scarcity of water, much of the ground being workable only in times of rain. More prospecting has been done this year than formerly, as a result of which several claims have been taken up and profitably worked.

It is worthy of note that two miners, while working out a small piece of ground among old workings near the township, unearthed a nugget weighing 100 oz., which was sold for £400.

Dredging.

During the last six months of the year dredging operations were carried on by one dredger, but this, chiefly owing to the fact that the machine was getting old and unfit for work, has been closed down. Efforts have been made by the owners of the dredger and claim to float a company, with the object of having the ground properly prospected and a new dredge put on if results warranted it, but so far without success.

Sluicing.

Mont D'Or Gold-mining Company.—This company has, throughout the year, continued sluicing operations, the gold won during that period being 1,115 oz. 14 dwt. 18 gr.; value, £4,012 2s. 3d. The dividends paid by the company amounted to £2,400. The total value of gold won by this company to date is £48,000. The company's plant and equipment is in good order. A low-level tail-race is being put in to tap a level lower than that at present being worked, and the outlook for the company is very promising. Fourteen men are employed.

OKARITO SUBDISTRICT.

Mining operations in this subdistrict are practically at a standstill.

A claim at Omeroa, in which four men are engaged, is reported to be furnishing good returns.

Rich patches of auriferous black sand have been treated by beach-combers on the Hunt's and Paringa beaches.

I have, &c.,

J. G. L. HEWITT, Warden.

Mr. Warden PORRITT, Dunedin, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Dunedin, 16th May, 1910.

I have the honour to report that mining generally throughout the Otago Central District has been more active, and the prospects better than during the preceding year, but operations have been greatly retarded by want of water. The shortage of water has been occasioned principally by the light snowfall last winter, followed by a very dry summer.

CROMWELL.

Mining in this locality is almost wholly confined to dredging. There is a small company sluicing at Quartz-reef Point, but the water-supply is poor, and the returns small.

Twenty miles further up the New Luggate Hydraulic Sluicing Company has a large claim, with a steady supply of water, and is making fair returns.

At Bannockburn sluicing is at a standstill for want of water.

The successful operations of the Rising Sun and Rise and Shine Companies, in the basin at Deadman's Point, and the returns occasionally secured by Riley's Revival Company, two miles higher up, appear to indicate that the extensive flats of the Upper Clutha may sustain the dredging industry for many years. Advantage has been taken of the Keystone borer to test these river-flats, and also those at Bannockburn. The results at the latter place were disappointing. The bores put down above Lowburn show that the ground is patchy, but would probably be payable with a dredger of sufficient capacity to turn over large quantities of ground.

NEVIS.

This portion of the district has had a good year, as the mild winter permitted work to be continued during the winter months, instead of having to be closed down as in ordinary winters. The water-supply is more plentiful in this locality than in most parts of Central Otago, but during the height of the summer the supply fell off, and operations were hampered for want of water. The dredging claims also had a successful year, but their returns are not available, the holdings being in the hands of private parties, who do not publish returns.

CARRICK.

There are indications of a revival in quartz-mining on the Carrick Range. In the early seventies a considerable quantity of gold was taken from shallow workings in this locality. An attempt is now being made to raise capital to develop the reefs known to exist. A small party has been prospecting, with successful results, and a company is being formed in Wanganui to take up and develop a claim in the vicinity.

BENDIGO.

In former years very rich returns were obtained from this district. A few years ago the Come in Time Company failed to get gold in their reef about two miles from the Old Bendigo Claim, and no work has been done in the locality since then. Attention is now being directed to the reefs at a lower level, and there is a prospect of work being recommenced on some of the old claims.

WAENGA.

Some shallow work has been done in past years. Nothing has been done during the last twelve months.

CLYDE.

There is no mining going on in the vicinity of Clyde.

EARNSCLEUGH.

Mining is confined to dredging in the Molyneux River, between Clyde and Alexandra. There are ten dredgers working, five of which are securing fair returns, and working at a profit.

BLACKMAN'S GULLY.

This locality is worked out, and the locality is now being utilised for fruit-farming.

ALEXANDRA.

During the past twelve months dredging on the Molyneux River between Alexandra and Coal Creek has been suspended, on account of the height of the river.

Apart from dredging, little mining is done. A small sluicing claim at Bald Hill Flat is working, but results are small.

Two dredgers on the Manuherikia River are working, with fair results, and the returns are profitable.

Berry and party have formed a company to take over their alluvial claim at Galloway, and the prospects are good, but operations are not sufficiently advanced to be able to judge of the results.

OPHIR.

Mining in the vicinity of Ophir is at a standstill, and nothing is being done.

MATAKANUI.

There are four companies in active operation on the alluvial ground, and good results are being obtained, considering the way operations have been hampered by want of water.

DRYBREAD.

There are two alluvial claims working, with fair results. Operations here have also been hampered by want of water.

NASEBY.

During the summer months operations were practically at a standstill, no water being available, although some claims were worked at intervals. A number of new claims have been taken up, and the prospects appear to be good.

ST. BATHAN'S.

The Scandinavian Water-race Company and the United M and E Company still continue active operations in the St. Bathan's Basin, but the amount of overburden to be removed makes the operations expensive. Apart from the work carried on by these two companies, very little is being done.

CAMBRIAN'S.

The Vinegar Hill Sluicing Company still continues working, and is reported to have had a successful year.

WEDDERBURN.

The discovery of a reef on the ranges was reported, and a syndicate formed to prospect the locality. Nothing further has been heard of it.

PATEAROA.

Matters are unchanged from last year. The Patearoa Sluicing Company is still in active operation, and is reported to have had a successful year.

HAMILTON'S.

A mild revival took place in this locality. The old water-race has been reconstructed, and, with the advent of water, it is anticipated that this old diggings will again become a payable gold-producer.

KYEBURN.

Matters are the same as last year, with the exception that operations have been commenced with a dredger on the Kyeburn River. No information has yet been received as to the returns obtained.

HYDE.

On the Waihemo side of the Taieri River an area is being developed by Fink and party at Mount Highlay, and a battery and plant is being got into working-order.

On the Maniototo side of the river McBride and party are tunnelling the hill at the back of Hyde Township, with the object of striking a deep lead believed to exist there. Beyond the operations of these two parties, work is principally confined to fossicking and turning over old workings by Chinamen.

MACRAE'S.

Matters are much the same as last year. Messrs. Donaldson Bros. surrendered a large area of their ground, but are still working for gold and scheelite on their remaining area. A prospecting-area of 80 acres has been taken up by a Timaru syndicate.

NENTHORN.

Several of the old areas have been taken up as claims, but no information has been received as to any results or prospects.

ROCK AND PILLAR.

Some prospecting has been done, but the results are not yet known.

MIDDLEMARCH.

Nothing in the way of mining is being done in this locality.

I have, &c.,

E. W. PORRITT, Warden.

Mr. Warden BARTHOLOMEW, Lawrence, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Lawrence, 14th April, 1910.

I have the honour to present herewith my report for year ended the 31st December, 1909, upon the mining district under my administration.

WETHERSTONES AND BLUE SPUR.

In Wetherstones two claims are still being worked—viz., the Golden Crescent Sluicing Company (Limited) and one held by Messrs. Smyth, Adams, and Doulan, known as the Golden Rise. The water-supply during the year was not very good.

The value of gold won by the Golden Crescent Company amounted to £1,200. This company during the past year have gone to considerable expense in improving their hydraulic plant. The directors, realising that the easier portion of their claim would soon be worked out, deemed it advisable to procure a stronger plant to cope with the deeper and heavier ground, which consists chiefly of a cement-deposit, running from a few feet to about 500 ft. in depth. By changing the position of their penstock a pressure of over 600 ft. has been obtained, in place of 150 ft. formerly in use. Under the altered conditions the water was turned on on the 16th November last, and proved itself a very effective force in dealing with the deposit. Under the circumstances the directors are satisfied that the company has a new lease of life.

The manager (Mr. J. H. Jackson) of the Blue Spur and Gabriel's Gully Consolidated Gold Company (Limited) has kindly supplied me with the following details of the year's work at the Consolidated Mine at Blue Spur: Average number of men employed, 28; quantity of cement treated, 178,200 cubic yards; wages paid, about £3,000; gold won, 1,115 oz.; amount paid for explosives, £311; wages paid for upkeep of water-races, £670. This claim was very considerably affected by the drought during the year, and the manager informs me that he had 650 sluicing-hours less water than during the previous year.

In Munro's Gully three claims are still being worked—viz., Messrs. John Kitto and party, P. P. Thomas and party, and E. C. Browne and party. Being all private concerns, the returns are not made public.

In Gabriel's Gully the Gabriel's Sluicing Company (Limited) have been carrying on mining operations in the bed of the creek during the year, and have won gold to the value of £1,553.

TUAPEKA FLAT.

The claim and plant formerly held by the Tamaiti Gold-mining Company in this locality were sold during the year to Messrs. Montgomery and party, and the claim has since been worked as a private concern.

WAIPORI.

There was considerable activity in this subdistrict during the latter part of the year over the quartz-mines.

In the Canton Quartz Claim very rich stone was reported to have been struck, but on account of the company being a small one, it was deemed advisable to float a new company with increased capital. Good progress is being made in sinking the main shaft.

Nearly all the known quartz reefs in this subdistrict were pegged out, and are now held as claims. Another company has been formed to work the claim known as Cox's Reef, and work is being carried on to develop the mine.

The sluicing claims in this subdistrict have been complaining a good deal of the shortage of water on account of the drought.

There are only two dredgers now working in this locality—viz., the Jutland Hydraulic Dredge Company and the Waipori Consolidated Gold Dredges.

WAITAHUNA.

The Havelock Sluicing Company mentioned in my last report as a new venture has been in constant work during the year, the water-supply being an excellent one. The company was successful in winning gold to the value of £2,371.

The Waitahuna Sluicing Company has also had a good supply of water, which has given them a satisfactory year's work, and enabled the company to win 614 oz. of gold.

The other principal mining claims being worked in this subdistrict are as follows: The Sailors' Gully Sluicing Company (Limited), 241 oz. for the year; Charles Thomson and party, Joseph Ferris, and Quilter and party, all carrying on mining operations in Waitahuna Gully.

Below Glenore a new dredge is being built to work the mining reserve and freehold (which is known to be auriferous) adjoining the south branch of Tokomairiro River.

At German Flat Messrs. Samuel Johnston and party have been busy for a great part of the past year working at the construction of a large storage-dam, to cost about £600, and on which a loan of £300 has been obtained from the Mines Department, the plans for the construction having been approved by the Inspecting Engineer of that Department.

ROXBURGH.

Sluicing.—Nothing of interest in mining matters has occurred in this portion of my district during the past twelve months calling for special report. The winter was an exceedingly mild one, with an exceptionally light snowfall, and this, followed by the driest spring and earliest summer known for the last twenty-five years, militated considerably against the supply of water for sluicing purposes.

Dredging.—Although the rainfall in this locality has been unusually scant, the Molyneux River (the principal dredging field) has generally maintained an unworkable height for those dredgers in the gorges or midstream. To such an extent has it interfered with some that the work has been carried on with unprofitable results, or they have been entirely laid up.

In the Warden's Court at Roxburgh during the year the sum of £511 19s. 9d. was collected for rents and royalties, 138 miners' rights were issued, and 114 applications were lodged.

I have, &c.,

J. R. BARTHOLOMEW, Warden.

Mr. Warden YOUNG, Queenstown, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Queenstown, 21st April, 1910.

I have the honour to present my report for the year ended the 31st December, 1909, on that portion of the Otago Mining District under my charge.

HEAD OF LAKE WAKATIPU.

The principal mining in this locality is lode-mining for scheelite, in connection with which seventeen mining privileges were granted. The Glenorchy Scheelite Syndicate, the pioneer in the industry, is still the principal producer. On its two properties twenty-four men were employed, and its output was about 35 tons of concentrate. The Bonnie Jean Company erected a stamp battery and concentrator, and was engaged chiefly in developing the lode. Several other parties produced a few tons of scheelite, but none of them have any treatment plant, and they either hand-pick the best ore or sell to one of the other companies. Altogether about forty men were employed in mining for scheelite, and everything points to the permanent establishment of this industry.

A mineral license was granted at Bob's Cove, the intention of the holders being to produce cement.

Very little alluvial mining for gold has been done. One party has been engaged in driving a prospecting-tunnel in the Buchleburn Terrace, and several small parties have been working in the creeks.

QUEENSTOWN.

A quantity of loose quartz containing gold was found on the southern slope of Ben Lomond. Several local residents secured the ground, but, after spending £140 in driving, their available funds were exhausted, and, although indications were favourable, work was suspended.

SHOTOVER RIVER.

Mining operations are being actively carried on in and about this river. Several new claims were taken up, and several applications for the amalgamation of claims were granted.

During the course of the past forty-seven years the river-beaches have been worked and the terraces driven upon and sluiced, and the gold obtainable by cheap methods of working has been extracted. The development during the past year has been to amalgamate the terraces and river claims—to acquire all available water, and sluice the terraces on a large scale and hydraulic elevate the wash in the crevices on the river-bed. All the water is used, and the men are employed on the river-bed when the river is low and on the terraces when the river is high. Employment has thus become more regular, a more secure investment has been provided, and the life of these fields has been extended.

MACETOWN AND ARROWTOWN.

There is nothing new to record with reference to the quartz reefs at Macetown.

The Arrow Falls Sluicing Company has carried on operations during the year with much success.

The Lake County Prospecting Syndicate, subsidised by the Government, has been actively carrying on prospecting operations. One of the results of its operations is that a claim and other rights were taken up above the Arrow Falls Company's ground. A company was formed and registered as the Shamrock Sluicing Company (Limited), and the work of bringing in the water and opening up the claim has been rapidly proceeded with.

WAIKAI.

No new ground has been taken up for dredging. There are fourteen dredges at work, being two less than in the previous year.

Sluicing operations in this portion of the district are in a flourishing condition. The Muddy Terrace Sluicing Company (Limited) finished its sixteen-mile water-race, and late in September commenced sluicing operations with a pressure of from 320 ft. on the flat to 150 ft. at the base of the wash on the terrace. The first ground opened up was the cap of the hill, where the alluvial-drift ranges from a few feet to 70 ft. in depth. At the foot of the terrace two elevators are being worked, 25 chains apart. The gold obtained from opening out these three faces was 297 oz., from the hill wash for about ten weeks' work; 102 oz. from No. 1 elevator, and 191 oz. from No. 2 elevator, for about five weeks' work. There still remained at the end of the year two ditches to be cleaned up, estimated to contain 30 oz. to 40 oz. of gold. The company's plant is very extensive and complete, and about twenty-six men are employed on the race and claims.

The ground on the Terrace adjoining the Muddy Terrace Company's claims has been taken up by a local resident.

Mining operations are being steadily carried on at the Nokomai, and increased interest is being taken in the wash at Gow's Creek and other places.

GORE-WAIKAKA.

Twenty-two dredgers are being worked on this portion of the district, being four less than in the previous year. During the year a private party built a dredger in the Waikaka Valley, much larger than any previously in use, enabling them to dredge to a depth of 50 ft. Good results are reported, and it is expected that as a result of this dredge's operations several deep-level dredgers will be built in this locality in the near future, and that much of the ground worked during the past ten years will be dredged again.

I have, &c.,
H. A. YOUNG, Warden.

Mr. Warden CRUICKSHANK, Riverton, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Warden's Office, Riverton, 18th April, 1910.

I have the honour to present my report on the various mining subdistricts under my charge for the year ended 31st December, 1909.

ROUND HILL.

Mining operations in this district are still being extensively carried on by the Ourawera and Round Hill Companies, and a few individual miners are still working their own claims.

Ourawera Gold-mining Company.—During the first half-year a great deal of time was spent by this company in opening out a new paddock in Italian Gully, and much inconvenience was caused by the mass of stones met with. Consequently the amount of gold won to the 30th June was only 202 oz. However, matters improved considerably in the latter half-year, and the gold-yield was 371 oz., thus enabling the company to pay the sum of £300 in dividends to the shareholders. The prospects at present are fairly good, but results, so far as can be seen at present, depend largely on the water-supply, which now diminishes much more rapidly than in former years. During the year the directors surrendered the worked ground, and amalgamated the existing claims into one of 51 acres.

Round Hill Mining Company.—The operations of this company are on a somewhat extensive scale, and about thirty men are kept constantly employed. The yield of gold for the year was 2,152 oz., being an increase of about 545 oz. on that of the previous year. The company are also carrying on mining operations on a smaller scale at Winding Creek, near Waikaia, where eight men are kept in employment.

OREPUKI.

Several miners are still making good money at gold-mining in this field. They have constant work while the water is plentiful, and there appears to be no reduction in the number of men working. During the year the New Zealand Smelting Company of Christchurch erected works in the township for the purpose of treating the black sand, which is very plentiful in the locality. As a result, all the available beaches were pegged off and applied for, but the hopes of the miners have evidently not been realised, as no operations of any great extent have been carried out on the beaches, and there appears at present to be a lack of activity at the works. At Pahia operations are still being carried on by the Pahia Sluicing Company, and the prospects appear brighter than formerly. But the want of a proper outlet for tailings has been a great drawback in this locality.

The New Zealand Coal and Oil Company have been showing some renewed activity during the year, and have been carrying on boring operations with a view to opening up again. Should they meet with success it will prove a great boon to the residents of the districts. At the present time this company holds a large area of coal-bearing land, which has been for the past eight years, and still is, locked up against any one wishing to take up coal-mining areas.

PRESERVATION.

Crown Gold-mining Company.—The work done by this company during the year was mainly of a prospecting nature, and they were unfortunate in getting their machinery damaged by trees falling across their battery, which will take time and money to repair.

Gulches Head Sluicing Company.—During the year this company went into liquidation, and the claim was taken over by Messrs. Harris and Whittingham, who have been doing a fair amount

of prospecting on the ground. Much work has been done in the way of cutting races, &c., and repairing damage done to their dam by floods. Sluicing-work will begin as soon as water is available.

Morning Star Company.—This company's battery has been put in working-order, and a little crushing has been done, but there was not sufficient stone to keep the battery going. They are putting in a crosscut at a low level to cut the reef. They have driven about 375 ft., and have let a contract to drive this level another 300 ft., which will take about two months to complete.

Tarawera Company.—The smelting plant for this company is now on the ground, and will be erected for the purpose of treating the ores known to exist in this locality. There is reason to believe that developments now taking place at the inlet will provide sufficient ores to keep a large smelter going for many years to come. The mine is admirably situated for the cheap handling of ores, as ample water-power is available at an extremely low cost.

WYNDHAM.

The mining industry in this district has been practically at a standstill for some years, as the gold existing on the beaches between Fortrose and Waikawa is too fine to be payably treated. Only two miners on the beach are able to make a steady living at it.

I have, &c.,

E. CRUICKSHANK, Warden.

ANNEXURE C.

REPORTS OF DIRECTORS OF SCHOOLS OF MINES.

Professor JAMES PARK, M.Inst.M.M., M.A.I.M.E., F.G.S., Director of the Otago University School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Dunedin, 28th April, 1910.

The mining school for the year ended the 31st December, 1909, showed an attendance of thirty registered students, exclusive of twelve who attended the lectures on general geology, and five who kept terms in dental metallurgy.

Twenty-six students presented themselves for examination at the annual October examinations, and all passed except one in mathematics and one in mineralogy. In the New Zealand University November examinations Henry Mayall Budd passed the final examination for the B.Sc. degree, and secured the senior scholarship in electricity and the senior scholarship in geology, being awarded the last; George T. Maunder at the same time secured his M.Sc. degree, with first-class honours in geology.

Two graduates who had passed the necessary examinations and presented satisfactory evidence that they had complied with the regulations relating to practical work were awarded the diploma of Associate in Metallurgy and the certificate in land and mine surveying respectively.

The diplomas granted in the divisions of mining, metallurgy, and geology since 1887 are as follows:—

					Issued up to End of 1908.	Issued in 1909.	Total.
Mining	...	...	...	...	89	...	89
Metallurgy	...	...	...	...	48	1	49
Geology	...	...	...	...	15	...	15
					152	1	153

Among the more important appointments obtained by graduates and old students of the mining school during the past year are the following: C. A. Cotton, Lecturer on Geology at Victoria College, Wellington; J. A. Thomson, Assistant Consulting Geologist, Kalgoorlie, Western Australia; J. McPadden, Director, Coromandel School of Mines; D. M. Tomlinson, General Manager, South Kangiara Mine, New South Wales; P. Fitzgerald, Mine-manager, Prestea Block A, Gold Coast Colony, West Africa; G. Thomson, Mine-manager, Colbalt, Ontario; G. Ahern, Mine-manager, Comet Silver-mines, Dundas, Tasmania; H. E. Allen, Chief Surveyor, Jumpers Gold-mining Company (Limited), Johannesburg, South Africa; W. E. Barron, Chief Surveyor, Van Ryn Gold-mining Company, Benoni, Transvaal; G. H. Royse, Underground Manager, Ferreira Deep Mine, Johannesburg; J. B. Macdonald, Mine-manager, Mazoi, Rhodesia.

SURVEYING COURSE.

In 1901 the instruction in surveying was divided into a course covering two full years. It was rearranged and adapted to the requirements of the Surveyors' Board of Examiners examinations. After a correspondence ranging over a period of two years the Governor in Council has amended the regulations so as to recognise the work of mining graduates, who will now be permitted to sit for the licensed surveyors' examination with having been previously articulated to a licensed surveyor, provided they have complied with the regulations relating to practical work.

LABORATORY.

During the year 255 assays and analyses were made for the public by Professor Waters. During the same period fifty-seven samples of rock or mineral were reported on by the Director, and forty by Professor Marshall, all free of charge.

ACKNOWLEDGMENTS.

In conclusion, the Director wishes to acknowledge his appreciation of the zeal and ability with which Professors Marshall and Waters have carried out the work in their several divisions during the period covered by this report.

I have, &c.,

JAMES PARK, Director.

Mr. A. H. V. MORGAN, M.A., Director of the Waihi School of Mines, to the UNDER-SECRETARY,
Mines Department, Wellington.

Waihi, 30th May, 1910.

SIR,—

I have the honour to report upon the work done at this school of mines during the year ended 31st December, 1910.

Attendance.—The average number of students during the three terms of 1909 was sixty-three, and the average class attendance 159, or approximately two and a half classes per student. These figures have remained practically constant for the last four years, and apparently represent the limit for a town of the population of Waihi.

Examinations.—At the annual examinations conducted by the Mines Department last December, 34 candidates presented themselves for the written papers and 14 for the practical tests. The results are best yet obtained by the school, 33 first-class, 26 second-class, and 9 third-class certificates being awarded. In addition, 19 passes were recorded in the practical examinations, out of 23 entries. Four students qualified for the bullion-assayers' certificate issued by the Department of Trade and Customs. For the second time the only School of Mines Scholarship awarded was gained by a Waihi student, Mr. Noel Carless, with the excellent average of 75.6 per cent. in nine subjects. This scholarship is of the annual value of £50, tenable for three years with free tuition at either Otago or Auckland School of Mines. A comparison of the results obtained by this school with those of all the other schools in the Dominion combined is shown in the following: Waihi School—Number of candidates, 34; first-class certificates, 33; second-class certificates, 26; third-class certificates, 9; failures, 9. Other schools—Number of candidates, 67; first-class certificates, 34; second-class certificates, 29; third-class certificates, 25; failures, 24. There is no doubt that the excellent results obtained are in no small measure due to the liberal prizes awarded by the Council and several private donors. The gold medal presented by the President (Mr. W. H. Johnston) for the highest aggregate in any four subjects was won this year by Mr. A. R. Aitken with an average of 79.5 per cent. Mr. Livesey's gold medal for mining subjects was won by Mr. R. Broad, and Mr. M. F. Haszard's gold medal for surveying by Mr. N. Carless. In addition to the above, a number of valuable text-books have been awarded for the highest marks obtained in each of the other subjects.

Government Certificates.—At the examination for New Zealand Government certificates, held in March, 1909, three students (Messrs. A. Katz, J. R. Spearing, and O. Bell) obtained first-class mine-manager's certificates. At the examination held in April, 1910, two students (Messrs. G. A. C. Ulrich and R. Broad) obtained first-class certificates as mine-managers, and two students (Messrs. P. H. McDonnall and Noel Carless) obtained battery-superintendent's certificates. Altogether twenty-eight students of this school have obtained certificates as first-class metal-mine managers, two as first-class coal-mine managers, forty-one as battery-superintendents, and seventeen as bullion-assayers under the Customs Department. In addition, a number of second-class certificates, engine-drivers' certificates, &c., have been obtained.

In conclusion, I wish to place on record my appreciation of the ability and enthusiasm with which the members of the staff (Messrs. Seeyle, Ellis, and Mitchell) have carried out their duties, and take this opportunity of extending my thanks to the Council and secretary for their unfailing support and assistance.

I have, &c.,

A. H. V. MORGAN, Director.

Mr. F. MCPADDEN, Director of the Coromandel School of Mines, to the UNDER-SECRETARY, Mines
Department, Wellington.

Coromandel, 24th May, 1910.

SIR,—

I have the honour to present my report for the year 1909.

Attendance.—Average individual attendance, seventeen, with a class attendance of thirty-three.

Examinations.—Nine students sat at the annual examinations, and the results obtained were highly satisfactory, being the best for the last seven years. In all 12 first-class, 4 second-class, and 3 third-class certificates were obtained. In six subjects students of the Coromandel School were the highest in the Dominion.

One student (F. K. Broadgate) sat for the School of Mines Scholarship, and he had the excellent average of 75 per cent. for nine subjects. He passed high in the more important mining subjects, but failed by 3 marks in theoretical chemistry and by 9 marks in practical chemistry.

During the year 129 assays were made for the public.

Owing to renewed activity in mining in this field, the outlook for the present year is very promising.

I have, &c.,

J. F. MCPADDEN, Director.

Mr. F. W. REID, Director of the Karangahake School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Karangahake, 30th April, 1910.

I have the honour to present the following report upon the work of the Karangahake School of Mines and the branch school at Waikino for the year ended 31st December, 1909.

Attendance.—The average number of individual students in attendance for the three terms of the year was forty-five, with a class attendance of eighty-seven. There were nine classes in operation at each centre.

Examinations.—At the annual examinations 15 students presented themselves at Karangahake and 13 at Waikino. The passes obtained were 5 first class, 16 second class, and 12 third class, in addition to 20 passes in the practical examinations.

Prizes.—The President's medal, presented by Mr. J. Nodwell for competition at Karangahake, was awarded to Mr. G. Hyde. At Waikino the mathematics prize, presented by the Waihi Students' Association, was won by Mr. S. Fuller, and Mr. L. Wilson secured the Council's prize for drawing and mathematics.

Equipment.—The Pelton wheel installed for driving the dynamo has given entire satisfaction, and greatly facilitated the work of the electrical class. The assay furnace was rebuilt, and several minor improvements carried out. At Waikino an additional room to serve as laboratory for wet assaying is now in course of erection.

Library.—The students largely availed themselves of the standard works supplied by the Department for their use. These books are a decided acquisition to the library. The Department might with advantage include a few works on the metallurgical treatment of ores, in which most of the students at Waikino are interested. There can be no doubt that this is as integral a part of the mining industry as the exploitation of the mines themselves.

Mineral Collection.—This has been increased by addition of specimens from various sources, but chiefly by a representative collection of Tasmanian ores kindly forwarded by Mr. D. V. Allen, Director Zeehan School of Mines.

Assays.—A large number of assays were made for prospectors and tributers, in the former case free of charge.

Staff.—Mr. C. Banks resigned from the instructorship in drawing at Waikino, his place being taken by Mr. S. Fraser.

I have again to record my appreciation of the zealous work done by the members of the teaching staff, and to express my thanks to the Council and secretary for their assistance and support.

I have, &c.,

F. W. REID, Director.

Mr. J. HENDERSON, M.A., D.Sc., Director of the Reefton School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Reefton, 18th March, 1910.

I have the honour to submit the following report on the work of the Reefton School of Mines for the year 1909.

The total number of students on the roll for the three terms was 27, 34, and 28 respectively, and the class attendance for the same periods 18, 24, and 26 respectively. The distance that most of the students reside from the school makes the attendance in bad weather most unsatisfactory.

Instruction was given in chemistry, assaying, metallurgy, mathematics, surveying, drawing, and all mining subjects. A class was also conducted in electricity, but the almost total lack of apparatus reduced the value of the instruction given.

At the annual December examinations seven students sat. It is with the greatest difficulty that any can be induced to sit, as in the majority of cases sitting for the examinations means changing shifts or losing a shift altogether.

So far 34 students of this school have succeeded in obtaining first-class mine-managers' certificates and 20 battery-superintendents' certificates.

For the year, 189 assays were made, the bulk of these for gold only; coals and fireclays were also analysed; other samples were examined for copper, molybdenum, tungsten, and tin, usually with negative results. As in former years, most prospectors' samples were reported on free of charge.

The lending library has been largely used, and contains, with the addition of the volumes supplied by the Mines Department, over 100 volumes.

I have, &c.,

J. HENDERSON, M.A., D.Sc., Director.

Mr. W. F. WORLEY, Director of the Nelson School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Nelson, 15th March, 1910.

I have the honour to present the subjoined report upon school-of-mines work carried on in Nelson during the year 1909. It is gratifying to be able to state that interest in the work attempted is well sustained. As most of the work is done gratuitously, this lively interest carries with it some reward, which acts as a stimulus to continue.

The most important part of our work is still the blowpipe analysis classes for boys attending the Nelson Boys' School. These classes are held in one of the class-rooms of the school after the ordinary day-school has closed. Two of these classes were in session from the beginning of April

to the end of December. There were thirteen lads in each class, and each class met for one hour per week. The attendance was good, and their progress satisfactory. It would, I think, astonish many an old prospector to see how quickly these boys, after a few months' teaching, can extract malleable lead from a piece of galena, or bright shining flakes of tin from tinstone. Then, too, they are able to identify with equal facility the ores of arsenic, antimony, bismuth, zinc, copper, chrome, cobalt, iron, nickel, and manganese. The panning-off of washdirt, and the finding of the specific gravity of minerals are also practised.

I regret to state that assaying has fallen off almost to vanishing-point, the number of assays and tests for the year being only eight.

One lady student took a course of lessons in practical chemistry, and the lecture on "Volcanoes," given once near the close of 1908, was repeated five times during the past year. As less time is now taken up with assaying, more attention is being given to this branch of scientific work, which promises to become increasingly popular.

I have, &c.,

W. F. WORLEY, Director.

Mr. SIDNEY FRY, Director of the Westport School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Westport, 16th February, 1910.

I have the honour to report upon the work done by the Westport School of Mines during the year 1909.

Instruction was given by the Director in nine subjects, and the average attendance of students studying these subjects is 4·2.

In addition to the eighteen individual students attending the above classes, we have had a class of five from the Westport Technical School, who were instructed in chemistry. For the present year we have been requested to take them for physics instead; their class now numbers eight.

Five students presented themselves at the annual class-examinations, but, with one exception, the results were very disappointing. This is largely due to the fact that with the one exception mentioned those who sat were very young students, aged from twelve to fifteen years.

During the past year eighty-three assays and analyses were undertaken, notwithstanding the very poor facilities afforded by the structure in which operations have had to be carried on during that period. The analytical work included assays for gold, silver, and copper, analyses of coal, clay for brickmaking, rock for monazite, tests of minerals for radio-activity, identification of rocks and minerals for the Charleston Prospecting Association, and the assay and cleaning of base bullion for the banks.

At the end of last year the apparatus was moved into the permanent School of Mines building, and the work of teaching, as well as assay and analytical work, may now be carried on much more expeditiously than formerly. The museum in connection with the school is likely to prove a great advantage, and as soon as case accommodation can be provided, a more scientific classification of the rocks and minerals than the present temporary arrangement will be carried out. Since the school received the books sent by the Mines Department for use as a lending library, these books have been much in demand by students for the purpose of home study.

I have, &c.,

SIDNEY FRY, Director.

Mr. W. H. BAKER, B.Sc., Director of the Thames School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Thames, 27th May, 1910.

I have the honour to report on the work of the Thames School of Mines for the year ended the 31st December, 1909, as follows:—

The attendance has shown a slight increase, and the interest of the students in their work is well maintained. The mining industry is still labouring under the depression.

The following statement shows the attendance of last year and the first term of the current year: For 1909—Individual registered students, first term 29, second term 31, third term 30; attendance at classes, first term 44, second term 43, third term 49; High School chemistry class, first term 28, second term 25, third term 17; Saturday science class, first term 26, second term 22, third term, 20; elementary electricity, first term 17, second term 12, third term 8: total class attendance, first term 115, second term 102, third term 94. For 1910 (first term)—Individual registered students, 36; attendance at classes, 53; Saturday science class, 44: total class attendance, 97.

The High School chemistry class was carried on most successfully during last year, but as attendance at the School of Mines involved the loss of a considerable amount of time on the part of the students, the class was not resumed. The elementary electricity class was also discontinued. Several of these students now attend the ordinary electrical course.

Both electricity and drawing classes have shown decided increases in attendance.

Examinations.—At the annual Government Schools of Mines examination 16 candidates presented themselves, and obtained 13 first-class, 10 second-class, and 7 third-class certificates. Two elementary-science students sat for the examination, and obtained third-class certificates. Two candidates sat for the mine-manager's certificate, and one (Mr. F. Autridge) succeeded in completing his partial pass.

Equipment.—Owing to various causes, the experimental plant is not yet in running-order, but the contractors are at present engaged in completing the necessary details. Considerable

delay has been caused in getting a suitable compressor, as the required size is not stocked. When completed the mill will give a very accurate working test, and should be run at considerably less expense than the old mill.

I have to acknowledge receipt of various samples donated to the Museum.

During 1909 275 assays were made for the public, including those done for prospectors.

I wish to express my appreciation of the work done by the staff, and of their zeal and willingness at all times to further the advance of the school.

I have, &c.,

W. H. BAKER, Director.

ANNEXURE D.

REPORTS OF WATER-RACE MANAGERS.

MR. JAMES ROCHFORD, Manager of Waimea-Kumara Water-races, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Kumara, 9th May, 1910.

I have the honour to present my report on the working of the Waimea-Kumara water-races for the financial year ended 31st March, 1910.

WAIMEA RACE.

The cash received for sales of water from this race for the year ended 31st March, 1910, was £938 17s. 5d., and the expenditure on gauging, maintenance, and repairs amounted to £574 9s. 8d., showing a credit balance of £364 7s. 9d. on the year's transactions.

The average number of miners supplied with water from the race during the year was thirty-five, showing an increase of 3.75 as compared with the previous year, and the approximate quantity of gold obtained by them was 1,965 oz., having a value of £7,663 10s.

The total sales of water for the year amounted to £942 7s. 10d., or £224 14s. 4d. more than the previous year, and the quantity of gold obtained was approximately 531 oz. greater, representing an increase in value of £2,070 18s.

The cash received for sales of water was £207 19s. 11d. greater than during the previous year.

The expenditure on gauging, maintenance, and repairs amounted to £21 9s. 5d. more than the preceding year, and the head-works at the Wainihinihi and Kawhaka, the Waimea siphon and tunnels, and the main and branch races have been maintained and are now in good working-order.

Temporary repairs were effected to the high flumings along the line of race near Fox's and Greek's during the Christmas and Easter holidays, and on various Sundays throughout the year; but they are in such a decayed state that it is impossible to carry out anything like permanent repairs, but by strict supervision they may be kept workable for another year or two.

The revenue from the Stafford section of this race shows a slight improvement on the previous year, and there is still a large area of ground in the vicinity that will pay for sluicing. Some of this ground was taken up during the year, and an application was made for twelve heads of water for five hours daily, but, owing to the large demand at Waimea, no water was available. Should a falling-off in the demand for water take place at Callaghan's, Middle Branch, or Waimea, it could be sold without difficulty in this locality for many years to come. It would cost the Department about £400 to increase the carrying-capacity of the existing races, so that this ground could be worked on up-to-date principles, but I feel satisfied that they would be amply repaid for the outlay.

Linklater and party worked steadily throughout the year, with satisfactory results, and purchased water to the value of £206 14s. 5d. In reporting on the construction of a branch race from Tunnel Terrace to Linklater and party's claim at Lower German Gully on the 8th June, 1907, I stated that the receipts from the sale of water which at that time was running to waste would pay the Government subsidy of £1 for £1 in less than two and a half years, and after that time all moneys received would be clear profit, as no additional expenditure for maintenance was involved; and the Department's share of the pipes, allowing a reasonable amount for depreciation, would be worth at least £220. I am pleased to say that, so far, that statement has been more than borne out by the results obtained. The Government expended £404 17s. 3d. on the work, and in less than eighteen months Linklater and party have purchased water to the value of £308 1s. 3d.

At Tunnel Terrace six parties have been taking water from the race during the year, with satisfactory results, and there is no indication whatever of a falling-off in the demand for water in this locality.

There was an excellent supply of water during the year, and the Waimea siphon was taxed to its full carrying-capacity, but, notwithstanding this fact, the demand for water was considerably in excess of the supply.

The water was off for seven days during the year, owing to breaks in the race.

Taking into consideration the reduced price of water, the sales for the year constitutes a record in the history of the Waimea Water-race, and represents an increase of over 207 per cent. since I took charge in July, 1905.

The following is a summary of the revenue and expenditure of the Waimea Water-race for the year ended 31st March, 1910: Sales of water, £942 7s. 10d.; cash received, £938 17s. 5d.; expenditure, £574 9s. 8d.; approximate quantity of gold obtained, £7,663 10s.; average number of men employed, 35.

BRANCH RACE TO CALLAGHAN'S AND MIDDLE BRANCH OF WAIMEA CREEK.

The cash received from this race during the year ended 31st March, 1910, was £465 13s., and the expenditure for the same period on gauging, maintenance, and repairs amounted to £602 12s. 10d., showing a debit balance of £136 19s. 10d. on the transactions for the year.

The average number of miners supplied with water was 15·75, an increase of 6·75 as compared with last year, and the approximate quantity of gold obtained by them was 1,381 oz., having a value of £5,385 18s.

The sales of water amounted to £435 16s. 8d., an increase of £13 15s. 5d. on the previous year, and the cash received showed an increase of £66 16s. 2d.

The approximate quantity of gold obtained by the miners was 160 oz. greater than during the previous year, representing an increase in value of £624. The expenditure on gauging, maintenance, and repairs was £30 18s. 9d. less than the previous year, and the races have been well maintained, and are now in good order.

M. Hanrahan and party are still working their claim near Goldsborough. A subsidy of £135 was granted by the Department in March, 1908, for the extension of the Middle Branch Race to convey water on to this property, and since its completion some fifteen months ago Hanrahan and party have paid £136 5s. for water, and no additional maintenance has been incurred.

Only two parties sluiced into the Waimea Main Tail-race during the year, but it commands a considerable area of payable ground, which is at present locked up by the Hokitika-Kumara Road. Owing to the position of this road, some of the parties sluicing into the Main Tail-race were compelled to hang up their claims over three years ago, but they left their plant on the ground in the hope that the road would be shifted, and thus enable them to again start sluicing. Flushing-water was supplied to the Main Tail-race during the year free of charge.

At Callaghan's Flat Havill and party worked steadily throughout the year, but were greatly handicapped by the hard nature of the ground, which the limited pressure from the Callaghan's Race was unable to cope with. This party went to considerable expense in constructing dams and water-races to store and convey flood-water on to their claim, at a higher level than the Callaghan's Water-race, so as to break down the ground more readily, and since this work has been completed the returns have shown a decided improvement. Manzoni and party had a successful year, but the quantity of water purchased was not as great as during previous years. This is chiefly accounted for by the wetness of the season and the large amount of drainage conserved from time to time in their private dams, which enabled them to do a lot of sluicing independent of the Government water.

Cook and Honey completed their 1,700 ft. of subsidised channel from the Little Kapitea Creek to Callaghan's Flat in August last; but, instead of immediately starting to sluice at this point, as they originally intended to do, they decided to drive an additional 530 ft. without subsidy, so as to open up their ground to better advantage. This party was engaged for a period of seventeen months in driving, boxing, and blocking 2,230 ft. of tunnel tail-race, sinking shafts, and cutting water-races to open up their property. The whole of the work has been carried out in a most creditable manner, and it is to be hoped that they will be well rewarded for their energy and enterprise.

Although the sales of water from the Callaghan's Race showed a slight improvement on the previous year, they would have been considerably greater but for the fact that Cook and Honey (owing to the additional work above-mentioned) only used water during the months of February and March. Now that their ground is opened up and the channel working well, the demand for water for some years to come should show a decided improvement, and be quite equal to the available supply. Authorised free water to the amount of £18 15s. was supplied from this race during the year.

The following is a summary of the revenue and expenditure of this race for the financial year ended 31st March, 1910: Sales of water, £435 16s. 8d.; cash received, £465 13s.; expenditure, £602 12s. 10d.; approximate value of gold obtained, £5,385 18s.; average number of miners employed, 15·75.

KUMARA RACE.

The cash receipts for sales of water from this race for the year ended 31st March, 1910, was £355 2s. 10d., and the expenditure on gauging, maintenance, and repairs was £644 19s. 9d., showing a debit balance of £289 16s. 11d.

The average number of miners supplied with water was 12·16, an increase of 1·91 on the previous year, and the approximate quantity of gold obtained by them was 720 oz., of the value of £2,808.

The total sales of water for the year amounted to £326 10s. 10d., a decrease of £53 13s. 9d. on the preceding year, and the cash received for sales of water shows a decrease of £9 0s. 1d.

The approximate quantity of gold obtained by the miners was 37 oz. less than during the previous year, representing a decrease in value of £144 6s.

The expenditure on gauging, maintenance, and repairs was £43 9s. 2d. greater than during the previous year, but £30 15s. of this amount was expended in repairing and strengthening the No. 1 Kapitea Dam, which is now in an excellent condition, and should last for many years to come.

The maintenance of No. 5 siphon cost over £20 during the year, and will be the source of further expense in the near future. These pipes were made by contract over eleven years ago, and were specified to be of No. 12 B.W.G. iron, but a number of steel sheets of a lighter gauge were mixed with the iron, and used in the construction of the pipes, and they are now in such a condition from oxidation that they are liable to burst at any moment. Had the steel sheets been kept together the cost of repairs would not be nearly so great; but, unfortunately, they were worked in indiscriminately, and at the present time may be seen in different pipes along the line.

The head-race tunnel was well maintained during the year, and is now in good order, with the exception of some of the lining outside the timber-sets, which is in a decayed state, and will require renewing at an early date. The maintenance and supervision of this tunnel is of the utmost importance, because it is the only supply race from the Government watershed in the Kapitea Creek, and is therefore the key of the whole water system, not only of the Kumara field, but of the proposed extension to the north bank of the Taramakau River.

Although the sales of water from this race showed a decrease on the previous year, the falling-off is only temporary, and entirely due to the fact that the Long Tunnel Company used no water for three months of the year.

Taking into consideration the new claims now preparing to open out, the outlook on the Kumara field is more hopeful than it has been for the past two or three years, and the sales of water for the ensuing year should have an upward tendency.

The usual quantity of flushing-water authorised by the Department was supplied to the Nos. 3, 4, and 5 Channels, and to the Kumara Borough for fire brigade and other purposes free of charge.

The following is a summary showing the revenue and expenditure of the Kumara Race for the financial year ended 31st March, 1910: Sales of water, £326 10s. 10d.; cash received, £355 2s. 10d.; expenditure, £644 19s. 9d.; approximate value of gold obtained, £2,808; average number of men employed, 12·16.

WAIMEA-KUMARA WATER-RACE.

The following is a summary of the revenue and expenditure of this race for the financial year ended 31st March, 1910: Sales of water, £1,704 15s. 4d.; cash received, £1,759 13s. 3d.; expenditure, £1,822 2s. 3d.; approximate quantity of gold obtained, £15,857 8s.; average number of men employed, 62·91.

It will be seen by the above summary that the value of sales of water from the combined races for last year was £1,704 15s. 4d., as against £1,519 19s. 4d. for the previous year, thus showing an increase in the value of sales of water for the past year of £184 16s.

The total expenditure on gauging, maintenance, and repairs was £1,822 2s. 3d., as against £1,788 2s. 5d. for the previous year, an increase in the cost of maintenance and repairs last year of £33 19s. 10d.

The cash received during the year was £1,759 13s. 3d., as against £1,493 17s. 3d. for the previous year, thus showing an increase in revenue of £265 16s.

In my last annual report I stated that the combined races should show a profit for the year ending 31st March, 1910, and my expectations would have been realised but for certain unlooked-for circumstances already detailed in this report. Comparatively speaking, however, the result for the year must be considered satisfactory, and shows a marked improvement on the position that obtained some five years ago. The loss on the working of the Waimea-Kumara water-races for the year ended 31st March, 1905, was £1,409 14s. 9d., and, notwithstanding the fact that the price of water was reduced 50 per cent. in May of that year, the annual deficit has steadily diminished, and last year it only amounted to £62 9s., and unless some serious break takes place they must pay a profit for the ensuing year.

WAINIHINIHI WATER-RACE.

There was an excellent supply of water from this race during the year, and, together with the water from the Kawhaka Race, the Waimea siphon (which supplies the Waimea, Callaghan's, and Middle Branch Races) was kept full all the year. No breaks occurred, and there were no stoppages during the year. The race was well maintained, and is now in a thorough state of repair.

I have, &c.,

JAMES ROCHFORD, Manager Water-races.

Mr. ROBERT MURRAY, Manager of the Central Otago Water-races, to the UNDER-SECRETARY, Mines Department, Wellington.

Sir,—

Naseby, 19th April, 1910.

I have the honour to submit the following report on the Mount Ida, Blackstone Hill, and Alexandra Water-races for the year ending 31st March, 1910:—

The total sales of water from the Mount Ida Race during the year amounted to £1,121 17s. 3d., an increase over that of last year of £43 9s. The expenditure on maintenance and repairs for the same period was £1,698 17s. 6d., a decrease of £3 17s. 4d. over that of last year. The total cash received was £1,121 17s. 3d. On account of payment in advance, free water to the value of 16s. 10d. was supplied, and free water for washing up was also supplied to the value of £92 1s. 1d.

The total value of water supplied from this race during the year amounted to £1,214 15s. 2d., an increase over that of last year of £44 10s. 9d. The average number of miners supplied with

water was thirty-six, a decrease of three from that of last year. The approximate quantity of gold obtained by parties using water from this race was 1,529 oz., valued at £5,905 15s. 3d., an increase of 70 oz. over that of last year.

During the year several small repairs were made to the distributing races.

Opportunity was taken when cleaning the main race to widen the intakes of the Eweburn Tunnel from 4 ft. to 6 ft., thus giving the water a smooth run, which allows of from two to three extra heads to be passed through it. The siphon across the Wedderburn Creek had to be given a thorough overhaul, as it was leaking badly at the joints; also had to renew a large box in Hill's Creek, which stops the shingle in flood-time from getting along the race, and put a gauge-box in the Blackstone Hill Race, to gauge the water sent on to the Dillons; and a single frame to turn the surplus water into the Mount Ida Race.

BLACKSTONE HILL RACE.

The total sales of water from this race during the year amounted to £17 10s. 1d. The total cash received was £17 10s. 1d. The expenditure on maintenance and repairs was £2 8s. The number of men employed was two (Dillon Bros.). The season being so dry, and farming as well, they only worked intermittently. When not required by them the water is sent on in the Mount Ida Race to Naseby.

ALEXANDRA WATER-RACE.

The total sales of water from this race during the year amounted to £175 11s. 8d. The total cash received was £175 11s. 8d. On account of payment in advance, free water to the value of £10 was also supplied. The total value of water supplied from this race during the year amounted to £185 11s. 8d. The total expenditure amounted to £425 8s.

In October a break occurred in the section of the race along the face of the Galloway Range, which I repaired; and repairs had to be done to the upper section by maintenance men.

Three parties of miners were supplied with water during the year, the Manorburn Sluicing Company being the principal consumers.

Nine different farmers use water from this race for irrigation, and they are anxious to get it at the price charged to the miners, thus no water goes to waste.

I have, &c.,

R. MURRAY, Manager.

ANNEXURE E.

MINING STATISTICS.

Table 1.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several Districts of the Dominion of New Zealand for the Period from the 1st January to the 31st December, 1909.

District.	Miners' Rights.	Business Licenses, Machine and Residence Sites.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Totals.
AUCKLAND.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Coromandel ..	66 10 0	64 5 0	0 5 0	320 5 3	9 17 0	26 1 0	12 12 0	499 15 3
Te Aroha ..	40 5 0	677 5 0	31 10 0	82 6 6	8 2 0	16 8 0	3 6 0	859 2 6
Paeroa ..	88 0 0	199 1 4	..	1,224 6 0	..	..	260 17 10	1,772 5 2
Thames ..	184 5 0	..	0 15 0	1,366 1 4	20 2 0	38 17 0	230 14 3	1,840 14 7
Pubipubi ..	1 15 0	..	..	6 0 0	..	2 19 0	..	10 14 0
Tauranga ..	2 0 0	..	..	..	..	..	1 12 0	3 12 0
Waihi ..	164 0 0	612 12 0	..	1,346 1 1	58 5 0	89 8 2	371 9 5	2,641 15 8
Totals ..	546 15 0	1,553 3 4	32 10 0	4,345 0 2	96 6 0	173 13 2	880 11 6	7,627 19 2
NELSON.								
Motueka ..	3 5 0	..	..	20 3 10	0 6 0	0 4 0	..	23 18 10
Collingwood and Takaka ..	11 5 0	0 6 0	0 10 0	328 14 10	1 4 0	2 6 0	15 14 9	360 0 7
Westport, Seddonville, and Granity ..	102 5 0	19 5 0	6 15 0	349 1 1	22 16 0	70 19 6	15 3 6	586 5 1
Charleston ..	20 10 0	..	0 10 0	21 7 7	1 0 0	1 5 0	0 16 0	45 8 7
Ahaura ..	58 5 0	18 11 3	3 5 0	277 11 9	11 17 0	23 12 0	69 5 0	462 7 0
Reefton ..	73 15 0	14 11 0	..	874 9 0	7 10 0	37 13 0	181 1 10	1,188 19 10
Lyll and Murchison ..	13 10 0	1 15 0	2 7 0	130 11 3	1 10 0	6 2 0	17 1 0	172 16 3
Nelson ..	5 5 0	..	..	5 9 4	..	..	2 0 0	12 14 4
Totals ..	288 0 0	54 8 3	13 7 0	2,007 8 8	46 3 0	142 1 6	301 2 1	2,852 10 6
MARLBOROUGH.								
Havelock ..	10 15 0	..	..	30 19 10	0 14 0	2 18 0	6 13 0	51 19 10
Blenheim ..	14 10 0	..	..	102 4 1	..	1 18 6	23 7 6	142 0 1
Totals ..	25 5 0	..	..	133 3 11	0 14 0	4 16 6	30 0 6	193 19 11
WESTLAND.								
Hokitika and Kaniere ..	57 0 0	28 5 0	2 0 0	423 10 11	14 13 0	29 4 0	66 9 3	621 2 2
Greymouth ..	84 10 0	..	1 5 0	980 0 4	3 11 0	21 17 0	13 15 0	1,104 18 4
Ross ..	28 10 0	..	2 15 0	214 18 5	9 8 0	25 10 0	36 19 0	318 0 5
Stafford and Goldsborough ..	22 10 0	0 5 0	..	636 7 10	..	33 7 6	1 1 0	693 11 4
Okarito ..	7 10 0	0 10 0	1 5 0	81 3 0	1 14 0	5 18 0	0 10 0	98 10 0
Kumara ..	52 10 0	..	1 10 0	199 11 2	7 9 0	13 17 0	5 1 0	279 18 2
Totals ..	252 10 0	29 0 0	8 15 0	2,535 11 8	36 15 0	129 13 6	123 15 3	3,116 0 5
CANTERBURY.								
Ashburton ..	1 0 0	..	..	..	..	..	..	1 0 0
OTAGO AND SOUTHLAND.								
Middlemarch ..	2 5 0	..	0 5 0	13 13 4	0 6 0	..	..	16 9 4
Tapanui ..	0 15 0	..	..	1 0 0	..	..	..	1 15 0
Hindon ..	16 15 0	..	..	35 15 0	..	..	0 12 0	53 2 0
Naseby ..	32 15 0	0 3 0	..	630 19 3	..	..	26 19 0	690 16 3
Black's Alexandra } Clyde } Roxburgh }	99 5 0	21 0 0	23 15 0	1,740 0 6	25 12 0	49 17 0	6 6 1	1,965 15 7
Cromwell ..	56 0 0	21 18 11	0 10 0	642 16 8	48 15 0	44 0 0	13 15 10	827 16 5
Queenstown ..	57 5 0	5 5 0	0 5 0	469 6 11	13 19 0	29 9 0	23 15 0	599 4 11
Lawrence ..	48 5 0	..	4 5 0	617 1 1	8 2 0	20 8 0	30 13 0	728 14 1
Orepuki ..	..	..	..	27 7 11	4 18 0	11 7 0	42 4 0	85 16 11
Riverton and Longwood ..	32 10 0	0 1 0	..	222 16 7	3 6 0	10 4 0	20 6 0	289 3 7
Pembroke ..	4 0 0	..	..	..	..	2 14 0	..	6 14 0
Waikaia ..	8 5 0	3 0 0	3 0 0	488 11 11	0 1 0	13 4 0	14 12 0	530 13 11
Wyndham ..	1 10 0	..	0 10 0	24 3 9	0 4 0	0 12 0	0 10 0	27 9 9
Gore ..	8 10 0	..	..	131 13 7	0 17 0	3 16 0	8 1 0	152 17 7
Totals ..	368 0 0	51 7 11	32 10 0	5,045 6 6	106 0 0	185 11 0	187 13 11	5,976 9 4
Grand totals ..	1,481 10 0	1,687 19 6	87 2 0	14,066 10 11	285 18 0	635 15 8	1,523 3 3	19,767 19 4

Table 2.

STATEMENT showing the REVENUE of the GOLDFIELDS collected in the several Districts of the Dominion of New Zealand for the Period from the 1st January to the 31st March, 1910.

District.	Miners' Rights.	Business Licenses, Machines and Residence Sites.	Water-races, Sluices, &c.	Gold-mining Leases, Rents, and Royalties.	Registration.	Fees and Fines, Wardens' Courts.	Miscellaneous.	Totals.
AUCKLAND.								
Coromandel ..	£ s. d. 9 10 0	£ s. d. 22 0 0	£ s. d. 0 10 0	£ s. d. 87 13 11	£ s. d. 2 14 0	£ s. d. 1 15 0	£ s. d. 9 4 0	£ s. d. 133 6 11
Thames ..	24 10 0	..	..	521 7 10	7 13 0	11 18 0	16 14 0	582 2 10
Te Aroha ..	3 15 0	63 1 8	13 0 0	263 5 4	2 18 0	1 13 0	..	347 13 0
Paeroa ..	17 0 0	36 4 0	..	477 9 5	..	..	64 19 3	595 12 8
Puhipuhi ..	0 15 0	..	..	..	..	..	..	0 15 0
Tauranga ..	1 0 0	..	..	..	..	..	1 1 0	2 1 0
Waihi ..	44 10 0	134 9 6	..	559 11 3	18 12 0	24 15 0	33 2 1	814 19 10
Totals ..	101 0 0	255 15 2	13 10 0	1,909 7 9	31 17 0	40 1 0	125 0 4	2,476 11 3
NELSON.								
Collingwood and Takaka	3 0 0	..	0 10 0	129 5 0	0 5 0	..	3 13 0	136 13 0
Westport, Seddonville, and Granity	31 5 0	12 5 0	1 10 0	124 9 9	7 1 0	15 3 0	3 8 0	195 1 9
Charleston ..	6 0 0	..	..	28 19 3	0 5 0	1 10 0	0 11 0	37 5 3
Ahaura ..	9 10 0	1 10 0	1 5 0	62 18 10	2 2 0	6 18 0	12 12 0	96 15 10
Reefton ..	17 0 0	4 0 0	..	336 15 9	1 7 0	17 18 0	51 6 0	428 6 9
Lyell and Murohison	5 5 0	..	0 11 0	77 2 5	0 3 0	1 16 0	0 6 0	85 3 5
Motueka ..	0 5 0	..	..	2 1 8	..	..	..	2 6 8
Nelson ..	0 10 0	..	..	..	..	..	..	0 10 0
Totals ..	72 15 0	17 15 0	3 16 0	761 12 8	11 3 0	43 5 0	71 16 0	982 2 8
MARLBOROUGH.								
Havelock ..	0 10 0	..	..	9 14 4	..	0 7 0	1 7 0	11 18 4
Blenheim ..	2 0 0	..	..	62 0 0	..	0 10 0	0 6 0	64 16 0
Totals ..	2 10 0	..	..	71 14 4	..	0 17 0	1 13 0	76 14 4
WESTLAND.								
Hokitika and Kaniere	14 15 0	4 10 0	1 0 0	131 14 7	3 7 0	20 8 0	14 0 0	189 14 7
Grey mouth ..	18 5 0	..	..	147 14 2	1 0 0	5 10 0	156 4 0	328 13 2
Ross ..	2 5 0	..	0 5 0	50 10 0	0 16 0	3 11 0	4 2 0	61 9 0
Stafford and Goldsborough	6 5 0	..	..	56 19 9	..	3 13 0	..	66 17 9
Kumara ..	11 0 0	..	0 5 0	52 18 6	2 12 0	3 5 0	2 1 0	72 1 6
Okarito ..	1 5 0	..	..	12 10 0	..	1 10 0	..	15 5 0
Totals ..	53 15 0	4 10 0	1 10 0	452 7 0	7 15 0	37 17 0	176 7 0	734 1 0
OTAGO AND SOUTHLAND.								
Hindon ..	6 10 0	..	..	13 17 6	..	..	0 2 0	20 9 6
Naseby ..	10 15 0	..	..	68 5 1	..	..	9 19 0	88 19 1
Roxburgh	21 0 0	1 16 0	3 10 0	514 5 5	4 3 0	12 12 0	0 12 0	557 18 5
Alexandra								
Clyde ..	..	..	..	..	..	..	..	..
Black's ..	..	..	..	..	..	..	..	..
Pembroke ..	0 15 0	..	..	..	..	0 11 0	..	1 6 0
Cromwell ..	11 0 0	5 15 0	0 5 0	233 13 6	20 13 0	14 9 0	2 4 6	288 0 0
Queenstown ..	13 10 0	1 10 0	..	114 4 9	2 0 0	4 15 6	17 0 0	153 0 3
Lawrence ..	10 15 0	..	0 15 0	203 7 11	3 6 0	3 6 0	1 10 0	222 19 11
Waikaiti ..	1 0 0	3 0 0	0 12 0	97 8 9	0 1 0	2 16 0	7 12 0	112 9 9
Orepuki ..	..	..	..	8 13 0	0 1 0	0 14 0	0 4 0	9 12 0
Riverton ..	7 15 0	..	..	103 19 3	..	1 18 0	1 4 0	114 16 3
Wyndham ..	0 5 0	..	0 5 0	1 0 0	0 2 0	..	..	1 12 0
Middlemarch ..	0 5 0	..	..	9 12 1	0 2 0	..	..	9 19 1
Gore ..	2 10 0	..	..	34 5 6	0 9 0	0 10 0	1 2 0	38 16 6
Totals ..	86 0 0	12 1 0	5 7 0	1,402 12 9	30 17 0	41 11 6	41 9 6	1,619 18 9
Grand totals ..	316 0 0	290 1 2	24 3 0	4,597 14 6	81 12 0	163 11 6	416 5 10	5,889 8 0

Table 3.

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1909.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.			Gold obtained.		Estimated Value.					
					Amalgamation.	Cyanide.						
WAIHI BOROUGH.												
		Tons	cwt.	qr.	lb.	Oz.	dwt.	Oz.	dwt.	£	s.	d.
Waihi—												
Waihi	1,500	416,813	0	0	0	114,963	0	1,508,731	0	924,145	19	11
Grand Junction	424	59,669	0	0	0	..	..	105,104	15	99,838	13	3
Sundries from various sources	23	23,950	0	0	0	..	..	26,386	0	10,058	17	6
	1,947	500,432	0	0	0	114,963	0	1,640,221	15	1,034,043	10	8
OHINEMURI COUNTY.												
Waitekauri—												
New Waitekauri	5	146	12	0	0	..	..	232	15	216	0	6
Scotia	5	116	0	0	0	52	15	85	0	201	6	2
Crossus	4	105	0	0	0	350	14	515	2	636	9	8
Maoriland	8	98	0	0	0	36	8	..	..	108	14	10
	22	465	12	0	0	439	17	832	17	1,162	11	2
Karangahake—												
Talisman	325	46,456	0	0	0	48,244	12	245,615	3	208,885	15	10
New Zealand Crown	44	Cleaning up			..	..	..	102	18	250	6	10
Karangahake	7	45	0	0	0	19	14	..	..	39	7	6
Ludwig and Graham (prospecting)	2	0	0	1	4	18	12	..	..	46	10	0
	378	46,501	0	1	4	48,282	18	245,718	1	209,222	0	2
Komata—												
Komata Reefs	70	13,390	0	0	0	5,022	3	31,356	7	24,417	1	7
Totals	470	60,356	12	1	4	53,744	18	277,907	5	234,801	12	11
PIAKO COUNTY.												
Waiorongamai—												
Bendigo	5	5	0	0	0	14	0	..	..	17	10	0
COROMANDEL COUNTY.												
Waikoromiko—												
Four-in-Hand	10	0	0	1	7	28	6	..	..	83	2	6
Kennedy and Ross	2	1	0	0	0	29	10	..	..	86	0	0
	12	1	0	1	7	57	16	..	..	169	2	6
Tokatea—												
Royal Oak	13	7	2	0	11	628	0	..	..	1,791	8	3
Pride of Tokatea	8	3	1	3	4	56	17	..	..	160	12	0
West Tokatea	4	0	10	0	7	8	17	..	..	23	0	0
Shotover	2	2	0	0	0	0	18	..	..	2	5	0
Pretty Jane	2	3	0	0	0	1	15	..	..	5	3	0
Exalt	2	0	0	0	2	1	18	..	..	4	17	6
	31	15	13	3	24	698	5	..	..	1,987	5	9
Kapanga—												
Kapanga	18	110	0	0	0	104	12	..	..	295	0	2
Scotty's	2	0	0	0	8½	22	5	..	..	68	2	9
	20	110	0	0	8½	126	17	..	..	363	2	11
Hauraki Block—												
Hauraki Freehold	7	222	1	0	21	417	19	..	..	1,194	14	6
Old Hauraki	16	104	12	0	7	498	4	..	..	1,512	2	9
	23	326	13	1	0	916	3	..	..	2,706	17	3
Kuaotunu—												
Mountain King	8	30	0	0	0	69	5	..	..	214	16	1
Handsworth	7	26	0	0	0	269	13	..	..	650	9	0
New Waitaia	12	197	0	0	0	79	6	71	15	362	6	10
Otama	2	3	0	0	0	197	0	..	..	462	19	0
	29	256	0	0	0	615	4	71	15	1,690	10	11
Totals	115	709	7	2	11½	2,414	5	71	15	6,916	19	4

Table 3—continued.

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the HAURAKI MINING DISTRICT for the Year ended the 31st December, 1909—continued.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
THAMES COUNTY AND BOROUGH.					
		Tons cwt. qr. lb.	Oz. dwt.	Oz. dwt.	£ s. d.
Puhoi Creek	1	0 0 0 8	5 5	..	13 2 6
Gumtown—					
Kapawai	5	28 10 0 0	39 3	..	96 17 10
Tararu—					
Day Dawn and Norfolk Mines	14	966 0 0 0	134 6	235 10	676 1 0
Tararu Creek	1	8 7 0 0	60 14	3 10	157 0 0
Waitangi	12	493 0 0 0	370 16	..	1,280 12 5
	27	1,467 7 0 0	565 16	239 0	2,113 13 5
Moanatairi—					
Moanatairi	12	15 0 0 0	14 2	..	37 18 7
Kuranui-Caledonian	5	9 0 0 15	22 2	..	62 1 3
Old Alburnia	12	9 11 2 2	202 14	..	519 19 9
Point Russell	8	12 0 0 0	30 8	..	79 6 9
Thames Foreshore	15	4,105 0 0 0	..	1,103 16	1,496 6 10
Hidden Treasure	5	21 2 0 27	365 10	..	912 10 0
	57	4,171 13 3 16	634 16	1,103 16	3,108 3 2
Kuranui—					
Kuranui	6	16 0 0 0	7 11	..	16 14 10
Waiotahi—					
Waiotahi	28	1,495 1 3 10	3,169 7	555 9	10,115 11 2
Golden Drop	1	3 0 0 0	6 0	..	15 18 0
Ballarat	3	2 1 3 4	151 0	..	377 10 0
West Coast	1	4 0 0 0	3 6	..	8 5 0
	33	1,504 3 2 14	3,329 13	555 9	10,517 4 2
Grahamstown—					
Victoria	7	39 0 0 23	70 5	..	196 2 11
Saxon	3	10 0 0 0	1 11	..	4 6 0
	10	49 0 0 23	71 16	..	200 8 11
Waiokaraka—					
May Queen	32	1,315 3 0 14	1,254 18	..	3,519 10 2
Karaka—					
Claremont	1	0 1 0 18	129 1	..	348 8 6
Halcyon	1	0 0 0 10	11 13	..	29 2 6
New Una	2	18 0 0 0	14 15	..	40 11 3
May Queen Extended	6	78 0 0 0	18 5	..	49 16 3
	10	96 1 1 0	173 15	..	467 18 6
Hape Creek—					
Lord Nelson	3	16 0 0 0	270 8	..	696 0 0
Summer Hill	2	8 4 2 11	130 9	..	347 13 3
Adventure	1	20 0 0 0	34 7	..	89 17 9
Dart Extended.. .. .	2	15 0 0 0	25 13	..	69 17 4
	8	59 4 2 11	460 17	..	1,203 8 4
Omahu—					
Last Shot	1	40 0 0 0	25 16	..	52 0 0
Puriri—					
Champion	8	900 0 0 0	175 4	..	451 15 11
Neavesville—					
Golden Belt	12	1,175 0 0 0	471 3	333 0	1,548 6 9
Tairua—					
Tairua Broken Hills	18	1,117 0 0 0	538 12	960 18	1,850 8 6
Dreadnought	5	14 10 0 0	10 16	..	30 18 3
Phoenix	8	13 0 0 0	12 10	..	31 8 1
	31	1,144 10 0 0	561 18	960 18	1,912 14 10
Totals	241	11,966 13 3 2	7,777 11	3,192 3	25,221 19 4
SUMMARY.					
Waihi Borough	1,947	500,432 0 0 0	114,963 0	1,640,221 15	1,034,043 10 8
Ohinemuri County	470	60,356 12 1 4	53,744 18	277,907 5	234,801 12 11
Piako County	5	5 0 0 0	14 0	..	17 10 0
Coromandel County	115	709 7 2 11½	2,414 5	71 15	6,916 19 4
Thames County and Borough	241	11,966 13 3 2	7,777 11	3,192 3	25,221 19 4
Total	2,778	573,469 13 2 17½	178,913 14	1,921,392 18	1,301,001 12 3
Total, 1908	2,933	546,904 14 1 11	198,058 4	1,872,289 16	1,302,665 0 0
Decrease	155	..	19,145 4	..	1,663 7 9
Increase.. .. .	..	26,564 19 1 6½	..	49,103 2	..

During the year 382 men were employed on unproductive works.

Table 3—continued.

STATEMENT showing QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the MARLBOROUGH, NELSON, AND WESTLAND MINING DISTRICTS for the Year ended 31st December, 1909.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
Collingwood— Golden Blocks	25	Tons. 1,299	Oz. dwt. gr. 1,348 0 0	Oz. dwt. gr. ..	£ s. d. 4,957 4 4
Westport— Red Queen	2	67	52 4 14	..	203 13 9
Britannia	3	89	47 8 18	..	154 0 3
	5	156	99 13 8	..	357 14 0
Lyell— New Alpine	43	5,311	1,780 11 3	268 8 0	6,765 7 11
Reefton— Golden Arch	10	307	154 18 6	64 1 0	790 19 4
Victoria Range	4	230	39 15 0	..	145 13 11
New Ulster	7	234	94 17 0	47 8 0	412 1 2
Golden Fleece	34	2,813	2,050 1 0	445 10 0	9,368 1 1
Wealth of Nations	105	15,577	5,476 9 0	1,746 5 0	28,358 16 8
Progress	335	35,414	10,523 13 0	3,576 8 0	52,090 7 2
Keep it Dark	45	11,163	1,926 12 0	1,138 13 0	11,312 19 5
New Big River	55	5,434	5,886 4 0	862 1 0	26,270 9 5
Blackwater	190	29,955	16,418 16 0	2,669 0 0	73,281 12 2
	785	101,127	42,571 5 6	10,549 6 0	201,971 0 4
Greymouth— Mount Paparoa	5	120	35 19 0	..	145 0 0
Ross— Oamers	5	123	170 0 0	..	680 0 0
SUMMARY.					
Collingwood	25	1,299	1,348 0 0	..	4,957 4 4
Westport	5	156	99 13 8	..	357 14 0
Lyell	43	5,311	1,780 11 3	268 8 0	6,765 7 11
Reefton	785	101,127	42,571 5 6	10,549 6 0	201,971 0 4
Greymouth	5	120	35 19 0	..	145 0 0
Ross	5	123	170 0 0	..	680 0 0
	868	108,136	46,005 8 17	10,817 14 0	214,876 6 7

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the SOUTHERN MINING DISTRICT for the Year ended the 31st December, 1909.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
FIORD COUNTY.					
Preservation Inlet Morning Star	14	Tons. 50	Oz. dwt. 11 5	Oz. dwt. ..	£ s. d. 43 7 3
LAKE COUNTY.					
Macetown— Anderson, Hannah, and party	3	237	128 7	..	499 3 4
Skipper's— Shotover	4	744	84 13	..	280 5 8
New Discovery	2	11	12 16	..	51 5 0
Totals	6	755	97 9	..	331 10 8
VINCENT COUNTY.					
Alexandra— Conroy's Gully	1	6	2 10	..	9 12 0
Chapman's Gully	2	50	24 7	..	85 6 10
Totals	3	56	26 17	..	94 18 10
Bald Hill Flat— Sundries	2	175	173 0	..	371 2 3
MANIOTOTO COUNTY.					
Hyde— Highlay Gold and Scheelite N.Z. Gold and Tungsten					Returns included under Sundries, Waihemo County.

Table 3—continued.

STATEMENT showing the QUANTITY of QUARTZ CRUSHED and GOLD OBTAINED in the SOUTHERN MINING DISTRICT for the Year ended the 31st December, 1909—continued.

Locality and Name of Mine.	Average Number of Men employed.	Quartz crushed.	Gold obtained.		Estimated Value.
			Amalgamation.	Cyanide.	
WAIHEMO COUNTY.					
Macrae's— Sundries	35	Tons. 4,650	Oz. dwt. 581 7	Oz. dwt. 222 8	£ s. d. 3,124 12 10
TAIERI COUNTY.					
Barewood— Barewood	22	5,477	1,704 1	..	6,518 0 2
SUMMARY.					
Fiord County	14	50	11 5	..	43 7 3
Lake County	9	992	226 6	..	830 14 0
Vincent County	5	231	199 17	..	466 1 1
Maniototo County .. .. .	..	Included in	Waiheмо County	..	..
Waiheмо County	35	4,650	581 7	222 8	3,124 12 10
Taieri County	22	5,477	1,704 1	..	6,518 0 2
Totals	85	11,400	2,722 16	222 8	10,982 15 4

Table 3 - concluded.

STATEMENT of VALUE of BULLION WON from QUARTZ CRUSHED for ALL DISTRICTS for the Years ended the 31st December, 1908 and 1909.

Mining District.	Year ended the 31st December, 1908.	Year ended the 31st December, 1909.
Hauraki	£ 1,302,665	£ 1,301,002
Marlborough, Nelson, and West Coast	160,156	214,876
Otago and Southland... .. .	14,191	10,983
Totals	1,477,012	1,526,861

Table 4.

GROSS TOTALS and VALUE of BULLION PURCHASED by BANKS for Year ended the 31st December, 1909.

Bank.	Bullion purchased.	Value.
<i>Hauraki Mining District (Northern Inspection District).</i>		
Bank of New Zealand	Oz. dwt. gr. 180,066 18 0	£ s. d. 110,697 14 9
Bank of New South Wales	4,032 15 12	7,664 7 5
National Bank of New Zealand	24,416 0 0	9,739 5 0
Totals	208,515 13 12	128,101 7 2
<i>Marlborough, Nelson, and Westland Mining Districts (West Coast Inspection District).</i>		
Bank of New Zealand	30,533 3 0	119,177 14 8
National Bank of New Zealand	15,863 14 23	61,182 4 7
Bank of New South Wales	7,473 19 3	29,530 0 4
Union Bank of Australia	2,671 5 0	10,621 9 5
Totals	56,542 2 2	220,511 9 0
<i>Otago and Southland Districts (Southern Inspection District).</i>		
Bank of New Zealand	63,930 6 6	246,843 9 2
Bank of New South Wales	6,405 6 7	25,013 11 7
National Bank of New Zealand	31,595 18 9	122,513 19 7
Bank of Australasia	6,317 8 0	25,206 0 0
Union Bank of Australia	2,353 0 0	9,412 0 0
Private buyers	623 16 9	2,404 0 9
Totals	111,225 15 7	431,393 1 1
Grand totals	376,283 10 21	780,005 17 3

Table 5.

RETURN of GOLD DUTY credited to LOCAL BODIES for the Year ended 31st December, 1909, and Quarter ended 31st March, 1910.

Local Body.				For the Year ended 31st December, 1909.			For the Quarter ended 31st March, 1910.		
COUNTIES—				£	s.	d.	£	s.	d.
Coromandel	..	..	..	91	11	2	103	0	7
Ohinemuri	..	..	..	6,092	2	11	1,263	18	9
Piako	..	..	..	0	7	7	..	..	..
Thames	..	..	..	548	11	11	..	..	..
BOROUGHS—									
Thames	..	..	..	371	10	0	..	..	..
Waihi	..	..	..	21,979	18	2	4,774	4	6
Totals	..	..	..	29,085	1	9	6,141	3	10

E. L. MOWBRAY,

The Treasury, Wellington, 2nd June, 1910.

For Accountant to the Treasury.

Table 6.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from New Zealand from 1st April, 1857, to 31st December, 1909.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31st DECEMBER, 1909.		ENTERED FOR EXPORTATION TO THE 30th SEPTEMBER, 1909.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31st DECEMBER, 1909.	
County or Borough.	District.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	220	848				
Ohinemuri ..		15,530	53,124				
Coromandel ..		..	..	
Piako ..		..	..	
Borough of Thames ..		..	..	
Waihi ..		64,022	259,365				
Great Barrier Island ..		..	..	
		79,772	313,337	4,796,252	18,177,064	4,876,024	18,490,401
	Wellington ..	..	..	188	706	188	706
County of Marlborough	Marlborough ..	14	56	90,216	351,467	90,280	351,523
County of Collingwood	Nelson	1,219	4,876				
Waiimea ..		7	28				
Takaka ..		106	424				
		1,332	5,328	1,722,908	6,830,482	1,724,240	6,835,810
County of Buller ..	West Coast	2,259	8,613				
Inangahua ..		17,297	65,274				
Grey ..		3,987	16,060				
Westland ..		1,480	5,969				
Borough of Ross ..		204	815				
		25,227	96,731	5,480,580	21,798,438	5,505,807	21,895,169
	Canterbury ..	..	..	99	387	99	387
County of Taieri ..	Otago	297	1,151				
Tuapeka ..		4,665	18,745				
Vincent ..		9,479	38,191				
Maniototo ..		1,499	5,954				
Waihemo ..		170	664				
Waitaki ..		1,036	4,135				
Lake ..		205	813				
Wallace ..		771	3,084				
Bruce ..		11	44				
Clutha ..		179	736				
Fiord ..		..	..	
Southland ..		9,193	37,071				
		27,505	110,588	7,007,163	27,855,349	7,034,668	27,965,937
Unknown ..	..	3	12	215	858	218	870
Totals	..	133,853	526,052	19,097,621	75,014,751	19,231,474	75,540,803

* Gold duty abolished in the South Island on the 31st March, 1891, by the Gold Duty Abolition Act, 1890.

Table 7.
COMPARATIVE RETURN for the Years ended 31st December, 1909 and 1908.

PRODUCE OF THE GOLDFIELDS IN THE DISTRICT OF	DURING THE QUARTER ENDED				TOTALS FOR YEAR 1909.		TOTALS FOR YEAR 1908.	
	31st March, 1909.	30th June, 1909.	30th September, 1909.	31st December, 1909.	Quantity.	Value.	Quantity.	Value.
	Oz.	Oz.	Oz.	Oz.	Oz.	£	Oz.	£
Auckland ..	54,862	74,379	79,601	79,772	288,614	1,142,098	296,971	1,171,375
Marlborough ..	..	..	25	14	39	155	297	1,145
Nelson ..	602	285	353	1,332	2,572	10,286	3,196	12,783
West Coast ..	23,471	21,601	24,715	25,227	95,014	369,930	86,052	335,722
Otago ..	38,201	24,892	29,523	27,505	120,121	484,385	119,907	483,900
Unknown ..	..	..	8	3	11	46	..	..
Totals for 1909	117,136	121,157	134,225	133,853	506,371	2,006,900	..	..
Totals for 1908	134,103	120,714	135,626	115,980	..	..	506,423	2,004,925

Table 8.

RETURN of the QUANTITY and VALUE of GOLD ENTERED for DUTY* for EXPORTATION from New Zealand from 1st April, 1857, to 31st March, 1910.

PRODUCE OF THE GOLDFIELDS IN		DURING THE QUARTER ENDED 31st MARCH, 1910		ENTERED FOR EXPORTATION TO THE 31st Dec., 1909.		TOTAL ENTERED FOR EXPORTATION FROM NEW ZEALAND TO THE 31st MARCH, 1910.	
County or Borough.	District.	Quantity	Value.	Quantity.	Value.	Quantity.	Value.
		Oz.	£	Oz.	£	Oz.	£
County of Thames ..	Auckland	1,236	4,790	4,876,024	18,490,401	4,940,342	18,744,930
" Ohinemuri ..		12,640	44,814				
" Coromandel ..		1,030	4,343				
Borough of Thames ..		1,670	7,017				
" Waihi ..		47,742	193,565				
		64,318	254,529				
	Wellington	188	706	188	706
County of Marlborough	Marlborough	90,230	351,523	90,230	351,523
County of Collingwood ..	Nelson ..	63	253	1,724,240	6,835,810	1,724,303	6,836,063
		632	2,550	5,505,807	21,895,169	5,528,059	21,981,314
County of Buller ..	West Coast	13,958	52,767				
" Inangahua ..		4,803	19,318				
" Grey ..		2,667	10,741				
" Westland ..		192	769				
Borough of Ross ..		..	..	
		22,252	86,145				
	Canterbury	99	387	99	387
County of Taieri ..	Otago	168	648	7,034,668	27,965,937	7,062,010	28,076,084
" Tuapeka ..		5,289	21,446				
" Vincent ..		7,946	32,026				
" Maniototo ..		2,113	8,329				
" Waibemo ..		92	353				
" Waitaki ..		361	1,409				
" Lake ..		1,599	6,434				
" Wallace ..		1,361	5,544				
" Bruce ..		4	15				
" Clutha ..		434	1,784				
" Fiord ..		25	99				
" Southland ..		7,950	32,060				
		27,342	110,147				
Unknown	218	870	218	870
Totals	113,975	451,074	19,231,474	75,540,803	19,345,449	75,991,877

* Gold duty abolished in the South Island on 31st March, 1891, by the Gold Duty Abolition Act, 1890.

Table 9.
COMPARATIVE RETURN for the Quarters ended 31st March, 1910, and 31st March, 1909.

District of	Quarter ended 31st March, 1910.		Quarter ended 31st March, 1909.	
	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£
Auckland	64,318	254,529	54,862	216,757
Nelson	63	253	602	2,408
West Coast	22,252	86,145	23,471	92,416
Otago	27,342	110,147	38,201	154,215
Totals	113,975	451,074	117,136	465,796

Table 10.

RETURN showing the AVERAGE PRICES of PROVISIONS on the Goldfields for the Year ended 31st December, 1909.

District.	Bread— Wheaten.	Butter— Fresh.	Butter— Salt.	Cheese.	Coffee.	Flour.	Grain— Wheat.	MEAT.								
								Beef.	Mutton.	Pork.	Milk.	Rice.	Salt.	Sugar.	Tea.	
								Per lb.	Per lb.	Per lb.	Per lb.	Per qt.	Per lb.	Per lb.	Per lb.	Per lb.
AUCKLAND—	d.							d.	d.	d.	d.	d.	d.	d.	d.	
Thames	2	1/1	/7	/7	1/10	11/6	4/6	5	4	6	4	2 1/2	1 1/2	3	1/6	
Paeroa	2	1/2	/9	/7	1/6	15/	4/6	5-7	5	6	3	2 1/2	1	2	1/6	
Coromandel	3 1/2 loaf	1/2	/10	/7	1/10	11/6	4/8	3-8	4-6	5-6	3	3	1	3	1/10-2/	
Tauranga	2	1/2	/10	/9	1/6-2/	14/	5/	4	5	6	3	3	1	2 1/2-3	1/-2/3	
Te Aroha	2	1/2	/9	/7	1/6	15/	4/6	6	5	6	4	2 1/2	1	2	1/6	
Waihi	2	1/2	/10	/8	1/9	12/6	4/6	3-10	3-7	5-6	4	3	1	2 1/2	1/6-3/	
Puhipuhi	2	1/	..	/8	1/7	13/6	5/2	5	5	5	3	2 1/2	1	2 1/2	1/6	
NELSON—																
Wangapeka	2	1/3	/10	/9	2/	17/	7/	6	6	6	5	4	2	4	2/	
Collingwood	2	1/10-1/	/9	/8	2/	14/	6/6	5	5	6	4	3	1	3	1/2-2/2	
Motueka .. .. .	..	1/3	1/	/9	1/9	15/	7/	6	7	6	4	3	1 1/2	3	2/	
Karamea	2	1/	/8	/8	2/	14/	5/9	3-5	3 1/2-4 1/2	5 1/2-6	4	2 1/2	1	2 1/2	1/10	
Lyell	2 1/2	1/3	1/	/10	2/	16/	6/6	6	6	6	6	3	1	3	2/	
Murchison	2 1/2	1/1	1/	/9	1/	16/	7/	5	5	5	4	3 1/2	2	4	1/	
Westport	2	1/2	1/	/8	1/6	12/6	5/	5	5	8	5	2	1	2 1/2	1/6	
Charleston	2	1/3	..	/8	2/	14/6	6/6	6	6	6	5	3	1	3	2/	
Ahaura	2	1/1	1/	/8	2/	16/	6/	6	6	8	4	3	2	3 1/2	2/	
WESTLAND—																
Stafford and Goldsboro	1 1/2	1/3	1/	/8	1/9	14/	6/6	6	6	6	6	3	1	3	2/	
Waimea .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hokitika and Kanieri	1 1/2	1/2	1/	/7	1/6	11/6	6/	6	6	7	5	2 1/2	1	3	1/6-3/	
Ross .. .. .	..	1/1	/10	/8	1/6	14/	5/	6	6	6	3	2 1/2	1	2 1/2	2/	
Okarito	4	1/3	1/	/10	1/9	18/	..	5 1/2	5 1/2	..	..	4	1 1/2	3 1/2	2/3	
Greymouth	2	1/2	1/1	/8	1/9	11/6	6/	6	5	7	4	2 1/2	1 1/2	3	2/	
Kumara	2	1/2	1/	/8	1/6	14/	6/6	6	6	6	6	3	1	2 1/2	2/	
Reefton	2	1/1	/10	/9	1/9	13/	6/6	6-8	5-7	5-7	4	3	1	2 1/2	1/10-2/10	
OTAGO—																
Hindon	2	1/3	/10-1/	/9	1/9	16/	5/	6	5	6	4	3	2	3	2/	
Cromwell	2	1/1	1/4	/8	1/6	12/9	5/	6	5	6	4	3	1	2 1/2	1/-2/	
Clyde .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Alexandra	2	1/3	1/2	/8	1/9	12/	5/	5	4	8	6	2	1 1/2	2 1/2	2/	
Roxburgh .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Black's .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Queenstown	1 1/2	1/	/10	/8	1/9	10/	3/	4-6	4-6	6	3	3	1	3	1/10	
Arrow (Wakatipu Goldfield)	2	1/	/10	/8	1/6	11/	3/	6	5 1/2	6	2	2 1/2	2	3	1/10	
Waikaia	2	1/3	1/	/10	2/	16/	..	7	6	6	5	4	2	3	1/10-2/10	
Riverton and Orepuki	1 1/2	/10	/10	/8	1/6	12/9	5/6	6 1/2	5	8 1/2	5	2 1/2	1	2	1/10	
Gore	1 1/2	/10	/8	/8	1/8	13/	4/3	4	3	7	4	2 1/2	1	2 1/2	1/6	
Wyndham	1 1/2	1/3	1/	/8	/9	9/	3/6	4 1/2	4 1/2	6	3	3	1	3	1/9	
Lawrence	1 1/2	1/	1/	/6	1/6	14/	5/0	5	4	6	4	2	1	3	1/6	

Table 11.
TABLE showing the AVERAGE RATE of WAGES per Week for the Year ending 31st December, 1909.

District.	General Managers.	Local Managers.	Mining Managers.	Engineers.	Engine-drivers.	Stokers.	Blacksmiths.	Carpenters.	Miners.	Labourers.	Boys.	Chinese.	Agricultural Labourers.	Domestic Servants.
AUCKLAND—														
Paeora	£ s. d. £200 to £1200	£ s. d. £1 to £2	£ s. d. £4 to £10	£ s. d. £2/10 to £3	£ s. d. £2/5—£2/11	£ s. d. £2/5—£2/11	£ s. d. £2/14 to £3	£ s. d. £2/14 to £3	£ s. d. £2/8 to £3/10	£ s. d. £2 to £2/10	£ s. d. £1 to £2	£ s. d. ..	£ s. d. 10/ to 30/	Weekly, 10/ to 17/6
Thames	£450 p.a.	1 10 0	5 0 0	3 0 0	3 0 0	2 8 0	3 0 0	3 0 0	2 11 0	2 8 0	1 0 0	..	1 10 0	12/
Te Aroha	£500 p.a.	2 0 0	£4 to £7	10/ to £1 p.d.	8/ to 11/ p.d.	7/ to 9/ p.d.	10/ p.d.	9/6 to 11/ p.d.	8/ to 10/ p.d.	2 8 0	1 10 0	..	1 5 0	10/ to 18/
Coromandel	..	1 0 0	£4 to £5	4 0 0	2 14 0	2 8 0	2 14 0	£2/14 to £3	£2/2 to £2/14	2 8 0	Up to £1	..	2 0 0	10/ to 15/
Tauranga	..	..	..	..	..	..	2 10 0	£2/10 to £3	9/ p.d.	8/ p.d.	1 15 0	..	5/ to 7/ p.d.	10/-25/ & fd.
Waihi	..	..	£4 to £7	11/ p.d.	9/ p.d.	8/ p.d.	8/6 p.d.	10/ p.d.	..	8/ p.d.	..	..	..	8/ to £1
NELSON—														
Reefton	..	2 0 0	5 0 0	£4/10 to £5	3 10 0	3 0 0	3 10 0	4 0 0	3 0 0	£2/10 to £3	1 16 0	..	25/ and found	15/
Collingwood	£8 to £10	£500 p.a.	£8 to £10	£3/10 to £4	3 0 0	£2/10 to £3	3 10 0	£3/10 to £3/15	£2/17 to £3	2 15 0	..	..	£2 to £2/10	15/ to 30/
Charleston	..	..	4 0 0	..	..	..	3 12 0	3 12 0	3 0 0	2 14 0	..	..	2 8 0	12/6
Westport	..	10/ to 20/	4 0 0	3 0 0	3 0 0	..	3 0 0	3 12 0	2 14 0	2 8 0	1 10 0	..	..	12/-20/ & fd.
Lytell	6 0 0	3 0 0	6 0 0	4 10 0	3 10 0	3 0 0	3 0 0	3 0 0	3 0 0	2 14 0	1 5 0	..	25/ and found	15/ and found
Ahaura	..	£1 to £2	5 0 0	4 0 0	3 10 0	3 0 0	3 12 0	3 12 0	3 0 0	2 8 0	1 10 0	1 5 0	£1 to £1/5	15/ to £1
Wangapeka	..	..	..	..	..	..	..	3 12 0	..	2 2 0	..	2 7 0	30/ and found	15/ and found
Murchison	..	..	5 0 0	4 0 0	3 10 0	3 0 0	3 0 0	3 0 0	3 0 0	2 14 0	1 0 0	..	1 5 0	15/-17/ & fd.
WESTLAND—														
Goldsbrough & Stafford	2 0 0	1 0 0	5 0 0	4 0 0	3 0 0	3 0 0	3 0 0	3 10 0	3 0 0	3 0 0	1 10 0	1 0 0	1 10 0	15/
Hokitika and Kaniere	..	1 10 0	£4 to £5	4 0 0	3 12 0	3 0 0	3 3 0	3 18 0	2 14 0	2 14 0	1 10 0	..	1 16 0	10/ to 15/
Ross	7 0 0	1 10 0	6 0 0	3 12 0	3 12 0	3 0 0	4 0 0	3 12 0	3 6 0	2 14 0	1 10 0	..	1 18 0	20/
Kumara	..	1 0 0	4 0 0	3 0 0	3 0 0	3 0 0	3 0 0	3 0 0	3 0 0	3 0 0	2 0 0	£1 and found	..	10/ to 20/
Greymouth	..	£1 to £2	£5 to £7	5 0 0	4 0 0	2 10 0	3 15 0	3 10 0	3 0 0	2 14 0	1 0 0	..	20/-30/ found	7/6 to 30/
Okarito	..	..	..	..	..	..	..	..	..	2 14 0	1 0 0	..	1 10 0	15/
OTAGO AND SOUTHLAND—														
Hindon	..	£30 p.a.	£4 to £5	4 10 0	9/ p.d.	3 0 0	10/ p.d.	3 10 0	8/ to 10/ p.d.	8/ p.d.	1 0 0	1 10 0	25/ and found	15/ and found
Cromwell	..	3 0 0	5 0 0	4 0 0	3 0 0	3 0 0	3 12 0	3 10 0	3 0 0	£2/8 to £2/14	..	..	..	..
Clyde	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Alexandra	6 0 0	1 5 0	5 0 0	4 0 0	3 0 0	..	3 10 0	3 10 0	3 0 0	2 8 0	0 10 0	1 0 0	£60 p.a. & fd.	10/ to 16/
Roxburgh	..	..	4 0 0	4 0 0	9/ p.d.	..	11/ p.d.	11/ p.d.	8/ p.d.	8/ p.d.	10/ to 15/	20/ to £1/5	£1/ to £1/10	10/ to 15/
Waikata	..	4 0 0	4 0 0	3 12 0	2 16 0	2 9 0	2 14 0	2 14 0	2 8 0	2 10 0	1 0 0	1 16 0	1 10 0	10/
Orepuki and Riverton	5 0 0	4 0 0	4 0 0	4 0 0	3 10 0	2 10 0	3 0 0	3 0 0	2 10 0	2 8 0	10/ to 25/	£1/5 to £1/10	1 5 0	8/ to 20/
Arrow	..	..	£4 to £7	4 0 0	3 10 0	2 10 0	3 0 0	3 0 0	2 10 0	2 8 0	10/ to 25/	£1/5 to £1/10	1 5 0	8/ to 20/
Queenstown	..	..	£4 to £7	4 0 0	3 10 0	2 10 0	3 0 0	3 0 0	2 8 0	2 8 0	10/ to 15/	10/ to 15/ & fd.	20/-25/ found	7/6 to 15/
Mount Ida	5 0 0	..	4 0 0	..	..	..	3 0 0	3 4 0	2 8 0	2 8 0	..	..	1 5 0	12/6
Gore	..	..	4 10 0	8/ p.d.	8/ p.d.	..	9/ p.d.	..	..	7/ p.d.	0 15 0	..	1 5 0	12/
Wyndham	..	..	..	3 0 0	3 0 0	..	3 0 0	3 0 0	..	2 8 0	0 15 0	..	2 8 0	12/
Lawrence	12 0 0	1 0 0	5 0 0	4 0 0	3 0 0	2 2 0	3 0 0	3 0 0	2 8 0	2 8 0	0 15 0	1 0 0	1 5 0	10/ to 16/

Table 12.
STATEMENT OF AFFAIRS OF MINING COMPANIES, as published in accordance with the Companies Act, 1908.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
Bendigo Gold-mining Co. (Ltd.)	26/3/08	£ 4,199	£ 2,775	£ 1,424	143,958	7d. & 1d	£	147	5	Oz.	£ 18	£ 2,373	£	£ 21
Bonanza Gold-mining Co. (No Liability)	22/10/06	10,000	2,179	8,250	100,000	0 0 7	..	125	4	..	512	2,175	..	..
Champion Mines (Ltd.)	5/12/05	22,500	14,250	8,250	150,000	0 3 0	..	257	6	240	612	15,207	..	1,431
Crown Royal Mines (Ltd.)	24/8/09	15,000	1,250	2,500	150,000	3d. & 6d.	..	87	5	..	..	15,468	..	..
Dixon's Consolidated Gold-mining Co. (Ltd.)	22/6/08	4,500	2,388	750	100,000	1d. & 7.	216	157	6	..	..	2,207	..	81
Dominion Gold-mining Co. (Ltd.)	3/3/08	10,000	1,750	4,000	100,000	0 1 4	316	165	5	..	149	1,931	..	10
Durbar Gold-mining Co. (Ltd.)	27/6/07	8,000	1,054	4,000	80,000	0 1 0	..	55	..	..	..	1,962	..	12
Ferguson's Mining and Smelting Co. (Ltd.)	15/12/05	102,594	39,100	38,550	102,594	1 0 0	..	..	1	..	83	39,289	..	788
Four-in-Hand Gold-mining Co. (Ltd.)	4/6/03	17,971	2,743	3,500	89,857	2/ & 1/	..	78	9	..	..	1,299	..	105
Golden Belt Gold-mining Co. (Ltd.)	12/8/02	36,065	28,186	5,250	360,645	2/1/4, 1/2.	..	341	15	6,552	13,933	46,701	..	2,150
Golden Cross Gold-mining Co. (Ltd.)	12/11/06	9,850	4,394	229	98,500	and 8d.	322	180	4	522	419	4,054	..	50
Golden Peh Gold-mining Co. (Ltd.)	20/3/08	5,000	1,377	375	100,000	1/11, 1/11, 1/11	332	119	4	17	53	1,357	..	60
Glamorgan Gold-mining Co. (Ltd.)	13/9/09	10,000	398	312	100,000	0 0 3	..	115	5	..	..	2,616	..	..
Halcyon Gold-mining Co. (Ltd.)	31/7/06	5,000	2,888	..	100,000	9d. & 3d.	..	110	4	..	620	2,737	..	..
Handsworth United Gold-mining Co. (Ltd.)	27/7/09	14,000	2,500	..	140,000	0 0 6	..	154	8	257	..	895	..	..
Hardy's Mines (Ltd.)	23/7/07	8,367	6,313	1,551	69,939	0 2 6	503	76	8	..	..	6,036	..	24
Hare-Ratjen Copper Co. (Ltd.)	5/4/07	7,600	1,000	6,600	7,600	1 0 0	..	20	1	..	..	1,439	..	27
Hauraki Freeholds (Ltd.)	25/1/99	20,000	1,275	18,725	100,000	0 3 0	..	378	..	1,373	4,291	5,773	..	395
Imperial Gold-mining Co. (Ltd.)	20/10/09	3,340	1,376	460	66,800	3d. & 1d.	259	120	3	..	..	436	..	..
Kaipara Copper Developing Co. (Ltd.)	23/6/08	1,470	1,005	..	1,470	1 0 0	5	110	1	..	..	967	..	78
Kapanga Gold-mining Co. (Ltd.)	12/12/08	20,000	6,500	1,250	200,000	10d. 9d., and 4d.	1,102	110	13	..	..	5,342	..	904
Kapowai Gold-mining Co. (Ltd.)	24/11/06	10,500	4,303	4,000	105,000	1/4 & 1/3	30	113	4	802	1,884	6,147	..	75
Karagahake Gold-mining Co. (Ltd.)	6/9/07	10,525	4,645	750	105,250	0 1 1	306	133	8	..	43	4,701	..	42
Kirikiri Consolidated Mines (Ltd.)	..	15,000	1,433	7,500	150,000	0 1 3	432	83	6	..	..	1,240	..	503
Kuranui Gold-mining Co. (Ltd.)	12/9/95	22,394	13,694	3,480	89,575	3/10 & 1/6	..	117	4	..	1,848	14,706	..	182
Langari's Antimony and Minerals (Ltd.)	20/8/07	5,725	2,688	..	114,505	1s. & 4d.	..	70	1	..	124	3,697	..	481
Last Shot Gold-mining Co. (Ltd.)	26/6/08	5,500	1,800	..	110,000	0 0 4	38	17	..	556	816	2,478	..	369
Lord Plunket Gold-mining Co. (Ltd.)	20/6/05	3,100	353	1,000	30,900	0 0 3	..	44	..	..	..	408	..	53
Luck-at-Lest Gold-mining Co. (Ltd.)	25/8/09	1,041	1,024	..	83,260	0 0 3	17	38	7	..	..	853	..	800
Magnet Gold-mining Co. (Ltd.)	24/4/06	5,000	3,668	1,000	100,000	11d. & 1s.	332	120	4	..	..	3,361	..	30
Maarahara Copper-mines (Ltd.)	13/12/06	32,130	1,704	30,000	32,130	0 16 0	..	80	..	..	..	2,335	..	12
Maoriand Gold-mining Co. (Ltd.)	15/6/06	10,600	5,231	4,200	106,000	0 1 7	68	197	11	..	1,656	7,864	..	106
May Queen Extended Gold-mining Co. (No Liability)	17/11/95	15,000	11,977	1,000	100,000	0 2 9 1/2	..	112	4	903	2,579	14,633	..	..
May Queen Gold-mining Co. (Ltd.)	15/5/07	64,000	13,593	26,767	256,000	0 3 2	174	618	28	3,111	8,779	26,709	..	747
Missouri Mines (Ltd.)	7/10/08	12,650	1,181	1,125	126,500	6d. & 4d.	177	85	5	..	..	1,133	..	3
Mowai Consolidated Gold-mining Co. (Ltd.)	2/8/09	10,000	983	5,000	100,000	d. & 2d.	267	105	3	..	..	904	..	75
Monowai Gold-mining Co. (Ltd.)	31/9/09	25,000	1,089	..	100,000	3d. & 2d.	181	100	8	..	..	974	..	150
Monte Christo Gold-mining Co. (Ltd.)	4/8/09	5,000	875	750	100,000	0 0 6	..	108	7	..	..	478	..	36
Mountain King Gold-mining Co. (Ltd.)	15/2/08	12,000	3,318	2,000	120,000	0 0 11	349	179	10	..	192	3,640	..	295
Mountain Queen Gold-mining Co. (Ltd.)	18/8/09	4,050	725	..	40,500	0 0 6	..	51	2	..	..	209	..	85
Mount Welcome Gold-mining Co. (Ltd.)	1/7/09	5,000	515	453	100,000	1d., 2d., & 3d.	277	80	4	..	..	501	..	..
Mount Zeehan Gold-mining Co. (Ltd.)	..	11,100	4,737	3,600	74,000	0 3 0	66	111	5	..	..	1,123	..	63

AUCKLAND DISTRICT.

Table 12—continued. STATEMENT OF AFFAIRS OF MINING COMPANIES, as published in accordance with the Companies Act, 1908—continued.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
Ngatiawa Consolidated Gold-mines (Ltd.)	27/11/09	10,000	1,667	£	200,000	0 0 4	£	180	13	Oz.	£	911	£	297
New Cornstock Gold-mining Co. (Ltd.)	23/11/09	28,750	3,746	0 0 3	97,225	0 0 3	..	78	8	..	..	409	..	..
New Success Gold-mining Co. (Ltd.)	1/11/09	6,000	884	0 0 3	100,750	0 0 3	..	64	2	..	..	732	..	..
New Sylvia Gold-mining Co. (Ltd.)	24/10/05	30,000	7,542	0 1 2	150,000	0 1 2	..	150	10	108	479	8,386	..	187
New Waikata Gold-mining Co. (Ltd.)	25/2/09	15,000	3,333	0 1 8	150,000	0 1 8	801	156	20	180	362	2,515	..	35
New Waitekauri Gold-mining Co. (Ltd.)	12/9/06	12,500	6,786	1/12, 1/24, and 1/74	100,000	1/12, 1/24, and 1/74	..	145	5	877	1,075	8,382	..	..
Occidental Consolidated Gold-mining Co. (No Liability)	3/8/09	5,500	1,000	0 0 3	110,000	0 0 3	..	75	8	..	..	758	..	..
Old Alburnia Gold-mining Co. (Ltd.)	25/7/03	15,697	14,790	2/1/8, 1/6	156,969	2/1/8, 1/6	134	202	15	..	863	21,678	..	200
Old Hauraki Gold-mines (Ltd.)	3/8/07	21,000	10,491	1/ and 1/	210,000	1/ and 1/	384	413	18	738	2,290	11,154	..	188
Phoenix Gold-mining Co. (Ltd.)	12/3/08	9,670	3,874	0 1 2	96,700	0 1 2	266	121	4	..	..	3,727	..	42
Pride of Tokatea Gold-mining Co. (Ltd.)	12/7/09	5,000	1,500	0 0 3	50,000	0 0 3	..	127	9	..	..	875	..	..
Pride of Waikato Gold-mining Co. (Ltd.)	15/1/01	50,000	2,708	0 0 9 1/2	50,000	0 0 9 1/2	..	244	2	..	..	2,859	..	31
Ready Bullion Gold-mining Co. (Ltd.)	2/2/08	5,395	1,180	0 0 4	53,950	0 0 4	86	24	..	..	..	1,183	..	..
Reliance Gold-mining Co. (Ltd.)	20/11/06	5,500	3,313	7d. & 8d.	110,000	7d. & 8d.	354	115	4	..	..	2,971	..	..
Rising Sun Gold-mining Co. (Ltd.)	11/12/08	16,500	1,896	0 0 9	110,000	0 0 9	..	137	7	..	..	1,243	..	..
Royal Oak Gold-mining Co. (Ltd.)	22/3/04	12,500	156	0 1 0	100,000	0 1 0	219	204	12	4,042	11,052	13,624	..	168
Saxon Gold-mining Co. (Ltd.)	3/12/07	35,000	2,332	1d. & 4d.	200,000	1d. & 4d.	268	320	4	39	109	2,110	..	50
Scandinavian Gold-mining Co. (Ltd.)	9/10/06	4,558	2,309	0 1 1	60,767	0 1 1	177	72	6	..	16	2,317	..	44
Scotia Gold-mining Co. (Ltd.)	11/9/09	776	764	0 0 3	102,150	0 0 3	13	75	5	..	..	468	..	9
Sheddon Gold-mining Co. (Ltd.)	13/8/09	10,000	875	0 0 3	100,000	0 0 3	..	72	3	..	..	432	..	150
Shorthland Flat Gold-mining Co. (Ltd.)	26/8/09	13,750	535	0 1 0	55,000	0 1 0	24	16	..	..	..	107	..	..
Silver Hill Gold-mining Co. (Ltd.)	18/2/08	16,000	2,809	0 0 7	60,000	0 0 7	684	68	2	..	..	2,704	..	50
Silver Stream Mines (Ltd.)	7/7/09	43,650	754	1/9 & 5/9	43,650	1/9 & 5/9	206	90	8	398	1,087	3,998	..	65
Southern Queen Gold-mining Co. (No Liability)	8/2/06	4,250	2,931	0 0 1 1/2	49,325	0 0 1 1/2	17	60	2	..	..	2,549	..	..
Taihoa Gold-mining Co. (Ltd.)	2,500	2,483	2,500	0 0 6	100,000	0 0 6	..	225	25	44,355	90,678	91,765	24,710	350
Tairua Broken Hills Gold-mining Co. (Ltd.)	12/7/99	17,500	17,500	0 2 0	175,000	0 2 0	..	81	..	..	..	1,134	..	..
Tairua Dawn (Ltd.)	24/7/08	6,000	1,185	0 0 7	60,000	0 0 7	7	43	3	..	..	512	..	24
Tairua Dreadnought (Ltd.)	21/9/08	7,045	489	4d. & 6d.	70,450	4d. & 6d.	14	56	2	3	..	2,772	..	18
Tairua Extended Gold-mining Co. (Ltd.)	20/9/07	3,575	3,277	0 0 11	71,500	0 0 11	..	64	5	..	..	560	..	97
Tairua Gem Gold-mining Co. (Ltd.)	11/9/09	7,800	878	0 0 3	78,000	0 0 3	..	104	7	..	..	24,965	..	..
Tairua Golden Hills Gold-mining Co. (Ltd.)	7/1/08	20,900	15,303	0 2 0	200,000	0 2 0	322	104	21	..	..	1,633	..	4,200
Tairua Leads (Ltd.)	29/9/08	13,300	1,661	5d. & 6d.	127,500	5d. & 6d.	368	119	4	..	..	1,155	..	..
Tairua Monarch Consolidated (Ltd.)	27/4/08	28,750	1,064	0 1 2	190,000	0 1 2	519	264	7	..	..	1,418	..	..
Tairua Reefs Gold-mining Co. (Ltd.)	21/10/08	2,867	1,289	0 0 4	140,000	0 0 4	377	100	3	..	..	3,467	..	5
Tangiaro Gold-mining Co. (Ltd.)	19/10/07	11,000	3,480	0 1 1	110,000	0 1 1	55	133	6	..	..	605	..	25
Tararu Mines (Ltd.)	28/8/09	10,200	869	0 0 3	700	0 0 3	..	81	6	..	..	12,851	4,545	11
Te Puke Gold Reefs (Ltd.)	4/5/98	12,685	12,685	0 2 6	101,478	0 2 6	..	102	10	..	..	7,147	..	4,967
Thames Foreshore Dredging Co. (Ltd.)	16/5/08	5,000	3,975	9/ & 6/	10,000	9/ & 6/	525	10	10	60	1,859	7,147	..	68
Thames Gold-mining Co. (Ltd.)	16/12/05	15,000	11,250	0 1 6	150,000	0 1 6	261	191	9	..	..	11,180	..	..
Tokatea Gold-mining Co. (Ltd.)	28/1/08	5,000	1,600	0 0 7	100,000	0 0 7	..	78	4	26	66	1,617	..	..
Tellurides Proprietary (Ltd.)	29/10/09	60,000	1,076	1 0 0	60,000	1 0 0	..	18	21	..	..	1,037	..	320
Union Hauraki Gold-mines (Ltd.)	9/10/09	14,500	1,868	0 0 6	..	0 0 6	..	93	..	..	..	..	..	..

AUCKLAND DISTRICT—continued.

Table 12—continued.
STATEMENT OF AFFAIRS OF MINING COMPANIES, as published in accordance with the Companies Act, 1908—continued.

Name of Company.	Date of Registration.	Subscribed Capital.	Amount of Capital actually paid up.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares allotted.	Amount paid up per Share.	Arrears of Calls.	Number of Shareholders at present.	Number of Men employed.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid.	Amount of Debts owing by Company.
										Quantity.	Value.			
OTAGO DISTRICT (INCLUDING SOUTHLAND)—continued.														
Earnsclough Gold-dredging Co. (Ltd.) ..	15/7/01	£ 8	£ 8	10,992	11,000	1 0 0	£	40	40	38,541	126,499	106,417	1,100	£ 693
Electrico Gold-dredging Co. (Ltd.) ..	2/9/99	26,000	..	26,000	26,000	1 0 0	..	272	20	49,562	192,323	72,489	122,843	458
Enterprise Gold-dredging Co. (Ltd.) ..	24/8/91	7,000	3,500	3,500	7,000	0 0 0	..	131	8	21,525	83,386	58,574	26,885	117
Gabriel's Gully Sluicing Co. (Ltd.) ..	2/5/07	600	180	3,500	600	0 6 0	..	6	4	3,726	970	2,765	1,080	120
Golden Bed Dredging Co. (Ltd.) ..	5/5/99	11,000	10,694	2,000	12,794	1 0 0	..	165	9	12,096	46,756	39,450	9,537	254
Golden Crescent Sluicing Co. (Ltd.) ..	26/10/98	3,500	3,500	..	3,500	1 0 0	..	24	8	5,300	20,591	16,959	7,261	254
Golden Gem Dredging Co. (Ltd.) ..	30/10/07	1,500	1,200	300	1,500	1 0 0	..	14	8	1,240	4,832	6,160	..	1,176
Golden Treasure Dredging Co. (Ltd.) ..	11/7/98	1,500	1,384	1,500	1,250	1 0 0	..	42	9	17,891	68,940	48,061	23,727	142
Good Chance Dredging Co. (Ltd.) ..	24/3/09	1,250	779	200	6,500	1 0 0	..	58	8	6,674	2,645	2,573	623	356
Hardley and Riley Beach-dredging Co. (Ltd.) ..	14/7/97	6,500	6,800	200	6,500	1 0 0	..	321	8	80,935	119,715	41,083	88,038	123
Havelock Sluicing Co. (Ltd.) ..	3/3/08	4,000	3,400	600	4,000	1 0 0	..	11	8	2,430	..	6,245	..	2,200
Hic-or-Miss Water-race Co. (Reg.), Mount Ida ..	19/6/67	..	..	..	301	20 0 0	..	3	..	..	..	..	..	406
Hydraulic Motor Dredging Co. (Ltd.) ..	-2/04	300	300	400	300	1 0 0	..	5	..	464	1,785	367	..	100
Island Basin Dredging Co. (Ltd.) ..	18/10/09	2,100	688	2,100	2,500	0 7 6	99	40	1	..	..	..	..	..
Island Block Gold Dredging and Sluicing Co. (Ltd.) ..	26/2/00	24,030	12,030	12,030	25,000	1 0 0	..	104	2	7,207	28,110	33,185	2,403	..
Jutland Hydraulic Dredging Co. (No Liability) ..	28/6/01	5,000	4,100	900	5,000	1 0 0	..	9	7	4,687	18,026	19,164	3,001	105
Kaiaunui Dredging Co. (Ltd.) ..	12/10/09	5,115	1,383	2,350	5,115	0 10 0	..	100	12	..	..	493	..	2,185
Kia Ora Victoria Gold-dredging Co. (Ltd.) ..	10/8/01	9,100	5,915	..	9,100	0 13 0	..	35	16	19,283	78,096	55,270	29,348	..
Koputai Gold-dredging Co. (Ltd.) ..	9/1/06	3,200	3,200	300	3,500	1 0 0	..	52	7	5,744	22,529	16,260	9,260	..
Lady Roxburgh Gold-dredging Co. (Ltd.) ..	3/8/00	9,000	4,885	2,000	11,000	0 14 0	..	104	8	5,656	21,737	24,377	3,593	100
Ladymith Gold-dredging Co. (Ltd.) ..	19/4/00	12,000	3,964	3,000	14,500	0 10 0	..	76	9	6,625	25,544	22,597	7,444	256
Lammermoor Mining Co. (Ltd.) ..	6/7/06	4,000	3,954	1,000	4,991	£1 & /11	19	17	9	..	..	3,781	..	381
Lead of Waikata Sluicing Co. (Ltd.) ..	27/7/09	2,000	..	1,000	750	0 8 0	116	22	5	..	..	178	..	38
Lower Nevis Dredging Co. (Ltd.) ..	26/1/09	2,000	650	1,350	2,000	1 0 0	..	7	8	..	..	2,470	..	783
Lower Nevis Dredging Co. (Ltd.) ..	29/9/06	600	600	600	1,200	1 0 0	..	7	7	1,690	6,506	6,457	420	161
Magnum Bonum Gold-dredging Co. (Ltd.) ..	1/8/06	2,500	2,500	..	2,500	1 0 0	..	10	8	4,063	16,216	11,891	5,000	297
Manuhēkia Gold-dredging Co. (Ltd.) ..	1/8/99	12,000	6,000	6,000	12,000	1 0 0	..	169	8	15,368	58,881	32,451	30,594	340
Manuka Mining Co. (Ltd.) ..	26/5/04	200	200	..	200	1 0 0	..	7	3	421	1,631	1,784	..	158
Masteron Gold-dredging Co. (Ltd.) ..	6/1/04	3,500	3,500	1,500	5,000	1 0 0	..	80	8	11,945	47,080	21,414	28,500	..
Matakauu Gold-mining Co. (Ltd.) ..	22/1/02	7,000	7,000	7,000	7,000	1 0 0	..	9	7	3,206	12,272	12,161	2,264	..
Molyneux Hydraulic Gold-dredging Co. (Ltd.) ..	25/5/00	5,896	5,896	..	5,896	1 0 0	..	86	7	11,589	44,014	48,637	6,781	128
Mount Morgan Sluicing Co. (Ltd.) ..	7/7/02	800	800	2,000	2,800	1 0 0	..	8	3	1,308	5,042	4,861	70	18
Muddy Creek Co. (Ltd.) ..	2/11/01	1,120	..	725	1,845	1 0 0	..	24	18	10,334	37,100	29,983	9,132	245
Muddy Terrace Sluicing Co. (Ltd.) ..	4/10/06	14,400	14,400	5,550	19,950	1 0 0	..	123	25	5,588	2,164	29,619	13,194	..
Mystery Flat Gold-dredging Co. (Ltd.) ..	16/7/00	5,512	4,512	1,000	5,512	1 0 0	..	98	8	13,218	52,246	30,517	25,769	247
Naseby Dredging and Hydraulic Sluicing Co. (Ltd.) ..	16/10/97	5,000	2,288	2,000	5,000	0 15 3	..	23	4	3,868	14,897	15,590	3,250	2
Nevis High Lead Sluicing and Hydraulic Co. (Ltd.) ..	15/9/09	2,100	630	..	2,100	0 6 4	35	8	7	50	192	955	..	451
New Golden Run Dredging Co. (Ltd.) ..	21/11/07	2,000	2,000	..	2,000	1 0 0	..	3	8	199	758	3,583	..	2,991
New Luggate Hydraulic Sluicing Co. (Ltd.) ..	5/12/08	2,000	500	1,300	2,000	0 18 0	..	22	7	418	1,691	1,759	..	88
New Roxburgh Jubilee Dredging Co. (Ltd.) ..	22/1/02	2,500	2,489	5,000	7,500	1 0 0	..	171	9	10,166	39,507	24,815	7,241	280

New Trafalgar Dredging Co. (Ltd.)	13/4/04	6,500	2,500	2,000	6,500	1	0	0	100	7	5,194	20,226	22,615	3,900	466
909 Gold-dredging Co. (Ltd.)	6/10/09	3,000	1,850	17,000	3,000	0	13	0	7	48	23,420	88,377	69,975	24,084	162
Nokomai Hydraulic Sluicing Co. (Ltd.)	26/3/98	24,000	7,000	17,000	24,000	1	0	0	62	8	7,034	27,310	29,250	4,173	671
Olrig Dredging Co. (Ltd.)	13/3/99	9,955	8,955	3,000	9,955	1	0	0	70	8	20,518	79,308	68,395	16,625	423
Otago Gold-dredging Co. (Ltd.)	20/5/95	5,000	2,000	3,000	5,000	1	0	0	60	17	10,263	40,864	31,913	12,715	550
Ourawera Gold-mining Co. (Ltd.)	23/5/95	3,000	3,000	..	3,000	1	0	0	17	9	286	1,131	1,744	..	898
Patea Sluicing Co. (Ltd.)	6/9/07	2,000	1,200	800	40	50	0	0	16	5	6,325	22,624	17,437	..	3,479
Paracale Gold-dredging Co. (Ltd.)	7/9/06	6,233	6,233	1,200	6,233	1	0	0	35	37	13,870	55,483	63,555	13,200	920
Paracale's Freehold Gold-mining Co. (Ltd.)	15/7/99	12,300	8,000	4,000	12,000	1	0	0	32	9	..	..	..	..	9
Phoenix Water-race Co. (Ltd.)	12/10/67	1,500	1,500	..	1,000	1	10	0	18	1	..	..	..	8,093	..
Punt Russell Gold-mining Co. (Ltd.)	2/8/03	3,750	2,625	1,125	150,000	0	0	6	144	9	30	79	1,133	..	47
Punt Gold-dredging Co. (Ltd.)	10/11/04	3,000	1,750	1,250	3,000	1	0	0	33	8	4,019	15,586	19,689	..	2,492
Quartz Reef Point Sluicing Co. (Ltd.)	20/7/08	1,200	1,200	800	2,000	1	0	0	25	4	25	95	1,714	..	394
Riley's Revival Gold-dredging Co. (Ltd.)	27/4/07	2,350	2,350	650	3,000	1	0	0	31	8	1,682	6,575	9,919	..	1,014
Rise-and-Shine Gold-dredging Co. (Ltd.)	24/2/00	10,000	9,746	2,000	12,000	1	0	0	172	19	23,427	90,833	76,517	22,800	938
Rising Sun Gold-dredging Co. (Ltd.)	16/2/01	8,000	5,500	2,500	8,000	1	0	0	83	10	10,865	41,988	32,795	10,800	184
Round Hill Mining Co. (Ltd.)	30/7/02	28,245	6,753	21,492	5,649	5	0	0	180	38	31,294	125,115	128,693	5,367	173
Roxburgh Amalgamated Mining and Sluicing Co. (Ltd.)	2/3/99	29,153	13,121	15,000	29,152	0	18	6	178	14	26,990	101,024	83,079	31,701	..
Sailor's Bend Dredging Co. (Ltd.)	1/9/99	8,000	6,500	1,500	8,000	1	0	0	168	9	4,203	16,242	20,133	3,587	92
Sailor's Gully (Waikabuna) Gold-mining Co. (Ltd.)	3/6/96	2,000	2,000	1,800	2,000	1	0	0	10	5	3,143	11,870	8,970	3,250	77
Sandy Point Gold-dredging Co. (Ltd.)	20/2/03	8,000	8,000	..	8,000	1	0	0	44	10	8,870	34,607	37,009	7,200	2,358
Scandinavian Water-race Co. (Ltd.)	10/12/07	7	3	9,750	9,757	1	0	0	28	15	2,244	8,670	9,174	..	5,321
Shotover Consolidated Mining Co. (Ltd.)	13/7/06	3,000	2,701	8,000	11,000	£1	£18s.	..	63	..	564	2,162	2,266	..	17
Shotover Gold-mining Co. (Ltd.)	24/6/08	10,000	2,145	750	100,000	0	0	7	129	..	..	..	1,886	37	
South Waikata Dredging Co. (Ltd.)	15/3/09	3,158	815	2,343	3,158	1	0	0	27	6	19	74	583	..	237
Skippers Sluicing Co. (Ltd.)	9/11/07	5,000	4,300	1,734	5,000	1	0	0	51	7	712	2,782	6,573	..	222
Stanley Paracale Gold-dredging Co. (Ltd.)	17/5/05	289	289	1,734	2,023	1	0	0	7	7	4,148	16,184	13,790	556	175
Taieri Falls Sluicing and Electric-power Transmission Co. (Ltd.)	4/8/08	7,000	5,450	3,000	10,000	1	0	0	72	5	275	990	10,192	..	2,997
Tallaburn Hydraulic Sluicing Co. (Ltd.)	3/12/04	1,200	1,200	2,000	4,060	1	0	0	54	5	..	..	3,614	..	1,499
Tamaiti Gold-mining Co. (Ltd.)	17/8/05	3,000	2,465	250	12	100	0	0	7	4	969	3,730	4,635	1,380	..
Tinker's Gold-mining Co. (Ltd.)	10/6/02	15,000	15,000	15,000	3,000	£1	£10s.	..	19	..	685	2,674	5,616	250	20
United M. and E. Water-race Co. (Reg.)	1/3/98	15,000	15,000	..	15,000	1	0	0	15	8	4,886	18,872	12,273	2,813	30
Vinegar Hill Hydraulic Sluicing Co. (Ltd.)	23/4/72	7,600	7,600	..	1,500	10	0	0	36	9	5,879	38,663	24,494	13,125	201
Waikaka Gold-dredging Co. (Ltd.)	28/9/00	6,000	6,000	..	152	50	0	0	7	8	14,566	56,148	64,497	3,078	2,355
Waikaka Queen Gold-dredging Co. (Ltd.)	20/10/08	3,500	1,750	1,750	6,000	1	0	0	12	4	..	9,992	9,228	1,050	400
Waikaka Syndicate (Ltd.)	6/7/99	6,560	6,560	1,050	3,500	1	0	0	46	9	7,401	29,238	21,214	11,200	313
Waikaka United Gold-dredging Co. (Ltd.)	20/12/01	7,000	4,700	4,000	6,560	1	0	0	101	16	6,232	25,184	28,159	3,038	261
Waipori Consolidated Gold-dredges (No Liability)	11/2/99	2,500	2,275	6,500	7,000	1	0	0	22	16	13,211	52,777	38,739	16,800	..
Waipuhana Dredging Co. (Ltd.)	22/3/99	1,380	1,380	..	11,200	1	0	0	34	16	21,737	86,949	53,183	38,080	357
Waikabuna Hydraulic Sluicing Co. (Ltd.)	22/2/02	2,000	1,200	..	2,500	1	0	0	7	..	4,989	19,301	18,943	2,813	37
Welcome Quartz-mining Co. (Ltd.)	10/11/04	4,000	1,441	2,500	1,380	1	0	0	22	..	605	2,330	4,177	1,967	..
Totals	..	553,868	354,016	263,266	820,742	..	..	..	5,329	867	666,341	2,611,389	2,139,973	764,769	63,006
Grand totals	..	2,607,824,899,060	820,351	11,448,461	13,215	19,406	1,569	98,471	1,398,069	3,711,775	1,398,069	98,471	1,398,069	98,471	..

STATEMENT OF AFFAIRS OF MINING COMPANIES, published in accordance with the Companies Act, 1908—*continued.*
Foreign Companies.

Name of Company.	Date of Registration of Office in Dominion.	Subscribed Capital.	Amount of Capital actually paid up in Dominion.	Value of Scrip given to Shareholders on which no Cash paid.	Number of Shares on Dominion Register.	Amount paid up per share: Dominion Register.	Arrears of Calls: Dominion Register.	Number of Shareholders on Dominion Register.	Number of Men employed in Dominion.	Quantity and Value of Gold or Silver produced since Registration.		Total Expenditure since Registration.	Total Amount of Dividends paid in Dominion.	Amount of Debts owing by Company.
										Quantity.	Value.			
AUCKLAND DISTRICT.														
Kurauui Caledonian (Ltd.)	11/11/05	£ 23,261	£ 10,733	£ 7,164	185,347	£ s. d. 1/ 0 0	£ ..	514	10	Oz. 898	£ 2,283	£ 10,201	£ ..	£ ..
New Zealand Crown Mines Co. (Ltd.)	27/6/96	200,000	..	100,000	97,251	1 0 0	..	334	44	286,463	683,549	671,575	12,224	112
Talisman Consolidated (Ltd.)	1904	270,000	204,543	..	227,269	0 18 0	..	1,119	330	1,456,807	785,914	388,196	180,282	..
Waibi Grand Junction Gold Co. (Ltd.)	22/11/97	350,000	25,332	..	168,965	1 0 0	..	1,005	426	..	254,458	497,402	..	2,453
Totals	..	843,261	240,608	107,164	678,832	..	..	2,972	810	1,744,098	1,736,204	1,567,374	192,506	2,565
OTAGO DISTRICT.														
Bluespur and Gabriel's Gully Consolidated Gold-mining Co. (Ltd.)	1/2/88	91,266	..	48,268	130,000	..	..	..	28	49,560	188,992	127,826	..	737
Grand totals	..	934,527	240,608	155,432	808,832	..	..	2,972	838	1,793,658	1,915,196	1,695,200	192,506	3,304

ANNEXURE F.

EXAMINATIONS UNDER THE MINING ACT, 1908.

QUESTIONS ASKED AT THE 1910 EXAMINATION FOR FIRST-CLASS CERTIFICATES OF COMPETENCY AS MINE-MANAGERS.

SUBJECT A.—*The Laying-out and Construction of Shafts, Chambers, Main Drives, Adits, Uprises, and Stopes.*

1. A lode outcrops at A, from which a perpendicular shaft is to be sunk to a depth of 400 ft. : show how you would convey the quartz from the shaft A to the battery-paddock B. If you adopt an aerial line for the whole or any portion of the distance, (a) show how you connect with the lode ; (b) where you would place your upper and lower terminals ; (c) give sketch and figure sizes of timbers in both terminals ; (d) diameter of sheaves and diameter of shafts in sheaves, and show how you could prevent the shafts from bending or breaking ; (e) number and cross-section of trestles on line ; (f) place trestles and terminals in position on section, and figure height of each trestle on section ; (g) how many brakes would you apply, and where would you fix them ? [Diagram not reproduced.]

2. In sinking a shaft you find the ground to be very heavy, and you timber with frame sets : describe fully your mode of timbering, giving (a) plan of the shaft, (b) the longitudinal, (c) the transverse end timbers, (d) partition timbers, (e) guides, gains, and lagging ; (f) give dimensions of all timbers used in the shaft, and the whole process where spilling is required, also the dimensions of shaft where there are three hoisting and one pumping compartment.

3. Where there is a considerable flow of water, and tubbing is required, describe fully the whole process from the start of sinking at the surface until impervious strata are reached and the water is completely shut off.

4. Describe the method of sinking through water-bearing strata adopted by Messrs. Kind and Chaudron.

SUBJECT B. — *The Timbering of Shafts, Adits, Main Drives or Levels, Passes, Stopes, and generally the Systems of timbering Mines, and filling up Old Workings.*

1. Where there are 30 men employed on the shift, give the dimensions of the chamber, the height of the opening set of timber, and the height of set where the chamber ends, length of chamber, single or double line of rails. If you use a double line, give the distance, and your reasons. Give dimensions of timbers in sets, kind of timber you would use in chamber, distance of sets apart (centre to centre), (a) where the ground is heavy, (b) where the country rock is sound and does not swell.

2. Give a sketch of the sets you would use in the crosscut from the chamber to the lode where the country rock is loose. Figure sizes of timbers on sketch, kind of timber, dimensions of sets in the clear, and splay (if any).

3. Where the width of the lode in the level is 12 ft., give sketch showing the position of your sets in the level (the walls are underlying 12 degrees), and show the best style of set to resist pressure from top and sides. Figure sizes of timbers, and describe timbers to be used.

4. A cap-piece of grey ironbark is 18 in. diameter, length between the legs 3 ft. : required the breaking-strain, and the factor of safety.

5. In a three-compartment uprise, where would you place the ladder-way ? Give your reasons.

6. To what height would you carry the stopes before filling in, providing the width of the lode was 12 ft. ?

7. In stoping a lode 10 ft. in width, at what distance apart would you place your double passes ? Would you use single passes ? Give your reasons for the course you adopt.

SUBJECT C.—*Ventilation of Mines and Composition of Gases.*

1. Describe the following instruments, stating also for what purpose and how they are used in mines : Anemometer, water-gauge, hygrometer.

2. What is black damp ? State approximately how many cubic feet of CO₂ at 70° Fahr. six men will produce in eight hours, using 1½ lb. of candles and 36 oz. of gunpowder.

3. If 2-horse power produces 10,000 cub. ft. of air per minute in an airway 10 ft. x 10 ft., what horse-power will be required to produce the same volume of air in an airway 10 ft. x 7.5 ft. ? Assume both airways to have the same length.

4. With a water-gauge of 0.4 in. and the fan making 65 revolutions per minute, there is produced 35,000 cub. ft. of air per minute : what quantity would be produced with a water-gauge of 0.6 in. ?

5. Compare centrifugal fans with blowers for the ventilation of mines with single outlet.

6. Explain the terms "equivalent orifice" of a mine and "orifice of passage" of a fan. Of what value is the comparison of these "orifices" ?

SUBJECT D.—*Tapping Water in Mines, and Mode of constructing Dams in Underground Workings to keep the Water back.*

1. Give a full description of how you would dam water back in a crosscut in a mine; the dimensions of the crosscut are 8 ft. by 7 ft., and the structure is to be of balk timbers. State the preliminary operations necessary, and give each step thereafter until the structure is completed. Would you use a battering-ram; and, if so, for what purpose? The water will rise to a height of 250 ft. above the centre of the breastwork: give pressure in pounds on the structure.

2. If you only had to dam the water back to a height of 5 ft., state the materials you would use, and your mode of construction.

SUBJECT E.—*Blasting and the Use of Explosives.*

1. Give the ordinary rule for the weight of explosives in small blasts.
2. Taking gunpowder as unity, what would be the strength of blasting-gelatine?
3. What is the weight of a cylindrical inch of gelignite; and, suppose a borehole 2 in. in diameter was filled with gelignite to a depth of 6 in., what would be the weight of the charge?
4. In using nitro-glycerine compounds, how do you ascertain (before charging) that the material is in good working-order?
5. What is the most powerful blasting-explosive known? and what is the standard composition of charge of Noble's No. 6 detonators?
6. How would you prepare any nitro-glycerine compound for use at a temperature below 45 degrees?
7. To avoid possible danger arising from the careless tamping of cartridges through the tamping-rod being brought into sharp contact with the detonator, give sketch showing how you would insert the primer cartridge containing the electric detonator so that the chances of the tamping-rod coming into immediate contact with the detonator are very much lessened.
8. In electric blasting a missed shot may occur from any one of four causes: name the four possible causes.
9. Describe fully the steps you would take when you have a missed shot in electric blasting.
10. Name Noble's exploder for high or low tension.
11. The ideal explosive is a compound possessed of six qualities: give them in full detail.

SUBJECT F.—*A Knowledge of Arithmetic and the Method of keeping Mining Accounts.*

1. The area of a circle is 24052.875 sq. ft.: what is (a) the diameter, and (b) the circumference, in feet?

2. Soundings taken at equal intervals across a stream 16 ft. wide were as follows: Water-edge, 0 ft., 1 ft. 4 in., 1 ft. 6 in., 2 ft., 2 ft. 1 in. 1 ft. 9 in., 1 ft. 9 in., 1 ft. 7 in., and water-edge 0 ft.: what was the sectional area of the water?

3. Calculate the gold contents in ounces fine of a quartz-dump of the following dimensions: Length of top, 200 yards; width of top, 95 yards; average height, 36 ft.; angle of slope, 45°; assay value per long ton, 3.5 dwt. The dump weighs 92 lb. per cubic foot. The prismoidal formula is,—

$$C = \text{contents of prism} = \frac{1}{6} L (A + a + 4 M).$$

L = length of prism.

A and a = areas of ends of prism.

M = area of middle of prism.

SUBJECT G.—*Practical Elementary Electricity.*

1. Define—kilowatt, Board of Trade unit, electrical horse-power, power-factor.
2. Is a hot-wire voltmeter equally applicable to alternating- and to continuous-current circuits? Is "volts × amperes = watts" always correct? State reasons for your answer.
3. What would be the full-load reading on the ammeter of a 200-horse-power motor on 25 cycles, 2,200 volts, and 90 per cent. power-factor?
4. How is the size of an electrical cable generally expressed in Great Britain? State a safe average rule for current-density on copper cables.

SUBJECT I.—*Pumping Appliances and the Drainage of Mines.*

1. Describe, and illustrate by sketches, starting from the collar of the shaft, a single-acting Cornish pumping system suitable for a vertical shaft 1,000 ft. deep, and adequate for dealing with 2,000,000 gallons of water in twenty-four hours. State the type of engine you would recommend, and the number of its strokes per minute; also the estimated mechanical efficiency of engine and pumps.

2. In a shaft 1,200 ft. deep it is proposed to instal electrically driven pumps having a capacity of 2,160,000 gallons per twenty-four hours: state,—

(a.) The type of pump you would recommend;

(b.) The B.H.P. necessary from the motor;

(c.) The dimensions and speed of the pump;

(d.) The estimated mechanical efficiency of pump and motor.

3. What is a sluice-head? Describe the statutory and practical methods of measuring the same.

SUBJECT J.—*The Haulage in Shafts and on Underground Planes, also the Strength of Haulage Ropes and Chains.*

1. At what piston-speed (feet per minute) would engines with cylinders 14 in. diameter and 28 in. stroke have to run to wind at the rate of 750 ft. per minute with drums 8 ft. diameter geared $2\frac{1}{2}$ to 1? The addition of rope-thickness to drum-diameter may be neglected.

2. How many horse-power will be required to pull twenty loaded trucks up an incline 400 ft. long in one minute, the grade being 7 per cent.? The weight of ore in each truck is 1,000 lb., and an empty truck weighs 300 lb. Allow 13 per cent. of the total pull of the rope for the resistance of rope and pulleys.

SUBJECT K.—*The Effect that Faults, Slides, and Mullock-bars have on Lodes, and how to ascertain the Direction of Slides and Heavals.*

1. How would you describe mineral veins or lodes?

2. Has a vein a dip and strike? Where is the dip measured from, and by what name do you call it? How do you measure the width of a vein?

3. Give a sketch of a lode where the mineralised part gradually disappears into the surrounding country, and where there are no distinct walls.

4. Give a longitudinal sketch showing (a) a large bunch or course of ore, (b) bunches of ore, (c) pipes of ore; and give example.

5. What are "reticulated masses"? And give a sketch showing a reversed fault.

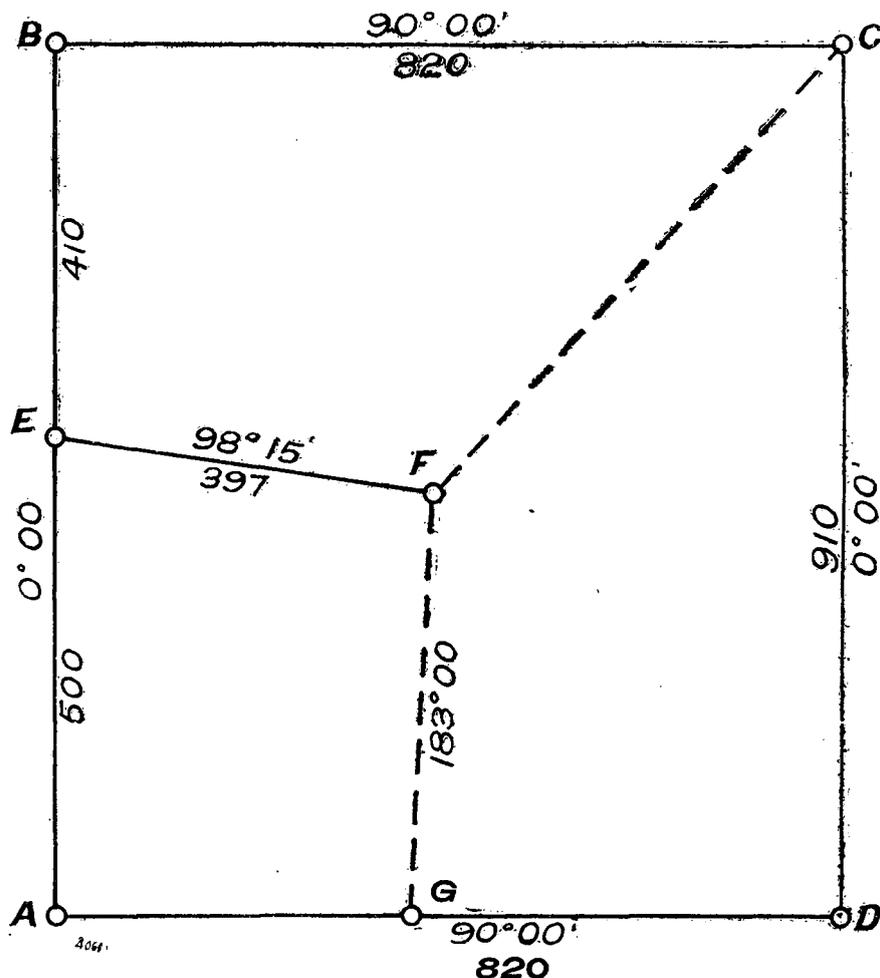
6. Give a sketch showing the complication caused by a succession of faults.

7. Give the best formula for recovering lost lodes.

SUBJECT L.—*A Knowledge of Underground Surveying, and of making Plans of Underground Working showing the Dip or Inclination and Strike of Reefs or Lodes.*

1. The figure ABCD represents a mining lease, with shaft at F: find the length in feet of the underground drive FG to the south boundary on the bearing given. Compute the bearing, and give the distance in feet from bottom of shaft at F to the underground corner at C. When pierced, the floor of connecting drive is to rise from F at the rate of 1 ft. per chain: give the difference in level and also the angle of inclination between the points F and C. Find also AG and GD.

Note.—All distances given on sketch are in links. Surface lines are firm, underground are broken, and all lines are to centre of shaft, top or bottom.



2. Describe your method of transferring the surface meridian or bearing down a shaft; also how and in what positions you would permanently mark the bearing at the various levels so that future underground surveys may be started therefrom at any time without having again to refer to the surface.

3. In commencing a purely magnetic underground survey, and without reference to surface bearings, what precautions would you adopt to guard against possible deflections of the needle through attractions caused by the presence of iron, &c.? In what part of the mine would it be advisable to lay down a standard magnetic meridian to govern all your underground surveys?

Would the bottom of shaft or eye of the pit be suitable places to begin; and, if not, why not? If in future comparisons the needle and vernier readings agree, then there is no attraction; but in case they should differ, how would you determine the amount of magnetic attraction? What reference marks would you put in, and where, to guard against loss of your standard meridian once laid down?

4. Compute the contents in cubic feet of a heap of mullock whose base is 40 ft. by 20 ft., the top being 26 ft. by 6 ft. and the height 7 ft.

5. Explain briefly the following terms as applied to bedded rocks:—

(a.) Dip, and how its angle of inclination is usually measured.

(b.) Strike, and its position in relation to dip.

(c.) Outcrop, and its position in relation to strike when the surface of the ground is level.

6. Describe briefly your method of taking horizontal and vertical angles with a circumferenter or miner's dial.

SUBJECT M.—A Knowledge of the different Rocks where Gold, Silver, Tin, Copper, Zinc, Lead, and Antimony are found, and the Formation of Lodes and Leads.

[Candidates need answer only three of the questions.]

1. What rocks enclose the gold-bearing quartz veins of the following localities: Waihi, Thames, Reefton, Skipper's? Mention in each case any changes which vein-formation may have caused in the vein-bearing rocks.

2. Where and in what rocks are copper, tin, and antimony known to occur in any considerable quantity in New Zealand? Where is the greater bulk of the silver exported from New Zealand derived?

3. What is meant by the term "lead" in auriferous alluvial deposits, and how do you suppose such "leads" have been formed? Discuss the terms "ore-shoot," "bonanza," and "secondary enrichment," as applied to gold-bearing quartz veins.

4. Give an account of the gold-bearing veins of any New Zealand locality with which you are familiar. In this account describe the nature of the rocks which enclose the veins, the minerals associated with the gold, the distribution of the gold (whether in shoots or of uniform distribution) the general strike of the veins, and their width, dislocations by faulting, &c.

QUESTIONS ASKED AT THE 1910 EXAMINATION FOR BATTERY-SUPERINTENDENTS' CERTIFICATES.

SUBJECT A.—The Different Modes of reducing and pulverising Ores.

1. State fully how you would erect a crushing-battery of forty heads of stamps, with rock-breakers, ore-feeders, amalgamating and concentrating appliances; also show by sketch their relative positions. Give the maximum speed that stamps can be worked with a given drop with safety. Demonstrate this fully.

2. Explain fully the use of tube mills, their action, dimensions, the speed they require to be worked at to give the most efficient results, their capacity, and the horse-power required to work them.

3. If all the machinery in connection with a crushing plant required 150-horse power to work it, and the plant was electrically driven, the electricity being generated by Pelton or turbine water-wheels under a head of 120 ft., the wheels giving 80 per cent. of the power of the water, what would the dynamo require to be in kilowatts to provide for all losses in working, including loss in transmission by a cable of No. 4 S.G. copper wire whose circuit was four miles in length, conveying a current of 30 amperes? Also state how many cubic-feet of water per minute would be required on the Pelton or turbine water-wheels to give the required horse-power at the crushing plant.

4. If auriferous ore had to be finally pulverised to pass through a mesh of 3,600 holes to the square inch, by using ore-breakers, stamps, and tube mills, (a) what size would you break the ore to in the ore-breaker; (b) what mesh of grating would you have on the front of the stamp-mortar to crush about 5 tons of ore with each stamp every twenty-four hours?

5. In crushing 5 tons of ore per stamp every twenty-four hours, and running the pulverised ore over amalgamating-tables, how many gallons of water would it require every twenty-four hours for a battery of five stamps? Give the reasons for your answer.

SUBJECT B.—Amalgamating-machines.

1. Describe how you would construct amalgamating-tables in front of a 5-stamp mortar. Give their dimensions, and all details in regard to their construction.

2. Describe fully the action of the following amalgamating-pans—The Watson-Denny, Mackay, Fraser, combination, and berdan—their capacity every twenty-four hours, the speed they require to be worked, and the quantity of quicksilver used in each.

3. What is meant by a "settler"? Describe its use, the speed it is worked at, and its capacity every twenty-four hours in treating ore.

4. Describe fully the construction of a Frue vanner, its action, use, and capacity in relation to a stamp-mill, and all details in regard to its action.

5. Give the dimensions and action of a Wilfley concentrator, its capacity in relation to a stamp-mill, and the horse-power required to work it.

SUBJECT C.—*The Use of Quicksilver, and Methods of using it in connection with the Extraction of Gold and Silver from Ores.*

1. How is it ascertained when quicksilver is in a pure state?
2. How are impurities such as antimony, lead, or zinc removed from quicksilver? What effect has impure quicksilver on the amalgamation of gold and silver?
3. How are copper plates cleaned, and coated with quicksilver? What steps are taken to keep the plates always bright?
4. How are gold and silver removed from the copper plates, and also from amalgamating-machines?
5. If quicksilver containing antimony or lead were subjected to a current of electricity, how would you apply the electric current, and what effect would it produce? State fully.

SUBJECT D.—*Cyanide, Chlorination, and other Chemical Processes of recovering Gold and Silver from Ores.*

1. At what plant were you employed where cyanide of potassium was used? Give the dates of your employment, and the name of the battery-superintendent you were under.
2. How is KCN used in the extraction of gold from pulverised material, and how is its purity ascertained?
3. Describe fully how stock solutions of KCN are made up.
4. In using a 15-per-cent. solution of KCN to make up 40 tons of a sump solution containing 0.09 per cent. of KCN to a 3-per-cent. solution, how many pounds of the 15-per-cent. solution would have to be used?
5. To make up 60 tons of a sump solution containing 0.03 per cent. KCN to a solution of 0.25 per cent. KCN, how many pounds of crude cyanide of 65 per cent. KCN would be required?
6. How many pounds of crude cyanide of 72 per cent. KCN would be required to make up 47 tons of water to a solution containing 0.28 per cent. KCN?
7. What effect has concentrated iron or copper pyrites on a solution containing KCN used in dissolving the gold contents?
8. A vat 40 ft. in diameter is filled with pulverised ore to a depth of 5 ft. or more: how many tons of KCN solution is required to treat this vat?
9. In treating tailings containing a very small percentage of gold, is there any limit to the weakness of the solution used when zinc is the precipitant? And why? What substitute for zinc can be used as a precipitant in weak solutions?
10. Show by sketch, and describe, how you would treat slimes by using compressed air for agitation in a KCN solution. State the time used in agitation, or how you ascertain when the slimes are sufficiently agitated. Also state how the solution is extracted from the gangue.
11. What are the antidotes to KCN poisoning, and how are they applied? What steps would you take at once if you found a workman suffering from KCN poisoning?
12. Describe how the ore is prepared for chlorination, and how it is treated by the Plattner process, and also by the Newbery-Vautin process. Describe fully.
13. How is the gold recovered from chlorination, also from KCN solution? Describe fully the different treatment it undergoes before it is in a marketable state.

SUBJECT E.—*Sampling and Testing of Ores.*

1. How would you take a sample for assay from ten truck-loads of quartz as it comes from the mine?
2. Describe the fire assay of a sample of quartz for gold and silver. What modifications of the process would you employ if the sample consisted largely of (a) iron-pyrites, (b) galena, (c) iron-oxide?
3. How would you determine the percentage of tungsten in a sample of scheelite?
4. What tests would you make in order to detect the following elements when occurring singly in rocks: Chromium, bismuth, tin, mercury, arsenic, cadmium?
5. How would you prove the presence of the following in a sulphide ore: Iron, lead, arsenic, silver, cobalt?

SUBJECT F.—*A Knowledge of Arithmetic and the Method of keeping Battery Accounts.*

1. A Pelton water-wheel is required to give 120 effective horse-power, the Pelton giving 80 per cent. of the power of the water. Required the number of cubic feet of water per minute, with a head of 200 ft., to produce the effective horse-power of the Pelton wheel. Also show the diameter of the nozzle to deliver the required quantity of water on to the wheel.
2. The value of bullion got from a mine was £20,146 10s. 3d. For every 1 oz. 5 dwt. of gold in the bullion there was 10 oz. 6 dwt. of silver. Taking the value of the gold to be £4 3s. 6d. per ounce, and of the silver 2s. 5d. per ounce, required the weight of the gold, and also of the silver.
3. If 25 men and 10 boys did a certain quantity of work in 17 hours, how long would it take 4 men and 12 boys to do the same quantity of work, allowing each boy to do eleventh-sixteenths of a man's work?
4. If a sphere contain 6,540 cubic ft., required its diameter.
5. A multitubular steam-boiler is 70 in. in diameter, and it has sixty tubes 4 in. in diameter; the steam-space is 21 in. high above the water-line; the total length of the boiler is 16 ft.: required the area of the steam-space, and also the area of the heating-surface of the tubes.

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

FIRST-CLASS MINE-MANAGERS' CERTIFICATES.

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

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|---------------------------------|-------------------------------|----------------------------------|
| Adams, H. H., Waiorongomai. | *Greenish, J., Reefton. | *Nasmyth, T., Reefton. |
| *Anderson, P., Thames. | *Greenville, W., Ohinemuri. | Newman, W., Naseby. |
| *Andrews, R., Coromandel. | *Hall, J. P. | Northey, J., Thames. |
| Andrews, T., Thames. | *Hansen, P. C., Thames. | *O'Sullivan, D. E., Thames. |
| Barclay, T. H., Thames. | *Harris, J., Owen's Reefs. | Polton, A., Karangahake. |
| Bennett, J., Alexandra. | Harrison, R. H., Coromandel. | Porter, J., Waipori. |
| *Benney, J., Coromandel. | *Hicks, T. B., Thames. | Purvis, G., Ross. |
| Black, T., Waiomo. | *Hilton, G. P., Bendigo. | Quinn, E., Te Aroha. |
| *Bollersley, N., Boatman's. | *Hodge, F., Coromandel. | *Radford, T., Thames. |
| *Bradbury, M., Reefton. | Hollis, W., Thames. | Ralph, J. G., Thames. |
| Bray, John, Lyell. | Hunter, R., Thames. | *Ranger, J., Reefton. |
| Burch, W. H., Thames. | James, F., Thames. | Rasmussen, C. L., Mokihinui. |
| Byrne, J. F., Stafford. | Jamieson, A., Coromandel. | Rasmussen, C. P., Mokihinui. |
| Cameron, A., Macetown. | Jenkins, M., Wakatipu. | Reid, P., Coromandel. |
| *Cameron, E., Te Aroha. | Johnstone, H., Bluespur. | Resta, L., Macetown. |
| Chapman, J. A., Dunedin. | *Julian, J., Boatman's. | Roberts, E., Ross. |
| *Clarke, G. S., Thames. | Kelly, J., Lyell. | Rooney, F., Reefton. |
| *Comer, R., Thames. | Kerr, J., Thames. | Scott, T., Waiorongomai. |
| Conradson, M., Lyell. | *Lawn, E., Black's Point. | *Searight, A., Reefton. |
| *Corin, W., Thames. | *Lawn, H., Boatman's. | *Senior, J., Thames. |
| *Cornes, C. A., Karangahake. | *Lawn, J., Reefton. | Smith, J. E., Thames. |
| *Coutts, J., Thames. | *Littlejohn, W., Karangahake. | Stone, F., Karangahake. |
| Crawford, T. H., Thames. | *Lowe, E. W., Thames. | Steedman, J. B., Thames. |
| *Crowley, C., Reefton. | Malfroy, J. M. C., Ross. | Sturm, A., Waipori. |
| *Cummings, W., Reefton. | *Martin, W. G., Thames. | Taylor N., Thames. |
| Davis, J. E., Queenstown. | *McCallum, J., Reefton. | Todd, C., Heriot. |
| *Davey, C., Ross. | McCullough, R., Thames. | Treloer, J. S., Reefton. |
| *Donald, J., Cromwell. | McGruer, G. N., Karangahake. | Tripp, R. S., Arrowtown. |
| Dryden, S., Thames. | *McIlhane, J., Thames. | Vivian, J. G., Thames. |
| *Dunlop, T. A., Thames. | McIntosh, D., Bluespur. | *Vivian, S., Reefton. |
| Edwards, J., Skipper's. | McKay, J., Ross. | *Waite, C. D., Thames. |
| Elliott, J., Macetown. | McKenney, J., Reefton. | *Waite, E., Thames. |
| *Evans, F., Skipper's. | *McKenzie, W., Thames. | Walker, J. W., Thames. |
| Evans, J. H., Skipper's. | *McLeod, G., Coromandel. | Watson, T., Reefton. |
| *Fitzmaurice, R., Reefton. | *McLiver, F., Thames. | *Wearne, J. E., Endeavour Inlet. |
| Frewen, J. B., Queenstown. | *McLiver, H., Thames. | Wearne, T., Endeavour Inlet. |
| Gavin, T., Te Aroha. | McMaster, J., Reefton. | *Wilcox, J., Thames. |
| *Gilbert, J., Reefton. | Moore, H. W., Thames. | Williams, J., Skipper's. |
| Gilmour, T., Thames. | *Moore, J. H., Thames. | Wright, G., Skipper's. |
| *Giles, G. F., West Wanganui. | *Morgan, R., Otago. | Wylie, W., Ross. |
| Glass, W. M., Naseby. | Morrisby, A. A., Glenorohy. | Young, G., Skipper's. |
| *Goldsworthy, J., Waiorongomai. | | |

First-class Mine-managers' Certificates, issued after Examination, under the Mining Act, 1886, and Amendment Acts.

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| Adams, B., Thames. | Crawford, J. J., Thames. | Hosking, G. F., Auckland. |
| Baker, W., Thames. | *Cummings, W., Reefton. | Kruizenza, W., Reefton. |
| Black, G., Reefton. | Donaldson, W., Otago. | *Lawn, T., Reefton. |
| *Caples, P. Q., Reefton. | Fleming, M., Thames. | Logan, H. F., Wellington. |
| *Carter, J., Thames. | Gardner, W. P., Reefton. | Mangan, T., Thames. |
| *Casley, G., Reefton. | Harris, W., Thames. | Mouat, W. G., Dunedin. |
| Cochrane, D. L., Reefton. | Horn, G. W., Thames. | *Truscott, G., Thames. |
| Colebrook, J. D., Coromandel. | Horne, W., Coromandel. | Watkins, W. E., Reefton. |
| Coombe, J., Reefton. | Hornick, M., Thames. | *Wilkie, J., Reefton. |

First-class Mine-managers' Certificates, issued on Production of Certificate from a Recognised Authority outside the Dominion, under the Mining Act, 1886, the Mining Act, 1891, and the Mining Act, 1898.

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| Argall, W. H., Coromandel. | Griffiths, A. P., Auckland. | Molineaux, H. S., Gore. |
| Beckwith, L. H., Wellington. | Griffiths, H. P., Auckland. | Rich, F. A., Auckland. |
| Datson, J., Manaia. | Hailey, R. C., Dunedin. | Williams, W. H., Auckland. |
| Dodd, William Milton. | McKenna, Thomas, Dunedin. | |

First-class Mine-managers' Certificates, issued after Examination, under The Mining Act, 1891.

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| Agnew, J. A., Thames. | *Hughes, D., Thames. | *Prince, F. H., Reefton. |
| Annear, William, Reefton. | *James, T., Thames. | Robertson, D. B., Stafford. |
| Arcott, R., Waihi. | Keam, P. E., Thames. | Ross, Richard, Thames. |
| Bennett, E. P., Thames. | Lane, J., Reefton. | Russell, Murray, Dunedin. |
| Boydell, H. C., Coromandel. | Lawn, C. H., Capleston. | Shepherd, H. F., Thames. |
| Bradley, R. J. H., Te Puke. | Linck, F. W., Thames. | Stanford, W. J., Macetown. |
| Bray, E., Reefton. | Marshall, F., Reefton. | Steedman, J. G., Thames. |
| *Bruce, Malcolm, Thames. | Morrison, R., Thames. | Sutherland, Benjamin, Reefton. |
| Carroll, J., Lyell. | McDermott, J., Thames. | Tierney, R., Thames. |
| Cartwright, E., Thames. | McDermott, G., Thames. | Vialoux, F., Coromandel. |
| Crabb, J., Reefton. | McDermott, W., Thames. | Warne, George, Thames. |
| *Dobson, J. A., Auckland. | McGregor, W. T., Thames. | Waters, D. B., Skipper's. |
| Evans, H. A., Wellington. | McKenzie, H. J., Coromandel. | Watt, J., Thames. |
| *Fahey, P., Reefton. | McPeake, J., Thames. | White, G. H., Thames. |
| *Flannigan, Francis, Reefton. | O'Keeffe, M. D., Thames. | Whitley, A., Thames. |
| Gilmour, J. L., Thames. | Paul, Matthew, Thames. | Williams, C., Capleston. |
| Hodge, J. H., Thames. | Paltridge, Henry, Thames. | |

* Deceased since issue of certificate.

FIRST-CLASS MINE-MANAGERS' CERTIFICATES—continued.

First-class Mine-managers' Certificates, issued after Examination, under the Mining Acts, 1898, 1905, and 1908.

Allen, Henry, Waihi.	Fry, S., Waimangaroa.	Moye, Michael, Reefton.
Autridge, L. E., Thames.	George, M. T., Waihi.	Oats, John, Black's Point, Reefton.
Baker, S. G., Thames.	Goldsworthy, C., Karangahake.	O'Sullivan, J. W., Thames.
Barker, B., Thames.	Goldsworthy, W., Coromandel.	*Rabe, John, Thames.
Barrance, K. M., Karangahake.	Gordon, J. A., Thames.	Rimmer, J. C., Helensville.
Bell, O., Waihi.	Grayden, P., Thames.	Rodden, John, Reefton.
Bennie, Boyd, Waihi.	Greening, W., Karangahake.	Saunders, W. H., Reefton.
Bishop, Thomas Otto, Skippers, Otago.	Hitchcock, W. E., Barewood.	Sheehan, D., Karangahake.
Blenkhorn, C., Coromandel.	Hooker, John, Coromandel.	Smith, Walter, Karangahake.
Bolitho, Joseph, Reefton.	Irwin, Samuel, Waihi.	Spearing, J. R., Waihi.
Bower, J. W., Coromandel.	Jackson, G. T., Waihi.	Stewart, F., Waihi.
Broad, R., Waihi.	Johnson, J. H., Coromandel.	Stewart, R. A., Reefton.
Buddle, Frank, Coromandel.	Katz, C. A., Waihi.	Thomson, Thomas, Waihi.
Bull, C. W., Waihi.	Langford, G. S., Waihi.	Thorne, G. M., Waihi.
Caisley, John, Karangahake.	Lawn, Nicholas, Reefton.	Tucker, E. S., Coromandel.
Carroll, A. M., Reefton.	Lewis, Ralph Reginald, Waihi.	Turner, G. W. E., Reefton.
Carroll, John, Kuaotunu.	Mackie, Portland Geo. Alex., Waihi.	Turnbull, E. V., Coromandel.
Carter, R. P., Waihi.	McConachie, W., jun., Waihi.	Turner, C. E., Murchison.
Clouston, R. E., Kaitangata.	McDonald, R. M., Table Hill.	Ulrich, G. A. C., Waihi.
Cooper, J. H., Thames.	MacDuff, R. B., Thames.	Watson, J. L., Thames.
Cooper, Thornhill, Waihi.	McGruer, A., Karangahake.	Webber, J. H. A., Reefton.
Cordes, F. M., Karangahake.	MacLaren, J. A. J., Coromandel.	Weir, Thomas, Waihi.
Cornes, J. G., Waihi.	McMahon, J. H., Reefton.	*Whyte, N. McG. H., Waihi.
*Daley, John William, Waihi.	McMahon, T., Reefton.	Williams, C., Thames.
Docherty, W. H., Coromandel.	Mitchell, William J., Barewood.	Wilson, Allan, Thames.
Ellery, John, Reefton.	Morgan, William, Waihi.	Wood, P. H., Reefton.
Evered, N. J., Waihi.	Morrison, William, Waihi.	Wotherspoon, James, Waihi.

First-class Mine-managers' Certificates, issued under Section 313 of the Mining Act, 1891.

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

First-class Mine-managers' Certificates of Competency, granted to Holders of Provisional Warrants under Section 32 of the Mining Act Amendment Act, 1896.

Alexander, Thomas, Deep Creek.	Harvey, A. G., Coromandel.	Moorecraft, Walter, Coromandel.
Argall, A. E., Coromandel.	*Howard, Samuel, Karangahake.	Morgan, William, Owharoa.
Battens, H., Coromandel.	James, Robert, Thames.	Moye, Thomas, Thames.
*Begley, Thomas, Reefton.	Jamieson, John, Reefton.	Patton, William, Macetown.
Bennett, Charles Henry, Kuaotunu.	Johns, Thomas, Waihi.	Pearce, Francis, Reefton.
Bunney, Joseph, Waihi.	Kennerley, W. H., Thames.	Potter, William H., Thames.
Campbell, Alexander, Cullensville.	Langford, James, Coromandel.	*Rabe, Henry, Karaka.
Carlyon, Samuel, Coromandel.	McCombie, John, Karangahake.	Rillstone, Charles, Waipori.
Cornes, C. A., jun., Karangahake.	MacDonald, H., Coromandel.	Somervell, John, Thames.
Daldy, Edward Arthur, Coromandel.	McEnteer, James, Tararu.	Stackpole, Robert, jun., Karangahake.
Draffin, Samuel, Waitekauri.	McFarlane, Charles M., Tokatea.	Thomas, Archelaus, Tapu, Thames.
Farmer, C. S., Waitekauri.	McLean, Benjamin J., Waitekauri.	Turnbull, Thomas A., Whangamata.
*Goldsworthy, Thomas, Tokatea.	McLean, Charles, Thames.	*Willets, Henry, Thames.
Goldsworthy, William, Karangahake.	*McLean, James, Tararu, Thames.	*Wilson, James R. S., Kuaotunu.
Govan, Joseph, Thames.	Meehan, James, Westport.	

First-class Mine-managers' Certificates, issued to Inspectors of Mines, by virtue of Office under the Mining Acts, 1886, 1891, and 1898.

Binns, G. J., Dunedin.	*Gow, J., Dunedin.	McLaren, J. M., Thames.
Cochrane, N. D., Westport.	Green, E. R., Dunedin.	Tennent, R., Westport.
Gordon, H. A., Wellington.	Hayes, J., Dunedin.	*Wilson, G., Thames.

SECOND-CLASS MINE-MANAGERS' CERTIFICATES.

Certificates of Service issued under the Mining Act, 1891.

Adams, W. J., Thames.	Flannigan, Francis, Reefton.	Laughlin, David, Thames.
Agnew, J. A., Coromandel.	Foster, Thomas, Wellington.	Law, John, Thames.
*Allen, Richard, Reefton.	*Gale, C. W., Coromandel.	*Lough, H., Thames.
Argall, A. E., Coromandel.	Gemmings, Charles, Thames.	Loughlin, S., Thames.
Beard, W. T., Reefton.	Gill, George, Thames.	Mackay, William, Nenthorn.
*Begley, Thomas, Reefton.	Glasgow, T. M., Thames.	Martin, David, Black's Point.
Bennett, C. H., Coromandel.	Goldsworthy, Henry, Thames.	Martin, James, Reefton.
Blair, Thomas, Kuaotunu.	Goldsworthy, William, Mauku, Auckland.	Mayn, John, Coromandel.
Bolitho, James, Reefton.	Govan, Joseph, Thames.	McCombie, John, Karangahake.
Bone, William, Reefton.	Gribble, James, Norsewood.	*McCormick, Charles, Coromandel.
*Borlase, J. H., Caplestone.	*Griffin, Patrick, Thames.	*McEwen, James, Reefton.
*Bowler, John, Thames.	Grimmond, Joseph, Ross.	*McLean, James, Thames.
Bray, Edwin, Reefton.	Guthrie, John, Wellington.	McLean, Alex., Coromandel.
Bremner, John, Coromandel.	*Guy, Robert, Kuaotunu.	McLean, Charles, Thames.
Brokenshire, James, Thames.	Hardman, James Edward, Thames.	McNeill, Daniel, Thames.
Brown, John, Macrae's.	*Harris, R., Thames.	McNeill, George, Upper Kuaotunu.
Brownlee, Thomas James, Thames.	Harvey, William, Reefton.	McLoughry, Archibald, Karangahake.
Bunny, Joseph, Thames.	Hetherington, William, Thames.	*McQuillan, John, Reefton.
Byrne, John, Karangahake.	*Hicks, W., Thames.	Meagher, John, Karangahake.
Caird, Alexander McNeil, Reefton.	Hill, Alex. Grey, Waikakaho.	*Mills, George, Thames.
*Campbell, J., Kuaotunu.	Hollis, Fred, J., Waihi.	*Milne, John, Thames.
*Climo, Noah, Coromandel.	Hore, John, Wellington.	Morgan, William, Upper Thames.
Comer, W. W., Thames.	Hornbrooke, H. P., Kuaotunu.	*Moorecroft, Thomas, Thames.
Comer, George, Thames.	Jamieson, John, Reefton.	Moye, Thomas, Thames.
Corbett, T., Paeroa.	Jobe, James, Thames.	*Naysmith, James, Reefton.
*Cowan, Hugh, Kuaotunu.	Johns, Thomas, Thames.	Newdick, Alfred, Thames.
Crabb, Thomas, Reefton.	Johnstone, William, Collingwood.	*Notman, Alexander, Reefton.
Daniel, P. F., Greymouth.	Kendall, Henry, Thames.	O'Keefe, M. W. D., Thames.
Dobson, John Allen, Kuaotunu.	Kerr, George, Kamo.	Page, John, Lyell.
Edwards, George, Westport.	Kirker, Thomas, Thames.	Parkiss, Jos. W., Reefton.
Ellery, John, Reefton.		Peebles, Alexander, Kuaotunu.

* Deceased since issue of certificate.

SECOND-CLASS MINE-MANAGERS' CERTIFICATES—*continued.**Issued under the Mining Act, 1891—continued.*

Pettigrew, Robert, Sydney.	Rogers, William Henry, Kumara.	*Wells, Charles Lewis, Thames.
*Phillips, W. H., Thames.	*Ross, J., Thames.	*Willets, Henry, Thames.
*Pollock, John, Thames.	*Rowe, James, Thames.	Williams, James, Thames.
Potts, W. H., Thames.	Shaw, James, Karangahake.	Williams, John, Thames.
Primrose, J., Kuaotunu.	Sligo, Alex., Nenthorn.	*Wilson, James R. S., Kuaotunu.
*Rabe, Henry, Thames.	Thomas, James, Thames.	Wilson, J. G., Thames.
*Radford, Thomas, Thames.	Thomas, A., Thames.	Whisker, Charles, Thames.
Reid, Thomas Groat, Thames.	Thomson, John, Dunedin.	White, John S., Karangahake.
Rickard, John, Thames.	Tregellas, James, Reefton.	Woodcock, James, Thames.
Richards, A. H., Kuaotunu.	*Tregoweth, William, Thames.	Worth, Robert, Waihi.
*Rogers, Charles Henry, Reefton.		

Second-class Mine-managers' Certificates, issued after Examination, under the Mining Act, 1891.

Benney, J., jun., Paeroa.	Evans, H. A., Skipper's.	McNeil, A. H., Coromandel.
Christie, William, Waitekauri.	*Gatland, V. Y., Coromandel.	White, F. H., Kuaotunu.
Driffin, S., Waitekauri.	Mathewson, A., Hyde.	White, G. H., Thames.
Dunkin, T., Coromandel.		

Second-class Mine-managers' Certificates, issued after Examination, under the Mining Act, 1898.

Bennie, Boyd, Coromandel.	*Cahill, T. M., Upper Kuaotunu.	Carroll, John, Upper Kuaotunu.
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Second-class Mine-managers' Certificates, issued under Section 313 of the Mining Act, 1891.

Connon, William, Thames.	Edwards, E., Coromandel.	McCormick, W. J., Waitekauri.
Coran, Henry, Thames.	Kelso, Archibald, Coromandel.	

Second-class Mine-managers' Certificates of Competency granted to Holders of Provisional Warrants under Section 32 of the Mining Act Amendment Act, 1896.

Allen, W. J., Coromandel.	Gardner, James, Waimangaroa.	Martin, William, Tararu, Thames.
Barney, Montague T., Waitekauri.	Howe, Albion S., Waitekauri.	Murphy, Joseph, Coromandel.
Brownlee, Henry, Thames.	Johnson, Frank H., Collingwood.	O'Brien, John, Westport.
Collins, Charles, Waitekauri.	Kirwan, William, Reefton.	Prescott, Arthur J., Coromandel.
Curtis, Charles, Taylorville.	*McDonald, John, Tairua.	*Radford, Samuel, Waihi.
Davis, James, Coromandel.	McInnes, John, Puriri.	Ruffin, Richard, Manaia, Coromandel.

BATTERY-SUPERINTENDENTS' CERTIFICATES.

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

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

Battery-superintendents' Certificates, issued after Examination, under the Mining Act 1891 Amendment Act, 1894.

Adams, A. A., Thames.	Doveton, G. D., Thames.	McMicken, S. D., Thames.
Allen, F. B., Thames.	Fleming, G. C. S., Thames.	Morgan, P. G., Thames.
Allom, H. O., Thames.	Fuller, J. P., Kuaotunu.	Morrin, W. S., Thames.
Ansley, Comyn, Paeroa.	Gray, J. W., Waihi.	Noakes, H. L., Waihi.
Ansley, Walter, Thames.	Hayward, F. W., Komata.	Raithby, R. W., Reefton.
Banks, J. H., Waihi.	Horn, G. W., Kuaotunu.	Robinson, J. R., Waitekauri.
Bowers, W., Thames.	Jackson, J. H., Paeroa.	Stafford, B. H., Waihi.
Brown, A. E., Thames.	Jones, Achison, Waihi.	Taylor, C. H., Tararu.
*Carter, Samuel, Thames.	Kidd, F. D., Thames.	Thorpe, A. H., Thames.
Clarke, J. L., Thames.	Laurie, D. B., Karangahake.	Vercoe, R. B., Thames.
Clarke, R., Waitekauri.	Lee, J. W., Reefton.	Wingate, H. M., Maratoto.
Clarke, W. J., Waihi.	Macdonald, W., Waihi.	Winslow, G., Thames.
Day, A. T., Thames.	McKenzie, H. J., Thames.	Williams, A. G. R., Thames.
Dixon, Clement, Waihi.		

Battery-superintendents' Certificates, issued after Examination, under the Mining Acts, 1898, 1905, and 1908.

Adams, J. H., Coromandel.	Bush, E. F., Parawai.	Evans, J., Waihi.
Adams, Richard W., Tararu, Thames.	Bush, George Arthur, Karangahake.	Evans, W. B., Reefton.
Adams, J. H., Thames.	Bush, H. R., Thames.	Ewen, H. F., Auckland.
Airey, Hubert, Karangahake.	Campbell, Colin, Thames.	Fletcher, H. T., Katikati.
Aitken, Alexander Hugh, Waihi.	Carpenter, W. E., Karangahake.	Fraser, J. M., Reefton.
Allen, D. V., Thames.	Carless, Noel, Waihi.	Fry, Sidney, Westport.
Allen, H. E., Wellington.	Carter, S., Waihi.	Fuller, John P., Kuaotunu.
Anderson, David, Waihi.	Carroll, John, Kuaotunu.	Fyfe, A., Dunedin.
Auld, J. B., Crushington.	Chappell, G. A., Karangahake.	Gardner, E. A., Reefton.
Baker, W. H., Thames.	Clark, John L., Waihi.	Gibson, William, Waihi.
Banks, C. A., Waihi.	Clarke, Thomas, Waihi.	Gilpin, J., Waihi.
Banks, E. J., Thames.	Coote, J. M., Thames.	Gow, E. A., Crushington.
Barrance, K. McK., Karangahake.	Corbett, G. L., Waitekauri.	Grayden, J., Waitekauri.
Barrett, J. J., Karangahake.	Couper, J., Thames.	Grayden, Peter, Thames.
Barron, Wm. E., Waikino.	Cowles, R. K., Crushington.	Grumitt, P. H., Thames.
Baskett, E. G., Karangahake.	Crompton, H., Maratoto.	Gwilliam, Ben., Karangahake.
Bell, L. M., Waihi.	Croucher, Herbert, Waihi.	Halliwell, L. V., Karangahake.
Bidlake, A. E., Waiomo.	Dawson, B., Ellerslie.	Hargraves, E. P., Waihi.
Bird, A. W., Thames.	Donnelly, Thomas, Waihi.	Hay, Adam, Karangahake.
Bishop, T. O., Reefton.	Donovan, Willie, Waikino.	Hazard, T. R. C., Waitekauri.
Blackadder, Wm., Crushington.	Driffin, Eugene, Kuaotunu.	Hitchcock, W. E., Barewood.
Bradley, R. J. H., Karangahake.	Eaton - Turner, Geoffrey William, Waihi.	Hogg, B., Karangahake.
Browne, E., Waitekauri.	Ellis, L. L., Waitekauri.	Hogg, T. R., Karangahake.
Brown, F. M., Karangahake.	Empson, J. B., Karangahake.	Horn, G. W., Kuaotunu.
Brown, J. E., Komata.	Evans, G. C., Waihi.	Gillooly, T., Roxburgh.
Burns, William, Waiomo.		Gillstrom, Carl A., Berlin's.

* Deceased since issue of certificate.

BATTERY-SUPERINTENDENTS' CERTIFICATES—continued.

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

Hutchison, R. M., Karangahake.	Montgomery, A. E., Oпитonui.	Thomson, G. W., Bendigo.
Johnson, Edward, Waihi.	Morgan, Robert James, Waihi.	Thurlow, J. R., Coromandel.
Jones, R. D., Karangahake.	Motherwell, Wm., Waihi.	Tomlinson, A., Karangahake.
Kidd, R. B., Waitekauri.	Moyle, W. T., Upper Tairua.	Tomlinson, David Mitchell, Barewood.
Kingsford, A., Karangahake.	Orbell, G. S., Waikouaiti.	Tomlinson, W. F., Dunedin.
Langford, G. S., Waikino.	Paltridge, F., Thames.	Turnbull, E. V., Waihi.
Lauder, G. H., Waitekauri.	Pond, H. C., Auckland.	Ulrich, G. A. C., Komata.
Lawless, L. J., Paeroa.	Porteous, J., Crushington.	Ulrich, Herstatt, Whangapoua.
Littlejohn, W. D., Karangahake.	Quick, J. N., Thames.	Walker, Alfred James Dickson, Waihi.
Lovelock, J. E., Crushington.	Reid, J. E., Great Barrier.	Waters, D. B., Waihi.
Mackay, John, Crushington.	Reynolds, E. A., Auckland.	Watson, A. B., Waitekauri.
Maltman, A., Reefton.	Roberts, H. C., Waihi.	Watson, A. P., Crushington.
Mann, C., Westport.	Rodden, Wm., Lyell.	Watson, J. R., Reefton.
Matheson, Alex. M., Barewood.	Rosewarne, R. H., Thames.	Watson, J. P., Reefton.
Maxwell, W. L., Waihi.	Royse, W. G., Reefton.	Watson, W. A., Crushington.
McDonnell, P. H., Waihi.	Sanford, A. G., Waihi.	White, A. S. H., Karangahake.
McEwin, J. A., Reefton.	Shaw, D. S., Waikino.	Williams, A. C., Waihi.
McKinlay, John, Waihi.	Shaw, L. J., Waikino.	Williams, James, Reefton.
McNeil, A. R., Karangahake.	Stephens, H., Dunedin.	Williams, William Eustace, Waihi.
McPadden, J., Coromandel.	Sutherland, J. A., Reefton.	Wilson, A. P., Crushington.
Melrose, P., Waihi.		

DREDGEMASTERS' CERTIFICATES.

Dredgemasters' Certificates, without Examination, issued under the Mining Act, 1898, and Amendment Acts, 1901 and 1902.

Allen, Chas., Alexandra.	Herbert, J., Beaumont.	Nicholson, W. E., Alexandra.
Anderson, L. C., Alexandra.	Hewitt, James, Clyde.	O'Leary, D., Waiau.
Andrews, Ralph, Canvastown.	Hogg, Thos., Cromwell.	Olsen, Chas., Roxburgh.
Baker, J. R., Alexandra.	Hoskins, Thos., Maori Point.	Parsons, J. D., jun., Clyde.
Ballantyne, D., Miller's Flat.	Hoy, Samuel, Alexandra.	Percy, John, Clyde.
Barnes, T. J., Beaumont.	Inwood, W. J., Rocklands Beach.	Perkins, A. C., Dunedin.
Barry, Thos., Clyde.	Johnston, E. A., Alexandra.	Pettigrew, Geo., Nelson Creek.
Bradley, Neil, Alexandra.	Johnstone, Alexander, Cromwell.	Poulter, G. W., Alexandra.
Bennett, Geo., Gore.	Keen, Thos., Clyde.	Pringle, John, Miller's Flat.
Bennett, James, Kumara.	Kennedy, Angus, Alexandra.	Ray, J. C., Totara Flat.
Blue, G. P., Alexandra.	Kitto, Ed. T., Miller's Flat.	Reeder, Philip, Bald Hill Flat.
Brand, Peter, Waikaka.	Kitto, Francis, Lowburn.	Rennie, Andrew, Roxburgh.
Brennan, Philip, Palmerston S.	Kitto, Jno. F., Miller's Flat.	Ross, Alexander, Cromwell.
Bremner, A. P., Lower Shotover.	Kitto, W. H., Cromwell.	Ross, Robert, Alexandra.
Brice, Wm. H., Cromwell.	Kloogh, N. P., Lowburn Ferry.	Richmond, J., Gibbston.
Bringans, D., Alexandra.	Lawson, Ed., Dunedin.	Ritchie, J. S., Waitiri.
Brown, T. G., Ahaura.	Ledingham, J., Bannockburn.	Sanders, H. P., Clyde.
Bunting, James, Murchison.	*Lee, George, Collingwood.	Sanders, John, Cromwell.
Busbridge, P., Gore.	Lidicoat, R. H., Fern Flat.	Sanders, Thos., Alexandra.
Butler, Ewen, Roxburgh.	Louden, Alexander, Clyde.	Schaumann, H., Alexandra.
Butler, M. J., Kanieri.	Luke, S. J., Alexandra.	Scott, M. G., Alexandra.
Cameron, Saml., Alexandra.	Magnus, A., Roxburgh.	Scott, Robert, Caplestone.
Clarke, Ed., Port Chalmers.	Magnus, Olaf, Box 130A, Christchurch.	Shore, T. M., Queenstown.
Compton, Albert, Dobson.	Mailer, John, Stillwater.	Shore, Wm., Gore.
Cormack, W., Greymouth.	Maitland, A. E., Miller's Flat.	Simonsen, Chas., Alexandra.
Cornish, J. T., Miller's Flat.	Maxwell, John, Dunedin.	Skilton, A. G., Old Diggings.
Coutts, Henry, Miller's Flat.	McClure, F. C., Rongahere.	Sligo, N. K., Ahaura.
Cowan, Alexander, Stillwater.	McConnell, J., Cromwell.	Smeaton, S. H., Inangahua Junction.
Cowan, James, Nelson Creek.	McCormack, D., Kanieri.	Smith, Alfred, Inangahua Junction.
*Crockston, W. L., Three-channel Flat.	McDonald, E. A., Waitiri.	Steel, Archibald, Kawarau Gorge.
Crowley, J. B., Edendale.	McDonald, J., Sofala.	Steel, Thos., Dunedin.
*Cumming, J. C., Beaumont.	McDonald, Jno., Cromwell.	Templeton, Ivie, Rongahere.
Cunningham, Geo., Kanieri.	McGeorge, J., Dunedin.	*Thompson, J., Alexandra.
Curtis, Chas., Stillwater.	McGeorge, Alexander, Dunedin.	Thompson, T., Miller's Flat.
Cutten, W. H., Dunedin.	McGregor, D., Kanieri.	Tough, John, Miller's Flat.
Deniston, R. A., Cromwell.	McGregor, G. R., Alexandra.	Troy, G. C., Cromwell.
Dewar, John, Alexandra.	McIntosh, D. J., Lowburn Ferry.	Turnbull, W. D., Canvastown.
Donaldson, J. G. A., Greenstone.	*McLay, Geo., Cromwell.	Tyson, John, Rongahere.
Edmonds, A. R., Nelson Creek.	McLean, D., Waitiri.	Von Haast, J. H., Clyde.
Faithful, Wm., Greymouth.	McMath, D. C., Ross.	Wallace, John A., Miller's Flat.
Foohy, J. M., Alexandra.	McMath, Thos., Alexandra.	Watt, John, Cromwell.
Gibb, Wm., Croydon Siding.	*McVicar, Peter, Roxburgh.	Weaver, Chas., Alexandra.
Gibson, A., Island Block.	Mills, Ed., Murchison.	Williamson, R., Millar's Flat.
Goodger, G. W., Waenga.	Mitchell, D. A., Dunedin.	Williamson, Walter, Miller's Flat.
Graham, J. M., Gore.	Morel, C. G., Inangahua Junction.	Wilson, S. W., Waikaka Valley.
Grogan, Wm. A., Miller's Flat.	Morris, G. S., Cromwell.	Wood, R. M., Cromwell.
*Hansen, Wm., Alexandra.	Murray, D., Clyde.	Woodhouse, W. S., Roxburgh.
Hay, James, Dunedin.	Murray, Madget, Cromwell.	Young, Andrew, jun., Roxburgh.
Hedley, A., Cromwell.	Neilson, S., Miller's Flat.	

Dredgemasters' Certificates, after Examination, issued under the Mining Acts, 1898, 1901, 1902, 1905, and 1908.

Anderson, Andrew, Alexandra South.	Burnside, Walter, Alexandra.	Dalton, J. R., Three-channel Flat.
Anderson, Bertram, Maori Point.	Burton, A. P., Miller's Flat.	Donaldson, John, Lawrence.
Anderson, G. B., Roxburgh.	Callaghan, E., Three-channel Flat.	Downie, Henry, Totara Flat.
Baird, William G., Clyde.	Campbell, G. W. T., Alexandra.	Eaton, Edgar W., Alexandra.
Bardsley, John James, Cromwell.	Carnegy, A., Three-channel Flat.	Elder, D. D., Roxburgh.
Bishop, Hugh Arthur, Collingwood.	Carr, W., Alexandra.	Faithful, Alfred, Bannockburn.
Blair, G., Abbotsford.	Carter, W. W., Sandy Point.	Farmer, Nathan C., Miller's Flat.
Borthwick, Robert, Alexandra.	Chapman, Robert, Maori Point.	Farquharson, Geo., Alexandra.
Bourke, John, Clyde.	Clark, D., Callaghan's Creek.	Findley, David, Dunedin.
Brent, C. D., Cromwell.	Clarke, R. S. B., Alexandra S.	Fisher, Hurtle, Miller's Flat.
Briggans, Thomas, Alexandra.	Coup, George, Albertown.	Filippi, S. de, Westport.
Briggans, William, Alexandra.	Cox, R. D., Alexandra.	Forno, D., Inangahua Junction.
Broderick, T., Lyell.	Craig, D. A., Shag Point.	Fraser, W. J., Roxburgh.
Bruce, J. A., Kawarau Gorge.	Croawell, James, Three-channel Flat.	Frenoh, T. E. K., Three-channel Flat.
Burley, J. P., Westport.	Curno, C. B., Alexandra.	Gibson, William H., Cromwell.

Deceased since issue of certificate.

DREDGEMASTERS' CERTIFICATES—*continued.*

Dredgemasters Certificates, after Examination, issued under the Mining Acts, 1898, 1901, 1902, 1905, and 1908—continued.

Graham, Thomas Arthur, Gore.	McCallum, W. S., Alexandra.	Ray, Robert Marshall, Bannockburn.
Gunion, R. A., Alexandra.	McGregor, Dougald S., Alexandra.	Reiderer, Edward, Cromwell.
Gunn, W. E., Beaumont.	McKenzie, John, Roxburgh.	Reynolds, T., Greymouth.
Guy, Donald, Cobden.	McKinnon, John, Alexandra.	Ritchie, William John, Cromwell.
Guyton, James, Dunedin.	McLean, John, Roxburgh.	Roberts, G., Three-channel Flat.
Hanning, C. J., Clyde.	Melvin, J. R., Roxburgh.	Robertson, D. J., Alexandra.
Hansen, H. C., Three-channel Flat.	Merchant, Isaiah, Clyde.	Robertson, W. R., Alexandra.
Harden, J., Stafford.	Milne, John A., Roxburgh.	Rooney, J. B., Roxburgh.
Harliwick, Matthew, Roxburgh.	Moffitt, R. W., Miller's Flat.	Rumble, Chas., Ngahere.
Hewetson, Sydney, Nelson Creek.	Mollison, William, Stillwater.	Rumble, Joseph, Miller's Flat.
Hogg, J., Nevis.	Moncrieff, Henry, Miller's Flat.	Sanders, W. J., Ahaura.
Holden, Charles, jun., Cromwell.	Monson, C. H., Miller's Flat.	Sawle, J., Cromwell.
Holden, John, Cromwell.	Morel, A. E., Nobles.	Sawyer, J. F., Alexandra.
Hepburn, D. O., Alexandra.	Morel, L. H., Inangahua Junction.	Sherwood, T. W., Greymouth.
Hughes, John L., Miller's Flat.	Morgan, Harold, Roxburgh.	Simpson, Edward Robert, Cromwell.
Johnston, John, Maori Gully.	Morgan, John, Alexandra.	Spooner, A. E., Alexandra.
Johnston, Louis, Beaumont.	Morris, V., Cromwell.	Steele, Thomas, Alexandra.
Jones, David Rowland, Island Block.	Mouat, W. G., Greymouth.	Steele, W. H., Miller's Flat.
Jones, T. R., Miller's Flat.	Munro, C. T., Waitiri.	Taylor, Alexr., Alexandra.
Junker, Frank J., Berlin's.	Munro, Hugh, Alexandra South.	Taylor, J. T., Dunedin.
Kane, William, Clyde.	Munro, R. F., Ross.	Theyers, C., Alexandra.
Kean, F. F., Waikaka.	Murray, H. B., Cromwell.	Theyers, J. W., Alexandra.
Kellett, C. H., Dunedin.	Murray, Robert John, Canvastown.	Vickerman, E. M., Cromwell.
Kennedy, A., Ophir.	Nelson, Edgar, Brunnerston.	Walker, J. J., Alexandra South.
Kitto, Henry, Alexandra South.	Nelson, George L., Brunnerston.	Wasserbrenner, M., Alexandra.
Kitto, John, Clyde.	Newick, Albion Edgar Charles, Bannockburn.	Wathen, James, Miller's Flat.
Linney, William, Island Block.	Nicholson, Charles S. G., Mataura.	Watson, E. H., Collingwood.
Livingstone, D., Alexandra.	Noble, William, Alexandra.	Weaver, P., Alexandra.
Lloyd, Arthur, Inangahua Junction.	Olsen, Hans, Alexandra.	Weir, T. R., Cromwell.
Lloyd, Hubert, Lyell.	Ommond, Thomas, Nevis.	Weir, W., Nevis.
MacDonald, C. J., Cromwell.	Orkney, H. E., Cromwell.	Wescombe, Alfred L., Island Block.
MacGinnis, J. A., Cromwell.	Orr, H. T., Cromwell.	Westcott, P. A., Miller's Flat.
MacGinnis, M. P., Alexandra.	Orr, William W., Cromwell.	Williams, Frederick, Alexandra.
MacLaren, John, Alexandra.	Parker, P. R., Roxburgh.	Wilson, George, Marsden.
Marklund, C. O., Lowburn Ferry.	Paterson, J. B., Miller's Flat.	Wilson, Stephen L., Inangahua Junction.
Mathews, James Halbert, Miller's Flat.	Patterson, J., Clyde.	Wood, W. W., Cromwell.
Matthews, A. A., Three-channel Flat.	Plumb, E. H., Maori Point.	Woodhouse, F., Bannockburn.
Mayne, W. C., Nelson Creek.	Poppelwell, William, Alexandra.	Woodhouse, G. G., Waitiri.
McDonald, C. J., Waitere.	Rait, Hume, Albertown.	Wyld, G. R., Inangahua Junction.
McDonald, G., Alexandra.	Ray, J. F., Bannockburn.	

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